MONETARY POLICY DURING ECONOMIC CRISSES: A COMPARATIVE AND HISTORICAL PERSPECTIVE

Yüksel Görmez
Şevket Pamuk
M. İbrahim Turhan

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Monetary policy during economic crises: A comparative and historical perspective

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Introduction

The global financial crisis that began in 2008 and has since then darkened the financial and economic outlook has increased the importance of historical economic analysis. Lessons drawn from history have once again become crucial for explaining the present status quo and for making decisions that will shape the future. A comprehensive investigation of past experience can support social and economic policymakers in considering the driving forces of the current global crisis, so that we may produce coordinated policies for the least costly solutions. Heightened interest in financial and economic history has fundamental benefits, not only because it unveils data sets with statistical time-series and qualitative information, but also because it creates greater historical awareness. By studying the development of institutions and procedures designed to solve complex financial problems of the past, we can understand the complex background of the recent global financial and banking crises. Investigating economic history with an eye towards today’s economic policy alternatives extends the range of policy options, allows well-founded arguments concerning policy implementation, and reduces the social cost of cures for macro- and micro-economic anomalies.

It was the awareness of these opportunities and the potential of historical analysis that motivated the establishment of the South-Eastern Europe Monetary History Network (SEEMHN), which was established in April 2006 on the initiative of the Bulgarian National Bank (BNB) and the Bank of Greece (BoG). Other regional central banks, including the Central Bank of the Republic of Turkey (CBRT) were invited to join, and the CBRT immediately accepted the invitation. During the first meeting in Sofia, a consensus was already reached regarding the benefits of an active exchange of experiences, ideas, data sets and arguments concerning monetary and financial history, with a special emphasis on the specificities of the region. The network consists of a community of central bank practitioners, financial historians, economists, and statisticians, mostly (but not exclusively) from countries on the Balkan Peninsula. Its main objective is to share and disseminate knowledge on this region’s economic history as an integral part of the European experience and to contribute to the understanding of European monetary history. It focuses particularly on financial and monetary history and brings together representatives of central banks, academia, and research institutions.

Furthermore, within the network, the SEEMHN Data Collection Task Force (DCTF) was founded, with the goal to establish a database of nineteenth- and twentieth-century financial and monetary statistics of the countries in the region. This Task Force has already produced a data set, published in the annex to the 2007 Conference Proceedings compiled by the Österreichische Nationalbank (2008).

Every year, the SEEMHN organizes a conference on a topic related to its interest areas, hosted by a central bank in the region. The hosting institution decides on the subject, and the network provides further support on a voluntary basis. At the end of each conference, the following year’s hosting central bank announces the theme of that meeting. To date, four conferences have taken place. The first was held in Sofia in 2006 and organized by the BNB, on ‘Monetary and fiscal policies in South Eastern Europe: Historical and comparative perspective’. The conference proceedings are available online, on the bank’s website. The second conference was organized in Vienna in 2007, by the Österreichische Nationalbank (OeNB), on ‘The experience of exchange rate regimes in South Eastern Europe in a historical and comparative perspective’. As with the volume resulting from the first meeting, the conference proceedings are available online, on the bank’s website. The respective websites are also interlinked with those of other SEEMHN member institutions.

The third meeting was held in Athens in 2008 and organized by the BoG, on ‘Banking and finance in South Eastern Europe: Lessons of historical experience’. Michael Bordo delivered the keynote speech on ‘Growing up to financial stability’. The participants presented, reviewed, assessed and discussed the experience of South-Eastern Europe (SEE) in terms of financial development, banking, and central banking from a comparative and historical perspective. The papers presented at the event are accessible to a broader audience, in the form of the Working Paper Series on the BoG’s website. The fourth annual conference was hosted in Belgrade in 2009, by the National Bank of Serbia (NBS), during the year of its 125th anniversary, on ‘Economic and financial stability in South Eastern Europe in a historical and comparative perspective’. The theme proved to be very timely against the backdrop of the economic
crisis that has weighed heavily on the global economy and the economies of the region alike. The shared lessons from the economic history of different states have offered particularly valuable guidance, at a time that governments all over the world were looking for solutions to the global crisis. This conference gathered more than 30 economists; a proceedings volume has been published, and again available on the hosting bank’s website.

The CBRT has been a member of the SEEMHN since its foundation, and its representatives have taken part in all previous conference and publishing activities. Naturally, it has been a great pleasure for the CBRT to host the Fifth Annual Conference in Istanbul in April 2010, on ‘Monetary policy during economic crises: A comparative and historical perspective’. The conference attracted many more submissions than could be accommodated, and many scholars from universities and research institutions—from the United States, the United Kingdom, France, Portugal, Bulgaria, Italy, Turkey and Slovenia, to name only a few—contributed to the discussions. It was also attended by representatives of the Albanian, Austrian, Belgian, Bulgarian, German, Greek, Italian, Romanian, Serbian, and Turkish central banks.

The conference took place on 15 and 16 April 2010, with the first day being devoted to the sixth meeting of the DCTF. As empirical research based on reliable data is of great importance to its members’ work, the SEEMHN aims to establish a historical data base with financial and monetary data for the countries of the region in the nineteenth and twentieth century and has for a number of years spent great effort in this direction. The representatives of all participating central banks presented and discussed the progress made so far, agreeing to accelerate the process of publishing a data volume, including the final output of this joint study, which will contain a newly developed data base with the main monetary and macroeconomic historical time series from 1914 to 1950. Three central banks—namely, the BNB, the BoG, and the OeNB—have taken a lead by providing the necessary human resources, funding, and time. The Romanian, Serbian, Albanian, and Turkish central banks will contribute to the cost of distributing the proposed publication to all interested parties—such as other central banks, major libraries, and interested scholars on the network’s mailing list.

As SEE has a rich history in terms of crises, the theme of the event could not have been timelier in the midst of the events presently occurring in the global financial landscape. During the nineteenth and twentieth century, almost all countries in the region were prone to a variety of economic and financial crises, and monetary authorities strove to sustain monetary and financial stability. The conference has shed light on the history of economic and financial crises in emerging market economies and discussed individual and coordinated monetary policy responses to resolve them. Emphasis has been placed on the evolution of financial market regulation and post-crisis regulatory responses. A comparison of the crisis experience of advanced countries with that of the emerging market economies served as a useful analytical framework in order to draw important lessons for resolving the current crisis and preventing future crisis episodes. The conference enjoyed the involvement of many scholars from universities and research institutes as well as central bank practitioners from network member states, all of them putting special emphasis on the importance of regional historical economic analysis and its contribution to the understanding of the current dilemmas in monetary policy implementation. In order to facilitate the contribution of historical analysis to policy implementation within a short time-frame, soon after the meeting the power point presentations accompanying the conference papers were uploaded on the CBRT’s website (http://www.tcmb.gov.tr/yeni/konferans/SEEMHN.html).

This publication consists of a collection of selected papers delivered at the Fifth Annual Conference. The first one was delivered as the opening lecture by the Deputy Governor of the CBRT, M. İbrahim Turhan, entitled ‘Central bank independence between a rock and a hard place: Is history simply repeating itself?’ The paper discusses the position of central banks on economic policy implementation from a historical perspective and draws attention to earlier crisis episodes that have certain implications for current issues. After analysing the sources and dynamics of the latest crises, the author argues that the sustainability of central bank independence is at stake under the current circumstances and that the conjunction carries a heightened risk of intervention, not only by politicians, but also by the private sector, as both of these groups question the credibility of central banks as the underwriter of monetary and financial stability.
The second paper was delivered as keynote speech by Eugene N. White, of Rutgers University and the National Bureau of Economic Research. In this paper, he investigates a very timely topic: ‘The role of bank supervision in American monetary history’. He addresses two questions: First, what are the institutional arrangements for ideal bank supervision; and, second, what are the best regulations and tools for bank supervision? He concludes that the importance of financial stability has increased, so that it is now equivalent to the importance of price stability. According to White, bank supervision to manage financial stability is now a key component of economic and monetary policy, and it is important to understand the evolution of institutional structures and incentives in order to prevent future failures, by increasing not only the quantity, but also the quality of crisis prevention strategies—a view shared by virtually all participants.

Matthias Morys from the University of York and Martin Ivanov from the Bulgarian Academy of Sciences contributed a paper entitled ‘Business cycles in South East Europe from Independence to the end of the Cold War’. In their research, they constructed business cycle indices for SEE from the 1870s to 2000; they address four questions, including whether there have been identifiable regional business cycles, and, if so, to what extent have these business cycles been synchronized with Western Europe. Also, they investigate how volatile and persistent SEE business cycles have been compared to the core countries of Western Europe, and whether the SEE business cycles exhibited characteristics similar to the stylized facts of business cycles in general.

Kalina Dimitrova from the BNB, Luca Fantacci from Bocconi University in Milan, and Ali Coşkun Tuncer from the London School of Economics (LSE) discuss in their paper ‘Monetary policy in South-East Europe in the transition from bimetallism to the gold standard’. They explain why the agio did not compensate entirely for the depreciation of silver on the international market, by highlighting other factors that influenced the relative demand for gold and silver currency at a national level. They suggest that, even in periods of bimetallic or monometallic standards, money was not simply a commodity and that its value did not depend entirely on the material of which it was made.

The subsequent paper, authored by Sophia Lazaretou, of the Economic Research Department of the BoG, is entitled ‘Financial crises and financial market regulation: The long record of an “emerger”’. She traces the long record of financial crises and financial market regulation from the perspective of an emerging economy. She addresses two questions: First, what explains the incidence and severity of financial crises in an ‘emerger’? Second, what is the role of learning?

‘Macroeconomic policies during the Great Depression: Another look at the Turkish Case, 1929-1939’ was jointly presented by Seyfettin Gürsel of Bahçeşehir University and Şevket Pamuk of the LSE and Boğaziçi University. The authors argue that government economic policies in Turkey were rather eclectic during the 1930s. Exchange rate policies resulted in the appreciation of the currency; fiscal and monetary policies were not expansionary until the very end of the decade. Nonetheless, the Turkish economy performed strongly during the 1930s, due to severe import repression and the recovery of agricultural output despite markedly lower crop prices.

Branko Hinic, Milan Sojic, and Ljiljana Djurdjevic from the NBS in their contribution discuss ‘Monetary policy in the Kingdom of Yugoslavia during the Great Depression (1929-1934)’. They demonstrate that the monetary conditions in the Kingdom of Yugoslavia prior to the Great Depression were relatively stable. According to their findings, the central bank’s interest rate was at a one-digit level, somewhat above the level of the interest rates of central banks of developed European countries, while the dinar maintained relative stability both in domestic and international stock exchanges.

In the following paper, Federico Barbieri Amidei and Claire Giordano, of the Banca d’Italia’s Economic and Financial History Division, discuss the ‘Regulatory responses to the “roots of all evil”: The re-shaping of the bank-industry-financial market interlock in the US Glass-Steagall and the Italian 1936 Banking Acts’. The paper provides a historical comparison between the 1930s banking regulations introduced in Italy and the US, with respect to the bank-industry-financial market linkages. The authors conclude that the resulting separation of commercial and investment banking in the US differs from the barrier erected between banks and industry in Italy; this was due to the dissimilar roles and responsibilities held by the banks in the two countries, as conceived by contemporaries.
Arta Pisha and Besa Vorpsi from the BoA contributed a paper entitled ‘Monetary policy in Albania during economic crises. According to the authors, the 2002 concussion in Albania was caused by a weak banking system, which underlines the importance of a sound information technology infrastructure. They conclude that a monetary policy transparent to the public is quite critical in order to sustain credibility and confidence.

Martin Pontzen and Franziska Schobert of the Bundesbank contributed a paper on ‘Central bank losses and the case of the Deutsche Bundesbank after the breakdown of the Bretton-Woods System’. According to their findings, during and after the breakdown of the Bretton Woods System, the Deutsche Bundesbank faced significant central bank losses, arising from the strong appreciation of the Deutsche Mark against the US dollar, and caused write-downs on foreign currency positions. They show that the Bundesbank escaped the loss-making dilemma by focusing on internal price stability, which reduced the share of foreign currency denominated assets on its balance sheets.

In the final paper, Yüksel Görmez and Serkan Yiğit, of the CBRT, share their findings on ‘Monetary policy under stress: Lessons from Turkey’. Following an analysis of the experimental and chaotic monetary policy implementations at a time of economic, political, and social uncertainties and the presentation of samples of extremely high and volatile interest rates, the authors argue that monetary policy under extreme conditions proves to be costly, whereas dedication to price stability increases social welfare.

There is a long list of persons to whom we owe a debt of gratitude for their help with the organization of the conference and this proceedings volume. First of all, it was Deputy Governor Erdem Başçı who approved the CBRT’s participation in SEEMHN activities and who from the very beginning called for active contribution to the discussions. The head of the Research and Monetary Policy Department, Ali Hakan Kara, could only follow the events from a distance because of his busy schedule, but still made sure that his team contributed a great deal.

We also owe special thanks to our committee members. The scientific committee consisted of the following persons: Darko Bohnec, Deputy Governor of the Bank of Slovenia; Kliti Ceca, Director of the Department of Statistics of the BoA; Kalina Dimitrova of the BNB; Nikola Fabris, Chief Economist of the Central Bank of Montenegro; Alfredo Gigliobianco, Head of the Historical Research Office of the Bank of Italy; Branko Hinic, General Manager of the Economic Analysis and Research Department of the NBS; Sophia Lazaretou, Senior Research Economist at the BoG; Peter Mooslechner, Director of the Economic Analysis and Research Department of the OeNB; Matthias Morys of the University of York; Nikolay Nenovsky of the BNB and World Economy-Sofia; Virgiliu Stoenescu, Member of the Managing Board of the NBR; and Boris Vujcic, Vice Governor of the Croatian National Bank.

As members of the Organizing Committee, Serkan Yiğit, Assistant Economist at the CBRT, and Ali Coşkun Tuncer of the LSE played an extremely critical role. They assisted with every step of the event—from the preparation, over the realization, to the very final stages. Without the contributions of the Protocol Division of the Communications and Foreign Relations Department of the CBRT, the event would never have been as successful as it was. Two persons deserve special mention here—Mehmet Taylan Yıldız and Hatice Jale Koloğlu—for their great efforts regarding the logistics, not only during the two days of the meeting, but also in addressing the difficulties caused by the volcanic eruption in Iceland. Only their enthusiasm and efficiency allowed the conference to proceed smoothly.

For their support with the publication of the proceedings, we owe special thanks to Hüseyin Zafıer; Executive Director of the Communications and International Relations Department, Yusuf Bora Enhoş; Deputy Executive Director and Soner Aksu; Deputy Director; both from the same Department. We would also like to underline and appreciate a great support from Graphic Designer Gülşen Çetinkaya from the Design and Product Development Division at the Issue Department of the CBRT on the final stages of this publication.

We believe that the papers in this volume add much value to the field of economic history and create a firm basis for further research that is aimed at the exploration of various historical economic problems in order to draw lessons for the present and the future, so as to meet the challenges posed by the rapidly changing economic environment. This endeavour provides us with a valuable analytical framework for overcoming the current global downturn and for preventing any future crisis episodes, with lower social
cost and better institutional structures. The SEEMHN intends to serve as a platform for promoting the exchange of skills, opinions, and ideas, by presenting particular countries’ specific experiences in the context of monetary history. The network will continue to research from a historical angle any issues that may provide insights for the analysis of present economic and financial developments and for policy-making in these areas today.

The Sixth Annual SEEMHN Conference was hosted by the National Bank of Romania and was taken place on 18 March 2011 in Bucharest. The topic of the conference has been announced as ‘Monetary policies and banking institutions in South Eastern Europe between national objectives and European patterns: A historical and comparative perspective’. The significance of the SEEMHN’s future endeavours is already evinced by the broadening interest in participation by central banks, not only from SEE, but also from regions beyond; certainly, this will not be the last publication based on the contributions of the members of the SEEMHN.

Yüksel Görmez  
Central Bank of the Republic of Turkey

Şevket Pamuk  
Boğaziçi University and London School of Economics and Political Science

M. İbrahim Turhan  
Central Bank of the Republic of Turkey
Central bank independence between a rock and a hard place: Is history simply repeating itself?

M. İbrahim Turhan
ibrahim.turhan@tcmb.gov.tr
Central Bank of the Republic of Turkey

Abstract

The story of central banking goes back at least to the seventeenth century. Central banks were first established to help with funding governments’ budgetary needs; yet, they were also private entities that engaged in banking activities. After World War I, central banks began to put more emphasis on the goal of maintaining economic stability—that is, to bring and hold in equilibrium macro-economic factors such as employment, real activity, foreign exchange rate, and price level. More importantly, central banks were an essential element of financial stability, as their ‘lender of last resort’ function became a necessity in paper-money systems. Although the independence of central banks has become one of the most important issues of economic policy frameworks, and in spite of the fact that only over the past two decades more countries have increased the independence of their central banks, this concept dates to as early as the eighteenth century, if not to the very emergence of central banking itself. The meaning and implementation of independence have followed a course dependent on current economic conditions and conjunctural cycles, rather than a linear and uninterrupted one. Although widely accepted by most experts in academia as well as in practice, central bank independence is still criticized both explicitly and implicitly, leading to proposals to limit it. Such demands have not only come from politicians, but also from the financial sector, other market-players and the business world, all of which seek to benefit from the short-term effects of monetary policy. The combination of large-scale bank bailouts in advanced economies and extremely loose monetary policies, which do not only keep the cost of global funds at record low levels, but also cause massively increased liquidity provision, requires a closer analysis of central bank independence and a revisiting of economic history.

JEL: B15, E02, E58, G01
Keywords: Central banks, central bank independence, financial crises.

'It is alleged that people draw lessons from the past... What a fairy tale!
Did stories from the past five thousand years give us anything at all?
So defined, history always repeats itself;
Would this have been the case, if any lessons had ever been learnt?’
(Mehmet Akif Ersoy)

1. Introduction

In recent years, there has been a quick move towards allowing greater legal mandate to central banks, due to the success of highly independent central banks in maintaining price stability. The inflationary experiences of the 1970s have been ascribed to governments borrowing from central banks, which caused expansionary monetary policies. The challenge of globalization and openness in international markets has increased the pressure on governments. Furthermore, the increased volatility and interlocking of in-

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1 I am grateful to Oğuzhan Bilgiç from the Communications and Foreign Relations Department of the Central Bank of the Republic of Turkey for his valuable contributions to the research on which this paper is based. I would also like to acknowledge my debt to Yüksel Görmez, the Vice Representative Officer of the CBRT in Tokyo, for his support.
2 The views expressed in this paper do not reflect the views of the CBRT.
ternational financial markets has resulted in more restrictions on the autonomy of national governments in economic decision-making. The political and intellectual reasons behind the argument for central bank independence lies in the context described here, as well as in the lessons drawn from international monetary history.

Issues regarding central banks are inherently part of the subjects of political science, due to their direct influence on specific socio-economic concerns, and as a result of their position in the political system and of their effectiveness in constructing their own image, resources, and the credibility of economic policies in society. Likewise, the issue of giving legal independence to central banks is highly political, in that it means the government’s abdication of a very critical power. In other words, creating an independent central bank is a redistribution of powers that will affect macro-economic decisions and, thus, the entire society.

The subject of central bank independence is also political in that any move to allow greater autonomy may create tensions between political-economic forces in any national context. The specific tensions between these forces can be eliminated by increasing the globalization of financial markets, which in turn may cause a crisis of national governance. To put it differently, central bank independence involves a redistribution of power over key areas of macroeconomic decision. The recent financial crisis has revealed that—in a world of great asymmetries of information, complex financial innovations, and incomplete regulatory frameworks—‘self-regulation’ obviously does not work (Wagner 2010).

Demands to limit the independence of central banks has come not only from politicians, but also from the financial sector, other market-players, and the business world, all of which seek to benefit from the short-term effects of monetary policy. Certain developments and economic conditions have garnered public and political support and led to compromises regarding central bank independence; among these count times of political tension, including wars, or times of economic tension, when protectionism is on the rise, and when financial bubbles burst following irrational financial euphoria. History has proven that turning away from central bank independence and attempting to change real variables through monetary policy may only amplify the problems and deepen the crisis, by simply postponing real adjustment for a while. Also, using monetary policy to correct imbalances that should be dealt with by means of fiscal policy causes foreign exchange crises and leads to asset price bubbles. Such a monetary policy intervention may aggravate moral hazard and adverse selection and thus pave the way to systemic financial crises. The current period to some extent resembles past episodes in which certain trends impaired central bank independence: (1) the global disparity on the north-south axis and the shift of power from the core towards the periphery due to the emergence of new economic powers that feed hostile rivalry; (2) saving-investment imbalances between advanced and emerging economies; (3) populist policies in democratic countries, as well as rising protectionism and interventionism; and (4) derivative products, soaring commodity prices, and accommodative monetary policies implemented in the early 2000s and during the current global crisis with the aim to counter the recession and deflation threats—these all have generated ample global liquidity. In the end, central bank independence is at stake, including the independence of the once most respected major central banks. For example, in the case of the European Central Bank either peripheral welfare or independence was to be sacrificed, as worthless peripheral government securities were purchased.

Another aspect of central bank independence concerns the distinction between ordinary and extraordinary periods of time. In ordinary times, countries do not face profound threats to, or alterations in their basic identity. Ordinary times are structured around more limited disputes that do not go to the core of a nation’s identity or its basic security. In extraordinary times, when a country’s identity or survival is at stake, the government may need to raise income very quickly and efficiently, or to depart from other basic aspects of central bank independence. Isolating central banks from politics does not pose any serious difficulty for democratic functioning in ordinary times, but in extraordinary times the autonomy of the central bank can, and should, legitimately yield to other concerns. The problem of institutional design is how to distinguish ordinary times from extraordinary ones. For instance, the financial crisis that began in 2007 and reached its peak in September 2008 can be considered such an extraordinary time, one that justifies departure from regular principles of central bank operations (Lastra 2010).
This paper aims to investigate central bank independence from a historical perspective in order to shed light on both its present situation and future. The first two sections will examine the history of central banks, their role as stabilizer, and discussions about their independence. The following section will discuss economic cycles and single-mandated central banks. Then, the paper will offer an overview over the formation of the recent crisis and the evolution of new monetary policies. Before concluding, the final section will analyse the new dynamics of central bank independence which is arguably under threat. The paper finally draws a number of conclusions and points to open questions for further studies on the subject.

2. The emergence of central banks and central bank independence

Recessions and crises during the late 1700s, the 1820s, and the 1860s all called for a stable international monetary system. During periods of low growth and high inflation, the central banks at the core of financial systems gained extended credibility, and the concept of their independence was strengthened. There was heightened support for central banks to play a stabilizing role in the economy, instead of just having a deficit-financing one. Ricardo argued long ago that, ‘if the government wanted money, it should be obliged to raise it in the legitimate way; by taxing the people; by the issue and sale of exchequer bills; by funded loans; or by borrowing from any of the numerous banks which might exist in the country; but in no case should it be allowed to borrow from those who have the power of creating money’ (Ricardo 2005).

Money originated as a political creation of the state to organize and control commerce and to standardize taxation. Central banks emerged as institutions to operate money for the public welfare and were charged with regulating a nation’s money supply, the availability and cost of credit, and the foreign-exchange value of its currency. The principal objectives of a modern central bank in carrying out these functions are to maintain monetary and credit conditions, to contribute to a high level of employment and production, and to achieve a reasonably stable level of domestic prices, as well as an adequate level of international reserves.

Central banks also have other important functions. These include acting as a fiscal agent of the government, supervising the operations of the commercial banking system, clearing cheques, administering exchange-control systems, and serving as correspondents for foreign central banks and international financial institutions. Furthermore, for central banks of the major industrial nations, an important task is also to participate in cooperative international currency and related arrangements designed to help stabilize or regulate the foreign-exchange rates of the participating countries.

The principles of central banking emerged in response to the continual British financial crises of the nineteenth century and were later taken over by other countries. Modern market economies are subject to frequent floats in output and employment. Although the causes of these floats are varied, there is general agreement that the ability of banks to create new money may worsen them. Although an individual bank may be moderate enough in keeping its own liquidity position, the expansion or tightening of the money supply to which it contributes may be excessive. This raises the need for a disinterested external authority that is able to view economic and financial developments objectively and to apply some measure of control over the activities of banks. While this is a difficult task, a central bank should also be able to react against offset forces originating from outside the economy.

Before the twentieth century, there was no clearly defined concept of central banking. There was a step-by-step evolution towards central banks, but a systematic and agreed-upon standard had not yet been formulated. On the one hand, the free banking school argued that the very existence of a central bank was not necessary or desirable. On the other hand, as the state superseded the issue by setting up legal tender fiat money, it needed an institution to manage the value of that money. This institution would

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3 In his classic book, Bagehot has described the Bank of England as ‘probably the most remote from party politics and from financing’ in the world. Yet, ‘in its origin it was not only a finance company, but a Whig finance company. It was founded by a Whig Government because it was in desperate want of money, and supported by the “City” because the “City” was Whig’. Under Charles II, England’s credit rating had sunk ‘to the lowest possible point, and the Government created by the Revolution of 1688 could hardly expect to be trusted with money more than its predecessor’ (Bagehot 1873).
become the central bank. Historically, the second view was more widely held. In the twentieth century, while Keynesian economics were on the rise, at the same time the foundation of central banks also accelerated (Capie et al. 1994).

The older central banks were founded as commercial banks, rather than as non-profit, public-sector institutions. However, in each case they were rather special, since they served as the government’s main banker and received monopolistic privileges and since the basis of commercial banking is the maintenance of the convertibility of bank liabilities.

In many countries, one bank gradually came to assume the position of a central bank, by enjoying the sole or principal right of note issue and acting as the government’s banker and agent. The regulations regarding note issuing were imposed by the state. These banks were not generally called central banks, but known as banks of issue or national banks. The Riksbank of Sweden, which was established in 1668 with the help of Dutch businessmen, was the first central bank founded as such. The Bank of England, founded in 1694, was the first bank of issue to assume the position of a central bank and to develop according to recognized fundamentals of central banking. Its history illustrates the development of the principles and standards of central banking. Successively, the Bank of France was established in 1800 and the Bank of Japan in 1882.

At the beginning of the twentieth century, the states of the New World, China, and India were still without central banks; however, the international finance conference held in Brussels in 1920 passed a resolution affecting all countries that did not yet have a central bank. This resolution addressed the importance of having a central bank for the stability of the monetary and banking system and, indeed, for the interest of worldwide economic cooperation. The following years saw the establishment of the South African Reserve Bank in 1921, together with the foundation of central banks in all parts of the world. The People’s Bank of China evolved into a central bank starting circa 1979, with the introduction of market reforms. The European Central Bank, established in 1998, is the most modern bank model and was introduced concurrent with the Euro in order to coordinate the European national banks.

In the twenty-first century, central banks have become such a ubiquitous phenomenon that literally no country is without one, not even emerging ones. Central banking has become an entirely separate branch of banking, typically functioning and operating like commercial banking. Hence, central banks have developed their own rules and practices—in other words, ‘the art of central banking’. There are three basic factors that have contributed to the rise of central banks and demonstrated their increasing influence: (1) most importantly, the economic priorities of the super-powers that have made monetary policy the only game in town; (2) the initiatives to establish new central banks to be attached to market economies; and (3) the need of deregulated globalized and virtual financial markets to be regulated by an authority (Deanie and Pringle 1995).

The gold standard was established as the main exchange rate regime with the single overriding objective to maintain the convertibility of the currency into gold; this objective was accepted as the proper basis for a stable, well-functioning, laissez-faire financial system. Yet, by 1914, the shock waves of the war hitting the financial markets damaged the stability of the system, resulting in gold being withdrawn from circulation and replaced with paper money. The monetary policy authorities in each country therefore reviewed the objective and, under the leadership of Great Britain, decided to protect the status quo.

But the collapse of the international monetary order in the early 1930s left central banks without an external objective, and the fragile economy showed little need to maintain domestic restrictions. Eventually, under Keynes’ influence, central banks used both short- and long-term falling nominal interest rates for recovery. After World War II, Keynes’ rhetoric extended the objectives of central banks to high employment and growth rates. Monetary policy was used to secure full employment and higher production levels, and thus the relations between central banks and governments became closer. In most cases, the central bank practically became a branch of the state treasury. Moreover, due to the Bretton-Woods peg system, each country’s external position determined whether it would tighten monetary or fiscal policies or expand them. The shocks of the late 1960s and early 1970s—such as the Vietnam War and the oil crisis—Injured the system. The short-term trade-off between employment and inflation along the Philips Curve dramatically worsened. Focusing demand management for price stability became the main objective; thus, central banks began to use their policy instruments accordingly.
Price stability being the main and primary objective of central banks is one of the few subjects that economists can agree upon. The hypothesis that ‘the only sustainable contribution of monetary policy to public prosperity in the long term is through price stability’ is considered a basic creed by New Consensus Macroeconomics, which consists of the monetary policy views of the synthesis of the neo-classical and new Keynesian schools. Furthermore, the Great Moderation has proven the legitimacy of ‘single-mandate’ central banking.4

3. The theoretical background to central bank independence

Central bank independence has emerged as a major point of discussion in economic policy worldwide over the last three decades. The concept dates to the beginning of the nineteenth century, sharing its background with the history of central banking itself. The concept and implementation of independence have followed a course dependent on the surrounding economic conditions and conjectural cycles, rather than a linear and uninterrupted one. Although it has been widely accepted by most experts in academia and in practice, central bank independence is still criticized both explicitly and implicitly, with proposals to limit independence being brought to the agenda quite often.

It has been argued that the roots of central bank independence are found in the political philosophy of the American constitution (Farvaque 2001). From the 1870s to the 1900s, belle époque and monetary laissez-faire were the most dominant approaches, and central bank independence was perceived as status naturalis. Bagehot believed that the Bank of England was the one bank in the world most isolated from the influence of politics and finance (Bagehot 1873). Several decades later, Lévy brought to the fore ‘the theory of decoupling of central banks and governments’ (Lévy 1911). In the 1920s, the Second Gold Standard shaped the fundamentals of modern central banking. There were arguments that the Great Depression was also linked to central bank independence and the choice to pursue a fixed exchange rate regime (Figure 1).

Figure 1: Central banking in historical perspective. Source: Marcussen 2003.

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4 “… the general view nowadays is that central banks should not try to use interest rate policy to control asset price trends by seeking to burst any bubbles that may form. The normal strategy is rather to seek, firmly and with the help of a great variety of instruments, to restore stability on the few occasions when asset markets collapse” (Hessius 1999).
Floating and unstable monetary systems could be observed during the era of mercantilism and during the two World Wars. However, the Classic Gold Standard, the New Gold Standard, and the Bretton-Woods System represented periods of more stable monetary systems. The so-called 'snake-in-the-tunnel' experiment before the introduction of the Euro may also be added to this period. This experiment opened the way for the last stable period, in the form of the European Monetary Union from 1999 to 2007, right up to the moment when the global crisis ended the period of stability. From the central banking point of view, aiming to stabilize prices for sustainable growth is one thing; preventing business cycles, a task that has always been challenging, is quite another.

Central banks in a wide variety of countries—from South Africa to New Zealand, from Japan to Turkey—have already received formal constitutional independence from the executive branch of government. Similarly, the status of the European Central Bank are modelled on those of the Bundesbank, which is historically accepted as the most independent of all central banks.

Central bank independence has been studied, defined, and measured by various authors in different ways. The literature concerning this subject can be classified into two groups: the first discusses how to define central bank independence and measure it, while the second focuses on the macroeconomic indicators that demonstrate the relations between central bank independence indexes and macroeconomic performance. In the latter studies, the impacts of central bank independence on inflation and growth are analysed (Chrigui, Boujelbene and Mhladib 2011; Klomp and de Haan 2010; Miles and Vijverberg 2011; Brumm 2011; Siklos 2008; Alpanda and Honig 2009, 2010; Hayo and Hefeker 2002). Most of the definitions related to central bank independence seek to clarify the place of central banks in relation to governments and commercial banks. In order to understand the nature of these relations, one should examine the relations of central banks to governments and then to commercial banks separately.

When analysing the history of the relations between central banks and governments, one can generally observe an inherent tension stemming from the conflict between the desire of central banks to maintain the value of their currency and their function as banker to the government (Capie et al. 1994). This tension is the basic determinant of the associated relationship. Central banks are established by an act of government and designed as banker to the government. Therefore, governments have a natural demand for cheap financing from their own bank. When the existence of the state is threatened—for instance, in times of war—governments have an incentive to force the central bank to give priority to their immediate needs.
Governments have the priority to preserve themselves as the strongest authority of the state. In this regard, war is the main driving factor of government expenditure. The government is almost always a large net debtor during and after a major war. Under these circumstances, an inflation tax whose incidence is inherently uncertain will always remain unpopular, and governments will always have an incentive to prevent such a measure. Similarly, according to Capie et al. (1994), for the past two centuries the principal factors influencing relations between the government and the central bank have been the prevailing political conditions, the dominant political and economic philosophy of the time (such as the popularity of the notion of independence after the 1980s), and the exchange rate regime.

However, the nature of this relation has also evolved over time. In the first phase, commercial banks accepted the presence of a central bank as a lender of last resort for the health of the banking system. Subsequently, central banks maintained their role with very limited direct regulatory tools, due to the protected self-regulative banking system. Recently, within an environment shaped by information technology, financial instability and high inflation rates have undermined this system. Today banks are facing difficult problems; many of the problems of establishing the best regulatory and supervisory structure for the financial system, including appropriate relations between central and commercial banks, have not yet been resolved. Also, in an interconnected world, the decision to strengthen the autonomy of central banks and to adopt new policies is no longer an exclusively domestic issue, but a decision that is often made in reference to decisions made by many other countries (Rapaport, Levi-Faur, and Miodownik 2009).

3.1 Central bank independence: The central bank as stabilizer

Central bank independence exists in two dimensions: goal independence and instrument independence. Goal independence is the central bank’s freedom to select the objectives of its monetary policy, whether in the form of low inflation, target rate of unemployment, level of GDP, and so on. Instrument independence is the central bank’s freedom to use the appropriate policies to produce a certain outcome in the economy.

It is widely believed that central banks that are not independent will give in to pressure from politicians who may be motivated by short-term electoral considerations or who may highly value short-term economic expansion while discounting the long-term inflationary consequences of these expansionary policies. Consequently, inflation will be sub-optimally high. Indeed, most empirical research focusing on the relationship between central bank independence and inflation suggests that average inflation is negatively related to measures of central bank independence (Klomp and de Haan 2010).

Concerns about the economic contributions of central bank independence are shaped around this focal point. The responsibility of institutions and policy arrangements has at least partially been believed to provide an explanation for any observed anti-inflationary tendency. In order to retain flexibility in monetary policy while acting to control inflation, Rogoff (1985) has proposed the appointment of a conservative central bank, which is more averse to inflation than is society as a whole. There are two important points to the solution proposed by Rogoff: first, it represents a trade-off between the average inflation rate and the increase in the variability of output that is implied by the conservatism of the central bank. Second, there is an optimal degree of inflation aversion on the part of the central bank, which means that the central bank can be excessively inflation-averse. Rogoff’s model provides the rationalization for an independent central bank. The bank is given the independence to pursue an activist policy, but is expected to be more inflation-averse than society. Central banks that are given great power and a mandate to secure price stability, perhaps within the framework of the government’s overall economic policy, seem to fit well into Rogoff’s model (Capie et al. 1994).

3.2 Economic cycles and the single-mandated central bank

One can argue that, since the invention of money and the creation of early banking services, the evolution of finance has constituted an open-ended phenomenon. As mentioned above, even the emergence of central banks was a result of systemic collapses that created a need for a ‘lender of last resort’. Throughout history, there have been many well-recorded events that have decreased sustainable growth
and reduced the level of welfare in everyday life. Before proceeding further, it may be useful to take a look at several of these historical events.

The general crisis of the seventeenth century may best be described as a movement from feudalism to capitalism; from the political and economic ascendancy of the South to that of the North; from a ‘natural economy’ based on the self-sufficient household and barter to the use of markets and money; and from isolated transactions to continuous trade in bourses. The crisis was particularly acute from 1619 to 1623. Following a sizeable monetary expansion during the sixteenth century due to the influx of a large quantity of Spanish-American silver, the decline in silver imports from Spanish America to Europe after about 1600 was inadequately compensated for by the gradual rise of credit. This resulted in a series of debasements in order to extract more seignorage. From 1618 to 1623, the average price of cereals increased sevenfold (Figure 3).

Figure 3: Composite price indices for Brabant (Lowlands), England and Spain (1501-1631, 5-year mean, 1501-1510=100). Source: Munro 2008.

In the seventeenth century, Amsterdam’s merchants managed to establish control over the financial flows of the world economy because of their monopoly over Baltic supplies and fine Asian spices, through which they appropriated the bulk of precious metal coming into Europe from Spanish America. Based on the magnitude of its operations, Amsterdam became the major custodian of precious metal. Merchant-bankers established the Wisselbank as an institution to control monetary flows. A new asset in Dutch markets, along with the dramatic extension of the practices of share-holding and trading and the associated influx of new investors, led to the speculative boom. Monetary expansion supported by structural shifts, along with financial innovation, brought price increases, leading to a full-scale crisis which in a very short time erased much of the welfare that had been accumulated over many years.

The South Sea Company’s planned conversion of government debt from a mass of highly illiquid annuities to modern securities, together with the influx of a mass of investors, was both quantitatively and qualitatively a new phenomenon. The French and British governments sought to swap the bulk of their outstanding debt for equity in large joint-stock trading companies with monopoly privileges—the Mississippi Company (Compagnie des Indes) in France, and the South Sea Company in Britain. Both efforts had the full support of those in power, and both were ultimately successful in reducing the respective debt burdens, but at the expense of those debt-holders who delayed converting their debt holdings or who failed to sell out.

The South Sea bubble influenced Law (1705), who sketched out his monetary theory in an environment of unemployed resources. He argued that an emission of paper currency would permanently ex-
pand real commerce, thereby sufficiently increasing the demand for the new currency so as to preclude pressure on prices. To finance a great economic project, an entrepreneur only needed the power to create claims that served as a means of payment. Once financed, the project would profit sufficiently from the employment of previously wasted resources in order to justify the public’s faith in its liabilities. Unfortunately, this theory did not work in practice, and the bubble burst with unintended consequences.

Another example is provided by the 1873 crisis in US railroad securities. The railroads, which had previously provided only locally integrated systems of transportation, were at that time being forged into a nation-wide network. Between 1867 and 1873, railroads were the most visible industry in the economic expansion and in the stock market. Railroad investment hit a peak in 1871/1872, as did stock prices. After the bubble burst, it was recognized that most of the estimated returns on investments had been exaggerated and that stock prices were not reflecting the real potential profitability of the sector, even under the most optimistic assumptions.

The Great Depression in the US between 1929 and 1933 is often associated with a classic boom and bust episode in the stock market. The boom, focusing on ‘new-economy’ stocks such as General Electric and the Radio Corporation of America, according to legend began in 1926 and turned into a bubble in March 1928, bursting on 24 October 1929. In many economic history analyses on the topic of crises, the events of 1929 have been taken as a ‘perfect example’ of what happens when a bubble bursts and of how long it might take to alleviate its destructive effects. The example also provides an almost perfect case-study for the dangers of an ‘early exit’ from anti-deflationary policies implemented to decrease the burden of the crisis. Unfortunately, it was a costly learning experience, demonstrating that premature exit only delays the recovery period further by adding more job losses and delaying employment gains. Many scholars believe that the role of central banking in alleviating the cost of bursting bubbles grew after the Great Depression in the US; they have argued that a central bank’s money supply should be expended in order to empower the transmission mechanism. The impact of the crisis on the stock market index and credit growth is given in Figure 4.


The twentieth century was a turning point in the history of central banking, as almost all central banks were nationalized and as the destructive impact of the two World Wars was felt until the beginning of the 1950s; economic management was mainly shaped by the US crisis in 1929 and the ‘currency wars’ in the inter-war years. As soon as World War II ended, a new paradigm emerged for a global solution to the destructive events of the first half of the twentieth century. From the 1950s to the 1960s, Keynesian economics shaped the conduct of global monetary affairs under the auspices of the Bretton-Woods Agreement, and a managed accommodative monetary policy was used to create welfare for all. In the second half of the 1960s, inflation appeared to be a global problem, and due to the Cold War there came
stagflation. Central banking was struggling to keep low inflation rates with sustainable growth rates around their potential. The demise of the Bretton-Woods system became inevitable in the early 1970s.

The first and second oil price shocks in the 1970s after the collapse of a benchmark global monetary system pushed central banks into a new struggle to decrease heightened financial volatility; most of them preferred to go for floating exchange rate regimes with monetary targeting (Frazer 1994). Unfortunately, the strategy did not prevent events such as the Latin American sovereign debt market collapse, and even developed countries such as the US and the UK faced an economic crisis with low growth as well as high and volatile inflation (Boria and Toniolo 2006). Monetary targeting failed especially in the UK, as it proved impossible to find the correct monetary aggregate with a direct link to prices, because of financial liberalization and the side-effects of being the global financial centre.

The 1980s may best be described as an all-out war against inflation rates reaching double digits in many developed countries and developing into hyperinflation in many newly emerging countries. The world of economics observed the rise of neo-liberalism and market fundamentalism, sometimes named Reaganomics and Thatcherism, after the then incumbent political leaders of the US and the UK, respectively. Interest rates remained elevated in advanced economies, on the one hand with the aim to win the ultimate fight against high inflation, and on the other hand because of increasing risk premiums due to the economic volatility. Double-digit interest rates were observed in these countries, and transmission to hyperinflation countries collapsed entirely, followed by money reforms in the form of dropping zeros from currencies, or redefining national monetary systems with entirely new names for national currency. Internationalism also constituted a rising trend in those years. Initiatives such as Brady Bonds were intended to help global monetary transmission, which was desperately needed to operate for the sake of sustainable global trade.

In the 1990s, there followed the last ‘golden years’ of central banking. Several aspects supported these golden years: initiatives such as the Washington Consensus supported globalization, and central bank independence became a generally agreed-upon principle for the conduct of monetary policy (Canova 2010). The fruits of success in the fight against high and volatile inflation, even with the cost of double-digit short-term interest rates, turned public opinion towards the necessity of central bank independence. Obviously, the central banks’ performance record helped to convince both politicians and scholars. Moreover, the end of the Cold War contributed to lowering budget deficits. Privatization earnings strongly supported this tendency during the 1980s to create a fiscal haven for many developed economies. Stronger central bank independence was almost a matter-of-fact reality of the decade.

The formulation of inflation targeting also came onto the agenda in the 1990s. The success in the fight against inflation gave great credibility to central bankers who promised better communication tools, more transparency, and heightened accountability, proposing to become the guardians of stable prices and, consequently, sustainable growth. This allowed room for more convincing arguments, and price stability as the main and primary objective of central banks became one of the rare subjects upon which economists can all agree. The hypothesis that ‘the only sustainable contribution of monetary policy to public prosperity in the long term is through price stability’ constitutes the basic creed of New Consensus Macroeconomics, which consists of the monetary policy views based on a synthesis of the neo-classical and new Keynesian schools. Central banks have gained further credibility with increasing efficiency in crisis management during the collapse of the Eurozone Exchange Rate Mechanism in 1992, the 1998 Asian Crisis, and the bursting of asset price bubbles, such as the end of the high-tech boom in the US equity markets. The concept of Great Moderation may be taken as the final proof for the legitimacy of ‘single-mandated’ central banking.

One opaque area in the golden years of central banking in the 1990s was the asset price cycles and the role of monetary policy to stop the destructive effects of bursting asset bubbles. As several bubbles have been managed at limited or tolerable cost (such as the high-tech equity bubble in the US), ignorance regarding the central bank’s role in stopping such bubbles has increased.\(^5\)

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\(^5\) For example, Hessius has proposed on international platforms that ‘…the general view nowadays is that central banks should not try to use interest rate policy to control asset price trends by seeking to burst any bubbles that may form. The normal strategy is rather to seek, firmly and with the help of a great variety of instruments, to restore stability on the few occasions when asset markets collapse’ (Hessius 1999).
In a typical boom-and-bust cycle, asset prices soar, first with a rally in bullish markets; finally the bubble bursts with an immediate asset price reversal, followed by crises and protracted recessions. Tightening monetary policy in an asset market boom serves as an insurance against the risk of real and financial turmoil, but it obviously comes at a cost. Unfortunately, we do not live in a perfect world where moderation can be maintained indefinitely. Several scholars had already tried to attract attention to the risk of bursting bubbles. For instance, Demirgüç-Kunt and Detragiache (1997) studied 53 countries between 1980 and 1995 and demonstrated that financial liberalization increases the probability of a crisis by stimulating credit growth. Arriving at a similar finding, Kaminsky and Reinhart (1996) studied a wide range of crises in 20 countries, including 5 industrial and 15 emerging ones; they found that a common precursor to most of these was financial liberalization and a significant credit expansion. Recently, a consensus among practitioners and scholars has been established regarding the fact that the conduct of monetary policy is not immune to crises. Another rare consensus seems to have been reached after the 2008 global crisis: asset price bubbles should better not be allowed to emerge, as they have proven to create disorderly systemic collapses with unforeseen consequences.

The Japanese boom-and-bust cycle began in the mid-1980s with an increase in real estate prices, fuelled by an increase in bank lending and easy monetary policy. In fact, the export-led growth strategy designed at the end of the 1960s created a truly miraculous economic performance in Japan from the 1970s onwards to the 1980s, with the help of an undervalued currency where USD 1 was worth JPY 320. As the currency appreciated with the help of the Plaza Accord in 1985, towards less than JPY 80, there emerged significant structural problems in the economy. The critical importance of real estate for the Japanese economy was its collateral role within the financial system. Once the bubble burst, the amount of bank losses arising from non-performing loans was beyond imagination, and as recovery never materialized, the need for re-capitalization was immediate, but not arriving any time soon. Unfortunately, the economic policy for revitalization came so late and with such inadequate amounts that Japan experienced a recession that dominated the economy for more than two decades, leading to this period sometimes being called the ‘lost decades of Japan’.

Figure 5: Nation-wide commercial urban land price index in Japan. Source: Japan Real Estate Institute.

Even if it is impossible to change the course of history, there are obvious lessons to be drawn from the Japanese bubble. To give one example of irrational price formation, economic entities were extremely over-confident, and even if the relative price of land seemed completely unrealistic, there were no policy initiatives to minimize any potential burst of the bubble. Interestingly, such a peak of land prices has never been experienced again, even though more than two decades have passed by now. There are no expectations that land prices will ever again reach such peak levels in the foreseeable future.
From the South Sea Bubble to the Japanese recession, the role of monetary policy during financial crisis has always been under discussion. It may be argued that after the burst of a bubble, monetary conditions should be loosened. However, the Japanese experience has demonstrated that even loose monetary conditions may not be a cure for the structural rigidities that surround economic activities. Analytically, the role of monetary policy under crisis conditions may be illustrated with the help of a chart, keeping in mind that the equilibrium interest rate for financial and price stability may differ, especially under stressful economic conditions. The interest rate that sustains price and financial stability may fluctuate, as price and financial stability curves do not fit each other perfectly. As Figure 6 summarizes, unconventional monetary policy tools are needed when the economy expands beyond capacity and when the equilibrium interest rate is lower than it should be. In such a situation, the interest rate that can satisfy the price stability objective would fall short of preventing the formation of credit bubbles; hence, additional tools are needed to ensure financial stability (Figure 18). Yet, conventional monetary policy is enough to meet both price and financial stability conditions when the interest rate level required for price stability is already higher than the levels restraining excessive credit expansion and when the economy grows less than its potential. In this case, conventional monetary policy strategies, such as cutting operational rates, can bring price and financial stability back to equilibrium.

Figure 6: Crises and monetary policy reaction. Source: Author.

Form a great number of historical crisis episodes have been analysed in this section; one common characteristic has been their devastating impact on ordinary people’s lives, not only in the short, but also in the long run. The following section will focus on the latest global financial crisis that has begun in the middle of 2008 and still dominates economic conditions—from price level targeting with an impact on central bank independence to sustainable growth, and from international trade to foreign exchange regime choice.
4. The formation of the recent crisis

The role of increased globalization with a heightened mobility of capital (see Figure 7) and the international monetary system involved in each crisis have always been questioned and discussed. The developing countries’ debt crisis in 1982, the Mexican crisis in 1994, the East Asian crisis in 1997, and the Russian crisis in 1998 were all surrounded by conflicting ideas on the issue. In 2008, the bubble occurred in the financial services sector, which, along with the real estate market, had experienced high productivity with high investment expenditures, similar to the 1990s’ information technology sector boom.

Figure 7: Total capital inflows. Source: IIF.

It may be argued that the main sources of the latest crisis were the unsustainable trends in the financial services sector provision and that its dynamics will shape the future recovery accordingly. Macroeconomic dynamics may be subsumed under three groups in the following way: (1) monetary policies, including the so-called Great Moderation; (2) global imbalances and exchange rate regimes; and (3) global integration and interconnectedness. At the same time, three micro-structural dynamics that played specific roles in the formation of the latest bubble may be listed as follows: (1) financial innovation; (2) change in risk-taking behaviour; and (3) deficiencies in financial regulation.

These macro- and micro-factors deserve further investigation. Although a partial analysis is useful in regard to the groups of the factors that did play a role in the bubble formation, one should also pay close attention to a special phenomenon that may best be defined as the ‘perfect storm’. The term refers to the simultaneous (instant and parallel) occurrence of weather events which, taken individually, would be far less powerful than the storm resulting of their chance combination. Since the non-fiction book written by Sebastian Junger and the 2000 film by the same name, the phrase has gained popularity and grown to mean any event in which a combination of circumstances will drastically aggravate a situation. In the latest financial crisis, the perfect storm was originally shaped by three factors that simultaneously came together: (1) monetary accommodation under increasing financial engineering activity; (2) foreign exchange regimes failing to prevent the side-effects of global imbalances; and (3) financial globalization with inevitable reinvestment of accumulated reserve assets. When analysing the impact of monetary accommodation, for example, it becomes quite obvious that the major central banks of the developed countries, namely of the G-4, from 1999 to 2009 kept injecting liquidity and thereby added more and more broad money into the financial markets. Especially from 2006 on, the speed of money creation accelerated (Figure 8).
Even though it may be argued that monetary expansion is not the only determinant of commodity prices, it still played a role in the price hikes of many commodities, such as aluminium, copper, corn and Brent oil, especially after 2004 (Figure 9).

The impact of the accommodative monetary policy on asset prices has become apparent in other areas as well. For example, house prices in the US started to increase from 1997 onwards, forming a trend that lasted until 2006. Even though the impact of monetary policy on asset price formation is still under discussion, the accelerated rise in housing cost was eventually supported by the ease of monetary conditions (Figure 10).
It has generally been agreed upon that the Asian crisis, the Russian crisis with its contagion, and the adoption of the Euro adversely affected global demand. At the same time, during the late 1990s, the Federal Reserve Bank’s policy moved towards a tighter stance. Consequently, monetary tightening resulted in bursting the dot-com bubble in 2000/2001. A fear of deflation following these events between 1997 and 2001 led policy-makers to keep short-term real interest rates excessively low so as to support confidence (see Figure 11).

At the same time, abnormally low real interest rates decreased the cost of capital on one hand, and supported risk appetite on the other, greasing the wheels of financial engineering (Figure 12). Most importantly, the low interest rate environment changed the risk-taking behaviour of financial institutions and laid down the foundations of the current crisis. For the sake of higher returns, financial institutions distorted their risk perception, and risk management strategies in the financial sector changed entirely. This also led to the acceleration of financial innovation, further facilitating excessive leverage.
The Great Moderation with its benign macroeconomic conditions supported the easy monetary policy strategies of central banks. World real GDP growth had shown an upward trend since the 1970s. Between 1994 and 2007, the growth rate stayed above two percent, and in the five years prior to 2007 reached levels as high as five percent. The policy of Great Moderation was quite apparent, with welfare creation dominating both the developed and developing parts of the world, and there was little room for critical voices. Higher growth rates were taken for granted, together with low levels of inflation, and these seemed sustainable until the bubble burst.

Improved policies that stabilized inflation and better anchored inflation expectations were important reasons for a loose monetary policy amidst high growth. Structural changes in the economy—such as deregulation, improved inventory control methods, and better risk-sharing in the financial markets—also played a contributing role. Consequently, price pressures, including volatility and variability, have decreased sharply since the end of the twentieth century. According to the International Monetary Fund’s data, the inflation differential between developed and developing countries has diminished over the last decade as well.

Figure 13: Inflation variability: Developed vs developing countries. Source: IMF.
As the inflation differential narrowed, another macro-indicator—namely, saving rates differentials—began to increase fast. Global saving and investment ratios varied among nations, and current accounts turned out to be a self-fulfilling crisis-leading indicator. Various factors contributed to this so-called ‘savings glut’ phenomenon. In emerging Asia, the main contributor was a steady increase in private savings, mainly because of a lack of social safety nets and job guarantees, especially in the private sector. High levels of corporate saving and strong precautionary motives for savings in the absence of a well-working social insurance system enhanced saving rate differentials. Also, a rapid rise in public savings in Middle Eastern oil-exporting countries, together with the surge in oil prices and a general trend towards higher public savings as governments took advantage of strong revenue growth to consolidate fiscal positions, contributed to create an unsustainable current account balance position globally.

The high level of the saving rate in the emerging economies and its low level in the US have been associated with the large current account deficits and surpluses, resulting in capital flows from emerging economies to developed ones. Developing countries hold massive dollar reserves in return for their exports, and they reinvested these reserves into the US financial markets. There was a rush to optimize returns through risky investment strategies, and the search for profit became a global issue in order to enhance a market return compatible with great expectations. Consequently, this led to a breakdown in macroeconomic adjustment mechanisms. As Figure 14 shows, emerging Asian countries such as China and oil-exporting countries such as Norway began financing the US deficit in large amounts, especially after 1998.

Figure 14: Net capital flows (billion USD).

Accordingly, the emerging market current account balances showed a sustainable surplus position, leading to further reserve accumulation (Figure 15).
As Figures 14 and 15 demonstrate, the global trends in the current account balances and the unbalanced reserve accumulation in favour of emerging countries have been a critical issue for global financial institutions. The unsustainable nature of the current situation may provoke discussions about foreign exchange rate regime choices and create the demand for a globally acceptable foreign exchange policy among major trading partners, which may also support an orderly correction of these unbalanced and unsustainable structures.

Throughout these discussions, the lessons derived from history lead one to a feeling of *déjà vu*. As the episode of the Triffin Dilemma or Triffin Paradox describes so well, the use of a national currency as global reserve currency leads to tension between national and global monetary policy. During the 1982 Third World Debt Crisis, this phenomenon was quite dominant. Yet, events such as the Dutch Tulipomania from 1634 to 1637 had already exhibited irrational financial decision-making. The immense expansion of commerce in the Netherlands encouraged gambling on profits to be made from speculation in all kinds of products.

Moreover, during the Great Depression of the 1930s, the maxims of ‘buy now, pay later’ and ‘telescope the future into the present’ made fortunes for some, while resulting in bankruptcy for many others. Between 1925 and 1929, the total amount of outstanding instalment credit more than doubled, and by 1928, with over 21 million cars on the roads, there was roughly one car for every six Americans. The hype caused an additional demand for cars, supporting steel and metal production and creating additional demand for fuel and even upholstery textiles. Based on the increasing optimism, the construction industry grew nearly 50 percent, through housing projects in the suburbs, commercial property demands (such as hotels), and the further establishment of more factories to supply the demand that was assumed to never end. Both the Dutch Tulipomania and the Great Depression exhibit many similarities to the latest global financial crisis, and history once more repeats itself, at least to a certain extent.

Let us return to the micro-structural dynamics of the current financial crisis. The first dynamic may be called *financial innovation*: As massive capital inflows to the US financed its current account deficits, financial institutions intermediated the vast excess liquidity into consumer credits and mortgages, which converted into mortgage-backed securities (MBSs) and collateralized debt obligations (CDOs). The second micro-dynamic may be called *change in risk-taking behaviour*: fast-growing financial innovation in instruments, such as credit default swaps (CDSs), developed as an insurance against risk, and the regulatory framework of the financial system caused deterioration in the risk perception of the market-players. Optimism prevailed in the financial sector due to ever-increasing global growth, and investors depended too much on credit ratings in risk evaluations, rather than carefully examining for themselves the nature
of the assets they bought. A lack of direct monitoring between lenders and borrowers led to the misallocation of loanable funds. The last micro-structural dynamic may be named **deficiencies in financial regulation**: a lack of well-designed regulatory frameworks and the conflict of interest between national and international agencies created regulatory arbitrage opportunities, not only at the scale of countries, but also between instruments. This decreased the effectiveness and efficiency of supervision and supported, on the micro-level, the emergence of the bubble. It also increased the social cost after the bubble burst.

Addressing the role of monetary policy in the latest crisis may lead to further discussions, but among the most critical ideas one already seems to have received wide-spread acceptance: Monetary conditions were loose, and cheap money exaggerated commodity price hikes. Taylor (2008) has argued that monetary policy was too loose in the United States between 2002 and 2004, when interest rates were lowered further, even as the economy seemed to turn around after the ‘dot-com’ recession of 2001.

Figure 16: FED funds rate and the Taylor Rule Path. Source: Taylor 2008.

![Figure 16: FED funds rate and the Taylor Rule Path. Source: Taylor 2008.](image)

To add further detail to the discussion, the Taylor rule residuals for 17 advanced economies and changes in real house prices over the period from January 2003 to April 2006 have shown that looser monetary policy is associated with greater house price gains, but this relationship is weak. However, when excluding Austria, Finland, England, Sweden, and New Zealand, the relationship becomes more significant. There seems to exist a very close relationship between house prices and the growth of money and private-sector credit. There also emerges more evidence about the relation between monetary policy and asset prices through liquidity and credit. However, the optimality of the rule imposed by Taylor (2008) may be questioned. One should also remember that, from 2002 to 2004, deflationary pressures were greater than conventional output gap estimates. Furthermore, the natural rate of interest is not measurable in exact numbers, as it is a quite uncertain indicator. As a result, the argument is still subject to further debate. If there is something more certain in this debate than the role of the natural rate of interest, it is the trend in commodity prices: first, low interest rates led to a credit boom in major economies. Second, low interest rates were the main driver for rising asset prices. The housing boom and the continuous rises in the stock markets were additional evidence for the emerging bubble.
Demand for housing was both a cause and an effect of the rapidly expanding shadow banking system, which helped to fund the shift to more lending of the speculative and ponzi types, through ever-riskier mortgage loans at higher levels of leverage. This helped drive the housing bubble, as the availability of credit encouraged higher home prices. Since the bubble burst, we are seeing the progression in reverse, as businesses de-leverage, lending standards are raised, and the share of borrowers shifts back towards the hedge borrower.

One implication of all of this for policy-makers and regulators is the implementation of counter-cyclical policies, such as contingent capital requirements for banks that increase during boom periods and decrease during busts.

Due to the focus on the latest global crisis, the shortcomings of domestic monetary policies may seem to receive much less attention. In fact, there are uncontrollable factors in the conduct of national policies, not only because of globalization through which capital flows may weaken the effects of domestic monetary policy, but also because of financial innovation, leading to reduced effects of monetary policy on structured products and helping along the emergence of private (outside) money. Globalization has led to a decline in inflation’s sensitivity to domestic output gaps and, thus, to domestic monetary policy. It has also reduced the scope for individual central banks to control domestic interest rates and so to stabilize both inflation and output. The effect of the interest rate channel on overall economic activity has been diminished by greater trade integration, as changes in domestic demand are offset by induced changes in imports.

In this regard, one lesson from the global financial crisis is that financial conditions in times of crisis may have strong and deteriorating effects on the transmission mechanism, making standard interest-rate policy less effective. It is now widely argued that the policy rate is an ineffective instrument for influencing financial stability; policy rates high enough to have a noticeable effect on credit growth and house prices will have a strong negative effect on inflation and resource utilization, even in sectors that are not experiencing any speculative activity. Specific policies and instruments are needed to ensure financial stability; monetary policy cannot serve as a substitute (Svensson 2010).

Another conclusion might be drawn from the global financial crisis: neither price stability, nor interest rate policy is sufficient to achieve financial stability. In particular, monetary policy and financial stability
policy need to be conceptually distinguished, since they have different objectives and different appropriate instruments, even in cases where central banks have responsibility for both. Financial stability as an objective of monetary policy makes little sense, but it does make sense as an objective of the central bank, if the central bank has the instruments required to fulfil this responsibility.  

There also arises a main conflict or tension from the duality of the global nature of the crisis and national crisis resolution mechanisms. Global crises obviously require a global reaction for a global solution, because of their global nature. A two-layered conceptualization is required for a solution: Globalization should be taken as global infrastructure, and national superstructure should be taken as the mechanism to shrink non-optimal solutions.

When looking for a global solution to a global problem, the issue of the impossible trinity deserves attention, as it argues that, under free capital movements, either interest rate policy (independent monetary policy) or exchange rate (FX) policy (fixed FX regime) is feasible, but not both. The theory was first introduced by Fleming (1962) and Mundell (1963) and further developed and applied to international trade theory by Obstfeld and Taylor (1998). Frankel (1999) has systematized it and termed it the ‘impossible trinity’ or ‘trilemma’. Rodrik (2002) has established a similar methodology in order to discuss the problematic structure observed in the global economic order. One result emerges from these discussions: there seems a general consensus on the view that, under global economic integration, it is not possible to have both full national independence/sovereignty and democratic domestic policies. Any cure for the global crisis should be aware of these constraints, before any proposals to solve the effects of globalization on national economies can be made.

To conclude and summarize the investigation of the sources and dynamics of the latest global crisis, the issues mentioned below deserve to be underlined: (1) The acceleration of US productivity and the increase in household net worth throughout the mid-1990s led to an upward shift in the private sector’s propensities to invest and to consume. The US monetary policy stance generally accommodated this development. (2) The expansionary monetary (and fiscal) stance sustained US domestic demand, contributed to a widening of the external imbalance, and compensated by an imbalance of the opposite sign in the external positions of major emerging economies. (3) A number of countries that pegged their currencies to the US dollar accumulated very substantial amounts of official reserves. The investment of these reserves in US treasury bonds contributed to lower long-term interest rates. (4) Low interest rates triggered a search for profits which, by squeezing risk premiums, tended to make financial conditions even more favourable for a broad range of borrowers, including Ninjas—that is, people with no income, no job and assets. Low perceived risk, abundant liquidity, and credit expansion, as well as regulatory failures in some markets, helped feed the asset price bubble.

This has not led to a happy ending: Increased global demand and commodity supply constraints caused global inflation, and monetary policies were gradually tightened. At that point, the large risk exposures that had accumulated in the financial system suddenly became apparent, precipitating the turmoil. Credit and money markets crashed. Contrary to the previous expectations that the US economy would land hard due to a correction to the unsustainable US current account imbalance, resulting in a disorderly USD depreciation, the opposite was observed: the USD appreciated due to enormous de-leveraging efforts all over the world.

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6 ‘The fact that financial-stability policy and monetary policy are different does not mean that there is no interaction between them. This interaction needs to be considered. Monetary policy affects asset prices and balance sheets and can thereby affect financial stability. Financial stability policy directly affects financial conditions, which affect the transmission mechanism of monetary policy. This means that monetary policy should normally be conducted taking financial-stability policy into account, and financial-stability policy should be conducted taking monetary policy into account. This is similar to how fiscal policy is conducted taking monetary policy into account, and monetary policy is conducted taking fiscal policy into account. Importantly, under normal conditions, financial stability is handled by financial-stability policy, not by monetary policy’ (Svensson 2010).
The task of monetary policy in this context has been problematic. Asset price cycles tend to happen with large changes in indebtedness and increase financial vulnerabilities. Should monetary policy react to asset price misalignments and financial imbalances? If so, how? Should central banks target, with just a single policy instrument, more than just inflation? If so, how? The twin mandate of central banks is stable money and sound banking. The emphasis on stable money as the primary objective of monetary policy in the late 1980s and the 1990s was often accompanied by a move away from the supervisory tasks that are an integral instrument to achieve sound banking and finance. Indeed, some countries (such as the UK and Australia) moved prudential supervision outside the central bank. But a crucial aspect of current reform proposals in response to the financial crisis of 2007-2009 involves having the monetary authorities more closely involved in financial supervision—in other words, a return to the financial stability mandate (Lastra 2010).

The policy issues on the national level have caused and will continue to cause cross-border financial and macroeconomic spill-over in an integrated world economy. Neither national, nor international measures and institutions have been sufficient. The concept of ‘international framework’ should be substituted by a ‘global framework’. Solutions should be re-designed within the globalized risk environment. The impossible trinity of the global economic order should be addressed. Since financial, economic and political globalization is irreversible, the legislation of globalization should be the first item on the future agenda. Legitimate and supranational mechanisms should be established in order to monitor the global benefits of national states.

Beyond this investigation into and discussion of the dynamics and sources of the latest global crisis, as summarized in the paragraphs above, especially the central banks in advanced economies have introduced a wide range of intervention measures, including not only substantial interest rate cuts, but also ‘balance sheet policies’. The real size of the central bank balance sheets in developed countries increased by more than 70 percent from early 2007 to the last quarter of 2009. These initiatives may be regarded as central banks’ policy reactions to the unexpected financial turmoil caused by the global crisis. Almost all systemically important central banks from advanced countries have proven their dedication to prevent a collapse of the individual financial systems and jointly addressed global spill-over with swap agreements among themselves, in order to ease the contagion.
Central banks around the world—such as the Federal Reserve Bank, the Bank of England, and the European Central Bank—conducted balance sheet operations varying from 3 to 13 percent of the GDP. Most of these operations consisted of systemic liquidity easing and public security purchases. The main target has been to eliminate the systemic risk and to encourage mutual trust among systemically important financial institutions. Even though the intention of these monetary authorities has been to stop the increasing burden and cost of the latest burst of the bubble, or the biggest global crisis after the Great Depression, as it is generally described, there are still uncertainties about their effectiveness. It seems that only the future will show whether these actions have been correct. Some of these operations are provided in more detail in Table 1.

Table 1: Asset purchases by central banks and market size.

<table>
<thead>
<tr>
<th>Target / maximum amount</th>
<th>Expansion date</th>
<th>Amount purchased by central banks (C)</th>
<th>Amount outstanding (at end-2008) (A)</th>
<th>Total issuance (during 2008) (B)</th>
<th>(C)/(A) (in percent)</th>
<th>(C)/(B) (in percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial Paper Funding Facility</td>
<td>Feb 1, 2010</td>
<td>150</td>
<td>1,659</td>
<td>-</td>
<td>21.1</td>
<td>-</td>
</tr>
<tr>
<td>Term ABS Loan Facility</td>
<td>Mar 31, 2010</td>
<td>48</td>
<td>1,506</td>
<td>N.A.</td>
<td>3.2</td>
<td>N.A.</td>
</tr>
<tr>
<td>Purchase of Agency MBS</td>
<td>Mar 31, 2010</td>
<td>910</td>
<td>5,675</td>
<td>1,259</td>
<td>17.9</td>
<td>79.0</td>
</tr>
<tr>
<td>Purchase of US Treasury</td>
<td>Oct 30, 2009</td>
<td>300</td>
<td>3,513</td>
<td>1,037</td>
<td>7.7</td>
<td>28.9</td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Purchase Facility (Commercial Paper)</td>
<td>No date</td>
<td>9</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Asset Purchase Facility (Corporate Bonds)</td>
<td>No date</td>
<td>2</td>
<td>N.A.</td>
<td>108</td>
<td>N.A.</td>
<td>1.4</td>
</tr>
<tr>
<td>Asset Purchase Facility (Gilt)</td>
<td>No date</td>
<td>188</td>
<td>479</td>
<td>147</td>
<td>39.3</td>
<td>128.4</td>
</tr>
<tr>
<td>Euro Area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outright Purchase of Covered Bonds</td>
<td>Jun 30, 2010</td>
<td>29</td>
<td>1,667</td>
<td>388</td>
<td>1.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Japan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outright Purchase of Commercial Paper</td>
<td>Dec 31, 2009</td>
<td>1,557</td>
<td>19,442</td>
<td>-</td>
<td>8.0</td>
<td>-</td>
</tr>
<tr>
<td>Outright Purchase of Corporate Bonds</td>
<td>Dec 31, 2009</td>
<td>54,792</td>
<td>8,843</td>
<td>0.0</td>
<td>9.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Sources: SFMA, Bloomberg, Haver Analytics, and central bank websites.
5. Conclusion

Historically, as in present times, demands to limit the independence of central banks have come not only from politicians, but also from the financial sector, other market-players and the business world, all of which seek to benefit from the short-term effects of monetary policy. When examining past episodes, we can see that certain developments and economic conditions have garnered public and political support for such proposals to limit independence and have led to compromises in terms of central bank independence. Among these are: (1) political tensions and time of war; (2) periods in which protectionism was on the rise and policy-makers endeavoured to artificially maintain unsustainable economic imbalances engendered by structural weaknesses; and (3) the end of irrational financial euphoria and deflating financial bubbles.

Past experiences have shown that refraining from central bank independence and attempting to change real variables through monetary policy only amplifies problems and deepens crises: covering out-of-control public spending through central bank resources leads to hyperinflation in the long run, and efforts to solve recessions caused by real or structural setbacks through counter-cyclical monetary policies lead to more instability. As Friedman (1953) has warned, using monetary policy to correct imbalances that should be dealt with by means of fiscal policy in order not to upset voters causes foreign exchange crises, and supporting asset price bubbles with monetary policy leads to moral hazard and adverse selection, thus helping systemic financial crises grow.

The current period to some extent resembles past episodes, when certain trends impaired central bank independence. Some of these trends can be identified quite easily: (1) the global disparity on the north-south axis and the climate of conflict based on a ‘clash of civilizations’; (2) saving-investment imbalances between advanced and emerging economies; (3) efforts to meet public demands in election periods and protectionism (demands to leave the European Monetary Union have been voiced in Italy and France, both founding members of the European Union); and (4) derivative products, soaring commodity prices, and accommodative monetary policies implemented after 1999 in order to counter the recession and the deflation threats. These all have generated ample global liquidity, even if a contraction in global liquidity conditions has been observed lately.

Moreover, it may be worth to underline that all these events have created a self-perpetuating cycle in the quest to find arguments against central bank independence, which seems very much under threat in light of recent events. One may remind of a number of incidents to that effect: (1) The Bank of England introduced an ultimate quantitative easing, immediately after Governor Mervyn King’s rejection of the proposal to do so following the Northern Rock banking crisis. (2) The Federal Reserve carried out balance sheet expansion and collateralized debt obligations under the ‘Troubled Asset Relief Programme’, all in all quantitative easing, to promote financial market stability. (3) Last but not least, the European Central Bank purchased bonds issued by weaker states, taking the risk of deteriorating its balance sheet. Hence, the independence of all of these central banks is in one way or another under attack, not only from scholars and politicians, but also from practitioners. In the case of the European Central Bank, either its periphery or its independence may be sacrificed, as the bank seems to find itself in the difficult position of compulsorily purchasing worthless government securities in order to prevent a systemic shake-up in the Eurozone.

The last crisis has shown that the argument that ‘central banks should not lend to governments because governments do not produce economic value; central banks should only lend to the private sector, which will create economic value’ may not be true.7 In this regard, central bank independence is at stake, not because of political pressure, but because of the urgent need to provide liquidity to the financial markets. However, we should keep in mind that central banks cannot be indifferent to the needs of financial stability, if the current money-based system continues. It is impossible to operate such a system without a ‘lender of last resort’.

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7 Walsh has also argued that ‘Nothing is so likely to threaten the independence necessary to ensure good monetary policy than the perception that the central bank is directly allocating credit to the private sector and engaging independently in large-scale policies which have significant distributional and fiscal effects’ (Walsh 2011).
In this era of global financial instability, central banks cannot react properly, despite the threat of inflation. This means that there is an urgent need for a new definition of central bank independence, given the fact that its traditional definition rests on price stability. The ‘golden days’ of central banking, supported by a proven track-record in the fight against inflation, seem to have come to an end, and there is a clear demand from all relevant parties for another proof of success so as to guarantee a sustainable independence that may survive the following decades. The dilemma of central banking, which at this point seems to be stuck between a rock and a hard place, may be solved by revisiting history.


Frankel, J. A. ‘No single currency regime is right for all countries or at all times’. *NBER Working Paper* 7338, 1999.


Japan Real Estate Institute. Available at: http://www.reinet.or.jp/en/markets_survey.html


The role of bank supervision in American monetary history

Eugene N. White
white@economics.rutgers.edu
Rutgers University

Abstract
The federal system of government in the US has provided a unique laboratory for the study of bank supervision. There have been five distinct regulatory regimes since the mid-nineteenth century. These have ranged from market-based discipline to discretion-based and rules-based government intervention. This article discusses the consequences and costs of these systems.

JEL: G28, N21, N22
Keywords: bank supervision, financial regulation

1. Introduction
In the past twenty years, research on central banking in universities, institutes and the central banks themselves have focused intensively on the conduct of monetary policy, the first pillar of central bank policy. This work has contributed to the ‘Great Moderation’—the general decline and stability in inflation rates among developed nations. At the same time, the banking crises of the 1980s in the United States and of the 1990s in Scandinavia were deemed to be well in the past, and relatively little research was focused on the second pillar of central banking—that is, financial stability. The financial crisis of 2008 and the subsequent recession pointed to the absence of an agreed-upon set of policies to counter this kind of disaster. In a recent comprehensive survey of monetary theory and policy, Alesina and Stella (2010) admitted: ‘Had we written this paper before the summer of 2008, we would have concluded that there was much agreement amongst economists about the optimal institutional arrangements for monetary policy […] but the financial crisis has re-opened […] and changed our perceptions’.

In order to develop the appropriate financial policies to complement monetary policies, the history of these policies is a relevant starting point. Modern monetary policy owes much to the pioneering work of Friedman and Schwartz’s A Monetary History of the United States, 1863-1960 (1963), which set down the key historical facts and empirical regularities. Unfortunately, there is no equivalent history of the regulation and supervision of the financial system for the United States or any other major economy. This paper provides a provisional framework for analysing the history of financial policy and applies it to the last 150 years of American history to identify five distinctive policy regimes in the evolution of supervision in the US and the various problems that they faced as they attempted to ensure the safety and soundness of the banking system.

2. The confused current state of policy recommendations and historical analysis
In designing policies to ensure financial stability, bank supervision is a key component. Yet, a survey of policy prescriptions for bank supervision quickly reveals that there is no agreement on the necessary institutional arrangements. Expanding the monetary authorities’ powers, Martin Feldstein (2010) has argued that central banks must conduct the supervision of all large bank holding companies because it is essential to their function as lender of last resort. Smaller holding companies and banks would be left to another agency.

Alan Blinder (2010) has taken an even more expansive view of the necessary powers for a central bank, giving it responsibility for supervising all systemically important institutions, not just banks. Thus, insurance companies like AIG, investment banks, and hedge funds would come under its authority. The problem with both of these recommendations is that there is no simple rule for deciding which financial institutions should be overseen by the central bank. The lack of clarity is highlighted by Blinder’s declaration: ‘The definition is clearly subjective and not numerical. Thus, a handful […] are the systemically...
important financial institutions that are too big to be allowed to fail messily’. Allowing the central bank complete discretion to decide which institutions it will supervise sounds like a recipe for conflict with the regulator(s) who will supervise the remaining ones. In the past this led to ‘competition in laxity’, where agencies lowered regulations to attract or keep institutions under their supervision, and ‘regulatory arbitrage’, where firms adapt to find the easiest supervisory regime. In addition, almost any insolvency is by its nature ‘messy’. Large and small bank failures in any country often take years to resolve because of complicated legal issues and the difficulty of disposing of assets.

Both Feldstein and Blinder are primarily concerned with ensuring financial stability and reconciling it with monetary stability. However, Zingales (2009) has argued that financial stability could be endangered if other considerations are not taken into account. He has worried about too great a concentration of delegated power in one institution and recommended three separate agencies. Zingales would assign monetary policy to the central bank, supervisory policy to an independent regulator, and consumer protection to a consumer protection agency. Each would have its own goals, and their independence would guarantee that these goals are not mutually compromised, thereby ensuring greater transparency. If there are conflicts between these goals, they would have to be resolved in the political area, rather than internally by a central bank, where there would be input by interested parties.

These are only three prominent recent recommendations; yet, they are radically different because there is no simple theoretical method for deciding the costs and benefits of each. In the absence of a good model, one might turn to historical evidence on the success or failure of different supervisory regimes. However, financial and monetary historians have all but ignored bank supervision, even though they are keenly aware of the problem of financial stability.

The founders of modern monetary history, Friedman and Schwartz (1963), have only one note on bank examination and offer a policy recommendation without much explanation: ‘The Board of Governors should be relieved of such duties as the regular examination of member banks, which should be concentrated in the agencies […] the OCC, state banking commissions, and the FDIC’. Thus, they contradict both Feldstein and Blinder by completely separating monetary policy and bank supervision, and they are happy to see more agencies than Zingales.

The most recent history of the Federal Reserve by Meltzer (2003) pays scant attention to questions of bank supervision. In Volume 1 of his opus, covering the years 1913-1951, Meltzer devotes only two pages out of 746 to bank examination, if only because bank supervision figured prominently in the title of the Federal Reserve Act of 1913. With little comment, he reports that Marriner Eccles, a chairman of the Fed, wanted all examination and regulation under control of the Fed and to vary examination standards ‘in harmony’ with the business cycle, making supervision pro-cyclical.

In the absence of a useful model to analyse supervisory regimes, I will begin my analysis of the American experience by specifying the major policy issues and a taxonomy to identify the key characteristics of a supervisory regime.

3. Major policy issues

Although there has been considerable disagreement over what defines the key issues that need to be addressed to design an effective system of bank supervision, I will focus on five major ones.

1. Are price stability and financial stability in conflict? Some analysts of the 2008 Crisis have claimed that a low interest rate policy to manage the dot.com bust and previous recession were instrumental in setting the conditions for the real estate boom. Similarly, policies that are used to counter inflation, such as the Federal Reserve’s 1979 changes in operating procedures, played havoc with the financial system. Consequently, countercyclical monetary policy may endanger financial stability. On the other hand, policies to protect the stability of the financial system, like lender of last resort activities in a financial crisis, are often thought to undermine price stability by excessively increasing liquidity.

2. Should supervision be independent of the central bank? In some countries bank supervision is located in the central bank, while in others it is an independent agency. Where supervision should be located depends partly on whether the monetary authority needs to have access to examination information
to conduct lender of last resort operations. If this information is essential, then it may be appropriate to locate supervision in the central bank. However, there is a cost to this arrangement because supervision may be subordinated to monetary policy, undermining its efficient conduct.

(3) Should there be industry-specific agencies or a central agency? In many countries, supervision of banking, insurance, and securities are separated. In the US, there are multiple overlapping state and federal agencies for each industry. Having numerous agencies increases the probability of regulatory capture, as public/political oversight diminishes with the number of agencies. Yet, there may be a trade-off if agencies are more efficient in supervision of industries offering very different types of products.

(4) What is the best means to ensure agency transparency and oversight? While authority to supervise agencies is delegated by legislatures, they require monitoring, involving transparent disclosure of their activities. At the same time, they are involved in the analysis of proprietary information from financial intermediaries and cannot provide complete disclosure. Yet, if there is incomplete disclosure, the agencies may be subject to regulatory capture and a failure to serve the purposes for which they were designed.

(5) What is the overall philosophy of bank supervision? If market discipline has the potential for being effective, then the supervisory agency should endeavour to reinforce market discipline, by guaranteeing that institutions release the relevant information needed by the market. However, if markets are unable to adequately monitor financial institutions and do not provide the right signals to the public, agencies will need to make judgments independent of the market. This independent supervision may be either discretion-based, allowing regulators wide latitude in disciplining institutions, or rules-based, narrowly circumscribing the actions and sanctions that regulators may take against institutions.

These key issues for bank supervision are not decided in a vacuum, but within the specific context of each banking system, given its structure set by bank regulation. Consequently, regulation and supervision complement one another, and failures of regulation may require the implementation of specific supervisory policies.

4. A taxonomy for supervisory and regulatory regimes

In laying out a taxonomy for the regulations governing a financial system, it is useful to provide a theoretical justification for the regulations that complement supervision. Although many regulations are the product of special interest groups persuading a legislature to tilt the playing field in their favour, regulations may be justifiable because they address the problems of asymmetric information. This approach permits regulations to be classified by the type of problem that they are intended to address (Mishkin 2001).

Problems of asymmetric information arise because the lender in a financial contract has less accurate information than the borrower. Financial markets and institutions arose, in part, because of the high costs of making and monitoring loans between individuals. By specializing in the collection of information, institutions and markets can reduce the information asymmetry at a lower cost, increasing the flow of funds to productive investments. Asymmetric information creates adverse selection and moral hazard. Adverse selection occurs because higher-risk borrowers are more eager to seek credit at a given rate of interest. When a lender cannot easily distinguish between borrowers, there is the danger that riskier firms will be adversely selected. Moral hazard appears because borrowers have an incentive to take more risk that the lender finds difficult to observe because monitoring is costly. These problems reduce the willingness of lenders to provide funds. By specializing in the collection of information, gaining economies of scale and scope, financial institutions can reduce the information asymmetries.

While banks help to solve these information problems, new difficulties emerge because they are delegated monitors for their depositors who face asymmetry of information vis-à-vis bank managers who may take higher risks than depositors wish. The incentive for numerous depositors to monitor banks is reduced by the free-rider problem. The depositor-banker asymmetric information problem may be partly controlled by the threat of a bank run, with depositors punishing banks by rapidly withdrawing funds when they believe that risks have risen. This is not a complete solution because bank runs can become a panic, as the public may not be able to distinguish between solvent and insolvent banks. Many countries
have sought to prevent costly panics by adopting deposit insurance, but these schemes reduce the incentives for the public to monitor banks, recreating the moral hazard problem for the government operating the insurance fund, which must then monitor insured banks to limit risk-taking.

Policy interventions to address these information problems take nine basic forms: 1 (1) controls on entry to screen out dishonest or extremely risk-taking potential bankers; (2) capital requirements to control moral hazard by limiting leverage; (3) limits on economies of scale to restrict size that may induce regulators to exhibit forbearance in closing large institutions that are ‘too big to fail’; (4) limits on economies of scope or diversification to constrain banks’ portfolio choices or activities to constrain risk-taking or conflicts of interest; (5) limits on pricing to control predatory behaviour vis-à-vis consumers; (6) liability (or more narrowly deposit) insurance to free customers from costly (inefficient) monitoring of banks and the incentive to panic; (7) disclosure requirements to reinforce market discipline by providing the public with more information; (8) bank examination where government-supplied auditing to examine proprietary information complements disclosure and ensures compliance with regulations; and (9) bank supervision to enforce regulations and control risk by imposing penalties and closing insolvent banks. When market-reinforcing supervision is replaced by independent judgment, it may be rules-based, with fixed procedures for taking action, or discretion-based, permitting the authorities latitude in deciding when to discipline and close a bank.

5. Five US policy regimes

Using this taxonomy and examining how the major issues were addressed, the five regimes governing American bank supervision may be analysed. The USA was the first country to set up independent state government agencies to oversee the banking system, appearing in the first half of the nineteenth century. These agencies were designed to ensure that banks conformed to the laws intended to guarantee the safety of banknotes issued by individual banks. Examination and supervision guaranteed that the bonds backing the notes were purchased, retained, and that they maintained their value so that in the event of a bank failure the bonds could be sold off to reimburse note holders. Supervision at the federal level began with the passage of the National Currency Act of 1863 and the National Bank Act of 1864, which created the National Banking System. This legislation restructured the banking system and set up the basic framework that influences regulation and supervision today. The National Banking Era gave way in 1914 to the second regime following the creation of the Federal Reserve System in 1913. The third period began with the shut-down of the banking system in 1933, which was followed by the wave of New Deal legislation. The New Deal era lasted until the early 1970s, when it slowly fell apart over two decades, leading to the contemporary era. I date this era as beginning in 1991, when there was a major shift in supervisory philosophy. The crisis of 2008 provides a clear dividing line, marking the beginning of a new and not yet well-defined era.

5.1. The National Banking era, 1863-1913

In terms of the five issues outlined above, the National Banking era was a simple regime. There was no conflict between monetary policy for price stability and supervisory policy for financial stability, because there was no central bank. The key determinants of the money supply in the classical Gold Standard period (1879-1914) were the balance of trade and the willingness of the banks to hold reserves relative to deposits and of the public to hold cash relative to deposits. At the federal level, there was one agency, the Office of the Comptroller of the Currency (OCC), set up by the National Bank Act to charter and supervise national banks. Although the federal government claimed the right to charter banks, the states retained their right to issue state charters, creating the American ‘dual’ banking system, where competition between these agencies tended to reduce regulation, leading to entry by more lightly regulated institutions (White 1983). The Comptroller was appointed by the President to a five-year-term and exercised considerable independence (Robertson 1968). Oversight took the form of annual reports and occasional congressional hearings. The overall philosophy of the OCC was for supervision to reinforce market discipline.

1 See Mishkin (2001) and White (2009) for details.
In terms of the nine-fold taxonomy, the National Banking era had free entry, with only minimal requirements to open a bank, and very little discretion was given to the Comptroller. One requirement was a fixed nominal minimum capital. For national banks in small towns, the minimum was USD 50,000 in 1864, falling to USD 25,000 in 1900, a very low bar. The states imposed equal or lower minimums. More importantly, owners of national bank stock were subject to double liability, meaning that in the event of a failure, shareholders could be assessed up to 100 percent of the par value of their stock. Most states also had double liability, although some imposed triple liability, with a view to giving even greater protection to depositors. Shareholders thus had a strong incentive to monitor bank managers. Branching was prohibited to national banks and most state banks; when combined with low minimum capital requirements, this led to the growth of the banking system by the establishment of thousands of small single-office banks. Combined with the rapid growth of the American economy, this yielded 7,514 national banks and 14,512 state banks by 1914. Although the industry was competitive, this fragmentation prevented the formation of larger institutions that might have gained economies of scale and been able to obtain a greater geographic diversification.

American commercial banks were narrowly defined, limiting potential economies of scope. Banks were encouraged to eschew long-term loans, prohibited from holding equities, and limited in their real estate exposure. Usury laws declined in importance over time so that by the end of the era they were not regarded as an important constraint on banking (Rockoff 2003). Initially, the public’s greatest concern was the riskiness of bank-produced currency. To provide a more uniform currency whose value was secure, the National Banking system designed a bond-secured system of banknote issue for national banks and taxed away the ability of state banks to issue banknotes. This protection was obtained by granting national banks the right to banknotes equal only to 90 percent of the par value of the US government bonds that the bank had purchased and deposited with the government and which could be redeemed to pay off note-holders in the event of a bank failure.

Deposits, which became an increasingly important liability for banks, had no guarantee, but their expansion was limited by the imposition of reserve requirements. National banks’ deposits were not insured, but after the panic of 1907 seven states established their own mutual guarantee funds for their state-chartered banks (White 1983). Before their demise, these systems created incentives for moral hazard that proved disastrous for the guarantee funds and produced widespread failures. Nevertheless, the deposits protected by these schemes represented only a small fraction of the nation’s total bank deposits.

Disclosure for national banks was enforced by ‘call’ reports that provided information on bank balance sheets. Although these were originally set for regular dates, Congress in 1869 responded to complaints of ‘window-dressing’ by mandating that three of the five call reports should be on ‘surprise’ dates (Robertson 1968). Examination of national banks was provided by a staff of examiners from the OCC who were required to give each national bank a ‘surprise’ examination twice a year to ensure their compliance with regulations as well as their solvency. Assets were marked to market as best as possible, and the OCC practiced prompt closure of insolvent institutions; in fact, its only sanction was revocation of a bank’s charter. Successive Comptrollers recognized with a small force of examiners—their number only reached 100 in 1914, in comparison to over 8,000 banks—that supervision had a light hand whose purpose was to reinforce market discipline. As Comptroller Knox aptly explained in his Annual Report 1889: ‘It is scarcely to be expected, if a robber or a forger is placed in control of all its assets, that a national bank can be saved from disaster by the occasional visits of an examiner’ (Comptroller of the Currency 1881, 38).

Although the National Banking era was subject to frequent panics—with major ones occurring in 1873, 1884, 1890, 1893 and 1907—these were largely a consequence of a fragmented banking system of small undiversified banks that were subject to runs without a central bank to act as a lender of last resort. The panics were liquidity events, not solvency events. There were no large, system-wide losses to depositors, even if a few bank failures triggered a panic. For the whole period, only 501 national banks failed, paying out 75 percent of the verified claims, with losses totalling a scant USD 20 million, a tiny fraction of deposits in any given year. State banks, while less vigorously supervised, had a similar record. Subject to double or triple liability, directors quickly closed down troubled banks, by voluntarily liquidating them to avoid assessments on shareholders. The absence of large losses is hardly surprising given
the high levels of capital maintained by banks, which for the most part exceeded 20 percent. While less than sufficient to prevent crises, market discipline—reinforced by the supervisory regime—guaranteed the solvency of banks, with very low losses.

5.2. The early years of the Federal Reserve, 1914-1932

The panic of 1907 and the recession of 1907-1908 were particularly severe and made apparent the dangers to the economy of the absence of a lender of last resort. While intended to stabilize the financial system and the economy, the Federal Reserve Act of 1913 only tackled one of the two key problems. It established lender-of-last-resort facilities, but did not remove the limitations on branching, thus preserving the fragmented and fragile system of thousands of small, undiversified banks.

The weakness of this type of banking structure was emphasized when, after World War I, the Fed suddenly changed policy to halt rising inflation. The unexpected rise in interest rates produced a sharp recession and deflation. These unanticipated events wreaked havoc on the small agricultural banks whose loans tended to have longer maturities and were exposed to the even sharper decline in agricultural prices. The Fed may not have realized it at the time, but there was now a trade-off between its price stability goals and financial stability. Between 1921 and 1929, 766 out of the 8,000 national banks failed—a far higher number than during the preceding fifty years. Furthermore, they had a lower payout, about 40 percent (Calomiris and White 1994). Losses for all banks totalled USD 565 million (6.9 billion in 2009 dollars), or 0.6 percent of GDP. The banking system was sufficiently resilient so that it would have recovered from this shock. However, the far greater wave of deflationary shocks during the Great Depression caused a collapse of the system.

While the key characteristics of the banking system remained largely unchanged with the advent of the Federal Reserve, the opening of the discount window and the practice of monetary policy changed the incentives facing banks. Contemporaries had recognized that one of the factors provoking frequent panics was the high and volatile seasonality of interest rates. One of the goals of the early Fed was to smooth out these fluctuations. As Miron (1989) has shown, the Fed was very successful in lowering the volatility and amplitude of swings in short-term interest rates. While this may have reduced the seasonal stress on the banking system, this shift would have enabled banks to take more risk, knowing that there was less interest rate uncertainty.

In addition, the opening of the discount window provided banks that were experiencing difficulties with a new source of credit—annonymously provided. Discounts were originally intended to be given on a short-term basis when member banks hit a liquidity constraint. However, banks soon began to borrow continuously. By 1925, the Fed reported that 593 banks had been borrowing for more than one year and 239 continuously since 1920 (Schwartz 1992). The Fed estimated that, since 1920, 259 of the failed member banks were ‘habitual borrowers’. The incentives for directors to voluntarily liquidate banks before losses fell on depositors were thus weakened, and banks had incentives to take more risk. Although it cannot be entirely ascribed to these changes, there was a decline in the capital to asset ratio for banks in the 1920s.

The early years of the Fed weakened the independence of bank supervision, as it was split at the federal level. A conflict emerged between the OCC and the Federal Reserve which was charged with the examination of state-chartered banks that elected to join the system and was given the right to review national banks. Faced with an encroachment on its turf, the OCC refused to provide the Fed with access to its reports of examination, arguing that they were not essential for the Fed’s lender-of-last-resort task (Robertson 1968). State member banks bristled at providing more information than non-member state banks. In response, the Fed, which had been transferred the authority to set call reports from the OCC, reduced the number of reports from five to two in 1926 before allowing them to increase again. Oversight of the OCC was unchanged, but the Federal Reserve banks, owned by their member banks, were not subject to Congressional oversight because they were not government agencies. Overall, these various problems weakened supervision at the federal level, while there were incentives to take more risk. In general, effectiveness of supervision to reinforce market discipline was somewhat weakened.
5.3. The New Deal, 1933-1970

The Great Depression prompted the imposition of a radically new and different regulatory and supervisory regime, where the philosophy of bank supervision shifted from reinforcement of market discipline to discretion-based supervision. The unexpected deflationary shock, precipitated in large part by the Federal Reserve’s policy errors, led to a 23-percent drop in prices and a decline in real GDP of 39 percent. Even if some banks had taken on excessive risk during the boom years of the late 1920s, most of the bank failures may be attributed to the continuing series of policy errors that turned solvent into insolvent banks. In June 1929, there were 24,504 commercial banks with USD 49 billion of deposits. After nearly four years of decline, only 11,878 banks with USD 23 billion of deposits emerged from the bank holiday. Losses were far higher than ever before. Friedman and Schwartz (1963) calculate them to be USD 2.5 billion (39 billion in 2009 dollars), or 2.4 percent of GDP.

The New Deal banking regime that emerged from this wreckage was based on key misdiagnoses of the causes of the problems, as well as on lobbying by special interests within the banking system, notably small-unit banks and stand-alone investment banks which tilted the playing field in their direction. In general, excessive competition was blamed on bank failures instead of the massive deflationary shocks, leading to a replacement of a regulatory system that encouraged competition with a regulatory system that imposed a loosely-organized cartel. Supervision underwent a transformation as it became a general presumption that markets could not accurately value assets, when, in fact, asset valuation had become difficult because the deflationary shocks had created volatile price expectations and thinned markets, making valuations difficult. Finally, the arrival of the Federal Deposit Insurance Corporation in 1934 led to the abolition of double liability, as depositors were to have deposits insured by regular \textit{ex ante} premiums paid by the banks, rather than often difficult to collect \textit{ex post} assessments on shareholders.

In almost every dimension the regulatory and supervisory regime was altered. Entry was now subject to the discretion of bank regulators who sought to determine whether a new bank was ‘needed’ by a community. There were no fixed rules for capital adequacy; instead, adequacy was largely determined by the agency’s discretion. Limits on economies of scale were reinforced as prohibitions on branching remained, and mergers were limited. Limits on economies of scope were increased as the banking industry became more strictly segmented by function, as represented by the Glass-Steagall Act of 1933, which split commercial and investment banking. Interest rate controls were imposed on checking, savings, and time deposits by Regulation Q. Reserve requirements were no longer set by statute, but given to the Fed as an instrument of monetary policy.

For bank examination, ‘intrinsic soundness’, not markets, were the guide for determining the value of assets. Overall, the supervisory authorities were granted more discretion so that forbearance was permitted in the hopes that failing institutions could recover. The number of agencies multiplied, and in some cases, such as the creation of the FDIC, overlap increased. With more agencies assigned to specific segments of the financial industry, congressional oversight and transparency diminished, while the danger of regulatory capture increased.

In hindsight, the New Deal regime that lasted four decades imposed enormous and ultimately unacceptable costs on the public and on banks. Yet, it is frequently regarded as a Golden Age during which regulation prevented large, costly bank failures. This assessment fails to consider the backdrop to the regulatory and supervisory regime. First, the Bretton Woods System of fixed exchange rates and the willingness of Congress to balance budgets and a good run of luck prevented any major adverse shock. This rare macroeconomic stability served financial stability well. Furthermore, the massive bank failures of the 1930s had eliminated thousands of small weak banks as well as any bank unable to withstand the massive deflationary shock. The Great Depression and World War II gave banks a very conservative asset mix. During the banking panics and economic decline of the 1930s, banks had cut back on their loans and rushed to the safety of US government bonds. During the war, the government induced banks to acquire enormous bond portfolios, so that by the end of the war bonds dominated bank assets. Although banks unwound these positions, it was a very slow process. Only in 1980 did banks return to the bond/loan ratio of 1929 (White 2000).
Competitive pressures and increasingly strong macroeconomic disturbances, notably erratically rising inflation, placed more stress on this system. With deposit insurance coverage expanding, thereby increasing the potential for morally hazardous behaviour, the capital to asset ratio declined, setting the stage for the collapse of the New Deal regime.

5.4. The demise of the New Deal, 1970-1990

The New Deal regime was destroyed by the rapid inflation of the 1970s, which accelerated the competitive pressures that had been building for several decades. Perhaps the single most important event influencing the overturning of the New Deal regime was the Fed’s 1979 decision to halt ever-rising inflation by driving up interest rates. Commercial banks and S&Ls saw both their profits and net worth drop. Given regulatory constraints, they found it difficult to pay market rates on deposits, leading to disintermediation. With the worst maturity mismatch, the S&Ls were the most severely affected, as their portfolios were filled with long-term fixed-rate mortgages. The percentage of unprofitable insured S&Ls rose from 7 percent in 1979 to 85 percent by 1981, and it is estimated that the whole industry was insolvent by USD 100 billion.2 Similarly, commercial banks, pressured by competition and disintermediation and protected by rising levels of deposit insurance, took on more risk. In the early years of the 1980s, bank failures cost the FDIC USD 52 billion, and S&Ls cost the taxpayers USD 74 billion (White 2000). Together this represents a loss of nearly USD 200 billion in 2009 dollars, or 3.4 percent of GDP.

The massive failures of banks and savings and loans in the 1980s brought an end to the limits on competition imposed by the New Deal, as Congress and regulators sought to shore up weak institutions or induce stronger banks to take over weak and failing ones. Interest rate ceilings were abandoned, entry into banking was made easier, banks were granted more powers, and branching and mergers were encouraged. Given the resistance of special interests, the complete erasure of some of these barriers took another decade. Only in 1994 did the Riegle-Neal Interstate Banking and Branching Efficiency Act begin the process of eliminating all barriers to nation-wide branching. Constraints on universal banking were finally overturned by the Gramm-Leach-Bliley Financial Services Modernization Act of 1999, which permitted universal banking within the structure of a financial holding company.

While these might be regarded as improvements to the regulatory structure of banking, efforts to contain damage from failing institutions resulted in a major change in supervision. Worried about forcing the public to accept large losses and systemic risk, the insurance coverage by the FDIC and FSLIC were hiked up, increasing moral hazard incentives. The ‘too big to fail’ doctrine emerged to handle large failures, such as that of Continental Illinois in 1984. As the moral hazard from explicit and implicit insurance of deposits became apparent, the first capital ratio requirement of 5 percent, later raised to 6 percent, was set in 1981. Measured as a flat percentage of all balance sheet items, it did not take into account the riskiness of a bank’s portfolio. The failures also transformed the practice of examination. To confront the increasingly sophisticated financial practices and organization of banks, examiners shifted from a ‘bottom-up’ to a ‘top-down’ approach, focusing on management and risk exposure rather than simple compliance and accurate accounting. Enforcement powers for supervision were increased. The Financial Institutions Regulatory and Interest Rate Control Act of 1978 gave regulators the power to dismiss or fine directors, officers, and employees (White 1992). These powers were enhanced by the 1989 Federal Institutions Reform, Recovery and Enforcement Act (FIRREA), which increased discretionary enforcement powers and fines against banks and their officers to compel compliance.

5.5. The contemporary era, 1991-2008

A principle concern that emerged in the wake of the banking and savings and loan crises was that bank supervisors had used their discretionary authority to delay prompt action against troubled banks. Forbearance, which used to help banks recover during the Great Depression, showed little benefit and enormous cost in the second half of the twentieth century.

The reaction was to move from discretion-based to rules-based supervision. The passage of the Fed-

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2 S&Ls were separately insured by their own mutual guarantee fund, the Federal Savings and Loan Insurance Corporation (FSLIC).
eral Deposit Insurance Corporation Improvement Act of 1991 established a new supervisory framework. The system of ‘prompt corrective action’ set non-discretionary triggers for intervention to ensure that problems were resolved early. Banks were assigned to one of five categories, according to three capital ratios based on their capital to risk-weighted assets, where assets are assigned explicit weights. When a bank crossed specific thresholds of these three ratios, supervisory actions were mandated, ranging from increased monitoring to restrictions and remedies (Spong 2000).

Forbearance, which characterized the crisis of the 1980s, was effectively ruled out, but a new problem emerged. Following the strict rules, banks developed new complex financial instruments and institutional arrangements that were not covered by the law and did not require more capital, even as they substantially increased the risk to banks. The best-known example was the mortgage-backed securities that were held off balance sheet in Structured Investment Vehicles (SIVs). Using these devices, banks exposed themselves to extraordinary risks, briefly reaping high returns, while regulators were following their statutory obligations. In this rules-based system, the ratings agencies played an increasingly important role. The bank regulators had limited resources to monitor the quality of assets that institutions acquired, and they relied more heavily on the agencies’ ratings to determine risk exposure. The conflict of interest for the ratings agencies between rating securities and offering advice on how to structure them undermined the usefulness of the ratings system. In the background, explicit deposit insurance and the ‘too big to fail’ doctrine may have lulled the public and regulators into forgetting the dangerous incentives that it created within this new regime.

These problems were not obvious, as weak institutions had been eliminated by the crisis of the 1980s. For a decade after 1990, the banking industry looked robust, and until 2007 the banking agencies reported that banks easily satisfied their requirements for capital and risk-taking. The suddenness of the collapse seemed surprising. Yet, by responding to the incentives set by the new regulations, banks had been gradually building up very risky positions just outside of the bank supervisors’ line of sight.

6. Lessons?

Surveying American bank supervision over the past century and a half, one cannot help but come to the conclusion that over time it has contributed to increasing rather than controlling the banks’ risk-taking behaviour. The organizations and incentives are, of course, determined in the political arena by Congress, which delegates the oversight of the financial institutions to its agencies. In a broader sense, it is a political failure and an expensive one at that. During the fifty years of National Banking, there were bank failures, but no system-wide insolvency. For national banks, there were approximately 500 bank failures, which paid out about 75 cents on the dollar to depositors and creditors; however, losses totalled only USD 20 million. For a lightly supervised system, it implies that the incentives were set correctly, even if it was a fragmented system suffering from the prohibition on branch banking and the absence of a lender of last resort.

Supervision designed to reinforce market discipline was weakened with the advent of the Federal Reserve which altered the supervisory system and added some moral hazard to the system. Yet, these changes did not completely undermine the system. The biggest shock came from the unexpected post-World War I deflation that caught many over-exposed banks. Between 1921 and 1929, 766 national banks failed and only paid out 40 cents on the dollar, representing a loss of USD 217 million. Again, this was a modest loss and not a heavy economic burden, representing about 0.2 percent of GDP in 1925. The cost of banking collapse during the Great Depression dwarfed these losses. Depositors and stockholders lost USD 2.5 billion, or 2.4 percent of GDP, or the equivalent of USD 38.7 billion in 2008.

The subsequent dramatic regime shift in supervision did not reveal its weaknesses, until the corset of regulations formed by the New Deal banking laws began to break down and allowed banks to respond to the moral hazard engendered by deposit insurance. As the unexpected deflations of 1920-1921 and 1929-1933 wreaked havoc on the banking system, the unexpected inflation of the 1970s followed by the

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3 Total losses to depositors from all bank failures, national and state banks were estimated at USD 565 million (Board of Governors 1943, 283).
sharp halt in 1979 undermined the New Deal regime. The increased incentives to take risks produced a more costly disaster. The 1980s losses to savings and loans and banks, totalling USD 126 billion, was the equivalent of 3.4 percent of GDP, or USD 200 billion in 2008 dollars.

The shift from a discretion-based to a rules-based supervisory system in 1991 demonstrates the limits of supervision when the underlying incentives to take risks are unchanged. While the final cost of the 2008 disaster is still not certain, a common estimate of the losses to the banks is USD 1.7 trillion or 11.6 percent of the 2008 GDP, easily topping all crises.

In this long historical perspective, the current proposals to improve supervision by adding agencies and increasing regulation and supervisory efforts may not be moving in the right direction. The regulatory/ supervisory regimes that worked best set the incentives to control risk-taking at the firm level. There were losses to depositors, but they were modest, and early Comptrollers of the Currency realized that there were limits to what supervision could achieve.
References


Business cycles in South-East Europe from Independence to the end of the Cold War

Matthias Morys
mm585@york.ac.uk
University of York

and

Martin Ivanov
hadjimartin@abv.bg
Bulgarian Academy of Sciences

Abstract

This paper constructs business cycle indices for South-East European (SEE) countries from 1899 to 1989 in order to address two questions: to what extent has there been a common SEE business cycle, and to what extent has there been a synchronization of business cycles with England, France, and Germany? We first explain why a construction of business cycle indices based on Common Dynamic Factor Analysis (CDFA) is preferable to one based on historical national accounts. We have found that business cycle integration, both within SEE and vis-à-vis the core economies, did not occur before World War I, but in the inter-war period. Business cycle integration continued during the Cold War, even though the SEE countries found themselves on opposite sides of the iron curtain.

JEL: N13, N14, C43, E32

Keywords: South-East European business cycles, national historical accounts, common dynamic factor analysis

1. Introduction

The purpose of our research is to construct business cycle indices for South-East Europe (SEE) from the 1870s to the present in order to address the following four questions: (1) Has there been an identifiable regional business cycle, or does the label ‘SEE’ cluster together countries that should better be treated separately? (2) How volatile have business cycles been in SEE compared to the core countries of Western Europe, and how can we account for the differences? (3) How persistent have macroeconomic fluctuations been? The second and third questions are important, as the welfare cost of income fluctuations and the burden on stabilization policy rise based on volatility and persistence. Last but not least, has the SEE business cycle exhibited characteristics similar to the stylized facts established on the basis of the business cycles of other countries and regions?

Increased interest in these questions is not only the natural result of the recent accession of several SEE countries to the European Union. SEE countries also provide rich historical evidence to address a number of key economic issues, such as the transmission of massive economic downturns, for example, the 1930s Great Depression (for Bulgaria, see Tooze and Ivanov 2009) and the contagion of financial crises.

In a perfect world, we would be able to study SEE business cycles by analyzing GDP data. Our knowledge of the GDP for SEE before World War II, however, remains poor, notwithstanding recent contributions for Austria-Hungary (Schulze 2000, 2007), Bulgaria (Ivanov and Tooze 2007), Serbia (Palairet 1997), and Turkey (Pamuk 2006, Altuğ et al. 2008). Lacking direct GDP estimates, the influential national account of the Maddison data set, for instance, resorts to proxy measures of economic activity.
compiled by Good and Ma (1999). The lack of reliable GDP data for this part of Europe is widely known (see, for example, the forthcoming *Cambridge Economic History of Modern Europe*), but unlikely to be overcome in the near future; even where attempts are made in this direction, there is often a need to limit the estimation to a number of benchmark years. But even for after World War II good-quality GDP data for the entire period are available only for Austria and Greece.

This paper takes a different approach to reconstruct the business cycles of five SEE countries which combined have consistently accounted for more than 85 percent of SEE’s GDP from the 1870s to the present: Austria(-Hungary), Bulgaria, Greece, Romania, and Serbia/Yugoslavia. The basic idea behind our approach is that a cross-section of economic variables, ranging from sectoral output over fiscal and financial variables to trade data, share a common factor. Extracting the common factor for the entire period, in turn, delivers a business cycle index. In comparable cases, such an index has been shown to be of similar quality as a conventional business cycle reconstruction based exclusively on GDP (Aiolfi et al. 2006). To the best of our knowledge, our research is the first attempt ever to construct such indices for SEE. It would therefore be a welcome addition to other business cycle reconstructions for other parts of the world (Basu and Taylor 1999).

It should be emphasized that this paper constitutes research in progress. Most importantly, the daunting task of collecting 25 annual data series for the Common Dynamic Factor Analysis (CDFA) still lies ahead for Austria(-Hungary), Greece, Romania, and Serbia/Yugoslavia. At this point of our research, we have collected most of the Bulgarian data for the period before World War II.

We will therefore proceed as follows: In the second section, we will explain why a business cycle reconstruction based on national historical accounts is not necessarily superior to the proposed CDFA and why it might even be worse. Our concerns partly stem from the idiosyncrasies of SEE GDP data, partly from general considerations as to why national historical accounts are unlikely to reflect the true but unknown GDP series. In the third section, we will not only explain the CDFA methodology, but also use it to construct a Bulgarian business cycle for the period before World War I, which we can then compare with the latest GDP estimates for Bulgaria for this period. The fourth section, then, is devoted to addressing the key question spelt out in the first paragraph. *Faute de mieux*, at this point of our research we have to rely on GDP series to find an answer to the crucial question of whether there has been an identifiable regional business cycle and to what extent this business cycle was synchronized with Europe’s main economies—that is, England, France and Germany. Two results stand out: We find that a regional business cycle as well as synchronization with Western Europe’s business cycle emerged only in the inter-war period. Second, we find that this business cycle then continued after World War II, even though SEE countries found themselves on opposite sides of the iron curtain. In the fifth section, we offer a summary and conclusion.

2. Pitfalls of a business cycle reconstruction based on historical national accounts

In a perfect world, we would study SEE business cycles by analysing GDP data on annual frequency (or even higher frequency). In this section, we will explain why historical national accounts are not as helpful for this purpose as they initially appear. Our concerns partly stem from the idiosyncrasies of SEE GDP data, partly from general considerations as to why historical national accounts are unlikely to reflect the true but unknown GDP series.

The most obvious limitation of SEE GDP data refers to the period 1870-1918. GDP estimates on an annual basis are available only for Austria-Hungary (Schulze), Bulgaria (Ivanov) and Greece (Kostelenos), of which only the data for the dual monarchy has made it into Maddison’s (2003) data set. By contrast, Kostelenos’ data have not been universally accepted, and the annual estimates of Ivanov have not yet been published (Tooze and Ivanov (2007) and Ivanov (2006) are confined to the benchmark years of 1892, 1899, 1905, 1911, 1921, and 1924). The SEE GDP data for before World War I reported by Maddison (2003) are on a decadal basis only (except for Austria-Hungary); moreover, the data do not constitute genuine GDP data but the results of proxy estimates by Good and Ma (1999), who draw on
(a) the share of non-agricultural employment in the labour force, (b) the crude birth rate, and (c) letters posted per capita to approximate overall economic activity.²

For the inter-war period, Maddison (2003) has reported GDP data for all five countries under consideration. If the detailed critique of Maddison’s data for Bulgaria by Tooze and Ivanov (2007) has implications for other countries (as is likely), then we have good reason to be equally sceptical towards the inter-war data reported for Greece, Romania, and Yugoslavia.

The data for the inter-war years are beset with yet another problem: the institutional incentive of the East bloc economies—in our case Bulgaria, Romania, and Yugoslavia—to over-report. Conceptual differences between the System of National Accounts (SNA) developed by the United Nations and its East bloc counterpart, the Material Product Accounting (MPA),³ further complicate the situation.

But even if we leave the idiosyncrasies of SEE GDP data aside, an argument can be made for relying on CDFA rather than on historical national accounts. As a matter of fact, these considerations have led to the use of CDFA even for countries such as the US (Ritschl et al. 2008) and Germany (Sarferaz and Uebele 2007), for which much more reliable GDP data are available. First, national historical accounts are normally constructed with an eye towards the level rather than the volatility; this preference determines interpolation techniques, which can lead to serious differences in volatility between the reconstruction and the true but unknown GDP series. Second, disaggregate series are often abundant for historical periods, but in many cases do not match national accounting categories very well; CDFA allows us to exploit the business cycle characteristics of these series. Third, CDFA deals better with structural breaks in sub-series than GDP, as CDFA is more flexible in excluding disaggregate time series with serious faults.⁴

3. Explaining and applying common dynamic factor analysis

This section has three main purposes. (1) We want to describe the key idea of the common dynamic factor analysis (CDFA). (2) We want to introduce the reader to the 25-time series to be employed for the CDFA. (3) Drawing on the data available to us, we will demonstrate that the common dynamic factor analysis is a viable alternative to the reconstruction of business cycles based on historical national accounts.

CDFA is best understood as an application of principal component analysis (PCA). PCA involves a statistical procedure that transforms a number of possibly correlated variables into a smaller number of uncorrelated variables called 'principal components'. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible. While we generally require as many components as variables to reproduce the original variance structure, we are usually able to account for most of the original variability using a relatively small number of components.

The principal components (also referred to as principal component scores) are obtained as follows:⁵ Let p be the number of variables (a maximum of 25 in our case), and let n be the number of observations (the number of years under consideration in our case); the n x p—matrix X is hence our data matrix. Let Σ further be the ordinary (Pearson) correlation matrix (of dimension p x p) pertaining to the data matrix X.

Σ will then have p eigenvalues

\[ \lambda_1 \geq \lambda_2 \geq \ldots \geq \lambda_p \geq 0 \]

and, correspondingly, p eigenvectors

² The Greek case is somewhat different; for details see Morys (2006).
³ It is not easy to compare SNA and MPA in any straight-forward sense, but MPA can be thought of as GDP excluding the service sector.
⁴ For a comparison of both techniques, see Ritschl et al. (2008) and Aiolfi et al. (2006).
⁵ See Johnson and Wichern (2002), chapter 8. The calculation as performed by EViews 6 is marginally different, as explained in the EViews Users Guide.
\( u_1, u_2, \ldots u_p \).

The \( k \)-th principal component—\( p_c_k \) of dimension \( n \times 1 \)—is then obtained as

\[
p_c_k = ((u_k)^T X^T)^T
\]

In extension, all principal component scores—a matrix \( p_c \) of dimension \( n \times p \)—can be obtained as:

\[
p_c = (p_c_1, p_c_2 \ldots p_c_p) = ((u_1, u_2 \ldots u_p)^T X^T)^T
\]

The basic idea of CDFA is to take only the first principal component and to interpret this component in an economically meaningful way. In our case, this means that we need to come up with a certain number of variables which promise to exhibit some form of correlation with the GDP. CDFA then implies that a cross-section of such economic variables shares a common factor; extracting the common factor for the entire period, in turn, will deliver a business cycle index. We suggest the inclusion of the following list of economic variables which range from sectoral output over fiscal and financial variables to trade data (Table 1).

<table>
<thead>
<tr>
<th>Table 1: Annual data series for common dynamic factor analysis.</th>
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<tr>
<td><strong>Sectoral output indicators</strong></td>
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<tr>
<td>1. agricultural production, areable agriculture</td>
</tr>
<tr>
<td>2. communication, letters sent</td>
</tr>
<tr>
<td>3. industrial output</td>
</tr>
<tr>
<td>4. mining</td>
</tr>
<tr>
<td>5. construction, import of cement</td>
</tr>
<tr>
<td>6. transportation, freight traffic on railways</td>
</tr>
<tr>
<td>7. fixed investment</td>
</tr>
<tr>
<td><strong>Fiscal indicators</strong></td>
</tr>
<tr>
<td>8. government expenditure</td>
</tr>
<tr>
<td>9. government revenue</td>
</tr>
<tr>
<td><strong>Financial indicators</strong></td>
</tr>
<tr>
<td>10. narrow money, M0</td>
</tr>
<tr>
<td>11. broad money, M3</td>
</tr>
<tr>
<td>12. consumer price index</td>
</tr>
<tr>
<td>13. short-term interest rate</td>
</tr>
<tr>
<td>14. mortgage credit</td>
</tr>
<tr>
<td><strong>Trade indicators</strong></td>
</tr>
<tr>
<td>15. terms of trade</td>
</tr>
<tr>
<td>16. real effective exchange rate</td>
</tr>
<tr>
<td>17. exports</td>
</tr>
<tr>
<td>18. imports</td>
</tr>
<tr>
<td>19. trade balance</td>
</tr>
<tr>
<td><strong>Other indicators</strong></td>
</tr>
<tr>
<td>20. external spread</td>
</tr>
<tr>
<td>21. foreign capital inflows</td>
</tr>
<tr>
<td>22. foreign short-term interest rate</td>
</tr>
<tr>
<td>23. foreign output</td>
</tr>
<tr>
<td>24. real wage</td>
</tr>
<tr>
<td>25. population</td>
</tr>
</tbody>
</table>

Our confidence in CDFA would certainly be enhanced if we were in a position to compare a business cycle index based on CDFA with a business cycle based on historical national accounts. In other words, if CDFA worked reasonably well for a specific time-period for which we have GDP data, we would then feel more comfortable to rely on this technique also for periods for which we do not have historical national accounts (which is the very reason why we turned to CDFA in the first place).
Thanks to the GDP reconstruction for Bulgaria by Ivanov (2006 and 2009) we are in such a position. While Ivanov has reconstructed the GDP for the period from 1899 to 1945, not all of our 25 variables as listed in Table 1 are available for this period. We do have, however, 13 high-quality time series for the period between 1899 and 1912. Confining ourselves to pre-World War I data has the additional advantage of avoiding the ‘structural break’ of World War I, which shows up in several of our time series.

Table 2: Correlation between annual time series and GDP / GDP per capita, Bulgaria 1899-1912. Sources: Bulgarian General Directorate of Statistics, Bulgarian National Bank, Bulgarian State Gazette; GDP and GDP per capita based on calculations by Ivanov.

<table>
<thead>
<tr>
<th>Sectoral output indicators</th>
<th>Correlation (coefficient) with GDP</th>
<th>Correlation (coefficient) with GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 agricultural production</td>
<td>+ 0.82</td>
<td>+ 0.82</td>
</tr>
<tr>
<td>2 communication</td>
<td>+ 0.51</td>
<td>+ 0.52</td>
</tr>
<tr>
<td>4 mining</td>
<td>- 0.68</td>
<td>- 0.68</td>
</tr>
<tr>
<td>5 construction</td>
<td>- 0.60</td>
<td>- 0.59</td>
</tr>
<tr>
<td>6 transportation</td>
<td>+ 0.30</td>
<td>+ 0.31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fiscal indicators</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8 government expenditure</td>
<td>- 0.53</td>
<td>- 0.53</td>
</tr>
<tr>
<td>9 government revenue</td>
<td>- 0.11</td>
<td>- 0.11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial indicators</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10 narrow money</td>
<td>- 0.15</td>
<td>- 0.15</td>
</tr>
<tr>
<td>11 broad money</td>
<td>- 0.11</td>
<td>- 0.11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trade indicators</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16 real effective exchange rate</td>
<td>- 0.80</td>
<td>- 0.79</td>
</tr>
<tr>
<td>17 exports</td>
<td>+ 0.64</td>
<td>+ 0.64</td>
</tr>
<tr>
<td>18 imports</td>
<td>+ 0.55</td>
<td>+ 0.55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other indicators</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24 real wage</td>
<td>- 0.80</td>
<td>- 0.80</td>
</tr>
</tbody>
</table>

| First Principal Component | + 0.88                             | + 0.88                                       |

Note: Time series are 4-year moving averages of the original data.
Table 2 shows the correlation coefficient between GDP / GDP per capita and the 13 time series which we want to use for the CDFA. The strongest correlation (+0.82) is exhibited between agriculture (1) and GDP. This should not come as a surprise given that the agricultural sector accounted for about 60 percent of the total Bulgarian GDP before World War I. Similarly, exports (17) and GDP are closely correlated, as national accounting would suggest (+0.64). Other indicators, such as communication (2), do not show up as strong as expected but certainly with the correct sign (+0.51). We did find some results surprising, most notably the very weak (and indeed slightly negative) correlation between the monetary aggregates (10, 11) and GDP (-0.15 and -0.11, respectively). Our way to deal with this issue was to exclude from the CDFA those variables that either exhibited a very low correlation with GDP or where economic theory makes interpreting the sign difficult. We have highlighted the variables to be included in the CDFA in Table 2 (1, 2, 4, 5, 8, 16, 17, 24).

Figure 2: Business cycles of Bulgaria, 1903-1912, approximation via historical national accounts versus approximation via Principal Component Analysis. Source: Morys and Ivanov.

![Graph showing business cycles](image)

Note: GDP per capita time series is 4-year moving average of the original data. Similarly, the 1st PC was extracted from 4-year moving averages of the time series 1, 2, 4, 5, 8, 16, 17, 24.

We then extracted the first principal component from the eight time series under consideration and plotted it against Ivanov’s GDP per capita estimate. Figure 2 shows that the first principal component tracks GDP per capita developments very well. Two issues, in particular, are worth noting: First, the correlation between the first principal component and GDP per capita is higher (+0.88) than between agricultural production (1) and GDP per capita (+0.82) (1 turned out to be the individual time series most closely correlated with GDP per capita, see Table 2). Given that the upper bound of any correlation coefficient is unity, the increase from +0.82 to +0.88 is not trivial. Second, the principal component series looks much smoother and hence more plausible than the business cycle based on historical national accounts. This finding seems to vindicate our remarks in the second section, where we explained why a business cycle reconstruction based on historical accounts might actually be inferior to CDFA, even if sources are good and the reconstruction is carried out carefully.

As we are still in the process of collecting many of the 25 time series for the other four SEE countries besides Bulgaria, we will rely on conventional GDP data in this section, despite all the problems involved and alluded to above. The two main questions we will address in this section are: First, has there been an identifiable regional business cycle among the SEE countries? Second, to what extent was the business cycle of individual SEE countries and/or SEE as a whole synchronized with the business cycles of Europe’s main economies—that is, England, France, and Germany?

As some of the data available to us at this stage of our research are of questionable quality, we have deemed it sufficient to rely on rather simple statistical techniques. Rather than employing more sophisticated concepts such as the coefficient of coherence (Lemmens et al. 2008), we will approximate business cycle integration by the correlation coefficient between GDP per capita growth rates of individual countries. We have chosen GDP per capita over GDP, as frequent border changes in SEE affect the GDP series substantially more than the GDP per capita series. It seems sensible to distinguish between business cycle integration before World War I, in the inter-war period, and after World War II.

4.1. Before World War I: 1899-1913

Data availability has determined our choice of 1899 as the starting point for our investigation of the period before World War I. Maddison has not provided pre-1914 GDP estimates on annual basis for any SEE country, except Austria-Hungary. As we wanted to include at least three SEE countries, we have relied on Ivanov’s estimates (Ivanov 2006, 2009) for Bulgaria and on those of Kostelenos et al. (2007) for Greece, whose estimations stretch back to 1899 and 1842, respectively. Table 3 shows the correlation coefficient between GDP per capita growth rates between 1899 and 1913.

Table 3: Correlation coefficient between growth rates of GDP per capita, 1899-1913.

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>France</th>
<th>Germany</th>
<th>Austria-Hungary</th>
<th>Bulgaria</th>
<th>Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>0.79</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>0.89</td>
<td>0.63</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria-Hungary</td>
<td>0.40</td>
<td>0.41</td>
<td>0.43</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>-0.79</td>
<td>-0.68</td>
<td>-0.75</td>
<td>-0.50</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Greece</td>
<td>0.17</td>
<td>0.22</td>
<td>-0.12</td>
<td>-0.55</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

Note: Time series are 4-year moving averages of the original data.

For aggregation purposes, it is helpful to condense the n * (n – 1) / 2 = 15 correlations into three key indicators: (1) the average correlation among the core economies (England, France, and Germany); (2) the average correlation between core countries and peripheral countries; and (3) the average correlation among Austria-Hungary, Bulgaria, and Greece. We obtained these averages as the arithmetic average of the individual correlations.

(1) average correlation intra-core 0.77
(2) average correlation core-periphery -0.08
(3) average correlation intra-SEE -0.34

The intra-core correlation yields a value of +0.77, reflecting in particular the extraordinarily high degree of business cycle integration between England and Germany, the two largest European economies since the 1870s (+0.89). Such a high value does not take us by surprise, given how economic historians
have come to see the decades before World War I, which are often referred to as the first age of globalization (Daudin et al. 2008).

More interesting in our context are the low (indeed slightly negative) correlation coefficients between core and periphery (-0.08) as well as intra-SEE (-0.34). This finding constitutes *prima facie* evidence that SEE did not participate in the first age of globalization (at least not to the extent that it would lead to a synchronization of business cycles). A closer inspection of the data reveals a substantial difference between Austria-Hungary on the one hand and Bulgaria and Greece on the other. As opposed to the latter two countries, Austria-Hungary does exhibit a positive correlation of 0.41 with the Western European core economies. This difference should not take us by surprise. Austria-Hungary was the only SEE country that had participated to a reasonable degree in the nineteenth-century expansion of industrialization on the European continent. Most of these industries were located in the dual monarchy’s Austrian part, which enjoyed good transportation and trading links with Germany.

Figures 3 to 6 visualize our findings. Figure 3 shows the high degree of business cycle integration between England, France, and Germany in the early twentieth century: a first boom period which was brought to an end by the American banking crisis of 1907, and another, even more spectacular boom immediately preceding World War I. The following three figures superimpose the business cycles of Austria-Hungary (Figure 4), Bulgaria (Figure 5), and Greece (Figure 6) on this Western European business cycle; we can see that Austria-Hungary broadly follows a similar pattern, whereas Bulgaria and Greece go their own ways.

Figure 3: Business cycles of England, France, and Germany, 1903-1913.
Figure 4: Business cycles of England, France, Germany, and Austria-Hungary, 1903-1913.

Figure 5: Business cycles of England, France, Germany, and Bulgaria, 1903-1913.
What then explains our finding? This question seems even more pressing given that our data do show evidence that crises emanating from outside SEE also had a sizeable effect on this part of Europe. Figures 4-6, for instance, do show the impact of the American banking crisis. The lack of business cycle integration before World War I is probably best explained by the absence of factors that are normally seen as crucial for the transmission of business cycles. In the Bulgarian and Greek cases, there is little evidence of sizeable capital imports from Western Europe before World War I (for Austria-Hungary, see Morys 2006). Similarly, trade was limited both with Western Europe as well as within SEE. In this context, the absence of intra-SEE trade might be due to the widespread pursuit of protectionist policies in SEE before World War I (which were often exacerbated by political motivations, such as the 1906 ‘pig war’ between Austria-Hungary and Serbia). Protectionist policies further reduced the scope for trade, which was already somewhat limited due to (a) a similar economic structure of SEE countries, and (b) the absence of mutual borders between Austria-Hungary, Bulgaria, and Greece (at least until the Balkan wars of 1912/1913).

4.2. The inter-war period: 1921-1938

Starting with 1921, Maddison has provided annual GDP data for Austria, Bulgaria, Greece, and Yugoslavia, with annual data for Romania beginning in 1926. All these series stretch at least until 1938. We have therefore chosen the years from 1921 to 1938 as our estimation period for the inter-war period, but we have relied on Ivanov’s data for Bulgaria, rather than on the data provided by Maddison. Table 4 presents our results. In accordance with our approach to the period before World War I, we provide the ‘condensed’ results below:

(1) average correlation intra-core 0.30
(2) average correlation core-periphery 0.48
(3) average correlation intra-SEE 0.41

6 A closer analysis of the Bulgarian data, however, seems to reveal that the 1907 data are largely driven by an extraordinarily poor grain harvest. The precise role of the American banking crisis on the Bulgarian economy requires further research.
We shall begin our discussion with developments in the core economies. The average intra-core correlation is down to 0.30, compared with 0.77 before World War I. This reflects the de-globalization of the inter-war period, due to the legacy of World War I and then exacerbated by the Great Depression. The core economies, whose business cycles had once been well integrated, started working again according to their own clock.

Against this international background, it is even more surprising to see the developments in SEE. The average core-periphery correlation yields a value of 0.48, and the average correlation intra-SEE stands at 0.41. Both values are not particularly high, but they are evidence of SEE business cycle integration within SEE as well as vis-à-vis Western Europe.

How can we explain this puzzle? Three explanations suggest themselves: (1) Business cycle integration had always been there, but only in the inter-war period were there enough countries and hence data to detect it. We should not forget that the three countries we have drawn on for our investigation of the period before World War I did not have mutual borders until the Balkan wars of 1912/1913. (2) As the SEE economies grew richer, they specialized more, thereby making intra-regional trade more attractive and hence the transmission of business cycles more likely. (3) Perhaps more controversially, the dramatic border changes after World War I might have given rise to the emergence of a common business cycle. In the political history of the inter-war period, many problems are blamed on the new borders after World War I, but there might well have been positive economic effects. The almost perfect business cycle integration between Austria and Yugoslavia (0.93) might be explained as follows: After World War I, Yugoslavia not only incorporated large parts of what used to belong to Austria-Hungary (Slovenia, Croatia, Bosnia-Herzegovina, and the Vojvodina), but those parts also were economically much more advanced than what had been the Kingdom of Serbia before 1918. Fifty percent of the entire Yugoslav banking capital after World War I, for instance, was concentrated in Croatia alone; Zagreb and not Belgrade was initially the economic capital of Yugoslavia. These are only some of the many aspects in recent research by Aleksic (2009), which demonstrates how much economic power Yugoslavia inherited from the dual monarchy. Cities such as Ljubljana, Zagreb, and Novi Sad might well have continued to carry out a great deal of their economic activity with Austria even after World War I, thereby potentially importing (or exporting for that matter) the business cycle. A similar rationale might explain the increased business cycle integration of Romania, which had gained the vast territory of Transylvania from the dual monarchy.

### 4.3. After World War II: 1950-1989

Maddison has provided continuous annual GDP series for all SEE countries from 1950 to 2001, but we have decided to end our analysis in 1989 in order to address more directly the following question: Was the inter-war business cycle integration doomed to unravel after World War II, when some SEE countries fell in the Western camp (Austria, Greece), some in the Eastern camp (Bulgaria, Romania) and Yugoslavia somewhere in between? Table 5 presents our results.

### Table 4: Correlation coefficient between growth rates of GDP per capita, 1921-1938.

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>France</th>
<th>Germany</th>
<th>Austria</th>
<th>Bulgaria</th>
<th>Greece</th>
<th>Romania</th>
<th>Yugoslavia</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>-0.07</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Germany</td>
<td>0.58</td>
<td>0.38</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>0.27</td>
<td>0.80</td>
<td>0.69</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria</td>
<td>-0.26</td>
<td>0.49</td>
<td>0.26</td>
<td>0.37</td>
<td>1.00</td>
<td></td>
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</tr>
<tr>
<td>Greece</td>
<td>0.78</td>
<td>0.40</td>
<td>0.68</td>
<td>0.48</td>
<td>0.13</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>0.19</td>
<td>0.33</td>
<td>0.39</td>
<td>0.34</td>
<td>0.60</td>
<td>-0.04</td>
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<td>1.00</td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>0.63</td>
<td>0.83</td>
<td>0.75</td>
<td>0.93</td>
<td>0.46</td>
<td>0.38</td>
<td>0.41</td>
<td></td>
</tr>
</tbody>
</table>

Note: Time series are 4-year moving averages of the original data.
Table 5: Correlation coefficient between growth rates of GDP per capita, 1950-1989.

<table>
<thead>
<tr>
<th></th>
<th>Austria</th>
<th>Bulgaria</th>
<th>Greece</th>
<th>Romania</th>
<th>Yugoslavia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>0.45</td>
<td>0.64</td>
<td>0.82</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>0.47</td>
<td>0.72</td>
<td>0.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>0.65</td>
<td>0.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yugoslavia</td>
<td>0.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Time series are 4-year moving averages of the original data.

The average correlation yields a value of +0.58, which suggests somewhat higher business cycle integration after World War II, when compared with the inter-war period. This means no less than that the business cycle was able to penetrate the iron curtain. Not surprisingly, the average correlation between countries on the same side of the iron curtain (Austria/Greece, and Bulgaria/Romania/Yugoslavia) is somewhat higher (+0.63) than the average correlation between countries on the opposite sides of the iron curtain (+0.55); it is worth keeping in mind, however, that the value of +0.55 is still at levels slightly higher than the average correlation intra-SEE of the inter-war period (+0.41).

What then might explain the persistence of a common business cycle after 1950? The iron curtain was meant to prevent the free movement of people, but other factors could easily pass it. There is, first and foremost, the weather. As late as the 1960s, over 50 percent of the Bulgarian and Greek economies were still accounted for by agriculture. Under these circumstances, similar weather conditions could easily induce a synchronized business cycle. Second, there is substantial evidence that the oil price shocks of 1973 and 1979 had a major impact not only on the Western economies, but also on the countries of the Eastern bloc. Third, following the death of Stalin, Eastern Europe did start to open economically towards the West by increasing trade and importing capital. This has been well documented by Ivanov for the case of Bulgaria (Ivanov 2008). In other words, while humans might not have been able to pass the iron curtain, goods and capital certainly could. But even the free movement of labour was not completely prevented. Yugoslavia did have some form of labour mobility with the Western European economies, as the *Gastarbeiter* experience of many Yugoslav workers in Germany demonstrates. On reflection, then, we should not be all too surprised that there continued to be a common SEE business cycle in the Cold War period.

5. Conclusion

This paper represents the first attempt ever to construct business cycle indices for the SEE countries from late-nineteenth-century independence to the present day. Constructing these indices has allowed us to address two key questions: to what extent was there a common business cycle among the SEE countries, and to what extent was the business cycle of individual SEE countries and/or SEE as a whole synchronized with the business cycles of the major European economies—that is, England, France, and Germany?

In a perfect world, we would be able to study business cycles by analysing GDP data. We first explained why historical national accounts are not necessarily as well-suited for this task as they might appear initially. Our concerns partly stem from the idiosyncrasies of SEE GDP data, partly from general considerations as to why national historical accounts are unlikely to reflect the true but unknown GDP series. We thus have suggested Common Dynamic Factor Analysis (CDFA) as a promising alternative to construct business cycle indices. Based on a period of Bulgarian history for which we have both GDP figures and the time series required for the CDFA, we have found that our business cycle closely tracked the GDP series. This finding boosted our confidence in using this technique also for other periods for which we lack such GDP data.
The fourth section has been devoted to addressing two key questions: to what extent was there a common business cycle among the SEE countries, and to what extent was the business cycle of individual SEE countries and/or SEE as a whole synchronized with the business cycles of England, France, and Germany? Three results have stood out: First, there was no discernible business cycle integration before World War I, neither among the SEE economies, nor between the SEE economies and Europe’s core economies; only Austria-Hungary’s business cycle was moderately well integrated with Western Europe. This result suggests that SEE did not fully participate in the first age of globalization (at least not to the extent that it would lead to a synchronization of business cycles). Our second major finding relates to the inter-war period. We have detected the emergence of a common SEE business cycle as well as increased synchronization with Western Europe. This trend contrasted sharply with the core economies themselves, whose business cycles had been a good deal more integrated before World War I than in the inter-war period. This SEE trend might be explained by increased specialization of the SEE economies in the inter-war period (reflecting higher GDP levels as much as contributing to them), thereby making intra-regional trade more attractive and hence the transmission of business cycles more likely. We also hypothesized that the dramatic border changes following World War I might well have played a part in the emergence of a common business cycle; regions incorporated into another country continued to have strong economic links with the country to which they had initially belonged. Last but not least, we have found that SEE had a common business cycle even during the Cold War period. We have explained this fact, surprising as it may seem, with reference to the many factors that were able to penetrate the iron curtain and potentially give rise to a common business cycle: similar weather conditions for economies with a substantial agricultural sector, the 1970s oil price shocks, as well as trade with and capital imports from Western Europe, both of which were sizeable after the East bloc had abandoned Stalin’s autarkist policies.
References


Monetary policy in South-East Europe in the transition from bimetallism to the gold standard

Kalina Dimitrova
dimitrova.ka@gmail.com
Bulgarian National Bank

Luca Fantacci
luca.fantacci@unibocconi.it
Bocconi University

and

Ali Coşkun Tuncer
A.C.Tuncer@lse.ac.uk
London School of Economics

Abstract

Bimetallism was widespread throughout South-East Europe between the end of the eighteenth and the beginning of the nineteenth century. Yet, as an increasing number of countries shifted to the gold standard, silver suffered a continuous depreciation on international markets. Hence, a positive and variable difference between the legal and the commercial value of silver coins, known as ‘agio’, was experienced by Bulgaria, Romania and Serbia and, to a lesser extent, by the Ottoman Empire. On one hand, the existence of the agio imposed a constraint on monetary policies, to the extent that they were all engaged in an effort to eliminate the agio. On the other hand, the fluctuations of the agio may have depended to a certain extent on a mismanagement of the money supply. This paper helps explain why the agio did not compensate entirely for the depreciation of silver on the international market, by highlighting other factors that influenced the relative demand for gold and silver currency at a national level. The two types of currency appear to have performed different functions; thus, the agio—that is, the discount between them—did not merely follow the depreciation of silver as a commodity on the international metal market, but rather reflected the excess supply of silver as a currency on the domestic market and/or the shortage of gold currency for foreign trade. This suggests that, even in the period of bi- or monometallic standards, money was not simply a commodity and its value did not depend entirely on the material of which it was made.

JEL: E42, E52, E63, F33, N14
Keywords: Agio, gold standard, monetary policy, South-East Europe

1. Introduction

Bimetallism was widespread throughout South-East Europe (SEE) between the end of the nineteenth and the beginning of the twentieth century. The Ottoman Empire had adopted this system as early as 1844. The principalities that gained their independence with the Treaty of Berlin in 1878 were all engaged, in the subsequent years, in the construction of a national monetary system capable of unifying domestic markets and integrating them in international trade and finance; most of them also adopted a bimetallic system.

However, as an increasing number of countries shifted to the gold standard, silver suffered a continuous depreciation on international markets. As a consequence of arbitrage, silver coins often circulated at a discount within the bimetallic systems where the silver/gold ratio was kept fixed by law. A positive and variable difference between the legal and the commercial value of silver coins, known as ‘agio’, was

1 The comparative analysis carried out in this paper was made possible by the generous help (including data, information and comments) provided by SEEMHN partners from Serbia—Milan Sojić and Ljiljana Duđević (National Bank of Serbia), and Dragana Gnjatović (Megatrend University)—and from Romania—George Stoenescu, Elisabeta Blejan, Brîndușha Costache and Adriana Aloman (National Bank of Romania). We would also like to thank Şevket Pamuk for his valuable comments throughout the preparation of this paper.
experienced by Bulgaria, Romania and Serbia and, to a lesser extent, by the Ottoman Empire. In the case of Bulgaria and Romania, the agio disappeared only with the establishment of a gold standard at different dates at the turn of the twentieth century, whereas the Ottoman Empire managed to sustain low levels of agio despite the heavy depreciation of silver in the world markets. There the agio finally disappeared with another monetary regulation more or less in the same years.

In the literature on monetary regimes in the peripheries, these events are usually seen as a difficult and chaotic transition from bimetallism to the gold standard. Due to the chronic misalignment between the official value and the market price of silver in terms of gold, bimetallism gave way to a ‘limping gold standard’ (Gnjatovic 2006, Avramov, 2006, Pamuk 2008). However, historical data for the agio in SEE show that arbitrage was far from compensating for the full misalignment. This suggests that there was scope for national authorities to set the value of silver coins, with a degree of freedom from international markets, as long as this was done to meet, and not to exceed, the requirements of domestic circulation. Perhaps, then, at least under certain conditions, the limping system could serve to combine the benefits of a sufficient internal currency and a stable external currency. If this was true, the adoption of a monometallic standard would appear as an attempt to cure the possible misconduct of this articulation, by cutting off one of its parts.

The present research intends to test this interpretation of the limping gold standard in the light of its historical embodiment in the monetary systems of SEE, from the second half of the nineteenth century to the collapse of the classical gold standard on the eve of World War I. We will consider the Ottoman Empire and, after 1878, the three independent states of Bulgaria, Romania, and Serbia.

In the second part of this paper, we start by analysing the distinctive characters of the monetary regimes set up in these countries, by comparing their monetary laws, not only among each other, but also with the provisions of the Latin Monetary Union (LMU), to which they intended to conform. We also review and compare the statutes of the four issuing banks entrusted with the task of complementing the money supply by issuing various forms of paper currency.

In the third section, we then consider how these bimetallic systems actually worked in practice. In particular, we observe (or reconstruct) the fluctuation of the agio in each country; we try to identify its possible determinants and to assess their relevance through appropriate empirical analyses. The variables we consider are suggested by the literature on the subject (Fantacci 2009, Sojic and Djurdjevic 2007, Stoenesescu et al. 2008) and include, besides the international bimetallic ratio, the main statistics for all countries concerning the domestic money markets (e.g., coin issues, banknote issues), the state budget (revenues, expenditures, balance), foreign trade relations (exports, imports, balance, trade by region), and foreign debt. The empirical analysis helps to explain why the agio did not compensate entirely for the depreciation of silver on the international market, by highlighting other factors that influenced the relative demand for gold and silver currency at a national level. The two types of currency hence appear to have performed different functions. For this reason the discount between them—that is, the agio—did not merely follow the depreciation of silver as a commodity on the international metal market, but rather reflected the excess supply of silver as a currency on the domestic market and/or the shortage of gold currency for foreign trade.

When discussing monetary policy in times of crises, it is interesting to explore the role of monetary authorities in this period of transition from the bimetallic to the gold standard, as we do in the fourth section. In all the countries and throughout the whole period we consider, there are two concurring monetary authorities: the issuing banks, which are in charge of the banknote supply; and the governments, which are responsible for the minting of metal coins. A decomposition of the different types of money on local markets allows us to assess the ability of either type of monetary authority to manage money in circulation. When considering the costs and benefits of the functioning of the limping gold standard in the region, we concentrate specifically on the relationship between the agio and the various monetary policies adopted. The relationship may have run in either direction. On one hand, the existence of the agio imposed a constraint on monetary policies, to the extent that they were all engaged in an effort to

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2 As we shall see in detail, the ‘limping gold standard’ adopted in SEE was similar to the standard adopted by the Latin Monetary Unit (LMU) since 1878, but with certain peculiarities, such as the absence of a limit on silver coinage and the state monopoly over gold as well as silver coinage.
eliminate the agio. The instruments of conducting monetary policy towards financial stability—that is, eliminating the agio was comprised of a wide range of measures and initiatives (Avramov 1999, Sojic and Djurdjevic 2008, Stoenescu et al. 2008). On the other hand, the fluctuations of the agio may have depended to a certain extent on a mismanagement of the money supply. In this respect, we enquire whether the need for extra budget financing was solved by recurring to seigniorage on various forms of fiduciary money (e.g., silver coins or banknotes) which, by exceeding the needs of the local markets, could cause longer-term adverse effects on the stability of the bimetallic standard.

We conclude by asking why countries eventually opted for the gold standard, and, more specifically, what they stood to gain and lose from the change.

2. Monetary legislation

Throughout the nineteenth century, various areas of SEE gained increasing autonomy from the Ottoman Empire. Serbia became an autonomous principality in 1817. The principality of Romania was formed in 1862. Both were recognized as independent states with the Treaty of Berlin in 1878. At that time, Bulgaria was constituted as an autonomous principality.

In each of these countries, the legal establishment of monetary sovereignty was an important aspect of political emancipation as well as the affirmation of a national identity. However, it was also a means of economic integration and of participation in an increasingly interdependent global economy. The peculiar design of SEE monetary systems was driven by the attempt to reconcile these two potentially conflicting intentions (Einaudi 2008, 30).

In this section, we review the main currency laws of Serbia, Romania and Bulgaria, together with contemporaneous developments in the monetary regime of the Ottoman Empire. The aim is to outline the institutional framework in which the events under discussion took place. Here, we look at the rules of the game, so as to understand better, in the following sections, what role was assigned to each player and how the game was played. Over the period we are considering, all four countries experienced, in fact, a variety of monetary regimes. It is possible to identify three regimes that were successively adopted by each country. The three regimes differ in terms of the way in which each of them provided for legal tender to be created by the monetary authority. Therefore, each regime is characterized by a peculiar form of domestic currency and by a peculiar relationship between domestic and international currency.

National unit of account and foreign coins. In the first regime, the monetary authority is entrusted with the task of regulating the relationship between the national unit of account and the coins used as means of payment. The monetary authority may or may not issue coins of its own. In any case, the money supply is directly determined by fixing the nominal value of the coins circulating in the country. At the same time, this evaluation affects the terms of trade with respect to other countries, and therefore the net influx of money as a result of foreign trade (and possibly of arbitrage).

Bimetallism and ‘limping gold standard’. In the second regime, the monetary authority issues its own coins and gives them a fixed value in terms of the national unit of account. Lower denomination coins, for domestic circulation, are assigned a higher nominal value than would be implied by their metal content, evaluated at international market prices. The overvaluation of domestic coins allows the monetary authority to satisfy the demand for money and to earn a seigniorage. Since the 1870s, overvaluation of silver coins with respect to gold coins was increased by a protracted depreciation of silver specie on international markets. However, excess supply of domestic currency and balance of payment deficits could result in a discount (agio), applied by market participants to divisionary coins vis-à-vis full-bodied coins.

Gold standard and paper money. In the third regime, the national unit of account is defined in terms of a fixed quantity of pure gold. However, the needs of domestic circulation are satisfied primarily not by metal coins, but by paper currency, issued by a national issuing bank. The money supply is regulated by the issuing bank directly, by buying or selling securities on the market, or indirectly, by varying the rate at which it stands ready to discount bills or to lend money to the commercial banks. Exchange rates are fixed, through the fixed gold parity, and trade imbalances are met by gold flows and foreign lending (possibly encouraged or discouraged by variations of the discount rate).
Each of these regimes implies distinctive features concerning the form of monetary authority, the body to which it is entrusted (government or central bank), the kind of legal tender that is issued (copper, silver, gold, paper), and the kind of revenue (seigniorage) it entails. Of course, each country had its own national peculiarities. Moreover, the change from one regime to the other did not occur simultaneously across countries, nor was it always instantaneous. In fact, in most cases, it required several years or even decades, resulting in protracted periods of different regimes coexisting. Let us then review the specific features of each regime in the different countries.

2.1. National unit of account and foreign coins

Protracted circulation of foreign coins was a common feature of SEE countries until the end of the nineteenth century. This is not surprising and should not be seen merely as a sign of backwardness and inability to manage an independent monetary system. Most countries of Western Europe, too, accepted foreign coins as legal tender, at given exchange rates fixed by the local monetary authority, up to the end of the eighteenth century; they had been doing so for almost ten centuries. This was indeed a distinctive feature of what Luigi Einaudi has described as the ‘system of imaginary money’ which had prevailed throughout Europe ‘from Charlemagne to Napoleon’ and which allowed, for example, 51 different types of national and foreign coins to circulate in the State of Milan as late as 1762 (Einaudi 2006).

Similarly, half a century later, 43 different types of foreign coins circulated in Serbia, coming primarily, but not exclusively, from Austria and the Ottoman Empire. Already during the First Uprising of 1804-1813, the newly founded Serbian authorities started announcing official monetary tariffs that were issued by the sultans, fixing the rate at which the various coins would be received in payment for taxes and other public revenues. The unit of account used in these tariffs was the groš that was named after the Ottoman kuruş. Since the greater part of money transactions had to do with the payment of taxes, the value of the coins fixed by the official tariffs determined the rate at which they would be accepted on the market (Sundhaussen 1989, 363-365). With the tariffs, Serbian authorities had thus an instrument of monetary policy even before they started to mint their own coins. The circulation of foreign coins and their evaluation by official tariffs continued even after Serbia had gained formal independence and had started to mint its own coins.3

Romania also experienced a broad circulation of various foreign coins, old and new, until the creation of the national monetary system in 1867 (Postolache 1994, 44). During the Russo-Turkish War, in which Romania was fighting alongside Russia to gain its own independence, the Romanian market was flooded by Russian rubles that were only gradually removed over the years following the Treaty of Berlin (Stoenescu et al. 2008, 10). Circulation of foreign coins in Romania continued probably until the actual issuance of national coins in sufficient quantities to substitute foreign ones.

In Bulgaria, foreign coins continued to circulate at least for a couple of decades after the establishment of the national monetary system. The law of 1880 did not ban them, but rather allowed their use for tax payment at official rates, avowing that ‘the Ministry of Finance will publish each time it finds necessary monetary tariffs at which they will be accepted by the government cash desks’ (art. 16). Nor were foreign coins accepted by the state only; they were imposed as legal tender also in private transactions, as declared by article 17: ‘Each citizen of Bulgaria is obliged to accept foreign coins at the price determined in the monetary tariffs of the government’. As the Principality of Bulgaria started to mint its own coins, it attempted to restrict and eventually eliminate the circulation of foreign coins. A commission appointed to discuss some economic issues recommended on 31 January 1890 ‘to confiscate all foreign coins, of silver, copper and tin’ (Avramov 1999, 29). Apparently, the recommendation was not effective, since the same ban was repeated in a law dated 27 February 1897, which at the same time confirmed the legal tender status of gold coins ‘at the rates announced in the monetary tariffs’ (art. 7). Therefore, for at least two decades after Independence, Bulgaria continued to have foreign coins of various denominations and provenance circulating extensively throughout its territory (Dimitrova and Fantacci 2010).

The Ottoman Empire was not an exception in experiencing circulation of different types of foreign coins coming from no less than 10 foreign countries (Gnjatovic 2006, 54-55).

3 See, for example, the tariff issued by Prince Milan Obrenovic on 9 February 1879, which contained the official quotes for gold and silver coins coming from no less than 10 foreign countries (Gnjatovic 2006, 54-55).
coins. In some parts of the empire, the official currencies lira and kurus were not a common medium of exchange. In provinces like Beirut or Izmir, gold coins were not in circulation, and the silver meciyie was dominant. In Syria and Palestine, dominant coins in circulation were the undervalued silver coins of beslik and altılık. In Basra, the Persian karan was the principal coin in use. In Hejaz and Yemen, the Maria Theresa thaler had replaced the Ottoman kurus. After the monetary reform of 1880, the Ottoman government tried to ban the circulation of foreign coins by issuing several decrees in 1883 and 1887. Despite these attempts, the circulation of foreign coins prevailed, in line with the broad transactional network and specific international trade conditions of each region (Eldem 1970, Young 1906).

The circulation of foreign coins ought not to be interpreted as the symptom of weak states incapable of affirming their authority. On the contrary, it is the sign of a different form of monetary authority, which consists not in determining the quantity of national currency, but rather in determining the value of international currencies in terms of the national unit of account. It is the sign not of a late, but rather of a precocious monetary autonomy. In fact, in Romania and Serbia, monetary legislation began before Independence, in the form of autonomous exchange rates for Ottoman and foreign coins. Both countries had a national unit of account before they had a national means of exchange (Lampe and Jackson 1982, 205). The same was true for Bulgaria.

2.2. Bimetallism and the ‘limping gold standard’

The Latin Monetary Union (LMU) was formed in 1866 by France, Belgium, Switzerland, and Italy. The four countries already had a fixed parity between their national units of account (1 franc = 1 lira) and had maintained from the time of Napoleon I large gold and silver coins of the same weight and fineness, which were freely minted and freely circulated throughout their territories (Redish 2000, 189-191). In this respect, the LMU merely confirmed previous practices, by sanctioning that each participant should accept the silver and gold coins of all others at par. The problems that the LMU intended to address concerned the divisionary coins—that is, the silver coins of lower fineness and denomination. These were not uniform across countries, and the bad coins tended to drive out the good ones. Moreover, massive gold discoveries since 1848 had induced a relative appreciation of silver on international markets, thus providing further incentives to withdraw silver coins from circulation in order to gain from arbitrage, by melting them and selling the silver on the market. The convention fixed a common fineness for all divisionary coins and set it at a level of 835/1000, which was low enough to avoid arbitrage and even to ensure a substantial seigniorage to the mint. In order to avoid excessive minting, the convention also set a ceiling of 6 francs per inhabitant to the issue of this sort of coins (Einaudi 2008, 32; Redish 2000, 192).

In 1867, an International Monetary Conference convened in Paris, on the initiative of the French Foreign Affairs Ministry and with the participation of most European countries, the United States, Russia, and the Ottoman Empire. Despite the unanimous call for a universal currency, the world remained divided between the gold standard, supported by Britain, Prussia and Austria-Hungary, and bimetallism, favoured by France and the LMU. To the peripheral countries of SEE, and particularly to the principalities that were still in the process of building their independence, the gold standard, however desirable for the purpose of stabilizing the currency and gaining access to international capital markets, would have implied major problems and drawbacks: the meagre gold reserves of these countries would have constrained the money supply and imposed severe deflation, while the weakness of newly established monetary and fiscal institutions would have made it difficult to supplement domestic circulation with a reliable paper currency. Therefore, bimetallism must have appeared as a more suitable system to combine the advantages of monetary stability, trade openness, and financial integration with an adequate elasticity of domestic money supply.

Moreover, the Ottoman Empire had adopted bimetallism as early as 1844. The silver kurus and the gold lira were both accepted as legal tender, freely convertible at the fixed rate of 100 kurus for 1 lira and obtainable at the Imperial Mint. The decree of 1844 also brought an end to the debasement of coinage in order to finance state expenditure. Therefore, even the principalities that gained their independence from

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4 The argument has been made for Serbia by Sojic and Djurdjevic (2008, 303-304) and by Gnijatovic (2006, 50). For the case of Romania, Stoenescu et al. (2008, 8) also mention the importance of economic and political ties to France.
the Ottoman Empire had inherited from the latter an acquaintance with a bimetallistic system. It is not surprising, then, that all these countries introduced monetary legislation following the bimetallistic model of the LMU: Romania in 1867, Serbia in 1873, and Bulgaria immediately after independence in 1880.5

Article 1 of the Romanian monetary law, promulgated only one year after the inauguration of the LMU, declared quite explicitly: ‘The metric decimal monetary system is adopted such as it exists in France, Italy, Belgium and Switzerland’ (National Bank of Romania 1995, 275). The law defined the national unit of account, the leu, in terms of a silver parity equal to that of the French franc, and the gold, silver and copper coins that were to be issued, according to the denominations, weights and alloys of LMU coinage. Articles 11 to 13 further specified that the gold and silver coins of the LMU would be accepted by all public offices of the country, that other foreign coins would cease to be legal tender six months after the issuance of national silver and gold coins, and that for the production of the latter ‘all measures of precaution will be taken so that they are identical with the French coins in terms of title, weight and size, as stipulated in the present law’ (National Bank of Romania 1995, 277). The only major difference, with respect to LMU coinage, was the fact that no provision was made for the minting of a silver 5-leu coin, corresponding to the écu, which was in fact the second leg of French bimetallism.

The Serbian law of 1873 also declared in its first article that it intended to conform to the principles and the provisions of the Latin Monetary Convention of 1865 (Sundhaussen 1989, 366). The new law established the national monetary unit, the dinar, at a par with the French franc. Moreover, it provided for the minting of silver coins in the denominations of 2, 1, and 0.5 dinars, equal to the LMU coins of corresponding denominations in both fineness (835/1000) and weight (10, 5, and 2.5 grams respectively). Equally in analogy with the provisions of the LMU, the minting of these coins was reserved as an exclusive right of the government. With the formal recognition of independence, Serbia also started to mint gold coins. The new law of 1878 prescribed the coinage of 20- and 10-dinar pieces, still following LMU types. However, unlike the LMU, Serbia did not allow the free minting of gold coins, but maintained even this type of coinage under the control and for the benefit of the government (Sojic and Djurdjevic 2008, 305). A further point of departure from the principles of the LMU was that only gold coins were granted the status of legal tender for payments of unlimited amount, whereas all other coins were subject to restrictions. In this sense, the monetary standard in Serbia was not bimetallistic, but gold (Sundhaussen 1989, 366-367).

Romania applied for LMU membership in 1867, immediately after having passed its new monetary law, introducing LMU-type coinage. However, admission was refused because, according to the French Commission des Monnaies, Romanian institutions were too weak to ensure the actual application of the qualitative standards and the quantitative restrictions that the LMU imposed on its members. Since Romania did not have a mint of its own, it ‘would have to entrust coinage to private enterprises without being able to exert an adequate surveillance’.6 Serbia presented three subsequent applications to the LMU: in 1874, 1879, and 1880. Each time, Serbia was rejected on similar grounds, since the country also had to rely on foreign mints (Einaudi 2008, 38-39).

The lack of public mints in both Romania and Serbia had an important implication in terms of the actual functioning of bimetallism in these countries: minting remained a public monopoly for coins of all denominations; hence, free mintage, even of larger denomination coins, was not feasible for private individuals. This represented a major departure from the rules of bimetallism strictly defined, where both gold and silver are supposed to be freely minted, and even from the rules of the LMU that in 1878 had shifted to a limping gold standard, where free mintage was maintained only for gold (Redish 2000, 201). With respect to the rule of free mintage, Romania and Serbia were, in fact, limping on both legs.

In the next section, we shall investigate which differences from LMU-style bimetallism and which other factors may have been relevant for the emergence and the fluctuations of the agio in SEE countries during the period of their bimetallistic regime. Before doing so, let us briefly turn to the third regime.

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5 It is worth reminding that Greece acceded to the LMU in 1867, and that even Austria-Hungary, while retaining the gold standard, set up a parallel system of trade coins that were compatible with LMU coinage (Einaudi 2008, 34).

2.3. Gold standard and paper money

Even in the core countries of Western Europe, beginning with the precursor England, the establishment of a monometallic standard and the issuance of paper money appear to have been not only simultaneous, but also mutually dependent. One is the condition for the other: if on one hand the metal parity provides a reliable base for the issuance of banknotes, then on the other hand the possibility of supplementing circulation with a flexible supply of paper money allows maintaining a fixed metal parity, without constraining the growth of the economy to the actual availability of metal.\(^7\) It is not surprising, then, that the countries of the SEE periphery made their first attempts at issuing paper currency even before having formally established a monometallic standard.

The Ottoman government for the first time put into circulation ‘state notes’ (kaime) already after the monetary reform of 1844, in order to solve its continuous fiscal difficulties. Kaimes were not backed by gold or silver reserves. The government declared that the kaime was to be accepted as legal tender, just like gold and silver coins. However, because of excessive issuing, kaimes depreciated heavily against silver, and the government finally decided to withdraw all these notes in 1863 with the help of short-term loans obtained from the Imperial Ottoman Bank (IOB). This was the beginning of a new era in the history of paper money in the Ottoman Empire. In fact, in the very same year, the IOB was established as a monopolistic issuing bank. It was entrusted with most of the transactions of the state treasury in return for the obligation to provide certain short-term loans to the state. Moreover, according to Article 9 of the Act of Concession, the IOB had the exclusive privilege of issuing banknotes, convertible into gold. The redemption of these banknotes would only be demandable at the place of issue, in Istanbul. However, Article 11 imposed a limitation on the issue of banknotes. Perhaps the most peculiar aspect of this system was the fact that the IOB was not a ‘national’ bank; rather, it was a French-British bank holding the monopoly of bank note issue in the Ottoman lands. This meant that the government did not have the possibility to increase the amount of banknotes in circulation at will, but only with the consent of the IOB. The partial autonomy of the IOB from the Ottoman government could also explain the small share of bank notes in the total money supply for the period under study (Akyıldız 1996, Kuyucak 1947, Eldem 1999).

From 1844 to 1880, the Ottoman Empire tried to reconcile fiduciary money with bimetallism. However, at the end of 1879, because of the further depreciation of the kuruş in line with the declining price of silver in the world markets, the Ottoman government moved away from bimetallism, and gold was accepted as the standard for the Ottoman currency. According to the new decree issued on 13 December 1879, the monetary standard of the empire would be the gold lira of 100 kuruş, and this standard would be applied in all revenues of the state, starting on 13 March 1880. Moreover, in Article 4 of the decree, it was specified that ‘in order to bring the value of silver equal to the value of gold, the value of the meciidaye (silver coin of a value of 20 kuruş) is reduced to 19 kuruş’. Although this was not stated directly, in practical terms this last point meant that the state was fixing the effective rate of the gold lira at 105.26 kuruş in silver. Thus, with the reform of 1880, the Ottoman Empire was adopting the ‘gold standard’ by closing down the minting of silver coins, but at the same time accepting silver at a reduced rate. In other words, the state was moving towards what the literature has called a ‘limping gold standard’, by preserving a fixed ratio between gold and silver. Under the limping gold standard, the existing silver coins retained full legal tender in payments to the state, and the Ottoman economy continued to rely heavily on silver for most daily transactions. Gold was at the centre, especially in relations with the world economy, while silver fluctuated according to supply and demand in internal commerce (Young 1906, Pamuk 2008).

The other countries had all set up a national issuing bank within less than five years: Bulgaria in 1879, Romania in 1880, and Serbia in 1883, well before any of them had gone on gold. In Romania, the issuance of paper money began even before the establishment of the National Bank in the form of mortgage notes, issued by the Ministry of Finance, on the basis of the law of 12 June 1877. These notes were put into circulation in 1878 and were backed not by metal reserves, but by government real estate (National Bank of Romania 2008). In 1880, the National Bank of Romania (NBR) was established as a discount and circulation bank, for the issuance of banknotes convertible in gold or silver, and with a

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\(^7\) That monetary reform was a condition for the financial revolution has been recently argued by Ingham (2004, 129) and Desmedt (2007).
fractional reserve system, following the model of the Belgian National Bank. The notes were not legal tender, but were freely usable for payments to the government (Stoenescu et al. 2008, 9-11). The NBR was also entrusted with the task of substituting the mortgage notes with banknotes, in view of reselling the mortgage notes to the original issuer, the state. The operation was eventually accomplished in 1889. The following year, the amendment to the monetary law of March 1890 put Romania on a gold standard, by fixing the value of the leu in terms of gold (0.3226 g at 900/1000 fine) and by limiting the legal tender status of silver coins to payments up to 50 lei. The new law also required the NBR to withdraw lower denomination banknotes (20 lei) and to replace silver reserves with gold in order to ensure a 40-percent backing of all outstanding notes in gold. Both provisions were questioned by the officials of the bank, who claimed that they would unduly reduce the elasticity of money supply and its adequacy to the needs of petty transactions. The issue was settled with a protocol on the implementation of gold monometallism between the NBR and the government, enacted in May 1892: 20-lei banknotes were allowed up to 20 percent of total circulation, and backing was confirmed at 40 percent of note issue, but with the possibility of supplementing gold with bills of exchange denominated in foreign currencies. The Romanian monetary system was thus transformed into a gold exchange standard (Stoenescu et al. 2008, 13-15). In 1901, the NBR was granted the possibility to reduce the reserve ratio to 33 percent in exceptional circumstances (Stoenescu et al. 2008, 18). Thanks to the combination of these provisions, the NBR appeared to be fairly capable of regulating the money supply according to the needs of domestic circulation, even while maintaining the stability of the exchange rate up to the eve of World War I.

The National Bank of Serbia (NBS) was established in 1883 and granted the exclusive privilege to issue banknotes (art. 15 of the Statute, National Bank of Serbia 1883, 10). Despite the bimetallistic nature of the Serbian monetary system, the banknotes were to be convertible into gold and backed ‘by gold and by securities easily and surely convertible in gold’, with a gold reserve ratio of at least 40 percent and the possibility of substituting with silver not more than one quarter of the gold reserves (art. 27). However, the banknotes were not received favourably by the population and were immediately converted into gold. This was ascribed to the high denomination of the first banknotes, which were all of 100 dinars. Therefore, 50-dinar banknotes were issued in 1885, but with little success. For this reason, in the same year, the NBS was granted the possibility of issuing 10-dinar banknotes that were to be convertible into silver. This was the beginning of a bimetallistic paper money system that lasted in Serbia until the end of World War I. Indeed, the silver-backed banknotes enjoyed a much wider circulation than the gold-backed ones and came to account on average for 95 percent of the supply of paper money (Sojic and Djurdjevic 2008, 307). In fact, the law of 1885 did not define a precise proportion, but merely stated that the overall issue of banknotes should not exceed 2.5 times the gold and silver reserves. The bank interpreted this somewhat vague provision, by allowing the gold reserves to cover also the issue of banknotes convertible into silver (Sundhaussen 1989, 368). When the agio on silver coins emerged, the government blamed this on a supposed oversupply of silver-backed banknotes by the NBS with respect to the silver backing; the bank replied, suggesting that the agio depended rather on balance of payments and public deficits (Sojic and Djurdjevic 2008, 312). The actual role of the banknote issue as a possible determinant of the agio shall be reviewed in the following section.8

In Bulgaria, the National Bank (BNB) was established in 1879, immediately after independence. However, it was only in 1885 that what had been founded as a discount and commercial bank was also granted the privilege to issue banknotes. As in Serbia, the first attempts to circulate banknotes convertible into gold resulted in failure. The bank claimed the right to issue silver-backed banknotes, but it was refused by the government which saw this as a possible threat to its own seigniorage revenues deriving from the massive mintage of divisionary coins. The permission was eventually granted in 1899, after an attempt to establish a gold standard in 1897 had failed in the straits of a financial crisis that caused the convertibility of gold-backed banknotes to be suspended. Unlike the latter, the new silver-backed banknotes gained immediate and wide circulation (Avramov 2006, 100). The gold-backed banknotes in circulation remained below the gold reserves at the bank until 1906, when they started to increase, and

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8 Sojic and Djurdjevic (2008, 307) have suggested that it was the existence of the agio that impeded the circulation of the gold-backed banknotes and thus made the issuance of silver-backed banknotes necessary. This has been admitted even by Sundhaussen (1989, 368), who however has also deemed the oversupply of silver-backed banknotes to be a cause of the increase in the agio.
continued to do so until the outbreak of World War I, when their amount reached the limit allowed by
the reserve ratio and an absolute value which was 10 times greater than 10 years before (Dimitrova and
Fantacci 2010). The coincidence between the disappearance of the agio and the successful circulation
of gold-backed banknotes is rather striking. Whether it was the establishment of the gold standard that
allowed the issuance of paper money or vice versa is open to question and will be discussed below.

Overall, the monetary history of SEE between the end of the nineteenth and the beginning of the twen-
tieth century displays a wide variety of institutional arrangements. The common concern of all countries,
throughout the entire period, appears to have been the attempt to reconcile the needs of domestic circula-
tion with openness to international trade and finance. This was done by selecting an appropriate standard,
compatible with the national endowments of monetary metal, and by complementing the supply of do-
mestic currency with various forms of fiduciary money, in the form of overvalued foreign coins, division-
ary silver coins, or banknotes. Each regime was liable to being managed more or less consistently, with
respect to its own principles, and more or less effectively, with respect to the objectives it was designed
to achieve. In the following section, we shall analyse the actual management of the monetary system in
the various countries, concentrating particularly on the peculiar phenomenon of agio, on its meaning,
and on its determinants.

3. The emergence of agio and its determinants

When an increasing number of countries shifted to the gold standard, silver suffered a continuous
depreciation in international markets. As a consequence of arbitrage, silver coins often circulated at a
discount within the bimetallic systems where the silver/gold ratio was kept fixed by law. A positive and
variable difference between the legal and the commercial value of silver coins, known as ‘agio’, was
experienced by Bulgaria, Romania and Serbia and, to a lesser extent, by the Ottoman Empire.9

Figure 1: Fluctuations of the agio in SEE

![Figure 1: Fluctuations of the agio in SEE](image)

Note: Agio is reported as annual average (%).

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9 In fact, a ‘disagio’, an additional charge on gold, was observed in Serbia in some months and in the Ottoman Empire at the end of the period
under study.
Fluctuations of the agio in SEE countries seem to follow some general tendencies, which may be observed for groups of countries in certain periods of time (Figure 1). Right after the Ottoman Empire’s moratorium on its foreign debt, in 1876, all four countries, which were still part of the same political entity, experienced an increasing premium on gold with respect to silver. Unrest in the Balkan provinces, together with the Russo-Turkish War, increased the pressure on state finances. As the international financial markets were closed, in order to finance its high spending, the Ottoman government suspended the privileges of the IOB and issued its own ‘state notes’, the above-mentioned kaimes, which lost their value against coins and contributed to the peak in the agio. The Ottoman Empire managed to control the agio with the monetary regulation of 1880, which redeemed all state notes in circulation; however, newly independent states of SEE experienced fluctuations depending on several other factors. Following their independence, the first peak of the agio partially reflected the depreciation of silver on international markets, and to a larger extent the extremely negative foreign trade balances, resulting in a considerable decrease in the metallic reserves of the respective issuing banks. Soon after that, in 1890, when the international bimetallic ratio descended, the agio scored its minimum in both countries.

Romania managed to introduce a gold standard in 1890 by changing the monetary law, and in 1892 the statute of the NBR was amended to adapt its functions to the new standard. Bulgaria drafted a program for the introduction of the gold standard by initiative of the government, yet without any real effects. From 1880 to 1890, the development of the agio in Serbia followed a path different from that in Bulgaria and Romania. It was increasing from 1887 onwards, not as a result of a gold outflow related to foreign trade, but rather due to the constant budget deficits that required extra financing via issuing banknotes (Sojic and Djurdjevic 2008, Gnjatovic 2006). After 1890, the agio in Serbia and Bulgaria developed in a much closer pattern than before. Although this development seems to be in line with the depreciation of silver on international markets and with the financial crisis of 1893, the different degrees of depreciation on the local markets can be better explained by domestic factors, which will be the main focus of our econometric analysis. In 1897, the agio in all three countries recorded a reversal, reflecting the decline in the gold/silver price ratio on international markets. Given that the appreciation of silver on the international market might be transmitted to the local markets with a time lag, the decrease of the agio in all three SEE countries reflected also a considerable increase in reserves. The second peak of the agio for this sub-period was triggered by the economic crisis starting in 1899, which severely affected small SEE economies like Bulgaria and Serbia. As a result of the depressed economic activity, public revenues decreased, and the governments in both countries ran considerable budget deficits. Facing extreme financial needs, they could resort either to external debt or to domestic credit. After being granted credits by the international financial community in 1899, the governments started to repay the debts at the cost of seeking direct assistance from the issuing banks. With the international appreciation of silver vis-à-vis gold after 1902, the external pressure on the agio in SEE bimetallic systems loosened. Serbia and Bulgaria enjoyed several years of positive foreign trade balances. This turned out to be crucial for the accumulation of gold reserves and for decreasing government liabilities towards the issuing banks. Given all these favourable circumstances, Bulgaria eliminated the agio by implementing several policy measures, while in Serbia the agio declined almost to zero. Finally, with the monetary law of 1909, the Ottoman Empire entered a period of disagio.

Given the similarities and differences in agio development in SEE countries under the bimetallic standard in different time-periods, it is interesting to look for empirical evidence of possible regularities. Several hypotheses may be taken into account in an attempt to outline the possible determinants of the agio in each country. The first hypothesis to take into consideration is the ‘external factors hypothesis’. Gold being used for international payments, it is to be expected that the amount of gold coins circulating within the country should follow the fluctuations of the balance of trade. Insofar as the occasional excess of imports over exports is paid out in gold, it results in a decrease of the supply of gold coins for domestic circulation, mirrored by an increase in the demand of gold coins for settlements abroad, thus exerting an upward pressure on the agio. However, outflows due to current account deficits may also be compensated by inflows on capital account. For this reason, the cumulative amount of foreign loans granted

10 The agio development in the Ottoman Empire and Serbia until 1890 scored negative correlations of -0.68 and -0.86 with respect to Bulgaria, and of -0.09 and -0.82 with Romania, respectively.
to SEE countries might be taken into account as a possible explanation for the reduction and eventual disappearance of the agio. A further element of the balance of payments is monetary movements driven by arbitrage on the difference between the relative value of precious metals fixed by monetary laws in SEE countries and the bimetallic ratio prevailing on international markets. Since the former was fixed under the bimetallic standard in SEE while the level of the latter was from the outset higher, increasing and volatile, it is to be expected that the fluctuations of the agio should reflect the difference between the two. Yet, according to the ‘fiscal hypothesis’, the additional financial needs of the governments in SEE countries were triggered by negative public budget balances (Sojic and Djurdjevic 2008, Fantacci 2009). Fiscal needs were either satisfied by public foreign loans or by domestic borrowing. The most common and easily available domestic financial sources were cheaper and consisted either of seigniorage from minting silver coins or of direct credits from the issuing banks. Moreover, government borrowing from issuing banks was closely associated with banknotes in circulation (Sojic and Djurdjevic 2008) and particularly with silver-backed banknotes in circulation (Dimitrova and Fantacci 2010).

Both hypotheses should be treated as complementary, although some factors could be prevailing over others in determining the behaviour of the agio in certain countries and for certain periods of time. In fact, as the agio was not fixed by the authorities but determined by private negotiations on the market, it was to reflect the relative supply and demand of gold and silver coins. Since there are no particular reasons to believe that the decades under observation should have experienced relevant variations in the composition of the demand for silver and gold coins, respectively, the analysis may be restricted to the supply of precious metals and coins. These are the relevant variables in the ‘money market hypothesis’. Although time series of the minted national silver and gold coins are available for some countries, constructing an indicator of the relative supply of gold and silver coins might not lead to a significant indication of the coins actually circulating within the country, given the large amount of silver and gold coins flowing across the borders. An alternative estimate may be provided by the metallic holdings recorded in the balance sheet of the issuing bank and constituting the official reserves of the country. Therefore, the ratio between silver and gold holdings (SGR) may be assumed as a proxy indicator of the relative supply of silver and gold coins responding to the respective demand.

Table 1: Correlation analysis of agio development and possible determinants.

<table>
<thead>
<tr>
<th></th>
<th>EXTERNAL FACTORS HYPOTHESIS</th>
<th>FISCAL HYPOTHESIS</th>
<th>MONEY MARKET HYPOTHESIS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NX/TV</td>
<td>FD/EX</td>
<td>BMR</td>
</tr>
<tr>
<td>Ottoman Empire</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1873-1912)</td>
<td>0.21</td>
<td>0.58</td>
<td>-0.38</td>
</tr>
<tr>
<td>(1880-1912)</td>
<td>0.68</td>
<td>0.40</td>
<td>-0.32</td>
</tr>
<tr>
<td>Romania (1880-1890)</td>
<td>0.41</td>
<td>n.a.</td>
<td>0.45</td>
</tr>
<tr>
<td>Bulgaria (1885-1906)</td>
<td>0.22</td>
<td>0.50</td>
<td>0.32</td>
</tr>
<tr>
<td>Serbia (1887-1912)</td>
<td>0.58</td>
<td>0.23</td>
<td>-0.05</td>
</tr>
</tbody>
</table>

* For the Ottoman Empire, it is ∆SC.
** For the Ottoman Empire, it is SC/GC.

A simple correlation analysis is always a good starting point for the attempt to provide empirical findings for the contending determinants of the agio development in SEE (Table 1). Among alternative variables that may have influenced the agio in Romania, within the external factors hypothesis, it is the international bimetallic ratio (BMR) that scores the highest correlation coefficient of 0.45, followed by net exports normalized by the trade volume (NX/TV). Given that banknotes in circulation were quite well received by the public in the country since the beginning (Stoenescu et al. 2008), it is to be expected that the change of banknotes in circulation (∆BN) will have a significant effect on the local market. Agio fluctuations in Bulgaria show a closer tie with gross foreign loans taken as a share of exports (FD/EX), suggesting that the stock of foreign loans was considerable given the capacity of the economy to bear such a burden. In fact, all domestic taxes were collected with no discrimination between silver and gold money (except duty taxes which were collected only in gold currency), while foreign debt was repaid only in gold. From all available alternative indicators that outline the fiscal hypothesis, the change in the issue of silver-backed banknotes (∆SBB) turns out to be of major importance for agio behaviour. Al-
though the other indicators have weak correlation coefficients, this indicator was closely related to fiscal conditions. As suggested by the literature, the issuing of silver-backed banknotes, which started in 1889, was triggered by the poor public finance condition as a result of the economic crisis and the constrained access to foreign capital markets. Moreover, it has been suggested that the relative structure of silver and gold components of the reserves reflects the relative supply of silver and gold money on the market (Christophoroff 1946, Yordanov 1910, Avramov 1999).

The behaviour of the agio in Serbia seems to be significantly correlated with the foreign balance deficit. This is not surprising, given that Serbia enjoyed close trade relations with Austria-Hungary, guaranteed by preferential trade terms until 1906, when the latter declared a ‘customs war’ that lasted until 1910 (Statistical Office of the Republic of Serbia 2008). Fiscal factors have been pointed out in the literature (Sojic and Djurdjevic 2008) as the major determinants of agio in Serbia. This seems to be reflected in the correlation between agio and banknotes in circulation (-0.27) and silver-backed banknotes (-0.23). Moreover, similar to what happened in Bulgaria, the strong correlation between agio and the relative share of silver to gold holdings (0.45) suggests that the change of the gold reserves may be less relevant to test the money market hypothesis (since the estimated correlation coefficient is -0.34).

The Ottoman Empire is the largest economy in the study, and as such the foreign trade deficit (BOT def) is expected to exhibit a close relation with the agio. Although for the whole period the correlation seems weak, if we exclude the years before the monetary law of 1880, it is possible to observe a strong correlation. Moreover, unlike the rest of the SEE countries, the Ottoman government enjoyed extensive access to international financial markets, especially after 1881. This is also supported by the high correlation coefficient between foreign debt stock and agio (0.58). The fiscal hypothesis overall is not supported, except for the change in silver coins (0.18). This estimate reflects the fact that, unlike the remaining SEE countries, the Imperial Ottoman Bank did not act as a bank of the state, despite being an issue bank.11 Hence, for the domestic sources of financing, the government had to rely on seigniorage from minting silver coins. This is further confirmed by the money market hypothesis, as the relative supply of silver to gold coins scores the highest correlation (of 0.88) with the agio development in the Ottoman Empire.

After checking for correlation regularities, we will implement econometric estimations for the significance of the respective indicators and the degrees of influence (Table 2).

Table 2: Econometric analysis of agio determinants.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>The Ottoman Empire (1873-1912)</th>
<th>Serbia (1881-1912)</th>
<th>Bulgaria (1885-1906)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Money market hypothesis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta(\text{SC/GC})_t$</td>
<td>16.01***</td>
<td>6.032**</td>
<td></td>
</tr>
<tr>
<td>($4.680$)</td>
<td>($2.222$)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\Delta(\text{SR/GR})_{t-1}$</td>
<td></td>
<td></td>
<td>0.772*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>($0.503$)</td>
</tr>
<tr>
<td>External balance hypothesis</td>
<td></td>
<td>-10.99**</td>
<td></td>
</tr>
<tr>
<td>($5.168$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy dummies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$D_1$</td>
<td>-0.701**</td>
<td>5.016**</td>
<td>-6.326**</td>
</tr>
<tr>
<td>($0.285$)</td>
<td>($2.142$)</td>
<td>($2.157$)</td>
<td></td>
</tr>
<tr>
<td>$D_2$</td>
<td>-2.601***</td>
<td>-2.623***</td>
<td>-5.878**</td>
</tr>
<tr>
<td>($0.259$)</td>
<td>($0.0807$)</td>
<td>($2.143$)</td>
<td>($2.272$)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.999***</td>
<td>0.910***</td>
<td>-0.0737</td>
</tr>
<tr>
<td>($0.0446$)</td>
<td>($0.0161$)</td>
<td>($0.456$)</td>
<td>($0.501$)</td>
</tr>
<tr>
<td>Observations</td>
<td>34</td>
<td>30</td>
<td>23</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.812</td>
<td>0.978</td>
<td>0.511</td>
</tr>
</tbody>
</table>

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.15. Policy dummies refer to the years with monetary laws and regulations, which had a significant effect on the agio: 1880 and 1909 for the Ottoman Empire; 1894 and 1903 for Serbia; and 1902 and 1903 for Bulgaria.

11 Apart from the legal provision in the statute of the Imperial Ottoman bank, the relatively low correlations of the public budget deficit with the agio development for the rest of the countries also justifies this practice.
Because Romania experienced agio for a short period of time, it is not possible to conduct an econometric estimation due to the small number of observation points. However, for the remaining countries, it is possible to run OLS time series regressions to test the above hypotheses, by taking only the most significant indicators for each country suggested by the correlation analysis. In order to avoid spurious relationships between variables, it is important to make sure that the time series used in the regressions are stationary. As expected for most time series, agio and other monetary and fiscal variables display non-stationarity. Therefore, in the above regressions we have used first-differenced series for both dependent and independent variables. While testing our hypotheses we also have considered the fact that in some cases a certain time lag between change in the independent variables and our dependent variable agio might exist. Finally, we have included dummy variables to test the effect of monetary laws and regulations on the agio. In line with our previous discussion of the Ottoman case, the ratio of silver coins to gold coins in circulation seems to be the most significant variable for the whole period. This is consistent with the overall monetary system, as the notes of the IOB constituted only a small percentage of the total money supply. Therefore, in order to finance its deficit the Ottoman government could either borrow from international markets or increase the minting of silver coinage. From 1873 to 1881, when the Ottoman government was facing insolvency, there was a rapid increase in the minting of silver relative to gold, which had a declining trend after 1881 onwards, with the favourable conditions in international financial markets for the Ottoman government. In this context, the duality of the Ottoman monetary system (i.e., silver for domestic transactions and gold for international transactions), together with the accessibility to the international financial markets, can explain the low levels of agio despite the increasing trend of the bimetallic ratio on international markets. As in the Ottoman case, the money market hypothesis seems to be the most relevant explanation for the evolution of agio in Bulgaria from 1885 to 1906, and the best explanatory variable is the silver-to-gold ratio in the reserves structure. Although it might not be intuitive that the reserves structure should reflect the relative supply of silver to gold money, this was possible given the way in which the backing for different kinds of banknotes was constituted (see section 2), and given the overall management of money in circulation. In fact, the coverage of silver-backed and gold-backed banknotes was provided by gold and silver, respectively. Moreover, this allowed for the replacement of silver coins by silver-backed banknotes in circulation. Two dummy variables point at structural changes concerning the foreign debt restructuring in 1902 and the withdrawal of silver-backed banknotes from circulation in 1903, apart from the sharply positive trade balances of 18 percent and 13 percent of total trade for the respective years.

Although the money market hypothesis provides a better framework to understand the evolution of agio for the cases of the Ottoman Empire and Bulgaria, as far as Serbia is concerned, the external balance hypothesis seems to offer the strongest explanation. This is consistent with the fact that Serbia was the only country in SEE with positive net exports for the whole period. As mentioned in the correlation analysis, this positive foreign trade was largely due to the preferential trade agreements with Austria-Hungary. In fact, among all four SEE countries, Austria-Hungary was a net exporting destination for Serbia throughout the whole period, accounting for 66 percent of Serbian foreign trade. The significant coefficient of the dummy variable indicates the swing in the policy in 1894 with respect to the coverage of banknotes, which forced the NBS to withdraw silver-backed banknotes from circulation (Sojic and Djurdjevic 2008). Moreover, in 1903 there was a structural change in the public finances, resulting in positive budget balances since then, which decreased the necessity of domestic borrowing and hence the fiscal interference on monetary policy.

Overall, the econometric analysis suggests that the most significant determinants of agio were the monetary laws and regulations, together with the specific economic conditions of each country. In explaining the agio in SEE, the money market hypothesis, together with the level of integration of each country in the world markets through international trade and capital flows, seems to be more important than the fiscal hypothesis. The fiscal hypothesis, however, should not be ultimately disregarded, given the fiscal interference on monetary policy (Dimitrova and Fantacci 2009) and the monetization of budget deficits (Gjnatovic 2009); therefore, we may assume that it is to some extent reflected by the money market hypothesis.
4. Monetary policy measures and initiatives

Operating under the bimetallic standard, all policy institutions were aware of the fact that the excessive supply of silver currencies relative to gold ones would result in a high and persistent agio. Moreover, having the experience of the LMU and its reforms, it was often argued that the omission of the ‘silver clause’, which limited the silver coins in circulation up to 6 franc per inhabitant (Lazaretou 2004, 38), was the main legislative deficiency that allowed for the excessive supply of silver money on local markets (Nedelchev 1940). On the contrary, the monetary laws in all four countries were rather loose, allowing for the free circulation of foreign silver coins on their territories. A specific problem was the extensive circulation of the Russian silver ruble, which was introduced in Romania, Bulgaria and Serbia during the liberation wars (1876-1878) at an overvalued exchange rate of 4 French Francs per ruble. This imposed overvalued exchange rate was unsustainable and turned out to be a set-back for the introduction of national currencies. Therefore, measures for its devaluation and ultimate demonetization were implemented in all SEE countries in different years.

Soon after their liberation in 1880, Romania demonetized the Russian silver ruble at the price of 3.30 Francs, while Serbia decreased the exchange rate to 3.50 (Trifonoff 1930, 30). In order to reduce the inflow from Romania and Serbia, the value of the ruble was reduced by the Council of Ministers in Bulgaria to 3.70, and on 15 August 1881 to 3.50 leva. In 1883, the Ottoman Empire attempted to demonetize all foreign silver coins by prohibiting their circulation. Although the enforcement of this ban is questionable, Bulgaria still offered the best price for foreign silver coins in the neighbourhood and hence was ‘flooded’ with them; as a consequence, the agio increased (Kiosseva 2000). After several unsuccessful attempts to limit their circulation (in November 1884 the BNB demonetized all Serbian and Romanian coins, and in January 1885 a law was passed, providing for the depreciation of silver Rubles from 3.50 to 3.40 and 3.30 leva [Trifonoff 1930, 31]), they were ultimately demonetized by mid-1887.

After the demonetization of foreign silver coins was accomplished, the national authorities took over the supply of the means of exchange on the local markets. As coinage was a function of the government and banknotes were issued by issuing banks, both institutions were responsible for the management of money in circulation and influenced the relative supply of silver to gold currencies. Given the diversity of different means of payment on the respective markets (silver and gold coins, silver- and gold-backed banknotes), a decomposition of money supply by different kinds of money can help us locate the degree of responsibility of the two monetary authorities.

As the issue of banknotes was well accepted by the public, the banknotes in circulation covered by metallic holdings in Romania accounted for more than half of the money in circulation (0.64), suggesting that the issuing bank was more involved in the management of money supply than the government. In fact, the comparatively high share of silver coins (0.30) exhibits a decreasing trend over the period, starting from almost 100 percent before banknotes were put into circulation, to reach around 20 percent after the introduction of the gold standard.

The decomposition of money in circulation in Serbia was dominated by coins (0.52). If we study, however, the differentiation between gold and silver money, the silver-backed banknotes rank first (0.45), placing the issuing bank as a competitor to the government with respect to silver money in circulation. In fact, this competition was not appreciated by the government, and in 1894 the NBS was forced to withdraw two-thirds of the silver-backed banknotes in circulation within a period of five years (Gnjatovic et al. 2003, 189).

In Bulgaria, the domination of silver coins in circulation (0.73) was criticized as the underlying determinant of the agio (Christophoroff 1946, 65; Nedelchev 1940, 29). The gold-backed banknotes issued since 1885 lacked credibility among the population who kept recent memories of the devalued Ottoman kaim. In fact, in exchange for the failed program of the introduction of the gold standard in 1890-1891

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12 A summary of these reforms may be found in Lazaretou (2004, 2005).
13 There were also copper and bronze coins in circulation for petty transactions in all SEE countries, of denominations less than half of the national unit of account.
14 The banknotes in circulation in Romania could be covered by gold and silver holdings with no distinction between them. Besides, there were banknotes backed by mortgage on public facilities, which were in circulation until 1889, estimated to be around 3 percent of all banknotes in circulation for the period under study.
(together with Austria-Hungary and Romania), the BNB obtained the legal right to issue silver-backed banknotes. It was not until 1899, when the BNB was de facto allowed to issue silver-backed banknotes, that the share of the total banknotes in circulation increased to 35 percent, of which 22 percent accounted for silver-backed banknotes only (Dimitrova and Fantacci 2010). With the establishment of the gold standard in 1906, the BNB enhanced its role in determining money supply, by increasing the share of banknotes in circulation to 60 percent (with the share of gold-backed banknotes at 40 percent).

The share of gold-backed banknotes issued by the Imperial Ottoman Bank was constantly below 5 percent throughout the whole period, given that they were mostly used by merchants and bankers for large transactions; their circulation remained limited to a small segment of the economy in Istanbul. For most of the daily transactions, however, people preferred to use both gold and silver coins, suggesting that the mint was the main supplier of means of exchange on the local market (Ferid 1914, Eldem 1999). The respective share of gold coins (0.72) and silver coins (0.26) indicate, however, that the government put strong efforts into the management of money supply by limiting silver coins in circulation, reflected by the modest agio around 2 percent under the limping gold standard.

For the successful supply of respective kinds of money in circulation, the denomination structure of money supply also played an important role in monetary policy. Applying a unified denomination structure (LMU-type), however, did not reflect the level of economic development in different countries and the preferences for various denominations. Gold currencies were either used for large financial transactions or kept by the population as a store of wealth. Given the existing agio, it was difficult to put banknotes into circulation, particularly gold-backed banknotes which were of large denominations as well.

In Romania, it was reported, there was no resistance to banknotes on behalf of the population from the very beginning, as the banknotes covered by mortgages on public real estates were quite well received by the public (Stoinescu et al. 2008). Another factor that contributed to the successive supply of banknotes in circulation was the constitution of coverage, which allowed for gold and silver to be taken into account in the cover stock, without differentiating between gold- and silver-backed banknotes. Last but not least, from its very beginning the issue of banknotes included also a 20-leu denomination, which perfectly matched the level of market activities. In fact, this very small denomination turned out to be the ‘apple of discord’ between the government and the NBR upon the introduction of the gold standard. Apart from the fact that the NBR was not involved in the preparation of the plan for the establishment of the gold standard in Romania, the NBR insisted on keeping the 20-leu banknote in circulation, ‘which was particularly necessary for the petty transactions in the rural community’ (Stoinescu et al. 2008). Finally, the government and the NBR reached an agreement that the issue of banknotes could also include the 20-leu banknotes, but only up to 20 percent of the total amount.

As in the case of Romania, the public preferred Bulgarian silver coins for local transactions, while the gold coins, which started to be minted only in 1894, quickly disappeared from circulation, as they were not used for regular transactions due to their large denominations (10, 20 and 100 leva). The gold-backed banknotes issued since 1885 according to LMU standards did not obtain proper circulation due to a lack of credibility and the existing agio. Moreover, they were of quite large denominations (20, 50 and 100 leva), as only in 1890 the BNB was allowed to issue 5- and 10-leva gold-backed banknotes which better met the needs of the local market. In 1899, when the BNB was de facto allowed to issue silver-backed banknotes, it applied a small denomination policy (5, 10 and 100 leva) which successfully entered circulation and gained a share of around 20 percent of the total money supply. The last significant measure with respect to the denomination policy was implemented after 1903, and it involved gradual withdrawal of silver-backed banknotes higher than the 10-leu denomination and replacing them with gold-backed banknotes.

Being aware of the fact that the large denominations of the gold-backed banknotes (50, 100, 500 dinar) did not meet the level of economic activities and the volume of economic transactions, the NBS initiated an issue of 10-dinar gold-backed banknotes, which would not be exchanged for metal and returned to the vault. This measure, however, was met with very strong opposition by the government, which on its own behalf intended to issue banknotes of the same denomination (Sojic and Djuredjevic 2008). In spite of
that, the NBS decided to start printing 10-dinar silver-backed banknotes instead of having no banknotes of the same denomination. In 1893, the NBS was accused that its expansionary policy affected the agio and was forced to withdraw two-thirds of its silver-backed banknotes from circulation within five years. In 1896, when the NBS restored its coverage policy, a limit of 25 million dinars of the overall amount of silver-backed banknotes in circulation was imposed regardless of the coverage level (National Bank of Serbia 1896). As a result of the imposed limit, the NBS initiated the issue of 20-dinar gold-backed banknotes, which entered circulation during the exports season, when the demand for money was strong and the limit of silver-backed banknotes was reached. These small-denomination gold-backed banknotes contributed to the increasing share of all gold-backed banknotes in money supply, which in turn put a downward pressure on the agio.

The gold-backed banknotes of the Imperial Ottoman Bank were also of large denominations, and by preserving their coverage and convertibility, they were designated to carry out large transactions. With the exception of a small volume of 2-lira banknotes, most of them carried a nominal value of 5 lira (around £4.5). Considering the fact that during this period the daily wage of an unskilled worker was around 8 kuruş, a 5-lira banknote would correspond to a two-month salary (Eldem 1999). In terms of coinage, from 1876 to 1914, on average 88 percent of the gold coins carried a face value of 1 lira, and the majority of silver coins were 20 kuruş (33 percent), 5 kuruş (21 percent) and 2 kuruş (28 percent) (Ferid 1914).

Based on their statutes, all four SEE countries issuing banks seem to have had common objectives: (1) to promote trade and economic activity by increasing the lending sources to the national economy, and (2) to maintain the stability of the national currency. Instruments to obtain the first objective involved: (1a) banknotes emissions and (1b) discount rate policy, while the second objective could be met by (2) adequate reserves management with a view of observing the cover ratios and convertibility of the national currencies.

Given the constraints on money supply management on behalf of SEE issuing banks, the effectiveness of discount rate policy to control the liquidity in the economy is debatable. In principle, discount rates in SEE countries were considerably higher than the ones applied in other European countries, implying underdeveloped financial intermediation and overall macroeconomic stability. Besides, the short-term interest rates charged by the SEE issuing banks exhibit a comparatively unstable behaviour, reflecting the drastic changes in the economic development typical of small open economies, where there is heavy dependence on the access to foreign financing and where agriculture is the main productive sector.

However, we would like to examine whether there might be some regularity between the development of the discount rates and the agio. Whenever there is an excess demand for money over the supply, interest rates are normally increased by monetary authorities in order to curb the demand. A necessary condition for the effectiveness of the discount rate as a monetary policy instrument to control for money demand is the widespread circulation of banknotes. Under a metallic standard, the issued banknotes are covered by metallic holdings and could be redeemed in precious metal when submitted to the bank. When the agio increases, the demand for gold is higher, which is expected to reflect on the increase in discount rates, given the metallic reserves management constraints. In this respect, we face three different situations in SEE countries.

In Romania, where the banknotes were not differentiated and where there was a general discount rate, the correlation between the agio and the discount rate does not seem to be significant (0.32) for the short period of study until 1890. A justification of this weak correlation could be found in the credit portfolio of the NBR, which is characterized by a large share of lombard credits. These credits, however, were not put into productive activities; rather, they were associated with market speculations against the gold stock of the NBR. Whenever the agio increased, the banknotes were readily returned to the bank in exchange for gold (Stoinescu et al. 2008). Moreover, given the nature of those credits as being collateralized by

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15 The contingent of 25 million dinars in silver-backed banknotes was meant for the operations of the National Bank with the economy, while the government was supplied with extra banknotes issued in the name of a 3-percent short-term loan of another 10 million dinars (Gnjatovic 1991).

16 It should be noted that the above figures do not reflect the cultural preferences towards holding gold as a store of value or as a representation of social status in the form of jewellery. Although this activity has been assumed to be common in the Ottoman Empire, its extent is difficult to quantify (Pamuk 2000).
government securities, there was no obstacle to obtaining such a credit. Provided that there were limited credit opportunities, those credits increased in times of crisis, in spite of the increasing interest rate.

The discount rate of the BNB was on average the highest among the SEE countries (7.76 percent), reflecting the low level of financial intermediation and the instability of gold reserves. Given the short supply of banknotes in circulation, the development of the discount rate instrument was obviously not used to effectively control the balance between the supply and demand of different types of currency and to influence the agio (0.04). With the extension of the banknotes in circulation due to the excessive issues of silver-backed banknotes since 1899, however, the development of the agio and the discount rate seem to move much closer, as suggested by the correlation coefficient of 0.61.

The Serbian case is different, as the NBS had two discount rates: one for credits extended in gold-backed banknotes, and another one for loans in silver-backed banknotes. The latter was almost flat at around 5 percent, as the NBS implemented its policy of excessive supply of silver-backed banknotes. The discount rate charged on gold-backed banknotes, in contrast, was in general higher (6.8 percent), incorporating not only the relative price of silver to gold as fixed by the law, but also the local discrepancy of relative supply and demand of silver to gold currencies—that is, the agio (0.62).

Unlike the rest of the issue banks of SEE, the IOB did not have an official discount rate. The conditions changed depending on the credibility of the customer. Moreover, the discount rate varied in proportion to the guarantees of the operation. In Istanbul, the bank could apply interest rates of 7 to 9 percent to bills of exchange operations, and in the provinces the rate was even higher. Because of the insecurity of the bills of exchange operations, the bank had even developed a particular system, which was named ‘advances on bills’, whereby it agreed to open a drawing account to individuals holding a number of bills to be re-discounted. Instead of re-discounting these bills, the bank took them as security for the account it opened, granting the holder a credit of up to 75 percent of the value of the collateral thus constituted (Billiotti 1909).

With the view to provide financial stability, the SEE issuing banks maintained, through market interventions, the fixed exchange rate of the national currencies with respect to the French franc in the case of Romania, Serbia and Bulgaria, and with respect to most of the gold currencies of Europe in the case of the Ottoman lira. Given that the agio was positive and very volatile in some SEE countries, the money market operations resulted in drastic changes in the reserves of the respective banks (Table 3).

Table 3: Indicators of stability of SEE national currencies.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Romania</th>
<th>Ottoman Empire</th>
<th>Serbia</th>
<th>Bulgaria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex Rate mean</td>
<td>1.005</td>
<td>0.905</td>
<td>1</td>
<td>1.002</td>
</tr>
<tr>
<td>St. dev</td>
<td>0.004</td>
<td>0.004</td>
<td>-</td>
<td>0.004</td>
</tr>
<tr>
<td>Reserve change mean</td>
<td>9.7</td>
<td>11.2</td>
<td>18.5</td>
<td>25.8</td>
</tr>
<tr>
<td>St. dev</td>
<td>15.9</td>
<td>31.0</td>
<td>30.5</td>
<td>75.1</td>
</tr>
<tr>
<td>Cover ratio (legal)</td>
<td>33.3</td>
<td>33.3</td>
<td>40</td>
<td>33.3</td>
</tr>
<tr>
<td>De facto</td>
<td>45.6</td>
<td>83.3</td>
<td>52.8</td>
<td>321.5</td>
</tr>
<tr>
<td>Convertibility</td>
<td>Free</td>
<td>Free</td>
<td>free</td>
<td>suspended 1899-1902</td>
</tr>
</tbody>
</table>

Note: Exchange rates are per 1 unit of FF expressed in gold-backed national currencies of Romania, Serbia and Bulgaria, and per British pound in gold-backed Turkish Lira for the Ottoman Empire; mean of the reserves is the period average of the annual changes in reserves as metallic holdings only; cover ratios are in percent and the de facto figures are period averages. The respective periods are: 1882-1890 (Romania), 1879-1912 (Romania), 1886-1912 (Serbia), and 1880-1912 (Ottoman Empire).

Therefore, in spite of the drastic changes in the reserves, the coverage of national currencies was usually much higher than the legally prescribed thresholds. This was possible because of the legal flexibility provided in the constitution of cover stock and the eligibility of silver holdings as reserves (except in the Ottoman Empire). For instance, Romania issued only gold-backed banknotes, but silver was recog-

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17 Even within a single year the agio exhibited an outstanding seasonality; it was higher in the winter and the first months of the year and much lower during the harvest and export seasons.
nized as cover stock. Serbia issued gold- and silver-backed banknotes, and the coverage was provided in both gold and silver holdings. The cover ratio was higher in the Ottoman Empire, where the banknotes in circulation were quite limited and served specific purposes, as discussed above. The high recorded cover ratio in Bulgaria was due to the extremely low amount of banknotes in circulation. The structure of reserves at the BNB was rather straightforward, as silver-backed and gold-backed banknotes should be covered by silver and gold holdings, respectively. Although this was implemented with a view to more effectively control for the emissions of silver-backed banknotes, it was first used for switching convertibility of gold-backed banknotes into silver (plus the daily agio) since the beginning of the financial crisis of 1899. The convertibility into gold was soon restored according to a clause in the foreign debt restructuring of late 1902, as a result of which the cover ratio of silver-backed banknotes based on silver holdings only dropped below the legal threshold at the end of 1902.

In conclusion, the efficiency of monetary policy measures implemented by the SEE issuing banks depended on the extent to which they were able to manage the money supply. For the successful supply of banknotes in circulation, it was important to provide banknotes of appropriate denomination that would best suit the level of economic activity. When the banknotes in circulation obtained a considerable share in the money supply, even when this was due to excessive issues of silver-backed banknotes, the conventional monetary instruments became more efficient in controlling money supply and market liquidity, and hence to counteract the agio. Given the agricultural character of all four SEE countries and the mechanism of international payments according to the gold standard, reserve management was difficult for the issuing banks. Thanks to drastic changes of the cover stock, they managed to maintain the stability of national currencies, which favoured the international relations of the new SEE countries.

5. In lieu of a conclusion

Instead of repeating the intermediate conclusions of the separate parts of this study, we would like to attempt to answer the question concerning the costs and benefits of practicing the limping standard, compared to those of introducing the gold standard. For this purpose, we will consider the economic appropriateness of alternative monetary regimes in two respects: (1) trade integration, and (2) access to foreign financing. We will outline several facts which could have served as a motivation for Romania and Bulgaria to strive to join the ‘gold club’, while others (Serbia and the Ottoman Empire) did not seem to be affected by this ‘bandwagon’ effect.

Against the background of the economic development of the period, the gold standard mechanism of foreign trade payments was hard to manage for small, open, newly independent, agrarian economies such as Romania, Bulgaria and Serbia. Therefore, the structure of the cross-country foreign trade of these countries can provide us with evidence concerning the direction of their trade integration. In fact, the main trading partner for all three countries was Austria-Hungary, as the shares of trade turnover with the Habsburg Empire were 25 percent for Romania, 18 percent for Bulgaria, and 66 percent for Serbia. Apart from the degree of trade integration with a given country (as measured by its share in foreign trade), it is even more important to observe whether the main trading partner was an importer or an exporter. Hence, as Austria-Hungary was a 100-percent net importer to Romania and Bulgaria throughout the entire period under study, these countries were supposed to suffer from the depreciation of their national currencies (as implied by the agio). Since the imported goods from Austria-Hungary were capital/investment goods essential for the economic advancement of these countries, they could not afford to stop importing them. Therefore, it seemed very important for the two SEE countries to join ‘the gold club’ (together with Austria-Hungary) in order to make the bilateral trade less expensive. Here, we dare to argue that the initiatives to introduce the gold standard in Romania and Bulgaria in 1890 were ‘imported’ by Austria-Hungary, while the effectiveness depended on the government’s will to put public finance in order.

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18 At the beginning, the coverage was one-third in gold and silver holdings for gold-backed and silver-backed banknotes, respectively, as in 1906 the BNB applied a much stricter ratio for silver-backed banknotes of 50 percent covered by silver (Avramov 2000).
19 In fact, it has been argued that from 13 November 1899 to 24 November 1902 Bulgaria practiced a silver standard (Christophoroff 1946).
20 The percentages are based on the number of years when the bilateral trade recorded a deficit in comparison to all years in the period (1879-1912).
From this, a logical question arises: why did Serbia not follow Austria-Hungary in the adoption of the gold standard, since the empire had the highest share of its trade turnover? The reason was that, in contrast to the Romanian and Bulgarian cases, Austria-Hungary was the main net exporting destination of Serbian products. Therefore, Serbia, enjoying its comparative advantage stemming from favourable terms of trade thanks to the existing agio, had no stimulus to introduce the gold standard in 1890. In fact, Austria-Hungary was the 100-percent net exporting destination until 1906; from 1906 onward, the bilateral trade turned out to be balanced due to the declared ‘customs war’, which also corresponds to the period with the lowest levels of agio.

Commercialization of Ottoman agriculture and integration with the world economy through foreign trade had been taking place much earlier than the newly established states of SEE—in fact, from the early 1840s onwards (Pamuk 1978). Moreover, given that domestic trade and cross-province trade were more intensive, the absorption capacity of the economy was much larger. The transition to bimetallism as early as 1844 can be explained in the context of this first stage of integration with the global economy. In fact, the UK was the main trading partner and net importer of the Ottoman Empire, accounting for 28 percent of the turnover, which can easily explain the efforts to maintain a stable exchange rate of the Turkish lira and complies with our argument.

The second advantage of adhering to the internationally dominant monetary standard—that is, the accessibility to foreign financing—was also very important for all SEE countries. The Ottoman Empire enjoyed accession to international financial markets from 1854 to 1876, when it declared moratorium. After a long period of negotiations it returned to its borrowing career in 1881, right after the representatives of foreign creditors established the Ottoman Public Debt Administration (OPDA). It can be argued that the establishment of the OPDA had a more direct and positive impact on the Ottoman finances than the transition to the limping standard in 1880. However, perhaps the adoption of the limping standard was a strategic decision in the negotiation process with foreign creditors. The need for foreign financing seemed to be comparatively weaker in Serbia, given the favourable trade relations with Austria-Hungary that resulted in a monotonous positive total foreign trade throughout the entire period from 1888 to 1912. As a result of the more volatile foreign trade of Romania and Bulgaria, the stability of the national currencies was more vulnerable, since it depended on credits from abroad. The effect of the introduction of the gold standard in Romania in 1890 could be justified by the improved sovereign creditworthiness resulting in new debts contracted on the foreign markets. Like Romania, Bulgaria also experienced extreme need for foreign financing, but it barely managed to obtain a significant foreign debt restructuring in 1902, under the condition of limited silver coinage and resumption of convertibility of the gold-backed banknotes. Both measures were implemented and resulted in the quick elimination of the agio.

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21 This applied also to Greece (Lazaretou 2004).
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Financial crises and financial market regulation: The long record of an ‘emerger’

Sophia Lazaretou
slazaretou@bankofgreece.gr
Bank of Greece

Abstract

The main goal of this paper is to trace the long record of financial crises and financial market regulation from the perspective of an emerging economy. Two questions are addressed: First, what explains the incidence and severity of financial crises in an emerging market economy? And, second, what is the role of learning; how does the country learn from its past experience in financial crises to improve institutions and develop better techniques so as to successfully manage successive crisis events? To answer the above questions, I first present evidence on financial crises in Greece over a long time-span. Greece has been chosen as an appropriate case-study since it is a country with a rich history in financial crises. I try to identify a variety of crisis events, thus providing a chronology. Moreover, I present a number of facts about the incidence, frequency and severity of crisis events. Second, I discuss the key determinants of the crises, which are closely related to country-specific factors, such as credit expansion, fiscal imbalances, and the limited reserve coverage of the monetary base. And third, I deal with the evolution of the regulation. I place emphasis on the post-crisis regulatory responses that changed the country’s institutional developments.

JEL: E5, N2

Keywords: Financial crises, emerging economies, sudden stops, financial market regulation

‘We have been here before…
This time is (not) different. It almost never is’
(Reinhart and Rogoff 2009)

1. Introduction

In the present era of globalization, financial crises are a recurring phenomenon in the history of emerging market economies. The literature is rich in evidence, both narrative and empirical, on external shock-driven sudden stops of capital inflows, current account reversals, currency drops, a rise in sovereign risk spreads, output losses, and severe financial turbulence (Calvo, Izquierdo and Mejía 2004; Calvo, Izquierdo and Talvi 2005, 2006; Calvo and Talvi 2005; Krugman 2009). The pattern has been common to all emerging economies during recent years. A rapid and sudden cut-off in capital inflows is often accompanied by currency, debt, and banking crises, while the impact of the crisis on the real economy and its incidence differ markedly across countries, depending on the special features of the affected country’s economic structure. Prominent examples of this analysis are the 1998 Russian default lending crisis, the 1998 Brazil crisis, and the 2001 crises in Argentina and Turkey.

1 This paper was presented at the Fifth SEEMHN Annual Conference on ‘Monetary policy during economic crises: A comparative and historical perspective’, hosted by the Central Bank of the Republic of Turkey in Istanbul on 15-16 April 2010. I would like to thank the conference participants and especially Kalina Dimitrova, George Chouliarakis, Ali Coşkun Tuncer, Şevket Pamuk, and Milan Sojic for their comments and suggestions. An earlier version of the first part of this paper was presented at the workshop on ‘Financial market regulation in the wake of financial crises: The historical experience’, organized by the Banca d’Italia on 16-17 April 2009 in Rome. I would like to acknowledge the helpful comments by the workshop’s participants and especially Alfredo Gigioli Bianco and Claire Giordano. Finally, I am most grateful to Luis Catoa for kindly providing Stone’s data on foreign capital inflows to Greece.

2 The views expressed here are those of the author and do not necessarily reflect those of the Bank of Greece. Any errors remain my responsibility.
More recently, Reinhart and Rogoff (2009, 2010), covering a large number of mature and emerging countries over eight centuries, have provided a comprehensive look at the varieties of financial crises. They find a strong link between sovereign debt crises and banking crises across rich and poor countries alike. Researchers’ interest has now focused on the comparison of the emergers’ crisis experience across the two periods of globalization: the present era from 1980 to present, and the first era of ‘golden’ globalization from 1870 to 1914. They have concluded that the crisis pattern for the 1880s and the 1890s’ emergers was strikingly similar to the experience of today’s emerging market economies (Reinhart 2010, Bordo 2008, Bordo et al. 2001, Eichengreen and Lindert 1989). This means that many driving forces that were present during the recent emerging market crises were also at work in the emergers’ crises a century ago.

In this paper, my main task is to trace the history of financial crises and financial market regulation from the perspective of an emerging economy. Two questions are addressed: first, what explains the incidence and severity of financial crises in an emerging market economy? And second, what is the role of learning? In other words, how does the country learn from its past experience in financial crises to improve institutions and develop better techniques so as to successfully manage successive crisis events? Learning concerns both institutional learning and how to follow policies consistent with the aims of these institutions.

The case-study of my analysis is Greece, a country with a rich history in financial crises. Greece before World War II is a typical example of a South-East European (SEE) ‘emerging market economy’,3 as it was on the ‘periphery’ of the international monetary system.4 Most of the historical literature so far has concerned the experience of the advanced countries of Western Europe. Interest in studying the behaviour and response of emerging countries has appeared only recently. However, historical research has largely focused on the peripheral areas of Latin America and Asia and only partly on the emerging economies of SEE. Indeed, the history of financial crises in that particular region of the European periphery—which faced a more turbulent financial, economic, and political environment—is still unexplored or only partly studied. Hence, tracing the past experience of an SEE emerger, like Greece, enriches our knowledge to answer the following questions: (1) Why do crisis events hit more frequently and more severely countries with backward and unsound economic and political institutions? (2) How does the absence of ‘country’ and ‘currency trust’ exaggerate the effects of a financial crisis on the real economy? And (3), how do the emergers learn to prevent and contain crisis episodes?

To answer the above questions, I will first present evidence on financial crises in Greece over a long time span. In particular, I will try to identify different varieties of crisis events, providing thus a crisis chronology. Moreover, I will present a number of facts about the incidence, frequency, and severity of crisis events. To this end, I use the standard definition of financial crises. Second, I will discuss the key determinants of crisis events, closely related to country-specific factors, such as monetary expansion, fiscal imbalances, and the limited reserve coverage of domestic money. And third, I will deal with the evolution of regulation, placing emphasis on the post-crisis regulatory responses that changed the country’s institutional developments. On the basis of the nine forms of prudential supervision of banks as identified by Mishkin (2001) and White (2009), I will discuss the regulatory framework that was initiated for the first time in 1931, as the government’s response to the ‘mother of all crises’. I will conclude by presenting important lessons derived from the country’s historical experience.

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3 The name ‘emerging markets’ was originally coined by Antoine van Agtmael of the World Bank Group in 1981. It was designed to ‘give a more uplifting feeling to what we had originally called the Third World Fund’ (van Agtmael 2006). Although the term was loosely defined—that is, any economy with low to middle per capita income—it is used to consider an emerging economy a country, regardless of whether it is very big or very small in size, that has embarked upon economic development and reform programs and begun to open its markets and ‘emerge’ within the global market economy. An emerging economy is characterized by fast growth, moving from a closed economy to an open market economy, and building sound institutions which enhance performance, transparency, accountability and efficiency within the system. Another key characteristic is also the increase in foreign (portfolio and direct) investment.

4 Countries participating in the international gold standard regime were divided into ‘core’ and ‘peripheral’, according to their faithfulness to specie rules. There are three typical features placing Greece on the system’s periphery (Lazarou 2005): (1) There was an exceptionally large number of alternations of periods of fixed and flexible exchange rates. (2) The governments proved to be unable to maintain a fixed exchange rate regime, as was revealed by the frequent regime alternations that resulted in the short-lived adoption of the prevailing international monetary system. And (3) the various Greek governments were strongly committed to the specie standard rule, as revealed by the periodic abandonment of the metallic standard in the face of an emergency and the hard efforts for resumption made afterwards.
2. Currency crises, banking crises and debt crises: Defining the terms

Before revisiting the long record on financial crisis episodes from the perspective of an emerging market economy, it might be useful to set the theoretical framework by defining the terms used. Following Eichengreen and Portes (1987), the typology of financial crises can be thought of as including three types of crises explained by different sets of variables: currency crises, banking crises, and debt crises (see also Goldstein 2007; Bordo 2006, 2008; Reinhart and Rogoff 2009, Part I).

Currency crises are viewed as being caused either by weak economic fundamentals or certain government policy actions, self-fulfilling expectations of market participants, and possibilities of multiple equilibria, or they are viewed as a run on a currency or a financial panic (see, among others, Krugman 1979, 1997, 1999; Obstfeld 1996). Attention has been drawn to the importance of balance sheet effects for the sustainability of a currency target. Measures of real exchange rate overvaluation, external imbalances, foreign exchange reserves and export growth are explanatory variables for currency crises (Catao 2006, Catao and Solomou 2005). For identifying the period of a currency crisis event, in my empirical work I have based myself upon the following definition: a currency crisis is defined as a speculative attack on the exchange rate, resulting in a sharp devaluation or depreciation within a given year in the case of a flexible rate regime, or in a large outflow of the country’s foreign reserves, accompanied by a forced abandonment of an exchange rate commitment in the case of a fixed rate regime.

In the case of banking crises, attention should be paid to the special features of banks, such as maturity and currency transformation and asymmetric information. These features make banks vulnerable to runs and collapses following adverse shocks of either domestic or external origin. Theory and practice provide us with four typical sources of bank failures: imprudent credit policies, imprudent investment policies, poor asset-liability management, and bank panics.

Bank runs have been modelled as asymmetric information problems between depositors and banks, random manifestations of mass hysteria, or self-fulfilling expectations of depositors (Kindleberger 1978, Diamond and Dybrig 1983). Hence, banking crises encompass both liquidity and solvency crises. A bank is illiquid when it is not able to meet short-term expected and unexpected obligations when they fall due. A bank is insolvent when its liabilities are greater than the value of its assets. As long as profits are sufficient to cover loan loss provisions, the level of bank capital and its capital adequacy ratio remain unchanged. However, when profits fall short, the amount of the bank’s capital declines. To sum up, real economy disturbances may adversely affect the banks’ loan portfolio (credit risk); bubbles in equity and bond markets often collapse and destroy the value of the banks’ securities portfolio (market risk); and exchange rate disturbances induce interest rate changes which change the position and the slope of the yield curve (exchange rate and interest rate risk).

In my analysis, I identify banking crises as periods of severe difficulty, either because of a severe liquidity shortfall, and/or a reduction of the banks’ capital position. In twin crises, both currency and banking crises occur together. Severe currency volatility results in a sharp rise in the risk premium and the interest rates, thus making banks and corporations face increasing lending costs. Furthermore, currency mismatches bring to the surface serious weaknesses in the banks’ balance sheets.

A debt crisis is a situation in which the country either has sizeable arrears of principal and/or interest on its obligations to its lenders, or in which there is debt restructuring or debt repudiation with commercial creditors (Detregiache and Schimmelberg 2001; Manasse, Roubini and Schimmelpfennig 2003). In other words, a debt crisis occurs when investors conclude that the debt ratio has become unsustainable.

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5 It should be noted that the taxonomy of crises in categories is a rather difficult task, since every crisis event is a specific historical episode associated with certain period and country features. However, a taxonomy of crises might be helpful in identifying the incidence and the frequency of crisis events across different time periods and different country samples for the same time period.

6 A liquidity crisis can become a solvency crisis, since the liquidity and the solvency position of a bank are clearly interrelated. For example, the information that a bank is illiquid will cause a wholesale deposit run, which will spread to retail deposit withdrawals. Ultimately, the illiquid bank becomes insolvent, since it will have to resort to using insufficient capital resources to meet all of its obligations. For a textbook view of the relationship between liquidity and solvency, see Casu et al. (2006).

7 It is a currency mismatch when an entity’s net worth and net income are not well hedged against a change in the exchange rate. Excessive debt exposure and holding insufficient foreign exchange reserves exaggerate currency mismatch between local currency reserves and hard currency denominated liabilities. Bordo and Meissner (2006a, 2006b) have found that currency mismatch is a robust determinant of financial crises both in the pre-1914 and the post-1980 eras of globalization.
Thus, debt crises might be better explained by economic factors that measure the weight of domestic and foreign debt, the amount of debt service obligations, or the ability of a country to generate sufficient resources to meet these obligations. In emerging market economies, currency crises are closely linked to the probability of sovereign default, in the sense that a currency crisis increases the probability of fiscal distress. It will activate currency mismatches that result in a ‘balance sheet crisis’ both for the government and the private sector.

In general, a sovereign country’s negative decision on its debt obligations may have two forms: repudiation and rescheduling. ‘Debt repudiation is an outright cancellation of all current and future debt obligations by a borrower […]’ [while] debt rescheduling is the change of the contractual terms of a loan such as its maturity and interest payments’ (Saunders and Cornett 2003, 398). Rescheduling has been the most common form of sovereign risk events in the period after World War II, whereas a large proportion of debt problems were met with repudiations before World War II (Eichengreen and Portes 1987). This difference in behaviour is explained by the fact that before the war most international debt was in the form of foreign bonds, while after the war debt was in bank loans. However, in the present era of globalization, bond financing is again the main instrument of sovereign borrowing. This is clearly a similarity to the earlier era of ‘golden’ globalization. Finally, a third generation crisis or a ‘balance sheet crisis’ is defined as a twin crisis accompanied by a debt crisis.

Apparently, to analyse financial crises we need a ‘minimal structure’ around which historical observations can be placed (Eichengreen and Portes 1987). This structure is thought to be made up of four elements: (1) It consists of a chain in a financial crisis. Linkages run from exchange rate disturbances to debt defaults and bank failures, and eventually to the real macroeconomy. (2) The propagation of the disturbance and the probability of its turning into a generalized crisis are influenced by the specific institutional character of the country’s financial system. How well do the banks manage risk? Are they supervised and regulated by an independent authority or not? (3) The government should be actively involved in creating a regulatory framework that insulates the banking system and the real economy from a shock. And (4) there is a need to link monetary stability with financial stability. Exchange rate and monetary arrangements influence both the volatility of the exchange rates and the interest rates. In the context of the so-called ‘balance sheet approach’ to financial crises (Goldstein 2007, Borio 2004, Beim and Calomiris 2001, Allen et al. 2002), a financial crisis can be considered a chain, drawing attention to the fact that a crisis can emerge from weaknesses in banks’ balance sheets, vulnerabilities in corporate and household balance sheets, and problems in the government’s balance sheet (see Chart 1).

3. The pattern of financial crises: The Greek case

The pattern of financial crises in Greece is shown in Figures 1 and 2. Figure 1 shows the frequency of crises measured as percent in total, where I divide the number of crisis events that occurred in each sub-period. The data set is separated into five different sub-periods: the years prior to 1880, the gold standard period (1880-1913), the interwar period (1919-1939), the Bretton Woods period (1945-1974), and the most recent period (1975-2008). As can be seen, in the period before World War I the predominant form of crisis were currency crises, followed by banking crises, although debt crises were the second-most

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8 International bank lending made renegotiation easier and less costly for a number of reasons: (1) The number of foreign investors in any international lending syndicate was very small compared to the thousands of geographically dispersed bond holders, and thus an agreement on the changes in the contractual terms of a bond was more likely to be reached. (2) In bond financing debt is no longer heavily concentrated among relatively homogenous international banks, but is held by a diverse group of financial investors who may be focused more heavily on rates of return, rather than on establishing a long-term lending relationship with a sovereign. (3) Governments and regulators in advanced lending countries consider the economic and social costs of a default on a sovereign borrower or a repudiation of its debt contracts more important than those on bond loans, because bond defaults are likely to be geographically and numerically more dispersed in their effects. Therefore, it is more likely for lending governments to bail out countries and indirectly provide liquidity to financial investors so as to reduce the probability of repudiation and thus increase the probability of renegotiation or rescheduling.

9 The chain can begin anywhere in the crisis circle. In particular, a financial crisis occurs when a shock exposes the vulnerability of one or more sectors in the economy and thus the demand for financial assets sharply declines. For example, investors and creditors can lose confidence in the government’s ability to service its future debt obligations. The resulting capital outflow leads to increasing balance sheet problems. As foreign investors pull out of the country, the exchange rate comes under pressure. Interest rates increase due to a higher risk premium or due to the efforts of the monetary authorities to slow down capital outflow. The sharp fall in the exchange rate and the rise in the interest rates mean that banks, households and corporations face increasing lending costs, and that their debt obligations in local currency increase notably.
frequent type of crisis before 1880. Before 1913, currency crises accounted for more than half of all crisis events. On the contrary, banking crises predominated in the interwar years; they account for more than two-thirds of the total events. The pattern of crises did not change notably after World War II. Currency collapses remained the most frequent crisis event, followed by banking crises, while no debt crisis event occurred during that period.\footnote{This finding is not in line with the evidence presented in Bordo et al. (2001) and Bordo and Meissner (2006a), who found that banking crises in both industrial and emerging economies predominated before 1913, while currency crises prevailed after 1945. The different Greek pattern might be explained by the fact that the country experienced a large number of exchange rate regime switches before 1913. The switch to an abnormally inconvertible paper currency was the government’s response to several military events. For an analysis of how excess government spending threatened the viability of the gold standard regime in Greece, see Lazaretou (1995).}

There also is no evidence of a twin crisis, while a third-generation crisis occurred only once, in 1932.\footnote{In 1932, a debt rescheduling, a banking crisis, and a currency collapse occurred together.}

Figure 2 shows the frequency of crises measured as percent per year; the years in crisis are divided by the total number of years in each data sub-sample. The figure suggests that, with the exception of the interwar period, crises appear to be more frequent after World War II. Surprisingly, the crisis frequency of 36.7 percent during the Bretton Woods period is much greater when compared to 17.7 percent in the period after 1975, while it is cut only in half compared to the most unstable period of the interwar era (71.4 percent). Another interesting point to be stressed here is that the frequency of crises was much lower in the early era of globalization before 1913, when compared to the post-1975 era. Finally, as expected, all types of crisis show the greatest frequency during the interwar period, confirming that the interwar crisis event still remains the ‘mother’ of all subsequent historical crisis episodes.

It may be interesting to compare the Greek crisis experience in the two eras of ‘finance capitalism’—that is, pre-1913 and post-1975. Then, improvements in technologies of communication and transfer—for example, the transatlantic telegraph cable in the late 1860s, which was the only way to transmit information across oceans—reduced the cost of money and goods transformation, thereby contributing to greater economic integration. Both periods are very similar to each other in many respects, but very distinct in others. Clear similarities are the use of bond financing as an instrument of sovereign borrowing and the high degree of world capital and goods market integration. However, a stark difference is the post-1975 strong increase in financial leverage, caused by the decoupling of money and credit aggregates. This means that after 1975 banks funded growth mainly through non-monetary liabilities, and thus their role in credit creation via bank loans is of great importance (Schularick and Taylor 2009).\footnote{More importantly, the decoupling of money and credit aggregates offers support for the ‘credit view’ supported by Bernanke, Getler and Gilchrist (1999), against the ‘money view’ supported by Friedman and Schwartz (1963).}
A closer look at the 1890s crisis episode and the current crisis event reveals that financial instability in Greece has been largely credit-driven. As Reinhart and Rogoff (2008) have argued, periods of financial distress have been associated with economic downturns and typically follow waves of domestic and international credit expansion. Figures 3 and 4 tell us of this story. Figure 3 plots the ratio of bank private credit to GDP over the pre-World War I period; this ratio shows the importance of the main function of the banks, namely channelling savings to investors. The data refer to bank gross loans to firms and households gathered by the balance sheets of eight domestic banks with a long presence on the Greek money market. Based on a simple inspection of the data, two periods of soaring credit can be easily detected. The first one took place from the mid-1870s to the early 1890s, and the second one from 1898 until the outbreak of World War I.

Systematic attempts to industrialize the country can be dated to the last quarter of the nineteenth century. The economic policy of the governments placed emphasis on the development of the private sector and the introduction of new technology to the production process, with parallel attempts to free the economy from stifling state control. It was at this time that first efforts were made to create infrastructure, which helped to modernize the country as well as to restructure the economy. During that period, agricultural production increased, industry was introduced, trade developed, credit grew rapidly, and the number of functioning banks rose. New banking products appeared, such as mortgage-backed loans, mortgage-backed credit lines, and long-term bank bonds. Rich Greek emigrants were attracted by the high deposit rates and kept their money in Greek banks.13 Moreover, the country’s modernization and the implementation of many large public works attracted foreign private investment capital. Foreign and Greek businessmen heavily invested in residential and commercial properties, as well as in portfolio investments.14 A lending boom soon occurred,15 which made land and resource prices soar.

Figure 1: Crisis frequency (percent in total)/

Note: A currency crisis is identified as a year when there was either a forced abandonment of an exchange rate commitment, an official depreciation, or an abnormally large devaluation of the value of the exchange rate in a given year. A debt crisis is identified as a year when government debt repudiation or restructuring occurred. A banking crisis is identified as a year when either a wide-spread deposit bank run occurred, banks went bankrupt, or when they asked for bailout when the function of the lender of last resort was activated to confront a wholesale or a deposit bank run. Isolated events are not taken into account, but only the year when the event took place, excluding the years of oncoming or ongoing crises. See also Table A in the appendix.

13 The return on bank deposits was much higher than those prevailing in the world money market. The return on savings deposits was set to 5.5-6 percent annually and the rate on time deposits to 3-5 percent.
14 A common feature of all rich Greeks of that time was the purchase of land and construction activity. As a result, real estate prices soared. Mine bonds were also bid up to above the fundamental prices.
15 In the 1880s private credit grew by a factor of two when compared to the previous period. A peak in credit occurred in 1885-1886. This was the year when the country adopted, albeit sporadically, the gold standard.
Economic growth in the 1880s was based on cheap and easy foreign lending. After the country’s foreign debt compromise in 1878-1879, Greek government bonds were again traded on the London stock market, and the governments started to heavily borrow from abroad to cover excess spending, both consumption and investment. During that period, the country’s creditworthiness was rebuilt, since the governments considered the gold standard as a ‘good housekeeping seal of approval’ along the lines considered by Bordo and Rockoff (1996), in order to improve the country’s access to the foreign capital markets and in order to attract cheap lending (Lazaretou 2005). Ultimately, the government accumulated an enormous external debt burden with gold clauses that triggered its ability to repay it, and thus the currency was pressed by a heavy speculation attack. In 1895, the spot exchange rate almost doubled.

With the successful rescheduling of foreign debt in 1898, a second period of soaring credit was put in motion. This time the credit increase was strong and rapid: the ratio of bank loans to GDP grew by a factor of four, reaching a peak in 1910-1911, when the country credibly joined gold after a long, painful
process of effective fiscal adjustment and monetary restraint. Key driver was the rapid output growth that the country generally experienced in the years prior to World War I. Export trade increased mainly after 1905, and the growth of domestic production accelerated. The shipping industry marked considerable progress, expanding its activities to the transit trade of third countries. Greater economic activity brought with it an increase in the number of commercial banks. The country’s international credit standing was rebuilt, resulting in foreign capital inflow.

In the current era of financial capitalism, soaring private credit has also been the key driving force. As seen in Figure 4, the ratio of private bank loans to GDP soared in the few years prior to the current crisis. While in the 1990s the mean rate stood at very low levels (36.6 percent), in the first half of the 2000s it quickly soared to 54.4 percent. Thereafter, it increased even more rapidly, approximating 84 percent in 2008 and 81 percent in 2009, becoming twice as high as in 2000. Lending became very cheap and easy, just after the country’s entrance into the Euro zone, soon resulting in a ‘liquidity overhang’ that triggered an asset price bubble and a consumption and investment boom. However, in the wake of the international crisis in 2008, a bust soon followed, resurfacing the country’s structural inefficiencies—such as excess public indebtedness, a sharp enlargement of both the current account deficit and fiscal deficit, and a heavy loss in the country’s international credit standing (Bank of Greece 2010).

4. What went wrong? The economic and financial environment

With the help of some simple descriptive statistics and using the Greek case as a working template, in this section I will highlight the key driving forces of emerging market crises. My interest is focused on the pre-1913 golden era of globalization. This era was characterized globally as a period of a low frequency of crises events. During that period, crises were phenomena observable in emerging rather than advanced countries. This was because emerging market economies lacked a sound institutional framework and had not learned to follow successful policies within that framework. This framework includes sound fiscal and monetary institutions, as well as regulation and supervision authorities. This is what Caballero et al. (2004) have named ‘country’ and ‘currency trust’. In particular, sound fiscal institutions mean the existence of an efficient tax system, the avoidance of excessive public debt exposure, and the credible commitment to balance the budget. Sound monetary institutions include the credible adherence to the classical gold standard, by holding sufficiently large gold reserves to minimize a currency mismatch between hard currency liabilities and domestic currency revenue.

Figure 4: Credit soaring in the current era of globalization, 1950-2009 (percent to GDP). Source: See appendix.

Note: This chart refers to total bank credit, i.e. loans to firms and households. Yearly averages are calculated by using a five-year rolling window. End-of-year data.

16 By contrast, the interwar crisis was largely a phenomenon in advanced countries, mainly attributed to key errors in policy and regime choice in the advanced world. The Bretton Woods collapse as well as today’s crisis can also be considered as such.

17 An economy has ‘country trust’ when foreign investors have confidence in the underlying soundness of the country’s monetary and fiscal institutions; it has ‘currency trust’ when the government credibly adheres to its commitment to a nominal anchor.
The advanced countries of that time had developed a sound and solid institutional framework that allowed them to manage crisis episodes successfully. They had developed financial markets, which had largely overcome the problem of asymmetric information, and they had efficiently channelled savings to productive investment. They enacted balanced fiscal policies and non-accommodative monetary policy targeting the fixed rate. They operated within the framework of globalization with free trade, free capital, and labour movements. They had successfully established important institutions such as a legal system to protect property rights and constitutional democracy, which greatly supported financial growth (Bordo and Rousseau 2006c).

By contrast, emerging countries of that time were in the process of developing fiscal and monetary institutions. They faced a more turbulent financial environment and experienced long periods of political instability. This in turn meant that they were prone to the occurrence of crises and that they had not learned to deal with them. What were the ‘risk factors’ for them? In the era of *laissez faire laissez passé*, excess saving in the advanced world flew towards the then poor peripheral countries.\(^{18}\) The massive capital inflows boosted asset prices in the emerging countries, particularly of land and unexploited physical resources, and fed a credit and growth boom. Inflows were accompanied by high budget deficits and government debt accumulation. In conjunction with an accommodative monetary policy, inflows fuelled domestic inflation and fed speculative attacks on the currency. The real burden of debt (both private and public) soared, asset prices failed, and lending went bust. Ultimately, the government and the banks faced a balance sheet crisis.

As we saw in the previous section, the Greek record of financial crises verifies the story outlined above. What was the economic and financial landscape that made an ‘em merger’ like Greece more vulnerable to crises?\(^{19}\) (1) Pre-World War II Greece was a poor agricultural economy;\(^{20}\) it financed its growth process through heavy foreign lending. (2) Capital inflows were attracted by higher returns on land and other resources and led to lending booms. Booms were accompanied by fiscal expansion, financed by money creation and government debt accumulation. However, the interplay between fiscal imbalances and monetary disturbances resulted in frequent convertibility crises. The country responded to the speculative attacks on the currency by adopting, if only occasionally, the gold standard as ‘a good housekeeping seal of approval’. This enabled the country to continue attracting cheap foreign capital. (3) The country was prone to a debt crisis when the domestic economy collapsed as consequence of a lending bust. This was because the country’s fiscal and monetary institutions were extremely fragile. The governmental financial system was weak due to the inherent structural inefficiencies and the frequent external spending shocks, such as wartime emergencies. In particular, the tax system, based largely on indirect taxes and custom duties, was procyclical. Thus, the governments were unable to raise sufficient tax revenues to service the debt. Further, monetary policy was loose and accommodated fiscal policy.\(^{21}\) (4) The country suffered from ‘original sin’, as it has been put forth by Eichengreen and Hausmann (1999) and Eichengreen et al. (2003). That is, it was not able to borrow abroad or even at home in terms of its own currency; debt issue required gold or exchange rate clauses. This in turn meant that in the case of a nominal currency devaluation, the debt burden soared, increasing the likelihood of the government’s default on its outstanding debt, with certain repercussions adversely affecting the quality of the balance sheet both of the banks and the private sector. As a result, risk premia rose. (5) The country had the experience of ‘sudden stops’. Sudden stops were a common feature in the economic history of emergers (Catao 2006, Bordo et al. 2010). Every time the economic and financial circumstances in the advanced lending countries changed and thereby led to a cut-off of cheap capital inflows to the emerging economies, the latter soon faced a balance of payments crisis and a debt crisis. This was exactly the case

\(^{18}\) For today’s crisis, world-wide excess liquidity was also the main risk factor, resulting in lower interest rates, inducing more risk-taking, and contributing to the creation of asset price bubbles, both financial and in real estate. This time capital flew from economies with a large current account surplus, such as China and India, towards the advanced countries that were in deficit (for instance, the US) and generated an enormous demand for financial assets.

\(^{19}\) A comparison of crisis frequency between Greece as an example for an emerging country and advanced countries reveals that the majority of crisis events occurred in emerging economies. For Greece, one can find a crisis frequency of 14.7 percent per year for the years prior to 1913; it exceeds by a factor greater than three the crisis frequency of less than 4 percent per year for advanced countries, as the latter has been addressed by Bordo et al. (2001) and Bordo and Meissner (2006b).

\(^{20}\) Per capita income was less than half of the combined average of the most advanced countries.

\(^{21}\) It has been shown that monetary base variations were the proximate determinant of the money supply movements, explaining more than 80 percent (Lazaretou 2008).
of a sudden stop event that Greece experienced in the early 1890s and again in the early 1930s. (6) The country was financially less developed; financial depth measured as the ratio of bank assets to GDP and/or broad money to GDP exhibited a positive long-term trend, even though it was relatively weak and excessively volatile. Throughout the whole sample period from 1846 to 1939, banking intermediation as measured by both indices stood at very low levels: it was on average 51 and 37.7 percent, respectively.

The data strongly support the historical accounts. Figure 5 shows the pattern of gross capital inflows to Greece based on Stone’s portfolio calls on London data from 1870 to 1913 (Stone 1999). Due to a lack of data, portfolio calls on London can be considered a proxy for foreign capital inflows to the country, since London was then the most important lending centre for emerging economies. As is evident, the time series seems to be stationary, although it was extremely volatile. However, an upward trend was present from 1879 to 1890. Gross foreign capital inflows pointed to a peak in 1898, 1903, and again in 1910. Following the same working definition as in Catao (2006, 7), I define a sudden stop as a drop from peak to trough of no less than two standard deviations of the deviations of the respective series, from a linear trend and/or any drop that exceeds 3 percent of GDP over a period shorter than four years. Based on this definition, the figure clearly shows a significant rise in the second half of the 1880s and a sudden drop in the 1890s. This pattern is in accordance with the average pattern of capital inflows for a large panel of emerging countries during that period. Precisely, three episodes of sudden stops can be detected and are denoted in the shaded areas: 1881-1883, 1890-1897, and 1911-1913. The second episode was associated with the 1893 debt repudiation.

Figure 5: Gross portfolio calls on London, 1870-1913 (million of pounds). Source: Data by Stone 1999.

Note: Sudden stops are in the shaded areas.

Figure 6 shows the pattern of sovereign bond spread over the period between 1870 and 1914. The bond spread is measured as the difference between the Greek bond yield and the British consol yield. Although it shows a declining long-term trend reflecting a greater world-wide financial market integration, it sharply increased above its trend in the years of a sudden stop, especially in the years when a sudden stop was followed by a debt crisis, as was the case in the 1890s.

22 The ratio of assets to GDP illustrates the importance of bank services relative to the size of the domestic economy. The ratio of broad money to GDP reflects the size of the country’s banking system.
23 Application of the standard tests for stationary verifies the above conclusion.
24 See, for example, the case of Latin American and Asian countries (Catao 2006, Bordo 2006).
25 Although the first episode does not satisfy the first precondition of the working assumption—namely, the drop (1.3 million pounds) is less than two standard deviations of the deviations of capital inflows from its linear trend (1.5 million pounds)—it still amounts to more than 9 percent of GDP in a two-year period and thus is taken into account.
26 The data are from Obstfeld and Taylor (2003).
Figure 6: Greek sovereign bond spread, 1870-1914 (percentage points). Source: See appendix.

Note: Greek gold bond yield minus British consol yield; percent per annum.

Figure 7 depicts the time series behaviour of the nominal and the real exchange rate of the drachma against the British pound. For the larger part of that time, Greece did not adhere continuously, but only partially, to the gold standard. As shown, the country experienced high depreciating rates during sudden stop episodes. The most notable example is the episode of 1890-1897. The drop in capital inflows was accompanied by a sizeable depreciation in nominal terms between 1892 and 1895. The nominal value of the currency rate peaked in 1895, two years after the 1893 debt crisis. Depreciation was also sizeable in 1886, followed by the sudden stop event of 1881-1883. Following Catao (2006), I define a currency crash as nominal exchange rate depreciation greater than at least one standard deviation of the annual percentage change of the spot exchange rate of the drachma against Pound Sterling over the period between 1885 and 1914. I also assume that this depreciation was not fully reversed within a three-year window. Based on this working assumption, I date four such events: 1886, 1892, 1893, and 1894.
Figure 7: The nominal and real exchange rate of the drachma against the British pound, 1885-1914. Source: See appendix.

Note: Cc = dates of the currency crises. Sudden stops are in shaded areas. Spot rates, yearly averages. LHS = real (1887-1914), RHS = nominal. The real exchange rate has been calculated as the ratio of British wholesale prices (Sauerbeck index) to prices for basic foodstuffs in Greece, using the bilateral nominal exchange rate as the conversion ratio. The food price index (1866-1877 = 100) has been constructed as a simple geometric average of the relative prices of five traded food products. Since data on quantities consumed are not available, a Laspeyres index cannot be calculated. Moreover, as Fisher (1927) and Mitchell (1938) have pointed out, the simple geometric average has the advantage of smoothing the time series of prices with regard to extreme values. This is very important in the case of food products, because their prices exhibit high volatility. Pre-1914 official data for a price index do not exist. The data for the Sauerbeck index have been taken from the *Journal of Royal Statistical Society* and Grilli and Kaminsky (1991).

Figure 8 depicts the evolution over time of the real GDP per capita. In the same figure, the incidence of crisis events is also indicated and the sudden stop episodes shaded. One can notice that sudden stops and crisis events were associated with notable drops in the level of the real GDP per capita. Figure 9 shows output losses associated with each sudden stop event. Following Adelet and Eichengreen (2005) and Bordo (2006), output loss is measured as the change between the average growth rate three years before the crisis and the average growth rate three years after the crisis. A three-year growth average is considered to serve as proxy for the trend growth. As seen, the sudden stop episode of 1890-1897 was associated with a considerable output loss.

27 However, the 1881 and 1912-1913 reductions in the real GDP per capita were largely determined by a sharp increase in the country’s population in those years, as the result of the country’s territorial enlargement.
So far, the inspection of the Greek historical data has indicated that drops in foreign capital inflows were associated with currency crises and debt crises. These fluctuations in capital flows were largely determined by external shocks, such as a change in the central bank rate of the lending countries. For example, the 1890-1897 crisis in Greece can be considered the outcome of an array of adverse shocks in the international economic and financial environment, which worried foreign creditors who, until the late 1880s, were generously supplying cheap loans to emerging economies without any guarantee and at low interest rates. Specifically, the lending boom of the 1880s ended suddenly in 1890-1891, when the advanced lending countries stopped lending as economic conditions in advanced Europe gradually improved and investment opportunities reappeared. The core countries’ central banks responded by increasing their discount rates, which caused a massive slowdown in investment abroad.

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28 Specifically, Argentina’s crisis in 1890—associated with a sharp decline in foreign capital, default on external debt, and a revolution—was a major shock to British investor confidence and precipitated the Baring crisis in London in 1890-1891 (for details, see Eichengreen 1992, della Paolera and Taylor 2001). At the same time, the Sherman Silver Act in 1890 led to a period of uncertainty surrounding US ability to remain on gold (Friedman and Schwartz 1963, Grilli 1990). A year later, in 1891, Portugal’s credit standing began to suffer. Government support for failing Portuguese enterprises caused a heavy burden on the budget and, in conjunction with an increase in the ratio of debt service payments to tax revenues, made suspension of convertibility and debt default inevitable (Reis 1992).
However, external shocks affected emerging countries differently. Country-specific factors closely related to fiscal, monetary and financial behaviour were the key drivers of this effect. Figure 10 shows the trend of the fiscal and monetary policy indicators over time. One can observe that fiscal behaviour as proxied by the ratio of total government spending to total tax revenues is generally lax, noticeably cyclical without however exhibiting a long-term trend. Sudden stop episodes and currency crashes were preceded by periods of high expenditure, which were accompanied by rapid monetary expansion as shown by the ratio of M3 to GDP. The ratio doubled between 1870 and 1880 and tripled between 1885 and 1890. As a result, a concomitant sharp drop in the international reserve coverage of the domestic currency occurred, implying that the country’s monetary authorities were no longer able to adhere to the specie convertibility rule. Further, by regressing the cyclical component of real government expenditure on the cyclical component of real GDP,\(^{29}\) bivariate regression estimates verify the well-known conclusion that in countries that experience currency crises fiscal policy is procyclical.\(^{30}\) A procyclical response of fiscal policy to the business cycle means that during cyclical upswings fiscal policy exacerbates imbalances, which in turn causes nominal exchange rate depreciation and a drop in the reserve coverage of the monetary base.

\(^{29}\) The cyclical component is measured as deviations from a log linear trend. The regressor coefficient takes a positive and statistically strongly significant value.

\(^{30}\) The estimates are available upon request.
Figure 10: Fiscal and monetary policy stance indicators, 1870-1914. Source: See appendix.

Note: Percent per annum. The ratio of spending to revenues is measured on the right hand axis.

Figure 11 plots the M3 multiplier—that is, the ratio of broad money (M3) to monetary base (M0). It corroborates the view that monetary expansion played a significant role in aggravating currency crises during sudden stop events. As with the ratio of broad money to GDP, domestic bank credit as proxied by the M3 multiplier is also cyclical throughout the period under study. From the turn of the century, however, it exhibited a strong upward trend, as the result of the country’s rapid financial development process that started in those years.

To recapitulate, in the pre-1913 period Greece experienced sudden stops in foreign capital inflows, accompanied by currency and debt crises. Country-specific factors were the key driving forces of this effect. Indeed, as the data show, all crisis events were preceded by periods of fiscal laxity, rapid monetary expansion, and limited reserve coverage of domestic money.31

31 Probit estimates strongly support the above conclusion. Crisis predictor coefficients on m3/y, reserves/m0, and spending/reserves are shown to be statistically significant in spite of the small number of crisis events.
5. The role of learning: The regulatory regime

Let us now turn to the role of learning. What has the country learned from its past experience in financial crises so as to improve institutions? What have we learned about banking supervision in Greece? Has the Greek financial system been regulated? Were financial crises followed by changes in the regulatory framework in order to prevent future crisis events? What was the role of the country’s central bank? In this section, I try to answer these questions. Specifically, I will deal with the evolution of the regulatory regime, placing emphasis on the post-crisis regulatory responses that changed the institutional determinants.

The country’s long record of crises illustrates several interesting points: (1) As seen in the previous section, financial crises were a common feature of the country’s economic and monetary history. (2) With the exception of the interwar years, banking crises were not common; this might explain why banking regulation was not crisis-driven. (3) Crisis events left their mark on the weak fiscal position of the country, which fed speculative attacks on domestic currency, thus causing debt and exchange rate crises. (4) Financial crises were not always followed by changes in the regulatory framework. (5) A full and effective prudential regulatory regime was introduced for the first time as late as 1931; this was the immediate response of the government to the impact of the 1929 crash. Until then, banking regulation was absent. (6) The country’s central bank, the Bank of Greece, did not even once act as a lender of last resort.

5.1 The rationale

Broadly speaking, there is no clear-cut definition of the term ‘regulatory framework’ or ‘regulatory regime’. In practice, regulatory rules are rather the outcome (that is, the product of a compromise) of a conflict game between the regulated entities and the regulating principle. There may be also a significant divergence between the rules and the actual practice of regulated entities, resulting in an ineffective or weak enforcement of regulation. Therefore, regulation changes might predate crises. However, when reading the world history of financial crises one may conclude that governments, in principle, used to act according to ‘a learning by crisis procedure’. Explicitly, in an attempt to make the system more crisis-resistant, governments always made significant reforms after the occurrence of a generalized crisis, concerning the improvement of the structure, the regulation, and the supervision of commercial banking. This is a common practice following a major crisis, whether economic or non-economic.

For both the advanced world and developing economies, banking regulation and supervision were absent in the long nineteenth century. This was because the world money and capital markets were dominated by the laissez faire laissez passé principle. Economic thought and policy were also largely dominated by the same principle. It was not until the wake of the great crash of 1929 and the wide-spread bank panics and failures in the early 1930s that strict legislation was adopted by almost all countries that participated in the then prevailing international monetary system.

Nowadays, nations and international organizations have built a highly sophisticated system of financial monitoring. However, as the current crisis episode has demonstrated, it totally failed since it suffered serious deficiencies (de Larosière 2009). Many mutually reinforcing factors contributed to increased systemic risks: (1) Many consider that ‘liquidity overhang’ was the main challenge that central banks faced during the last decade (Bernanke 2005, 2009, Krugman 2009). (2) Structural changes and innovation in the financial sector weakened risk management practices and increased leverage (Sacasa 2008, Blanchard 2008, IFS 2008, FSF 2008, and Borio 2007). And (3) shareholders and managers were...
characterized by destabilizing incentives. In other words, they increased short-term returns on equity by increasing leverage and being exposed to high risks (Rajan 2005, 2009). Further, when they acted in this manner, they disregarded systemic risks. Therefore, for central bankers the main challenge ahead is ‘to rush in like fire-fighters and at the same time to be as vigilant as policemen’ (Nowotny 2009).

It is widely accepted that banks play a pivotal role in the economy. They channel funds from units in surplus to units in deficits. They transform small-size, low-risk and highly liquid deposits into loans which are of larger size, higher risk, and illiquid. The reasons for their existence are related to their task of monitoring borrowers, producing information, transforming liquidity, and facilitating consumption. Their existence is also related to their role as a commitment mechanism for prudential behaviour—that is, ensuring that banks hold sufficient liquidity and capital resources. Information costs and information asymmetries due to imperfect distribution of information among different parties give rise to adverse selection and moral hazard problems. Through their ability to collect information, banks can reduce these problems and channel funds to highly productive investments, thus stimulating economic growth.

However, due to the fact that depositors cannot adequately monitor bankers’ action, banks create a new type of asymmetric information. Regulation is therefore justified, since it is delegated the task of monitoring of banks and thus protecting depositors. Mishkin (2001) has limited nine basic forms of prudential supervision of banks: (i) restrictions on asset holdings and activities; (ii) separation of banking and other financial service industries; (iii) restrictions on competition; (iv) capital requirements; (v) risk-based deposit insurance premia; (vi) disclosure requirements; (vii) bank chartering; (viii) bank examinations; and (ix) a supervisory versus regulatory approach. More recently, White (2009) has also identified nine basic forms of policy intervention to deal with asymmetric information problems: (i) controls on entry; (ii) capital requirements; (iii) limits on economies of scale; (iv) limits on pricing; (v) liability insurance; (vi) disclosure requirements; (vii) bank examination; (viii) limits on economies of scope and diversification; and (ix) bank supervision and enforcement. Both Mishkin (2001) and White (2009) have argued that these policy interventions are needed to reduce the asymmetric information problem which affects financial markets. Thus, policies that enhance the effectiveness of the above-mentioned forms of prudential supervision will preserve the safety and soundness of the financial system.34

However, history has shown that there is no optimal regulatory regime to prevent crises and preserve financial stability. As Calomiris and Gordon (1991) have argued, banking and capital markets are in continuous transformation due to technological change, making the task of designing an effective regulatory framework extremely difficult. Furthermore, Barth et al. (2001) have shown for a sample of sixty countries that, in some cases, tighter forms of restrictions are associated with a less stable financial system.

### 5.2 Banking in Greece during the unregulated era

The Greek banking system was typically characterized by multiple-issue banks, while a central bank was totally absent until 1928.35 The country’s quick banking development after 1900 was based on inadequate capital and the complete absence of a regulatory framework.36 The high rate of economic activity at that time increased money transactions as well as the demand for money and caused an enlargement of the banking system.37 These favourable developments continued in the early 1920s. They were mainly driven by three forces: (1) the sudden and rapid increase of the country’s population in 1922-1923 augmented domestic consumption and output demand; (2) bank deposits sharply increased due to a massive money creation in the first half of the 1920s; and (3) the strong devaluation pressures on the drachma due

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34 Comparing Mishkin’s and White’s classifications, Giordano (2009) has proposed twelve possible regulatory instruments. Her classification is based on a clear ‘separation of regulatory instruments from the objectives they are designed to achieve and from the effects they actually produce’ (245). These are: (i) restrictions on entry and on dimensions; (ii) regulation on ownership and control; (iii) restrictions and directions on activities and asset holdings, (iv) price regulation; (v) capital and liability requirements; (vi) deposit insurance; (vii) regulation on compensation and insurance schemes for managers and directors; (viii) accounting standards; (ix) disclosure to authorities and on-site examinations; (x) disclosure to the public; (xi) regulation on organization, risk management and corporate governance; and (xii) enforcement of the regulation.

35 The country’s financial system made its start with the inception of the National Bank of Greece (NBG) in 1842. It was created and functioned as a ‘universal bank’ that served as a deposit and discount bank, as well as a provider of short- and long-term credit. At the same time, it was an issue bank. Earlier attempts to operate a banking institution dated to the early 1830s, but failed.

36 Until 1900, only four out of 23 credit institutions remained active.

37 From 1900 to 1914, seven new banks operated; some of them proved to be the most trusted and long-lived financial institutions of the country.
to high inflation not only increased exports but, more importantly, reinforced speculation on the currency. The abnormal fluctuations of the drachma exchange rate against the British pound during those years caused large discrepancies between buying and selling prices. Speculative attacks on the currency were strong, frequent, and excessively profitable. From 1918 to 1927, a large number of banks, 46 in total, were created just to exploit these profits. However, very few managed to survive, while arbitrage profits were minimized soon after the currency’s stabilization in 1926-1927. Most of them were eventually dissolved or went bankrupt in the wake of the 1929 financial crisis.38

The main configurations of the Greek banking system were as follows: (i) numerous small banks co-existed with very few large ones; (ii) they were highly leveraged and poorly asset-liability managed; (iii) they enjoyed monopoly rents; (iv) lending was not well collateralized;39 (v) they were not regulated by an institutional principle; and (vi) there was no a central bank which could safeguard monetary and financial stability and act as a lender of last resort during periods of crisis.

In particular, the excess liquidity in the first half of the 1920s caused a rapid increase in bank deposits. In the absence of a developed capital market and due to the low public confidence in the domestic currency and the high monetary instability, private agents preferred to keep their money with the banks in the form of more liquid investments (e.g., demand deposits), to be able to convert them into a gold-based foreign exchange more easily. Domestic consumption and output demand also increased during that period. Banks accommodated the increase in output demand by expanding short-term lending. As seen in Figure 12, discounts and advances accounted for more than 75 percent of total private lending in 1928. Demand deposits were 60 percent of the total private deposits. At the same time, the ratio of reserves to assets was kept at high levels. The rapid increase in bank deposits, which was not followed by a respective rise in the banks’ equity capital, resulted in a fall of the equity to assets ratio and an increase of the proportion of deposits to equity. As evident in Figure 13, the equity to assets ratio followed a downward movement. The low values of the ratio indicate that the banks were highly leveraged in the sense of a high ratio of deposits to equity. The equity to assets ratio is a measure of capital adequacy;40 low values imply that the bank operates with less equity and more debt.

Figure 12: Deposits, loans, and reserves, 1894-1932. Source: Data based on banks’ balance sheets; Lazaretou 2008.

Figure 12: Deposits, loans, and reserves, 1894-1932. Source: Data based on banks’ balance sheets; Lazaretou 2008.

Note: All banks; * as percent to total private deposits and to total private lending; ** as percent to total bank assets.

38 Between 1917 and 1923, 17 new banks were in service; in 1924, 11 new banks were created; in 1925, eight; in 1926, also eight; and in 1927, two more. In the first months of the interwar crash, 12 banks went bankrupt. By the end of 1932, the banks (both domestic and foreign) that remained active were reduced to 32.

39 Collateral is a stabilizing factor in the banking system. As shown, it is the key determinant of the different growth rates and different development levels reached by various countries. In advanced countries with well-defined property rights and where the commercial value of the collateral is a large portion of the total outstanding loan, the risk premium is lower for a given probability of default since the recovery rate is higher. This in turn induces higher investment and a better use of the country’s savings. However, in less developed, peripheral countries collateral has a low value and property rights are not well-protected.

40 This is an index of capital adequacy in financial and not in regulatory terms. In other words, it measures financial leverage and represents both a profit and risk measure.
Furthermore, a simple inspection of the banks’ balance sheets suggests that the Greek banks were also poorly asset-liability managed in the sense that assets and liabilities seemed to have, on average, the same maturity. This means that they malfunctioned in terms of the transformation of liquidity—which is one of the most important banking operations—and, consequently, they could not enjoy funding profits. Even though the Greek banks could not enjoy funding profits, they still enjoyed high profits as released by the trend behaviour of the returns to equity ratio (ROE). As seen in Figure 13, ROE moved upwards in the first half of the 1920s. Two forces chiefly drove bank profitability: first, high profits derived from the speculation in the currency, and, second, monopoly rents. In particular, the market was characterized by an oligopolistic structure. On the eve of the 1929 crash, 85 percent of the total bank deposits were kept in six banks; four banks held 80 percent of the total equity capital. Bank competition was extremely weak and, in conjunction with interest, inelastic demand for lending and supply of private deposits, the interest rate spread was high enough.\footnote{The discount rate fluctuated between 7.5 and 11 percent. The short-term lending rate was 15 percent or even higher. However, the return on bank deposits was rather low: 3.5-4 percent on sight deposits, 4 percent on time deposits, and 5 percent on savings.}

In summary, the Greek banking system, although it expanded rapidly, was poorly asset-liability managed in terms of liquidity transformation. Greek banks also suffered from capital inadequacy and were highly leveraged. More importantly, they were not supervised by an institutional principle, nor was there a central bank that would preserve monetary and financial stability.

### 5.3 What was the role of the Bank of Greece? The new regulatory framework

Until the end of the 1920s, the domestic banking system was dominated by the National Bank of Greece (NBG), which acted as a commercial and an issue bank. It was by far the biggest player in the domestic money market. However, profit motives and its priority to preserve the convertibility of its banknotes did not allow it to operate as ‘a banker for banks’ and lender of last resort for the domestic money market in times of crisis. Rather, it performed as the Treasury’s bank and, after 1920, as the sole money issuer. Thus, it usually appeared extremely reluctant to take part in rescue operations so as to help other commercial banks in difficulty. As a consequence, monetary tightness usually resulted in real effects, and financial stability could not be preserved. Hence, there was a need to establish a separate and independent issuing institution that would conduct monetary and exchange rate policies. In May 1928, the new central bank, named Bank of Greece, was born.
As a guardian of the gold exchange standard, the new bank should maintain the convertibility of the currency and perform the function of lender of last resort. However, due to the small size and structure of its portfolio, it was not ready to perform the functions of a central bank from the very beginning. Hence, defending the exchange rate of the domestic currency by selling and buying foreign exchange at the official parity was its ultimate function. Its discount rate policy was also unsuccessful. At its very beginning, the bank’s credit policy aimed at facilitating private lending, by lowering the already high market lending rate. However, it did not succeed in lowering it since commercial banks did not face liquidity problems then and the demand for money remained at high levels.

However, the situation changed two years later, in the wake of the 1929 crisis. The 1929 worldwide financial crisis reflected itself in Greece in the form of bank panics, dissolutions, and bankruptcies. The commercial banks that experienced a severe liquidity shortfall turned to the Bank of Greece, asking for assistance and rescue. Unable to meet their liquidity requirements, they attempted to obtain support through the lending of last resort function, asking the central bank to bail them out. The Bank of Greece, however, neither undertook a rescue effort, nor coped with the crisis. Consistent with its primary goal—that is, to maintain the international price of the domestic money stable, by protecting the relationship between banknote circulation and foreign exchange reserves (see Part I, Part II, articles 4, 5, and 61 of its statute)—it continued to implement a strongly anti-inflationary policy. Hence, in the aftermath of the 1931 Pound Sterling crisis it raised its rate by three percentage points, from 9 to 12 percent. Furthermore, its activities as lender of last resort were not explicitly or institutionally specified. Ultimately, credit shortage increased the market lending rate, and the economy suffered from severe recession pressures. Wide-spread bank panics, bankruptcies, and money balances hoarding soon caused a liquidity squeeze in the domestic money market. Money supply measured by M3 aggregate fell by 2.6 percent at the end of 1931, and by 4.9 percent at the end of 1932, whereas in 1930 it had increased by 27.7 percent. The monetary M0 base fell by 15.2 percent in 1931, while in the following year it increased by almost the same rate.

The 1929 crisis, by causing several bankruptcies and a wide-spread bank panic, destroyed the already fragile and vulnerable stability of the domestic banking system and impaired public confidence. More importantly, it demonstrated its key structural inefficiencies and characterized as imperative the need to establish a banking supervisory regime aimed at making the banks more crisis-resistant and at protecting depositors. Thus, in the aftermath of the great crash, in 1931, a rigorous set-up concerning the structure, regulation and supervision of domestic commercial banking was initiated for the first time (see the laws of 30 June and 7 July 1931). As expected, the government acted according to the ‘learning by crisis procedure’. That is, it was actively involved in creating a regulatory framework that would insulate the banking system and the real economy from a shock. The Bank of Greece was defined as the regulatory agency. The Banking Regulation Law has as a key objective to strengthen the banks’ capital adequacy; to impose restrictions on mixing banking and commerce, thus protecting banks from excessive business risk; and to support banking specialization and consolidation. As a result, new specialized banking institutions were established, while the number of the operating small-sized local banks was sharply reduced.

The main features of the new institutional set-up were as follows (see articles 10 to 14 and 16): (1) All commercial banks were obliged to keep reserves with the central bank or in cash to meet excess liquidity demand. The required reserve ratio was initially set to 7 percent of the total bank savings and demand deposits in domestic money kept with the central bank, or 12 percent of the total bank deposits kept in the form of required reserves as vault cash. The reserve required ratio was the most important institutional change, since with this ratio a new tool for monetary control was introduced. Through it, the

42 They did not turn to the NBG as they had used to do in previous crisis episodes, since the latter also faced severe liquidity problems and thus was unable to provide liquidity to other troubled banks.
43 Not until April 1932, when the country followed the US in the dollar’s uncoupling from gold, did the stance of the monetary policy pursued change considerably, by allowing the bank rate to gradually decline. However, this regime change did not last, since a year later, in 1933, the golden constraint was restored by joining the Gold Bloc.
44 Its statute rigorously specified the rules of its credit policy: it was allowed to provide only short-term lending facilities to banks in difficulty via discounted traded bills.
45 This increase was chiefly attributed to the compulsory reserve requirements that, beginning in 1932, all commercial banks should keep with the central bank for prudential purposes.
46 See the Law of 7 July 1931, article 15.
central bank could control more efficiently banks’ lending activities and check their liquidity conditions. (2) Banking activities were strictly specified and banks’ involvement in trade and industrial activities was strictly prohibited in an attempt to avoid banks’ exposure to business risk. (3) A lower limit of equity was set to safeguard capital adequacy. (4) It was defined that all banks were to operate in the form of a limited company. (5) All banks were obliged to submit to the central bank monthly financial statements. Specifically, they were obliged to release monthly reports about their daily reserve requirements, their demand deposits and savings deposits.

Based on the nine basic forms listed by Mishkin (2001) and White (2009), Tables 1 and 2 summarize the main features of the banking reforms in the period before World War II. The entire sample period is divided into the unregulated period until 1930 and the post-1931, regulated period. An emphasis is placed on the identification of banking regulatory agencies and the forms of prudential supervision over the two periods.

Table 1: Greek banking regulatory agencies

<table>
<thead>
<tr>
<th>Period</th>
<th>Banks</th>
<th>Central Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre-1931</td>
<td>totally unregulated</td>
<td>Until 1928, there was no central bank. A system of multiple issue banks was in effect until 1920. Afterwards, until 1927, there was only one bank of issue, the NBG, which also had commercial responsibilities. The NBG did not even act as a lender of last resort in times of difficulty, nor did it take measures to prevent or contain a crisis episode.</td>
</tr>
<tr>
<td>1931-1939</td>
<td>strict rules of prudential supervision in place</td>
<td>The Bank of Greece established in 1928 served as the country’s central bank. It was the sole institution responsible for maintaining monetary and financial stability. It was the regulatory agency. However, it never acted as a lender of last resort.</td>
</tr>
</tbody>
</table>

Table 2: Bank regulatory regimes in Greece

<table>
<thead>
<tr>
<th>Forms of Prudential Supervision</th>
<th>All Banks Second Period, 1931-1939</th>
<th>First Period up to 1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) controls on entry bank chartering</td>
<td>subject to government and central bank authorization</td>
<td>Free entry; a locally located multiple system of issue banks. The government granted the monopoly of issue in exchange for raising money to cover its spending.</td>
</tr>
<tr>
<td>(b) capital requirements</td>
<td>fixed minimum</td>
<td>no limits</td>
</tr>
<tr>
<td>(c) restrictions on asset holdings and activities; limits on economies of scope and diversification; separation of banking and other financial services industries</td>
<td>Strict limits: The mixing of banking and commerce activities was strictly prohibited.</td>
<td>no limits</td>
</tr>
<tr>
<td>(d) limits on economies of scale; restrictions on competition</td>
<td>de facto support of banking consolidation</td>
<td>no limits</td>
</tr>
<tr>
<td>(e) risk-based deposit insurance premium; liability insurance</td>
<td>Deposit insurance; a minimum reserve requirement ratio</td>
<td>no</td>
</tr>
<tr>
<td>(f) disclosure requirements</td>
<td>Information disclosure to the Bank of Greece. All commercial banks were obliged to publish at the end of every month daily financial statements.</td>
<td>no</td>
</tr>
<tr>
<td>(g) bank examination</td>
<td>The Bank of Greece was the official regulatory agency.</td>
<td>no</td>
</tr>
<tr>
<td>(h) bank supervision and enforcement</td>
<td>strict enforcement of rules</td>
<td>No; limited (poor and informal) supervision due to the presence of a government commissioner on the board of the directors of the banknote-issuing banks.</td>
</tr>
<tr>
<td>(i) limits on pricing</td>
<td>no limits</td>
<td>no limits</td>
</tr>
</tbody>
</table>
6. Concluding remarks

Several important lessons can be drawn from Greece’s long record of crisis experience: (1) A comparison of the key characteristics and the sources of the two historical episodes of financial instability (‘then’ and ‘now’) reveals that excess credit was the main crisis determinant in both instances. (2) Country-specific features such as fiscal laxity, credit expansion, and the limited reserve coverage of the domestic currency were the key aggravating factors of the earlier crisis. And (3) data and historical accounts verify that the government’s response to a crisis event was weak, slow, and delayed. This means that the government officials learned only with serious difficulty and after a long delay how to manage successive crises and develop better techniques. For example, studying the historical experience of dealing with the interwar banking crisis, one can conclude that the delayed government action contributed to the delayed recovery. Explicitly, even though the introduction of the deposit insurance principle and the new regulatory framework were the immediate response of the government to the wide-spread bank panic, the government decided only after several delays to release the country from its golden constraint and heavily devalue the currency in an attempt to relieve the economy of the strong deflationary pressures of the gold regime.

Recently, several scholars have raised the following question:⁴⁷ can strict regulation produce innovations that might in turn produce future crises? This is not the general rule. Certainly, there are many other risk factors. For example, riskiness might arise from global macroeconomic imbalances combined with inherent financial inefficiencies and weak institutional determinants that put to work destabilizing incentives. A crucial issue is thus addressed: How can we strengthen the deep institutional determinants of financial development (such as the rule of law, property rights, corporate governance, and constitutional democracy) to avoid a new crisis? Therefore, an interesting topic for further research might be to identify the predicted probabilities of a crisis event. By enlarging the country sample to include all SEE countries, probit regression results might show if and to what extent country-specific features would be the most important predictor of crashes.

‘History does not repeat itself, but it does rhyme’.⁴⁸ History has shown that, even though financial crises were accompanied by considerable output loss, they were always followed by a period of growth that lasted many years. However, as historical accounts demonstrate, crisis events will always occur, and it is very difficult to avoid repetition. On the other hand, policy-makers and governments often have a short historical memory. This means that their past attempts to strengthen prudential supervision either failed or were proven to be ineffective in preventing similar situations in the near future.

⁴⁷ See, for example, Gigliobianco, Giordano and Toniolo (2009).
⁴⁸ Mark Twain (1940) actually wrote: ‘it is not worthwhile to try to keep history from repeating itself for man’s character will always make the preventing of the repetition impossible’.
References


Grilli, V. and G. Kaminsky. ‘Nominal exchange rate regimes and the real exchange rate’, *Journal of...*


Appendix

Table A: Dates of Crisis Events.

<table>
<thead>
<tr>
<th>Block I: Before 1914</th>
<th>Debt crises</th>
<th>Currency crises</th>
<th>Banking crises</th>
<th>Sudden Stops***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>definition 1*</td>
<td>definition 2**</td>
<td></td>
</tr>
<tr>
<td>1826</td>
<td>1831</td>
<td>1886'</td>
<td>1834</td>
<td>1881-183</td>
</tr>
<tr>
<td>1843</td>
<td>1848</td>
<td>1892</td>
<td>1899</td>
<td>1890-97</td>
</tr>
<tr>
<td>1893</td>
<td>1868</td>
<td>1893</td>
<td>1906</td>
<td>1911-13</td>
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<tr>
<td></td>
<td></td>
<td>1877</td>
<td>1894</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1886</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1895</td>
<td></td>
<td></td>
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</tbody>
</table>

Notes: 1 The data series starts as late as 1885. Debt crises = I include only the year of debt repudiation. Negotiation years are excluded. Currency crises = * Definition 1: I refer to the year of a heavy speculation attack on domestic money, causing abnormal fluctuations of the exchange rate or the year of a nominal currency depreciation or devaluation; ** Definition 2: Following Catao’s working assumption (2006), I define a currency crisis (that is, a currency drop) as nominal exchange rate depreciation greater than at least one standard deviation of the annual percentage change of the spot exchange rate of the drachma against the Pound Sterling over the sample period. I also assume that this depreciation is not fully reversed within a three-year window. Banking crises = I include the years of a wide-spread bank panic and/or the years of massive bank failures. Isolated events are not taken into account. *** Following Catao’s (2006) working assumption, I define a sudden stop as a drop from peak to trough of no less than two standard deviations of the deviations of the respective series from a linear trend and/or any drop that exceeds 3 percent of GDP over a period shorter than four years.

<table>
<thead>
<tr>
<th>Block II: 1919-1939</th>
<th>Debt crises</th>
<th>Currency crises</th>
<th>Banking crises</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932</td>
<td>1923</td>
<td></td>
<td>1919</td>
</tr>
<tr>
<td></td>
<td>1925'</td>
<td></td>
<td>1927</td>
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<tr>
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<td>1926'</td>
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<td>1929</td>
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<td></td>
<td>1931</td>
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<td>1930</td>
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<td></td>
<td>1932</td>
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<td>1931</td>
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<td>1936</td>
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<td></td>
<td></td>
<td></td>
<td>1939</td>
</tr>
</tbody>
</table>

Note: 2 Years of heavy currency speculation and abnormal exchange rate fluctuations.

<table>
<thead>
<tr>
<th>Block III: 1945-2008</th>
<th>Debt crises</th>
<th>Currency crises</th>
<th>Banking crises</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1945</td>
<td></td>
<td>1967</td>
</tr>
<tr>
<td></td>
<td>1949</td>
<td></td>
<td>1974</td>
</tr>
<tr>
<td></td>
<td>1951</td>
<td></td>
<td>1988'</td>
</tr>
<tr>
<td></td>
<td>1953</td>
<td></td>
<td>2008'</td>
</tr>
<tr>
<td></td>
<td>1963'</td>
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</tr>
<tr>
<td></td>
<td>1964'</td>
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<tr>
<td></td>
<td>1965'</td>
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<td>1971</td>
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<td>1973</td>
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<td>1983</td>
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<td>1985</td>
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<td>1994'</td>
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<td></td>
<td>1997'</td>
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</tr>
<tr>
<td></td>
<td>1998</td>
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</tbody>
</table>

Notes: 3 Gold hoarding; 4 speculation attacks resulting in an abnormal increase in the interest rates to defend currency; 5 an isolated event of a bank failure due to a corporate governance failure (fraud risk), therefore not taken into account; 6 bailout, rescue package.
Data

For the period from 1846 to 1914, bank loans to firms and households refer to total gross loans to the private sector. The data on lending are taken directly from the Balance Sheets of the eight large commercial banks of Greece. For the period from 1950 to 2009, total bank credit includes loans to firms and households; the data are from the Bank of Greece. The data for the level of the Gross Domestic Product (1833-1938) in current prices and in constant 1914 prices, both aggregate and per capita, are from Kostelenos et al. (2007). GDP deflator is a Paasche type index of the prices of 10 products from the primary and secondary sectors and covered over 23 percent of the total value of GDP. GDP has been computed ‘based on estimates made directly using the production (value added) method, the most notable exception being the analysis of the tertiary sector, where a combination of the income method and of an indirect approach has been used’ (Kostelenos et al. 2007, 251). For the period after World War II, the data for the GDP in current prices are from the National Statistical Service of Greece. Total bank assets for the same sample of banks are also taken directly from their balance sheets. Broad money (M3) and monetary base (M0) are from Lazaretou (2010). Demand deposits, vault cash, and short-term lending (advances and discounts to traders) refer to all commercial banks for the period from 1894 to 1932 and are taken from the banks’ balance sheets. The equity to assets ratio has been computed for all commercial banks for the period between 1894 and 1932. Return on equity has been assessed for six large banks for the period between 1910 and 1932. The financial statements of those banks are my primary data source. The data for the nominal exchange rate of the drachma against the British pound are taken from Bank of Greece (2009). Total reserves, both foreign exchange and metallic, are from Bank of Greece (2009). The data for total government spending and total tax revenues are from the Greek Government Budgets, Annual Reports, and concerned realized entries.
Macroeconomic policies during the Great Depression: 
Another look at the Turkish case, 1929-1939

Seyfettin Gürsel 
seyfettin.gursel@bahcesehir.edu.tr 
Bahçeşehir University, Istanbul

and

Şevket Pamuk 
s.pamuk@lse.ac.uk 
Bogaziçi University, Istanbul, and London School of Economics and Political Science

Abstract
This paper will re-examine the economic policies and the performance of the Turkish economy during the Great Depression. The Great Depression was transmitted to Turkey primarily through the sharp decline in the prices of agricultural commodities. In response, the policies of the urban-based government were strongly interventionist. Protectionist measures of the early years were followed in 1932 by the adoption of etatism, or import-substituting industrialization led by the state. In contrast, macroeconomic policies were rather cautious and eclectic. While exchange rate policies resulted in the appreciation of the currency, fiscal and monetary policies were not expansionary until the very end of the decade. The recovery in the 1930s was stronger in Turkey than in most other countries around the Eastern Mediterranean, despite the cautious macroeconomic policy. We argue this performance was due to protectionism and the strong recovery of the agriculture.

JEL: N14, N15, E5, E6
Keywords: Great Depression, macroeconomic policy, protectionism, etatism, Turkey

1. Introduction
Many developing countries around the world experienced a turning point during the 1930s. The contrast between ‘before and after 1929’ may often be exaggerated, but there is little doubt that in many parts of the developing world the decade witnessed a closing towards international trade and capital flows and a relative rise in import-substituting activities. The crisis also changed the nature of political power with a weakening of large landowners and export-oriented interests, as well as the commitment to the liberal order that had prevailed until World War I. In many countries control fell into more populist hands, with nationalist leanings towards autarchy and import-substituting industrialization.

In the 1980s Carlos Diaz Alejandro (1984) and Angus Maddison (1985) showed that, whatever the outcomes may have been in the long term, developing economies that shifted to protectionism and inward-looking policies generally fared better during the Great Depression than those that adhered to the earlier strategy based on primary exports. Diaz Alejandro also offered a list of policy instruments adopted by the interventionist governments in Latin America during the 1930s. These were, in order of decreasing importance: exchange rate policies, import repression and import diversion, expansionary monetary and fiscal policies, and a variety of other measures ranging from wage repression and public works programs to debt repudiation. These should not be viewed as a comprehensive set of measures, however. In the absence of a unified body of theory, they were mostly ad hoc measures adopted by the different governments in response to the specific conditions in each country (Diaz Alejandro 1984, 17-39).

Not all regions or countries experienced these trends to the same degree. For one thing, shocks, policies and capacities differed substantially from country to country. On the whole, colonies of European...
powers adhered more closely to orthodox regimes. Similarly, countries where the landed interests were more powerful or where they could not be challenged tended to remain more passive and adhere to the earlier model. On the other hand, the ability and willingness to actively manipulate policy instruments such as exchange rates, tariffs, and domestic credit were greatest in countries that were either large or had relatively autonomous public sectors.

This paper will re-examine the economic policies and the performance of the Turkish economy during the Great Depression. The Great Depression was transmitted to Turkey primarily through the sharp decline in the prices of agricultural commodities. In response, the policies of the government as controlled by an urban-based bureaucracy were strongly interventionist. Protectionist measures of the early years were followed in 1932 by the adoption of etatism, or import-substituting industrialization led by the state. The recovery in the 1930s was stronger in Turkey than in most other countries around the Eastern Mediterranean, as we shall show.

The legacy of the 1930s profoundly influenced attitudes toward international trade in Turkey. Per capita foreign trade indicators reached in the 1920s were not surpassed until the 1960s. Similarly, the degree of openness of the 1920s as measured by the exports/GDP ratio was not exceeded until the 1980s. Unfortunately, because of the absence of long-term macroeconomic series until recently, it has not been possible to study analytically and quantitatively the 1930s and more generally the first half of this century.

This paper will argue that, as was the case in many developing countries, government economic policies in Turkey were rather eclectic during the 1930s. While exchange rate policies resulted in the appreciation of the currency, fiscal and monetary policies were not expansionary until the very end of the decade. Instead, the government preferred balanced budgets and a stable money supply. We thus have an apparent puzzle in our hands: How can such a cautious approach to macroeconomic policy be consistent with the strong performance of the industrial and, more generally, the urban sector and the national economy? We will also argue that severe import repression was one of the most important reasons behind the performance of the industrial sector during the 1930s. The protectionist measures adopted by the government, as well as the restrictive foreign exchange trade, foreign exchange regimes, and bilateral trading arrangements sharply reduced the import volume, creating attractive conditions for the mostly small and medium-sized domestic manufacturers.

There is another explanation for the overall performance of both the urban and the national economy. For that, we will turn to agriculture, the largest sector of the economy, employing more than three-fourths of the labour force during the 1930s and accounting for close to half of the GDP. We will show that, despite the sharp deterioration of the intersectoral terms of trade, agricultural output registered significant increases during the 1930s. This strong performance can be explained in terms of the availability of marginal lands, combined with the demographic and economic recovery of the countryside after a decade of wars lasting until 1922.

2. Macroeconomic policies during the Great Depression

The period from 1913 until 1945 was exceptionally difficult for Turkey’s society and economy. In addition to the global depression, the country suffered two world wars and a radical redrawing of the borders accompanying the process of transition from an empire to a nation-state. Until recently it was not possible to assess the impact of these events on the Turkish economy. Utilizing official statistics, Bulutay et al. (1974) have constructed national income accounts for the period from 1923 to 1948. However, these series are not linked to the official production, tax collection, and foreign trade series of the Ottoman period and the reasonably detailed estimates for national income prepared by Vedat Eldem (1970) for the years before World War I.

Recently, İşık Özel (1997) for the first time linked these two sets of evidence, producing comparable series for the area within the present-day borders of Turkey for the period from 1907 to 1939. Thanks to this study, it is now possible to assess the macroeconomic performance of the Turkish economy during the first half of the twentieth century and, for the purposes of the present paper, insert the 1930s into a long-term context. The results are summarized in Tables 1 and 2. They indicate that Turkey’s GDP per
capita in 1950 stood approximately 30 percent higher than its level in 1913, an average annual rate of increase of 0.7 percent. Not surprisingly, there were sharp fluctuations in between, in population, GDP, and GDP per capita. Periods of expansion (before 1914, 1923-1929, 1929-1939, and 1945-1950) were disrupted by wars (1914-1922 and 1939-1945).

Table 1: Turkey’s basic economic indicators, 1923-1946. Source: Calculations based on Turkey State Institute of Statistics 1994; Bulutay et al. 1974. For the conversion to 1990 PPP dollars, see Maddison 1995, 184-185.

<table>
<thead>
<tr>
<th>1923</th>
<th>1929</th>
<th>1939</th>
<th>1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population in millions</td>
<td>13</td>
<td>14</td>
<td>17.5</td>
</tr>
<tr>
<td>Share of agriculture in the labour force</td>
<td>n.a.</td>
<td>80</td>
<td>77</td>
</tr>
<tr>
<td>GNP per capita in 1990 PPP dollar</td>
<td>615</td>
<td>1,015</td>
<td>1,425</td>
</tr>
<tr>
<td>Share of agriculture in GNP (%)</td>
<td>40</td>
<td>52</td>
<td>39</td>
</tr>
<tr>
<td>Share of manufacturing in GNP (%)</td>
<td>12</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Share of total industry (incl. construction) in GNP</td>
<td>22</td>
<td>16</td>
<td>22</td>
</tr>
</tbody>
</table>

Note: Bulutay et al.’s estimates for the growth rates of manufacturing output and other related aggregates for 1929-1939 were revised downwards, following the calculations by Zendisayek 1997, chapter 4.


<table>
<thead>
<tr>
<th>Average annual rates of growth (%)</th>
<th>1923-1946</th>
<th>1923-1929</th>
<th>1929-1939</th>
<th>1939-1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>1.9</td>
<td>1.7</td>
<td>2.2</td>
<td>1.2</td>
</tr>
<tr>
<td>GNP</td>
<td>4.6</td>
<td>10.3</td>
<td>5.2</td>
<td>-2.0</td>
</tr>
<tr>
<td>GNP per capita</td>
<td>2.6</td>
<td>8.4</td>
<td>3.0</td>
<td>-3.2</td>
</tr>
<tr>
<td>Agricultural output</td>
<td>4.9</td>
<td>13.6</td>
<td>4.4</td>
<td>-1.4</td>
</tr>
<tr>
<td>Manufacturing output</td>
<td>3.3</td>
<td>7.2</td>
<td>5.2</td>
<td>-3.0</td>
</tr>
<tr>
<td>Total industrial output (incl. construction)</td>
<td>4.5</td>
<td>10.2</td>
<td>5.7</td>
<td>-2.6</td>
</tr>
</tbody>
</table>

Note: Bulutay et al.’s estimates for the growth rates of manufacturing output and other related aggregates for 1929-1939 were revised downwards, following the calculations by Zendisayek 1997, chapter 4.

The principal mechanism for the transmission of the Great Depression to the Turkish economy was the sharp decline in the prices of agricultural commodities. Prices of wheat and other cereals declined by more than 60 percent from 1928-1929 to 1932-1933 and remained at those levels until the end of the decade. Prices of the leading export crops—tobacco, raisins, hazelnuts, and cotton—also declined, by an average of 50 percent, although they recovered somewhat later in the decade. Since these decreases were greater than the decline in the prices of non-agricultural goods, the external terms of trade of the country deteriorated by more than 25 percent, and the domestic terms of trade shifted against agriculture by 31 percent from 1928-1929 to 1932-1933. In contrast, the physical volume of exports continued to rise after 1929, perhaps reflecting the continued recovery in output levels. Nonetheless, the result was a sharp decline in the real income of most market-oriented agricultural producers. The adverse price movements thus produced an acute sense of agricultural collapse, especially in the more commercialized regions of the country.\(^1\) Also in 1929, the economy experienced a foreign exchange shock, arising in part from the much higher import volume ahead of the expected tariff increases and in part due to the anticipation of the first annual payment on the Ottoman debt (Tekeli and Ilkin 1977, 75-90; Tezel 1986, 98-106).

The government was not free to change tariff policy until 1929, but began to move towards protectionism and greater control over foreign trade and foreign exchange as soon as the restrictions of the 1923 Lausanne Peace Treaty ended. A new tariff structure was adopted in October 1929, before the collapse on Wall Street, reflecting the desire of the new state elites in Ankara to exercise greater control over the economy.\(^2\) Average tariffs on imports are estimated to have increased from 13 to 46 percent in

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\(^1\) Since most of the impact of the Great Depression was felt through price effects, national income accounts prepared in constant prices do not reflect the severity of the impact.

\(^2\) The decision of the Higher Economic Council was made in June 1929.
1929 and to more than 60 percent by the second half of the 1930s. Equally important, tariffs on imports of foodstuffs and manufactured consumer goods were raised much more than those for agricultural and industrial machinery and raw materials. For this reason, effective rates of protection on many of the final goods selected for protection were substantially higher. In addition, quantity restrictions were introduced on the imports of a long list of goods in November 1931. These lists were updated frequently, and some of the tariffs were raised further during the 1930s as import substitution spread to new sectors (Yücel 1996, 74-84, 105-113). The immediate beneficiaries of this strong shift to protectionism were the small and medium-sized manufacturing enterprises in many parts of the country, consisting of textile mills, flour mills, glass works, brick factories, tanneries, and others which began to enjoy high rates of growth. A recent study has estimated the average rate of growth of the manufacturing sector at 6.3 percent per annum between 1929 and 1933 (Zendisayek 1997, 54-106; see also Yücel 1996, 113-130; Boratav 1981, 170-176; Kazgan 1977, 231-273).

The crisis that began in 1929 had a number of other important repercussions as well. First, concern about trade deficits and problems with balance of payments moved the government increasingly towards clearing and barter agreements and bilateral trade. By the second half of the decade, more than 80 percent of the country’s foreign trade was being conducted under clearing and reciprocal quota systems. These bilateral arrangements also facilitated the expansion of trade with Nazi Germany, which offered more favourable prices for Turkey’s exports as part of its well-known strategy towards SEE. Germany’s share in Turkey’s exports rose from 13 percent in 1931-1933 to an average of 40 percent for 1937-1939. Similarly, its share of Turkey’s imports increased from 23 percent in 1931-1933 to 48 percent in 1937-1939 (Tezel 1986, 139-162; Tekeli and İlkin 1982, 221-249).

It is significant that the government did not use exchange rate policy to improve the balance of payments and to soften the impact of the depression. On the contrary, the existing parity of the Turkish lira vis-à-vis gold was maintained even as the leading international currencies were devalued. As a result of the actions of other governments, the lira was revalued by a total of 40 percent against both the sterling and the dollar between 1931 and 1934, and the new parities were maintained until the end of the decade (Tezel 1986, 144-150). The impact of these price movements on export volumes was limited, because the exports consisted mostly of agricultural commodities with low price elasticity of demand. In addition, a growing part of Turkey’s exports in the 1930s began to be covered by bilateral trade agreements.

Even though the export volume continued to rise in absolute terms, these far-reaching changes in the structure of foreign trade combined with the adverse price movements and the increases in GDP later in the decade led to a sharp decline in the share of exports in GDP from 11.4 percent in 1928-1929 to 6.9 percent in 1938-1939 (Table 3). It is thus clear that exports did not act as a source of recovery for the national economy during the 1930s. The causes of that recovery have to be found elsewhere.


<table>
<thead>
<tr>
<th></th>
<th>1924-1925</th>
<th>1928-1929</th>
<th>1938-1939</th>
<th>1945-1946</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports (million dollar)</td>
<td>92.5</td>
<td>81.5</td>
<td>107.5</td>
<td>192.0</td>
</tr>
<tr>
<td>Imports (million dollar)</td>
<td>114.5</td>
<td>97.0</td>
<td>105.5</td>
<td>108.5</td>
</tr>
<tr>
<td>Exports/GNP (%)</td>
<td>12.8</td>
<td>11.4</td>
<td>6.9</td>
<td>5.2</td>
</tr>
<tr>
<td>Imports/GNP (%)</td>
<td>15.8</td>
<td>14.4</td>
<td>6.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Trade balance/GNP (%)</td>
<td>-3.0</td>
<td>-3.0</td>
<td>+0.1</td>
<td>+2.4</td>
</tr>
<tr>
<td>External terms of trade (export prices/import prices)</td>
<td>129</td>
<td>100</td>
<td>79</td>
<td>68</td>
</tr>
</tbody>
</table>

Government concern with the balance of payments also led to a cessation of payments on the external debt and a demand for a new settlement after the first annual payment in 1929. The subsequent negotiations, aided by the crisis in the world economy and demands for resettlement by other debtors, produced a favourable result, reducing the annual payments by more than half for the rest of the decade. For the

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3 Bent Hansen’s calculations show that the effective exchange rate against the leading trade partners also appreciated sharply during this period (Hansen 1991, 374-375).
rest of the decade, the Kemalist regime sought foreign funds and expertise for its industrial projects. Due to the world economic crisis, however, inflows of foreign capital remained quite low during the 1930s (Tezel 1986, 165-189).

2.1 Absence of expansionary fiscal and monetary policies

One of the striking features of the macroeconomic policy during the 1930s was the absence of ‘Keynesianism’. Neither fiscal policy nor monetary policy was relaxed in response to the Great Depression. Fiscal policy can hardly be characterized as expansionary during the 1930s. Government revenues and expenditures increased only modestly, from about 13 to 15 percent of GDP in the late 1920s, to a new range of 17 to 19 percent during the 1930s. Moreover, national budgets remained balanced despite minor yearly fluctuations (Tezel 1986, 368-388; Yücel 1996, 62-73).4

The approach to monetary policy was very similar to that to fiscal policy. Before the Great Depression, the early years of the Republic had been characterized by the absence of a central bank. The basic principle that guided monetary practice during this period was to keep unchanged the amount of currency (banknotes plus coinage) inherited from the Ottoman period (Table 4). Yet, the number of domestic banks, national and local, increased rapidly between 1924 and 1929 (Table 5), and these created bank money through the credit channel in the amount that the real sector demanded, without any reserve limitations. M2 increased by 74 percent in nominal terms and by a similar amount in real terms, since the price level increased only by 10 percent during this earlier period.

Table 4: Change of monetary aggregates and price level (%). Source: Tezel 1994, 123.

<table>
<thead>
<tr>
<th></th>
<th>Currency in circulation</th>
<th>M2</th>
<th>Inflation</th>
<th>M2 (real)</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924-1929</td>
<td>8</td>
<td>74</td>
<td>10</td>
<td>64</td>
<td>66</td>
</tr>
<tr>
<td>1929-1933</td>
<td>-9</td>
<td>-2</td>
<td>-52</td>
<td>100</td>
<td>-15</td>
</tr>
<tr>
<td>1933-1938</td>
<td>25</td>
<td>71</td>
<td>17</td>
<td>54</td>
<td>58</td>
</tr>
</tbody>
</table>

Table 5: Number of banks in Turkey (1923-1933). Source: Tezel 1994, 125.

<table>
<thead>
<tr>
<th></th>
<th>1923</th>
<th>1928</th>
<th>1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic banks</td>
<td>18</td>
<td>39</td>
<td>47</td>
</tr>
<tr>
<td>Foreign banks</td>
<td>13</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>57</td>
<td>57</td>
</tr>
</tbody>
</table>

The Central Bank of the Republic of Turkey (CBRT), founded in June 1930, became operative only in 1931. While the Great Depression was ravaging the American and European economies, the CBRT kept the monetary base almost stable during the early 1930s (Table 4). One can argue that there was no need to relax monetary policy during this period, because the money supply did not contract as bank failures were limited to a few small local banks. Despite this passive stance of the CBRT, however, there occurred a large increase in the real money supply due to the decline of prices. Indeed, the amount of currency in circulation decreased only by 9 percent from 1929 to 1933, while the aggregate price level as represented by the GNP deflator declined by more than 50 percent (Yücel 1996, 55-59).5 Undoubtedly, these years were characterized by excess liquidity and high levels of money demand. The CBRT discount rate started at 8 percent in 1931 and declined afterwards only to 5 percent, despite the continuation of price deflation. In other words, real interest rates remained quite high, which may have created problems for the urban economy. Yet, increasing financial costs for firms must have been more than compensated by the increase of profitability due to strong protectionism. Monetary policy was relaxed slightly after 1934. Currency in circulation increased by 25 percent, as did M2 by 71 percent from 1933 to 1938. As a result, some inflation emerged, with the price level increasing by 17 percent during this period. One suspects that the rest

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4 Incomes increased from 249 million TRY in 1929 to 317 million TRY in 1938.
5 It appears unlikely that this de facto increase in the real money supply had a significant impact on the level of aggregate demand.
of the additional money supply met the growth in GDP and helped support the ongoing monetization of the agricultural sector.

Clearly, this macroeconomic policy stance during the Great Depression requires an explanation. The relatively strong performance of the economy provides one answer. We would also argue that behind the Ankara government’s cautious approach to macroeconomic policy was the bitter legacy of the Ottoman experience, with budget deficits and large external debt until World War I as well as the inflationary experiment with paper currency during the war. İsmet İnönü, a close associate of Atatürk and the prime minister for most of the interwar period, was a keen observer of the late Ottoman period and the person most responsible for this conservative policy stance.6

3. Etatism

The difficulties of the agricultural and export-oriented sectors quickly led to popular discontent with the single-party regime, especially in the more commercialized regions of the country: in Western Anatolia, along the Eastern Black Sea coast, and in the cotton-growing Adana region in the South. The wheat producers of Central Anatolia who were connected to urban markets by rail were also hit by the markedly lower prices. As the unfavourable world market conditions continued, the government announced in 1932 the beginning of a new strategy called ‘etatism’, or state-led import-substituting industrialization.

Etatism promoted the state as a leading producer and investor in the urban sector. A first five-year industrial plan was adopted in 1934 with the assistance of Soviet advisors. This document provided a detailed list of investment projects to be undertaken by state enterprises, rather than an elaborate text of planning in the technical sense of the term. A second five-year plan was initiated in 1938, but its implementation was interrupted by the war. By the end of the decade, state economic enterprises had emerged as important, even leading, producers in a number of key sectors such as iron and steel, textiles, sugar, glass works, cement, utilities, and mining (Tekeli and İlkin 1982, 134-220; Tezel 1986, 197-285; Boratav 1981, 172-189; Hansen 1991, 324-335; Hershlag 1968, chapters 4, 9; Gürsel 2005).

Etatism involved the extension of state-sector activities and control to other parts of the urban economy as well. Railways which were taken over from European ownership and nationalized and the newly constructed lines were transformed into state monopolies. Most of the state monopolies which had been handed over to private firms in the 1920s were taken back. In transportation, banking, and finance, state ownership of key enterprises was accompanied by increasing control over markets and prices. At the same time, the single-party regime maintained tight restrictions on labour organization and labour union activity. These measures paralleled the generally restrictive social policies of the government in other areas. It is significant that, despite considerable growth in the urban sector during the 1930s, real wages did not exceed their levels of 1914 (Pamuk 1995, 96-102).

Etatism has undoubtedly had a long-lasting impact on Turkey. For better or worse, this experiment also proved to be inspirational for other state-led industrialization attempts in the Middle East after World War II.7 From a macroeconomic perspective, however, the contribution of the state sector to the industrialization process in Turkey remained modest until World War II. For one thing, state enterprises in manufacturing and many other areas did not begin operations until the middle of the decade. The total number of active state enterprises in industry and mining on the eve of World War II did not exceed 20. Official figures indicate that in 1938 total employment in manufacturing, utilities, and mining remained below 600,000, or about 10 percent of the labour force. State enterprises accounted for only 11 percent of this amount, or about 1 percent of total employment in the country. Approximately 75 percent of employment in manufacturing continued to be provided by small-scale private enterprises (Tezel 1986, 233-237).

6 The government’s reluctance to pursue expansionary policies was, of course, consistent with the orthodoxy of the period. For a survey of the restrictive fiscal and monetary policy that prevailed in the United States and Western Europe until 1933, see Temin 1989, chapter 2; Eichengreen 1992.
7 For the influence of etatism on state-led industrialization strategies in other Middle Eastern countries after World War II, see Richards and Waterbury 1990, 174-201.
Yet, it would be difficult to argue that the private sector was hurt by the expansion of the state sector during the 1930s. The strongly protectionist measures of the government helped the mostly small and medium-sized enterprises producing for the domestic market. Some large private enterprises in the foreign trade sector were affected adversely by the contraction of foreign trade. This was, however, more due to the disintegration of international trade than etatism itself. By investing in large expensive projects in intermediate goods and providing them as inputs, the state enterprises actually helped the growth of private enterprises in the manufacturing of final goods for the consumer. Private investments continued to be supported and subsidized during the 1930s. Nonetheless, the private sector remained concerned that the state sector might expand at its own expense. Tensions between the two sides continued.

4. Sources of economic growth

It is difficult to be precise about the rate of growth of industrial output and more generally the rate of growth of the urban sector during the 1930s. In their reconstruction of the only series of national income accounts for the period before 1948, Bulutay et al. assumed, in the absence of other evidence, that the manufacturing sector as a whole grew at the same rate as those mostly large establishments that received subsidies from the government under the Law for the Encouragement of Industry, for which data was available (Bulutay et al. 1974). This method sharply overstated the extent of increase in manufacturing output. In fact, other independent evidence has since become available, showing that the small manufacturing establishments achieved a more modest increase in output during the 1930s. The consequent revisions to Bulutay et al.’s calculations bring down the overall annual rate of growth for the manufacturing industry from more than 10 to 5.2 percent per annum (Zendisayek 1997, chapter 4). This is undoubtedly a significant correction, but the latter rate is still remarkable for the decade of the Great Depression. The revised estimates presented in Table 2 still point to a strong performance for the economy as a whole.

We thus have an apparent puzzle in front of us: there is evidence of strong performance by the industrial sector, the urban economy, and the national economy. At the same time, aggregate figures show that the contribution of the state sector to the urban economy, both as an investor and as a producer, did not begin until the middle of the decade and remained rather modest for the 1930s as a whole. How, then, can we explain these growth rates?

In the absence of the use of currency depreciation, fiscal policy, or monetary policy to expand aggregate demand, the strong protectionist measures adopted by the government beginning in 1929 emerge as one of the key causes of the output increases after 1929 (see Table 2; Tezel 1986, 102-103). Increasingly restrictive foreign trade and exchange regimes sharply reduced imports from 15.4 percent of GDP in 1928-1929 to 8.7 percent by 1932-1933 and 6.8 percent by 1938-1939. Even more importantly, the composition of imports changed dramatically. The share of final goods declined from 51 percent in 1929 to 21 percent in 1940, while the share of intermediate goods rose from 26 to 54 percent and of machinery and equipment from 9 to 22 percent during the same period. Severe import repression thus created very attractive conditions for the domestic manufacturers after 1929. These mostly small and medium-sized producers achieved relatively high rates of output growth for the entire decade until World War II. The available evidence indicates clearly that in textiles and several other manufactured goods such as sugar, domestic producers had replaced most, if not all of imports by the end of the 1930s (Zendisayek 1997, 54-105; Yücel 1996, 89-130).

There is yet another explanation for the overall performance of both the urban and the national economy, which has frequently been ignored by economists and economic historians in their often heated debates over etatism and its meaning (see Hershlag 1968, chapter 4; Boratav 1981; Keyder 1987, chapter 5; Tezel 1986, 197-232). For that, we need to turn to agriculture, the largest sector of the economy, employing more than three-fourths of the labour force during the 1930s and accounting for close to half of the GDP.
5. Agricultural expansion during the Depression

The story of the agricultural sector during the interwar period has two parts: one about prices, the other about quantities. First, as has already been pointed out, the collapse of commodity prices and the deterioration of the intersectoral terms of trade after 1929 had severe consequences for most producers. Not only did the market-oriented producers, both small and large, in the more commercialized, export-oriented regions of the country experience a decline in their standard of living, but so too did the more self-sufficient producers of cereals in the interior. The decline in the terms of trade of the latter was in fact much greater than that of the producers of non-cereals. The sharp decline in agricultural prices also increased the burden of the indebted peasantry, forcing many to give up their independent plots and accept sharecropping arrangements.

One of the responses of the government was to initiate, after 1932, direct and indirect price support programs in wheat and tobacco. It began to purchase wheat from the producers, first through the Agricultural Bank, and later via an independent agency established for this purpose, called the Soil Products Office. Until the end of the decade, however, such purchases remained limited, averaging 3 percent of the overall crop or about 15 percent of the marketed wheat (based on Atasagun 1939, Bulutay et al. 1974).

The second part of the story about agriculture during the Great Depression is less well known, but at least equally important. Evidence from a variety of sources, including official statistics, show that agricultural output increased by 50 to 70 percent during the 1930s, after adjustments are made for fluctuations due to weather. The evidence thus indicates an average rate of growth of more than 4 percent per year for aggregate agricultural output during the decade. The official statistics suggest that the big jump in agricultural output occurred in 1936, but crop output may have begun to rise earlier. Similarly, foreign trade statistics indicate that Turkey turned from being a small net importer of cereals at the end of the 1920s into a small net exporter of wheat and other cereals on the eve of World War II, despite a population increase of 20 percent during the 1930s.8

The next task would be to explain these substantial increases in output in the face of unfavourable price movements. Two different and not mutually exclusive explanations appear possible, although it may not be easy to assess the contributions of each without more detailed research. First, government policies may have played a role. Most importantly, the abolition of the tithe in 1924 may have contributed to the recovery of the family farm by improving the welfare of small and medium-sized producers and helping them to expand the area under cultivation or to raise yields. Another important contribution of government policy was the construction of railways, which helped integrate additional areas of Central and Eastern Anatolia into the national market. Railways may have encouraged the production of more cereals in these areas. The government was also involved in a number of other programmes in support of the agricultural sector, such as the expansion of credit to farmers through the state-owned Agricultural Bank, and the promotion of new agricultural techniques and crops of a higher-yielding variety. Despite the rhetoric from official circles, these programs did not receive large resources, however, and their impact remained limited.

The second explanation focuses on the long-term demographic recovery of family farms and their response to lower prices. In the interwar period, Anatolian agriculture continued to be characterized by peasant households which cultivated their own land with a pair of draft animals and the most basic of implements. Most of the large holdings were rented out to sharecropping families. Large-scale enterprises using imported machinery, implements and wage labourers remained rare. Irrigation and the use of commercial inputs such as fertilizers also remained very limited. If one reason for the strength of family farms was the scarcity of labour, the other was the availability of land, especially after the death and departure of millions of peasants, both Muslim and non-Muslim, during the decade of wars. Under these circumstances, increases in production were achieved primarily through the expansion of cultivated area, so that a shortage of labour emerged as the effective constraint in impeding higher agricultural output in most parts of the country.

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After the wars ended and the population began to increase at annual rates of around 2 percent, the agricultural labour force followed suit, albeit with a time lag, thus facilitating the expansion of the area under cultivation. While yields changed little, the area under cultivation expanded substantially during the 1930s. Area cultivated per person and per household in agriculture also increased. The number of draft animals rose by about 40 percent during the same period, both confirming the material recovery of the peasant household and facilitating the expansion in cultivated area (Shorter 1985). Comparisons of the late Ottoman and early Turkish statistics indicate that per capita agricultural output did not return to pre-World War I levels until 1929 and the early 1930s. Total agricultural output reached pre-war levels only in the second half of the decade.

6. Conclusion

The case of Turkey during the Great Depression is exceptional around the Eastern Mediterranean, not only because of the extent of government interventionism, but also the strength of economic recovery. Moreover, the policy mix in Turkey was rather unusual in comparison to the activist government initiatives in other developing countries in Latin America and Asia. Government interventionism in Turkey was not designed, in the Keynesian sense, to increase aggregate demand through the use of devaluations and expansionary fiscal and monetary policies. The preference of the government for balanced budgets and a strong currency during the 1930s was closely associated with the unfavourable experiences of the Ottoman governments with external debt until 1914 and with a paper-currency-driven inflation during World War I. Instead of expansionary macroeconomic policies, emphasis was placed on creating a more closed, more autarkic economy and increasing central control through the expansion of the public sector. These latter preferences were directly related to the bureaucratic nature of the regime.

This paper has also shown that, contrary to the assertions of much of the existing literature, the contribution of the state sector to the recovery and growth during the 1930s was limited. Instead, it was the small and medium-sized private enterprises benefiting from the severe import repression and the strong performance of the agricultural sector that sustained the economy until late in the decade.

The economic model and strategy for development thus created during the Great Depression worked in the 1930s and, for the most part, through the 1960s when much of the import substitution was technically simple and protectionism created strong incentives for continued accumulation in the urban sector. The state sector played an important role in the industrialization process during this period. Since then, however, the legacy of the 1930s has been casting a long shadow on Turkey’s economic development. Efforts to reduce the extent of government regulations and to privatize the state economic enterprises have had a mixed record against the political and legal opposition over the last two decades.
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Monetary policy in the Kingdom of Yugoslavia during the Great Depression (1929-1934)

Branko Hinic
branko.hinic@nbs.yu

Milan Sojic
milan.sojic@nbs.yu

and

Ljiljana Djurdjevic
ljiljana.djurdjevic@nbs.yu
National Bank of Serbia

Abstract

As with most countries in Europe and worldwide, the Great Depression (1929-1934) also had a substantial impact on the Kingdom of Yugoslavia. Nevertheless, the consequences of the Great Depression are estimated to have been relatively less pronounced in Yugoslavia than in other European countries, taking into consideration the level of development of the Yugoslav commodity and financial markets, as well as its economic structure at the time. Real national income in Yugoslavia fell by 7.1 percent and total employment by 13.3 percent during the recession, accompanied by high deflation which, measured via the cost of living for an average family, equalled 31.1 percent between 1930 and 1933. The drop in nominal national income was much greater than the drop in real income as the result of the deflation that affected both the international and Yugoslav economies. From 1928 to 1934, wholesale prices in Yugoslavia fell by 40.5 percent.

In order to mitigate the effects of the economic crisis, several fiscal adjustments were made, imposed by declining levels of economic activity, employment, and national income. The total Yugoslav public revenues and expenditures were significantly reduced in nominal terms. Between 1928 and 1930, the average fiscal surplus was around 4.3 percent per annum, while in 1931 and 1932 the fiscal deficit was 1.3 and 1.7 percent, respectively. In 1933 and 1934, the average surplus fell to a moderate level of 1.1 percent per annum of the national income. From 1935 to 1940, the trend of moderate surplus continued, with 1.3 percent of the national income per annum.

We estimate that the monetary conditions in the Kingdom of Yugoslavia prior to the Great Depression were relatively stable. The central bank’s interest rate was at a one-digit level, somewhat above the level of interest rates of central banks of the developed European countries, while the Yugoslav currency, the dinar, maintained relative stability both in the domestic and international stock exchanges.

JEL: N1, N24, E24, E31, E52, E58

Keywords: Great Depression, Kingdom of Yugoslavia, high deflation, national income, monetary policy, interest rates, exchange rates, national bank, foreign trade, employment, wages, fiscal balance, recovery

1. Introduction

As with most countries in Europe and worldwide, the Great Depression (1929-1934) also had a substantial impact on the Kingdom of Yugoslavia (1918-1943; prior to 1920 called the Kingdom of Serbs, Croats and Slovenes). Nevertheless, the consequences of the Great Depression are estimated to have been relatively less pronounced in Yugoslavia than in other European countries, taking into consider-

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1 Goran Poznanovic and Milorad Petkovic, both on the staff of the National Bank of Serbia, significantly contributed to the preparation of the statistical data in this article.
ation the level of development of the Yugoslav commodity and financial markets, as well as its economic structure at the time.

Real national income in Yugoslavia fell by 7.1 percent and total employment by 13.3 percent during the recession, accompanied by high deflation which, measured via the cost of living for an average family, equalled 31.1 percent between 1930 and 1933. The drop in nominal national income was much greater than the drop in real income as the result of the deflation that affected both the international and Yugoslav economies. From 1928 to 1934, wholesale prices in Yugoslavia fell by 40.5 percent. The decline in wholesale prices of agricultural products and in export products was larger than the decline in wholesale prices of finished industrial products. In order to mitigate the effects of the economic crisis, several fiscal adjustments were made, imposed by declining levels of economic activity, employment, and national income. The total Yugoslav public revenues and expenditures were significantly reduced in nominal terms. Between 1928 and 1930, the average fiscal surplus was around 4.3 percent per annum, while in 1931 and 1932 the fiscal deficit was 1.3 and 1.7 percent, respectively. In 1933 and 1934, the average surplus fell to a moderate level of 1.1 percent per annum of the national income. From 1935 to 1940, the trend of moderate surplus continued, with 1.3 percent of the national income per annum.

We estimate that the monetary conditions in the Kingdom of Yugoslavia prior to the Great Depression were relatively stable. The central bank’s interest rate was at a one-digit level, somewhat above the level of interest rates of central banks of the developed European countries, while the Yugoslav currency, the dinar, maintained relative stability both in the domestic and international stock exchanges.

Business and household credit demand increased as private shareholding banks reduced the volume of credit activity. Foreign exchange inflow into the country decreased, while foreign exchange outflow increased. This is why the National Bank increased its discount rate from 6 to 7.5 percent while intensifying its credit activity, including seasonal credits for exporters. After recovery from the Great Depression, the discount rate of the National Bank was reduced to 5 percent in 1935, remaining unchanged until 1940. As of June 1931, the Lombard rate was pegged to gold and equalled 8 percent, then was raised to 9 percent in July 1931, only to be reduced to 7.5 percent in October 1933 and 5 percent in February 1935.

The monetary policy of the National Bank of Yugoslavia basically focused on maintaining the stability of the national currency and partly intensifying credit activity in order to reduce the effects of the economic crisis.

During a five-year period preceding the economic crisis (1925-1929), the national currency was actually stable. In 1931, the National Bank and the Ministry of Finance carried out a monetary reform based on the experiences of developed Western countries. A statutory stabilization of the national currency was introduced by pegging the dinar to gold (at the rate of 26.5 milligrams of gold per 1 dinar). The Monetary Law defined the minimal cover of 35 percent for the national currency and the minimal cover of 25 percent in gold. The objective of the monetary reform was also to enhance financial discipline in the country. During the recession period from 1929 to 1934, joint stock banks in Yugoslavia reduced their credit activities, as well as the issue of their own securities, while the State Hypothecary Bank, the Postal Savings Bank and the Privileged Agrarian Bank expanded their credit activities, especially those based on hypothecary guarantees.

Under the conditions of the significant reduction of the dollar value of exports, several adjustments in foreign trade were made. The dollar value of imports was thus significantly reduced, thereby also reducing the trade deficit and the current balance-of-payments deficit. Our research has shown that the Kingdom of Yugoslavia pursued a liberal foreign trade policy during the Great Depression and that it introduced no protectionist measures for equilibrating the foreign trade balance. It was only on 25 June 1936 that the Yugoslav authorities enacted measures to partially restrict imports of specific goods from non-clearing countries (33 products, and as of 14 January 1937, 39 products). From 1929 to 1934, the exchange rate of the dinar remained relatively stable against the French franc, the German mark, the Italian lira, the Belgian belga and the Dutch florin, while devaluing against the Austrian schilling by 9.3 percent and appreciating against the US dollar by 39.9 percent and the pound sterling by 37.3 percent.
2. The world economic crisis

The negative consequences of the Great Depression were felt throughout the following decade. Many authors associate the beginning of the crisis with the New York Stock Exchange crash on 24 October 1929 (Black Thursday). Following recession and depression in the US economy, the crisis spread to most states that existed at the time. Between May and September 1929, the average price of shares dropped by 40 percent. Losses on the stock exchange amounted to 16 billion dollars (the equivalent value in January 2010 would be 202.71 billion dollars) in a single month. Many European countries introduced foreign exchange restrictions in order to prevent the outflow of capital during the crisis.

Of course, the intensity of the crisis varied across countries, depending on the structure of their economy, the volume of foreign trade and trade balances, the degree of openness of their economies, the employment situation, the level of the development of commodity and financial markets, the level of technological development, natural resources, the state of public finances and foreign debt, monetary conditions and the state of the monetary and financial systems, social and welfare conditions, as well as many other factors. In the majority of Western countries, the crisis started in the second half of 1929 or the first half of 1930, while the beginning of recovery can be dated to 1932 and 1933. However, the full recovery and achievement of the pre-crisis levels of economic activity only followed several quarters later. At the end of 1930 and in the spring of 1931, two banking panics broke out in the US, causing a rush on banks. A series of banks went bankrupt and large amounts of deposits were lost. Table 1 details the beginning of the Great Depression as well as the beginning of recovery after the depression and shows how many quarters the crises lasted in the different countries.

Table 1: Dates of the Great Depression in various countries (quarter). Source: Romer.

<table>
<thead>
<tr>
<th>Country</th>
<th>Beginning of Depression</th>
<th>Beginning of Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1929 (3)</td>
<td>1933 (2)</td>
</tr>
<tr>
<td>Canada</td>
<td>1929 (2)</td>
<td>1933 (2)</td>
</tr>
<tr>
<td>Great Britain</td>
<td>1930 (1)</td>
<td>1932 (4)</td>
</tr>
<tr>
<td>Germany</td>
<td>1928 (1)</td>
<td>1932 (3)</td>
</tr>
<tr>
<td>France</td>
<td>1930 (2)</td>
<td>1932 (3)</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1929 (4)</td>
<td>1933 (1)</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>1929 (4)</td>
<td>1933 (2)</td>
</tr>
<tr>
<td>Italy</td>
<td>1929 (3)</td>
<td>1933 (1)</td>
</tr>
<tr>
<td>Belgium</td>
<td>1929 (3)</td>
<td>1932 (4)</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1929 (4)</td>
<td>1933 (2)</td>
</tr>
<tr>
<td>Sweden</td>
<td>1930 (2)</td>
<td>1932 (3)</td>
</tr>
<tr>
<td>Denmark</td>
<td>1930 (4)</td>
<td>1933 (2)</td>
</tr>
<tr>
<td>Poland</td>
<td>1929 (1)</td>
<td>1933 (2)</td>
</tr>
<tr>
<td>Argentina</td>
<td>1929 (2)</td>
<td>1932 (1)</td>
</tr>
<tr>
<td>Brazil</td>
<td>1928 (3)</td>
<td>1931 (4)</td>
</tr>
<tr>
<td>Japan</td>
<td>1930 (1)</td>
<td>1932 (3)</td>
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<td>India</td>
<td>1929 (4)</td>
<td>1931 (4)</td>
</tr>
<tr>
<td>South Africa</td>
<td>1930 (1)</td>
<td>1933 (1)</td>
</tr>
</tbody>
</table>

The depth of the crisis varied across countries. The highest level of depression was registered in the US, Germany, France, Canada, Italy, Poland, the Netherlands, and Belgium. The Great Depression had a relatively smaller impact on the economies of Japan, Brazil, the USSR, and several other countries. Table 2 shows data related to the decline in industrial production during the Great Depression in selected countries.
Table 2: Peak-to-trough decline in industrial production in various countries (annual data). Source: Romer.

<table>
<thead>
<tr>
<th>Country</th>
<th>Decline (%)</th>
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</thead>
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</tr>
<tr>
<td>Great Britain</td>
<td>16.2</td>
</tr>
<tr>
<td>Germany</td>
<td>41.8</td>
</tr>
<tr>
<td>France</td>
<td>31.3</td>
</tr>
<tr>
<td>Canada</td>
<td>42.4</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>40.4</td>
</tr>
<tr>
<td>Italy</td>
<td>33.0</td>
</tr>
<tr>
<td>Belgium</td>
<td>30.6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>37.4</td>
</tr>
<tr>
<td>Sweden</td>
<td>10.3</td>
</tr>
<tr>
<td>Denmark</td>
<td>16.5</td>
</tr>
<tr>
<td>Poland</td>
<td>46.6</td>
</tr>
<tr>
<td>Argentina</td>
<td>17.0</td>
</tr>
<tr>
<td>Brazil</td>
<td>7.0</td>
</tr>
<tr>
<td>Japan</td>
<td>8.5</td>
</tr>
</tbody>
</table>

The majority of countries experienced a drop in employment and increasing unemployment. According to the League of Nations’ data, the global employment index fell by 26 percent from September 1929 to December 1932, while the working hours’ number index fell by 25 percent (Figure 1). Between 1929 and 1932, employment dropped by 37.4 percent in the US, 21.1 percent in Germany, 21.5 percent in Italy, 8.3 percent in Great Britain, 23.1 percent in France (1930-1933), 8 percent in Japan, 35.5 in Austria (1929-1936), and so on. In the same period, the world index of unemployment drastically increased from 100 in the middle of 1929, to 291 by the end of 1932, which means that unemployment soared by 191 percent. The unemployment rate did not return to its mid-1929 level until the middle of 1937. Observed by country, in 1933 in the US the unemployment rate equalled 24.3 percent (compared with 8.2 percent in 1929); in Germany the unemployment rate peaked in 1932, reaching 30.1 percent (compared with 5.3 percent in 1930). The unemployment rate in Japan was lower than in most other countries, reaching 6.8 percent in 1932 (compared with 5.3 percent in 1929). In 1932, the unemployment rate in Great Britain was 17.6 percent (compared with 8.2 percent in 1929). Unemployment rates increased significantly in many other countries in the world as well.

Figure 1: Unemployment rates by countries, 1929-1937 (%). Source: Statistical Yearbooks of The League of Nations.
Under the conditions of the Great Depression, there was profound deflation in most countries in the world. During the deflation period, the wholesale price index fell by 34 percent in the US (from 1929 to 1932), 32 percent in Germany (1929-1932), 30.4 percent in Japan (1929-1931), 32.3 percent in Great Britain (1929-1932), 46 percent in France (1929-1935), 35 percent in Italy (1929-1934), 17.9 percent in Austria (1929-1933), 47.2 percent in Bulgaria (1929-1933), 47.7 percent in Romania (1929-1933), 18.8 in Greece (1929-1931), 42.3 percent in Poland (1929-1936), 30.7 percent in Turkey (index of cost of living 1929-1935), and so on.

Figure 2: Index of wholesale prices (average 1929=100). Source: Statistical Yearbooks of The League of Nations.

According to the League of Nations data, from 1929 to 1932, world prices of primary industrial products fell by 31.3 percent, with the greatest decline (57.1 percent) recorded in the price of metals. Between 1929 and 1933, the price of crude oil remained relatively stable. The first more significant oil price fall by 8.4 percent compared to 1929 was registered in 1934, when the global economy started to recover. During the Great Depression, world prices of primary agricultural products were relatively stable, with mild annual fluctuations between 1 and 2 percent.

The global gold production increased significantly from 600 tons in 1928, to 840 tons in 1934, and then to 930, 1,030 and 1,100 tons in 1935, 1936 and 1937, respectively. World gold prices also rose significantly from $664.55 (equivalent to $8,419 in January 2010) per kilogram between 1928 and 1932 to $1,094.9 per kilogram in 1933 and $1,125.27 (equivalent to $18,193 in January 2010) per kilogram during the following three years. (The derived value of the dollar in the foregoing calculation is based on the data on the fluctuations in value of the dollar from the official US and Federal Reserve statistics).

Wages decreased in most countries in the world, while competition on the labour market drastically increased due to soaring unemployment. Between 1929 and 1932, wages dropped by 47 percent in the US, 21 percent in Germany (1929-1933), 8 percent in France (1929-1935), 8 percent in Japan (1929-1931), 18 percent in Italy (1929-1934), 23 percent in Hungary (1929-1934), 22 percent in Bulgaria (1929-1934), 39 percent in Romania (1929-1934), and so on.

World trade also fell drastically. According to the League of Nations’ data, US imports fell from 4,047.9 million dollars in 1929, to a meagre 1,325.1 million dollars in 1932, or by 67.5 percent. In the same period, US exports fell from 5,039.1 million dollars to 1,576.2 million dollars, or by 68.7 percent. Due to the interlinked nature of global trade, foreign trade fell significantly in most other countries as well. Between 1929 and 1933, the total value of imports, expressed in national currencies, dropped by
70 percent in Germany, 41.8 percent in Great Britain, 66.8 percent in Italy, 60.9 percent in France (1929-1935), 43.5 percent in Japan (1929-1931), and so on. In the same period, the total value of exports, expressed in national currencies, dropped by 60.3 percent in Germany, 49.2 percent in Great Britain, 60.1 percent in Italy, 70.3 percent in France (1929-1935), 41.5 percent in Japan (1929-1931), and so on.

Discount rates of central banks were gradually reduced, especially during the second half of the Great Depression, when American and European economies as well as the economies of other countries started to recover. The lowest annual discount rates in 1934 and 1935 were registered in the US (around 1.5 percent), Great Britain (2.0 percent), Switzerland (2.0-2.3 percent), France (2.5-3.7 percent), Japan (3.65 percent), and Germany (4 percent), as is evident from Table 3. Most other countries had higher central bank discount rates during the same period.

Table 3: Discount rates of central banks, 1928-1936 (%). Source: Statistical Yearbooks of The League of Nations.

<table>
<thead>
<tr>
<th></th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
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<tbody>
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<td>Greece</td>
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<td>9.00</td>
<td>9.00</td>
<td>9.89</td>
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<td>5.48</td>
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<td>2.50</td>
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<td>2.00</td>
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<td>5.93</td>
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<td>3.10</td>
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<td>Austria</td>
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<td>5.75</td>
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<td>4.74</td>
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<td>2.00</td>
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<td>9.05</td>
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<td>7.00</td>
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<td>Romania</td>
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<td>9.00</td>
<td>8.25</td>
<td>7.17</td>
<td>6.26</td>
<td>5.93</td>
<td>4.50</td>
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</tr>
</tbody>
</table>

Figure 3: Discount rate of central banks, 1928-1936 (%). Source: Statistical Yearbooks of The League of Nations.
In 1932, in order to resolve the economic crisis in the US, President Franklin D. Roosevelt launched a pragmatic program of economic recovery, the New Deal, which began with the Bank Holiday and the Emergency Banking Act, and continued with the Economy Act, Farm Programs/Agricultural Adjustment Act, and the National Industrial Recovery Act. Striving to overcome the depression, other countries also implemented their own programs, which included government interventions to a greater or lesser extent.

3. Economic activity in the Kingdom of Yugoslavia

In 1931, the population of the Kingdom of Yugoslavia was about 14.5 million, with 2.7 million households and a population density of around 57 inhabitants per square kilometre. A constitutional monarchy, it was capitalist with a free market, private ownership and a multi-party political system. The National Bank of Yugoslavia was a joint stock company, as were the majority of commercial banks and business firms. Stock exchanges trading in money, capital and commodities operated under the conditions of substantial import competition. Between 1929 and 1932, the total economic activity in the Kingdom of Yugoslavia decreased; unemployment increased, while prices of agricultural products fell significantly, along with the cost of living, deflation of the general price level and decline in foreign trade, which all resulted in numerous other consequences. However, the real decline in economic activity was smaller than in the most developed Western countries at the time.

The national income in Yugoslavia expressed in current prices amounted to about 34.1 billion dinars in 1934, which was by 43.2 percent lower than in 1929, when it equalled some 60 billion dinars (Table 4). However, the real decline in the national income in Yugoslavia was significantly lower than the nominal decline, if the significant deflation of the period is taken into consideration. Notably, the real value of the Yugoslav national income fell by 7.1 percent between 1929 and 1934, and this real decline was significantly lower in comparison with the decline in real national income of a range of other countries. Hence, the national income implicit deflator declined by 37.9 percent between 1929 and 1934.


<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Manufacturing and Mining</th>
<th>Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1923</td>
<td>65,223</td>
<td>8,765</td>
<td>34,414</td>
</tr>
<tr>
<td>1924</td>
<td>70,080</td>
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</tr>
<tr>
<td>1925</td>
<td>63,282</td>
<td>9,110</td>
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</tr>
<tr>
<td>1926</td>
<td>56,156</td>
<td>8,312</td>
<td>28,916</td>
</tr>
<tr>
<td>1927</td>
<td>53,328</td>
<td>9,002</td>
<td>25,582</td>
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<tr>
<td>1928</td>
<td>59,629</td>
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<td>1929</td>
<td>59,966</td>
<td>9,593</td>
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<tr>
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<td>50,418</td>
<td>8,775</td>
<td>23,351</td>
</tr>
<tr>
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<td>1933</td>
<td>36,117</td>
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<td>1934</td>
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<tr>
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<tr>
<td>1939</td>
<td>52,784</td>
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<td>24,275</td>
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</table>

Within the economic framework during the period of crisis from 1929 to 1934, the nominal national income registered a smaller decline in manufacturing than in agriculture, trade and other branches of the economy. In that period, the decline in nominal income was 28.4 percent in manufacturing, 48.1 percent in agriculture (due to the fall in prices of agricultural products), and 45.8 percent in trade.
As already noted, from 1929 to 1934, the real national income of Yugoslavia declined only by 7.1 percent. Broken down by branches of economic activity, the decline in national income was 8.9 percent in manufacturing, 21.7 percent in the construction industry, 22 percent in transport, 13 percent in trade, and 25.2 percent in crafts. It is estimated that, due to the major decline in the prices of agricultural products, the real national income in agriculture actually increased by 5.2 percent during the period observed. In the structure of the national income at the beginning of the economic crisis in 1929, agriculture had the largest share (49.6 percent), followed by manufacturing (16 percent) and trade (12.3 percent). In 1934, the structure of the national income somewhat improved in favour of manufacturing, whose share in the total national income increased to 20.2 percent, while the share of agriculture decreased to 45.3 percent and that of trade to 11.8 percent.

From 1929 to 1934, the number of persons employed in the Kingdom of Yugoslavia declined by 13.3 percent, although the decline was not as large as in countries in Western Europe and America (Figure 5). From 1933 until the beginning of World War II, the number of persons employed was gradually increasing. At the beginning of the crisis in 1929, the number of officially registered employed persons was 824,000. This number does not encompass employees in the private agricultural sector, transport and other services. In 1934, employment fell to 775,000. After this period, employment started to increase, surpassing one million in 1940, a year before World War II. In 1935, the government initiated extensive public works to improve the economy and to increase employment.
Before the Great Depression, inflation in Yugoslavia was quite moderate, following similar trends in Western European countries. However, during the crisis there was a great deflation of prices of almost all types of goods and services. According to the official statistics, from 1928 to 1934, wholesale prices in Yugoslavia fell by 40.5 percent (Figure 6, Table 5). The decline in wholesale prices of agricultural products (65.9 percent) and in export products was larger than the decline in wholesale prices of finished industrial products. From 1930 to 1933, the cost of living of an average household was reduced by 31.1 percent, indicating strong deflationary effects.

Figure 6: Index of wholesale prices in Yugoslavia, 1928-1939 (1928=100). Source: Statistical Yearbooks of the Kingdom of Yugoslavia.

Table 5: Wholesale price index in Yugoslavia, 1928-1935 (1928=100). Source: Statistical Yearbooks of the Kingdom of Yugoslavia.
of Yugoslavia.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Agricultural Products</th>
<th>Live-stock Products</th>
<th>Mineral Products</th>
<th>Industrial Products</th>
<th>Export Products</th>
<th>Import Products</th>
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<tbody>
<tr>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
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<tr>
<td>1929</td>
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<td>91.2</td>
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<td>97.7</td>
<td>94.5</td>
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<tr>
<td>1930</td>
<td>81.5</td>
<td>68.7</td>
<td>88.6</td>
<td>102.1</td>
<td>81.9</td>
<td>81.6</td>
<td>83.1</td>
</tr>
<tr>
<td>1931</td>
<td>68.7</td>
<td>57.1</td>
<td>66.5</td>
<td>89.3</td>
<td>72.8</td>
<td>63.5</td>
<td>71.9</td>
</tr>
<tr>
<td>1932</td>
<td>61.4</td>
<td>51.9</td>
<td>52.1</td>
<td>88.3</td>
<td>67.5</td>
<td>53.2</td>
<td>71.2</td>
</tr>
<tr>
<td>1933</td>
<td>60.6</td>
<td>43.9</td>
<td>52.6</td>
<td>87.4</td>
<td>72.2</td>
<td>51.0</td>
<td>77.4</td>
</tr>
<tr>
<td>1934</td>
<td>59.5</td>
<td>44.1</td>
<td>51.0</td>
<td>93.5</td>
<td>68.7</td>
<td>51.6</td>
<td>73.0</td>
</tr>
<tr>
<td>1935</td>
<td>62.0</td>
<td>52.4</td>
<td>52.1</td>
<td>92.2</td>
<td>68.0</td>
<td>55.5</td>
<td>72.2</td>
</tr>
</tbody>
</table>

Prices in foreign trade were on the decline, with export prices declining more than import prices. According to the official statistics, from 1928 to 1934, export prices fell by 48.4 percent, while import prices fell by 12.4 percent. Consequently, the terms of trade of the Yugoslav economy deteriorated by 27 percent during the first two years of the global economic crisis.

Nominal employee wages in the Kingdom of Yugoslavia fell significantly due to the general economic slump and increased unemployment along with the greater competition on the labour market. In the period between 1930 and 1934, nominal wages in manufacturing decreased by 21.3 percent and in agriculture by 30.2 percent. During the same period, the nominal decline in public sector wages was 28.1 and 24.8 percent in private sector wages. Under the conditions of a significant decline in the cost of living of 31.1 percent, the real wages of employees in the Kingdom of Yugoslavia, despite their nominal decline, actually increased from 1930 to 1934 due to the higher purchase value of the dinar.

In the midst of the economic crisis, a fiscal adjustment was undertaken, prompted by decreased fiscal revenues and decline in economic activity. In the period between 1929 and 1934, the total public revenues and expenditures were nominally significantly reduced (Figure 7). Fiscal surplus was registered in the first three years of crisis, from 1929 to 1931, while a relatively small fiscal deficit occurred in 1932 and in 1933.

Figure 7: Public revenues, expenditures, and fiscal balance, 1927-1937. Source: Statistical Yearbook: Yugoslavia, 1918-1988.

Table 6: Public revenues, public expenditures, and fiscal balance, 1924-1940. Source: Statistical Yearbook:

<table>
<thead>
<tr>
<th>Years</th>
<th>Public revenues (Million dinar)</th>
<th>Public expenditures (Million dinar)</th>
<th>Fiscal balance (Million dinar)</th>
<th>Fiscal balance to National income (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924/1925</td>
<td>10,838</td>
<td>10,540</td>
<td>298</td>
<td>0.43</td>
</tr>
<tr>
<td>1925/1926</td>
<td>12,064</td>
<td>11,777</td>
<td>287</td>
<td>0.45</td>
</tr>
<tr>
<td>1926/1927</td>
<td>11,606</td>
<td>11,593</td>
<td>13</td>
<td>0.02</td>
</tr>
<tr>
<td>1927/1928</td>
<td>11,319</td>
<td>10,983</td>
<td>336</td>
<td>0.63</td>
</tr>
<tr>
<td>1928/1929</td>
<td>13,796</td>
<td>11,147</td>
<td>2,649</td>
<td>4.44</td>
</tr>
<tr>
<td>1929/1930</td>
<td>15,062</td>
<td>11,817</td>
<td>4,145</td>
<td>6.91</td>
</tr>
<tr>
<td>1930/1931</td>
<td>13,312</td>
<td>12,470</td>
<td>842</td>
<td>1.67</td>
</tr>
<tr>
<td>1931/1932</td>
<td>10,964</td>
<td>11,530</td>
<td>-566</td>
<td>-1.25</td>
</tr>
<tr>
<td>1932/1933</td>
<td>9,681</td>
<td>10,286</td>
<td>-605</td>
<td>-1.66</td>
</tr>
<tr>
<td>1933/1934</td>
<td>10,015</td>
<td>9,651</td>
<td>364</td>
<td>1.01</td>
</tr>
<tr>
<td>1934/1935</td>
<td>9,758</td>
<td>9,379</td>
<td>379</td>
<td>1.11</td>
</tr>
<tr>
<td>1935/1936</td>
<td>9,989</td>
<td>9,562</td>
<td>427</td>
<td>1.23</td>
</tr>
<tr>
<td>1936/1937</td>
<td>10,572</td>
<td>10,059</td>
<td>513</td>
<td>1.26</td>
</tr>
<tr>
<td>1937/1938</td>
<td>11,987</td>
<td>11,083</td>
<td>904</td>
<td>2.01</td>
</tr>
<tr>
<td>1938/1939</td>
<td>12,385</td>
<td>11,814</td>
<td>571</td>
<td>1.18</td>
</tr>
<tr>
<td>1939/1940</td>
<td>13,118</td>
<td>12,463</td>
<td>655</td>
<td>1.24</td>
</tr>
</tbody>
</table>

According to the official data available for the period between 1929 and 1934, the nominal decline in total fiscal revenues was 29.3 percent, while the total fiscal expenditures dropped by 13.4 percent (Table 6). The decline in fiscal revenues was the result of a decrease in foreign trade and customs revenues. In the 1928/29 fiscal year, total public revenues amounted to 13,769 million dinars, while total public expenditures equaled 11,147 million dinars. Therefore, the total fiscal surplus for that year reached 2,649 million dinars, or 4.4 percent of the national income. The situation was even better in the 1929/30 fiscal year, with fiscal surplus reaching 4,145 million dinars, or as much as 6.9 percent of the nominal national income. However, fiscal revenues significantly decreased in the 1931/32 and 1932/33 fiscal years, when they amounted to 10,963 and 9,681 million dinars respectively. Higher fiscal expenditures than revenues resulted in fiscal deficit of 566 and 605 million dinars or 1.3 and 1.7 percent of the nominal national income, respectively.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Exports</th>
<th>Total Imports</th>
<th>Trade Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1925</td>
<td>8,905</td>
<td>8,753</td>
<td>152</td>
</tr>
<tr>
<td>1926</td>
<td>7,818</td>
<td>7,632</td>
<td>186</td>
</tr>
<tr>
<td>1927</td>
<td>6,400</td>
<td>7,286</td>
<td>-868</td>
</tr>
<tr>
<td>1928</td>
<td>6,445</td>
<td>7,835</td>
<td>-1,390</td>
</tr>
<tr>
<td>1929</td>
<td>7,922</td>
<td>7,595</td>
<td>327</td>
</tr>
<tr>
<td>1930</td>
<td>6,780</td>
<td>6,960</td>
<td>-180</td>
</tr>
<tr>
<td>1931</td>
<td>4,801</td>
<td>4,800</td>
<td>0</td>
</tr>
<tr>
<td>1932</td>
<td>3,056</td>
<td>2,860</td>
<td>196</td>
</tr>
<tr>
<td>1933</td>
<td>3,378</td>
<td>2,883</td>
<td>495</td>
</tr>
<tr>
<td>1934</td>
<td>3,878</td>
<td>3,573</td>
<td>305</td>
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<td>1935</td>
<td>4,030</td>
<td>3,700</td>
<td>330</td>
</tr>
<tr>
<td>1936</td>
<td>4,376</td>
<td>4,077</td>
<td>299</td>
</tr>
<tr>
<td>1937</td>
<td>6,272</td>
<td>5,234</td>
<td>1,038</td>
</tr>
<tr>
<td>1938</td>
<td>5,047</td>
<td>4,975</td>
<td>72</td>
</tr>
</tbody>
</table>

The total volume of foreign trade in Yugoslavia was significantly reduced during the Great Depression (Figure 8, Table 7). In 1929, the total value of exported goods amounted to 7,922 million dinars (equivalent to 1.77 billion dollars in January 2010), with the total value of imported goods reaching 7,595 million dinars (equivalent to 1.7 billion dollars in January 2010). Therefore, a positive foreign trade balance of 327 million dinars was achieved. During the following three years, the volume of foreign trade drastically decreased, with the total value of export equalling 3,056 million dinars, a total value of import of 2,860 million dinars and a positive trade balance of 196 million dinars in 1932. Hence, between 1929 and 1932, the value of export, expressed in the national currency, decreased by 61.4 percent, while the total value of import fell by 62.3 percent. After 1932, the value of foreign trade started to grow again. However, it did not reach its previous highest level until 1939. Our research has shown that the Kingdom of Yugoslavia pursued a liberal foreign trade policy during the Great Depression and that it introduced no protectionist measures for equilibrating the foreign trade balance.

It was on 25 June 1936 that the Yugoslav authorities enacted measures to partially restrict imports of specific goods from non-clearing countries (33 products; as of 14 January 1937, 39 products). The Kingdom of Yugoslavia traded most with the countries with which it had signed agreements on mutual clearing. To import the above products, one needed to obtain a relevant approval by the Import Committee of the National Bank. Without prior approval of the National Bank, the goods could be neither imported nor cleared by the customs authorities.

As for foreign exchange operations, the National Bank stepped up its supervision and prohibited banks to extend gold-backed loans so as to prevent gold hoarding. To maintain the foreign exchange stock and the balance of payments position, on the eve of World War II, the Kingdom of Yugoslavia introduced additional supervisory measures in the area of foreign exchange operations. On 27 September 1938, the Ministry of Finance increased the number of products requiring an import licence by 17, to a total of 56 products. The National Bank began verifying import documentation and the invoiced import prices. As of 12 October 1938, the National Bank was vested with the power to control the export of 30 products, mostly raw materials. On 17 June 1939, the National Bank and the government in the form of the Ministry of Finance founded the Foreign Exchange Committee, whose specialist body, the Foreign Exchange Directorate, operated within the National Bank. The Import Committee continued operating.


<table>
<thead>
<tr>
<th>Year</th>
<th>Million USD</th>
<th>% of National income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>-35.6</td>
<td>-4.0</td>
</tr>
<tr>
<td>1931</td>
<td>-32.1</td>
<td>-4.0</td>
</tr>
<tr>
<td>1932</td>
<td>-8.0</td>
<td>-1.2</td>
</tr>
<tr>
<td>1933</td>
<td>1.7</td>
<td>0.2</td>
</tr>
<tr>
<td>1934</td>
<td>-7.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>1935</td>
<td>-5.7</td>
<td>-0.7</td>
</tr>
<tr>
<td>1936</td>
<td>2.9</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Between 1930 and 1932, the total current account balance was negative despite a positive foreign trade balance (Figure 9, Table 8). In 1939, the current account balance deficit amounted to 35.6 million dollars, in 1931 to 32.1 million dollars, and in 1932 it equalled 8 million dollars. A 1.7-million dinar surplus in the current account balance was registered in 1933. During the following two years it again became negative: 7.5 million dollars in 1934, and 5.7 million dollars in 1935. Only in the years 1930 and 1931, the share of the current account balance deficit in the national income was relatively high, reaching a level of 4 percent, while in other years it remained at the level of about 1 percent of the national income and was minimally positive.

Figure 10: Stock exchange turnover in Yugoslavia (in 000 dinar). Source: Statistical Yearbooks of the Kingdom of Yugoslavia.

During the Great Depression, the total stock exchange turnover in Yugoslavia decreased significantly (Figure 10). This applied to money and capital turnover, as well as the turnover of goods on the product
exchange in Novi Sad. In 1929, the total turnover reached 7,953 million dinars, falling to only 1,360 million dinars in 1933. Thereafter, the total stock exchange turnover started to grow again gradually, but the total recovery of the stock exchanges in Yugoslavia took several more years. Trade in foreign exchange accounted for the largest share of the total stock exchange turnover in Yugoslavia and in 1929 amounted to 5,923 million dinars, falling to 791 million dinars in 1933.

4. The monetary policy of the National Bank of the Kingdom of Yugoslavia

Monetary conditions in the Kingdom of Yugoslavia were relatively favourable before the Great Depression. The central bank interest rates were stable (with a discount rate of 6 percent and a Lombard rate of 8 percent), with a factual stability of the dinar on domestic and international stock markets. The discount rate of the National Bank was first reduced from 6 percent in 1929 to 5.5 percent in 1930, only to be increased to 6.5 percent in June 1931 and to 7.5 percent in July 1931. After the Great Depression ended, the discount rate of the National Bank was reduced to 7 percent in February 1934, followed by a further reduction to 5 percent in the period between February 1935 and the end of 1940.

Figure 11: Discount rate, 1928-1940 (annual level, in %). Source: Annual Reports of the National Bank of the Kingdom of Yugoslavia.

Within the framework of the implemented monetary reform (pegging to gold), the lombard rate was increased from the former 7 percent to 8 percent in June 1931. This was followed by a further increase to 9 percent in July 1931. The first decrease after that occurred in October 1933, when it was reduced to 7.5 percent, followed by a further reduction to 7 percent in February 1934, and finally to 5 percent in February 1935.


<table>
<thead>
<tr>
<th></th>
<th>Discount rate</th>
<th>Lombard rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Silver</td>
<td>Gold</td>
</tr>
<tr>
<td>Jan 1928</td>
<td>6.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Jan 1929</td>
<td>6.0</td>
<td>8.0</td>
</tr>
<tr>
<td>May 1930</td>
<td>5.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Jun 1931</td>
<td>6.5</td>
<td>8.0</td>
</tr>
<tr>
<td>Jul 1931</td>
<td>7.5</td>
<td>9.0</td>
</tr>
<tr>
<td>Oct 1933</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>Feb 1934</td>
<td>7.0</td>
<td>7.0</td>
</tr>
<tr>
<td>Feb 1935</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Dec 1940</td>
<td>5.0</td>
<td>5.0</td>
</tr>
</tbody>
</table>

In 1929, total foreign exchange reserves equalled 1,633.5 million dinars, which was sufficient to preserve the stability of the dinar. According to the Ministry of Finance’s statistics, the foreign debt of the
Kingdom of Yugoslavia in dinars as of 30 November 1929 was 461.9 million (435.3 million dinars in net terms). The repayment of foreign debt was accompanied by certain difficulties. The lowest cover for currency in circulation of 20.8 percent was registered on 30 June 1929, followed by its increase to 34.5 percent by the end of 1929.

In 1929, the total amount of credits approved by all 671 large and small banks operating in the Kingdom of Yugoslavia equalled 12,941.7 million dinars, which is considered a high credit activity for the period in question (Figure 12, Table 10). Credit demand was high, prompting the National Bank of the Kingdom of Yugoslavia to extend credits to banks, industry and trade, including seasonal credits for exporters. The objective was undoubtedly to prevent any significant decrease in economic activity and employment while increasing export revenue during the global and domestic crisis, by increasing the level of lending at interest rates that were more favourable than the ones offered on the market. Thus, in 1929 the National Bank approved 704.36 million dinars in credit to 290 banks (credit institutions) and 192.11 million dinars in seasonal credits. The objective was undoubtedly to prevent any significant decrease in economic activity and employment while increasing export revenue during the global and domestic crisis, by increasing the level of lending at interest rates that were more favourable than the ones offered on the market. Thus, in 1929 the National Bank approved 704.36 million dinars in credit to 290 banks (credit institutions) and 192.11 million dinars in seasonal credits. By the end of 1929, the total amount of loans of the National Bank of the Kingdom of Yugoslavia amounted to 1518 million dinars and continued to grow until the end of 1932, when the total amount of loans of the National Bank reached 2,457 million dinars. The growth of the National Bank’s loans broken down by years was the following: 7.8 percent in 1930, 37.6 percent in 1931, and 9.1 percent in 1932. After that, the volume of the National Bank’s lending was reduced to 2,102 million dinars in 1934, followed by a further reduction to 1,764 million dinars in 1934. The National Bank’s lending volume of 2,223 million dinars, dating from 1931, was not reached until 1939.

Figure 12: Loans given by the National Bank of Yugoslavia, 1921-1938 (million dinars). Source: Annual Reports of the National Bank of the Kingdom of Yugoslavia.

The level of ‘advance payments’ extended to the government in previous years decreased significantly, from 4.15 million dinars in 1929 to 1.8 million dinars in 1931, and further to 1.69 million dinars in 1934. This points to the reduction in internal public debt to the National Bank under the conditions established by the monetary reform of 1931. In 1931, the National Bank issued its own securities. The issue was modest at first but increased in the period between 1936 and 1939 (Table 10).

<table>
<thead>
<tr>
<th>Year</th>
<th>Loans</th>
<th>Securities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>267</td>
<td></td>
</tr>
<tr>
<td>1921</td>
<td>598</td>
<td></td>
</tr>
<tr>
<td>1922</td>
<td>1,521</td>
<td></td>
</tr>
<tr>
<td>1923</td>
<td>1,524</td>
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<tr>
<td>1924</td>
<td>1,495</td>
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<td>1925</td>
<td>1,371</td>
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<td>1926</td>
<td>1,481</td>
<td></td>
</tr>
<tr>
<td>1927</td>
<td>1,683</td>
<td></td>
</tr>
<tr>
<td>1928</td>
<td>1,724</td>
<td></td>
</tr>
<tr>
<td>1929</td>
<td>1,518</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>1,637</td>
<td></td>
</tr>
<tr>
<td>1931</td>
<td>2,253</td>
<td>27</td>
</tr>
<tr>
<td>1932</td>
<td>2,457</td>
<td>15</td>
</tr>
<tr>
<td>1933</td>
<td>2,102</td>
<td>12</td>
</tr>
<tr>
<td>1934</td>
<td>1,764</td>
<td>17</td>
</tr>
<tr>
<td>1935</td>
<td>1,781</td>
<td>49</td>
</tr>
<tr>
<td>1936</td>
<td>1,717</td>
<td>117</td>
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<td>1937</td>
<td>1,705</td>
<td>201</td>
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<tr>
<td>1938</td>
<td>1,771</td>
<td>259</td>
</tr>
<tr>
<td>1939</td>
<td>2,223</td>
<td>408</td>
</tr>
</tbody>
</table>

In cooperation with the US Federal Reserve, the Bank of England, the Banque de France, and the central banks of Switzerland and Austria, the National Bank of the Kingdom of Yugoslavia managed to prevent a speculative attack on the Yugoslav dinar in 1929 during the crash of the New York and other stock exchanges. The National Bank of the Kingdom of Yugoslavia kept the bulk of its deposits, foreign exchange reserves, with the listed central banks.

In 1929, the National Bank of the Kingdom of Yugoslavia, together with the Ministry of Finance, started to work on the statutory stabilization of the dinar. Experts of the National Bank studied the experiences of several Western countries regarding to the stabilization of their own currencies and implemented these experiences in the monetary and financial system of the Kingdom of Yugoslavia, taking into consideration the specifics of domestic conditions. The year of 1931 was the year of implementation of the monetary reform, which had been under preparation during the preceding two years. The main objective of the monetary reform was statutory stabilization of domestic currency, despite the fact that the dinar had been factually stable during the period of the preceding five years, since 1925. The reform was the basis for introducing a long-term sound financial and economic policy. Statutory stabilization of the dinar was introduced by the Monetary Law adopted on 11 May 1931. The dinar was pegged to gold with the introduction of the gold currency standard. The value of the dinar was set at the rate of 1 dinar = 26.5 milligrams of pure gold. The law introduced the mandatory minimum total cover of the dinar of 35 percent and the minimum cover of 25 percent in gold for all sight liabilities. Until 1930, the cover in gold and foreign exchange was low. In 1931, as part of the monetary reform, the cover was increased to 2,183 million dinars, or 35 percent of the total amount of money in circulation. In the same year, the capital of the National Bank increased from 30 million dinars in 1929 and in 1930 to 180 million dinars. In addition to other positive changes, the statutory stabilization of the dinar contributed to the reduction of public debt and an increase in lending. The dinar was listed on a number of stock exchanges, including the one in Zurich, where its value was relatively stable throughout 1929, fluctuating narrowly between 9.12 and 9.13 Swiss francs for 100 Yugoslav dinars, but falling to 6.5 to 7.0 against the Swiss franc in 1934 and 1935 (Table 11, Figure 13).
Money circulation in Yugoslavia significantly decreased during the period of crisis. In 1929, the total money circulation was 7,328 million dinars, followed by a reduction to 5,250 million dinars, or by 28.4%.
percent by 1934, as the nominal national income dropped by 43.2 percent in the same period (Figure 14). On the basis of the total circulation of money and the national income trends, it can be concluded that the economy was relatively well supplied with money during the period of the economic crisis, since the ratio of money in circulation to the national income ranged between 12 and 15 percent.

Figure 14: Money in circulation and demand deposits, 1920-1940 (million dinars). Source: Annual Reports of the National Bank of the Kingdom of Yugoslavia.

Banknotes in circulation accounted for 79.4 percent and sight deposits for 20.6 percent of the total amount of money in circulation in 1929. In 1934, the percentage of banknotes in circulation increased to a staggering 83.5, while the share of sight deposits decreased to 16.5 in the absence of a contemporary practice of high proportion non-cash payments.

Table 12: Total savings and Dinar current accounts, as on 1 December of each year. Source: Annual Reports of the National Bank of the Kingdom of Yugoslavia.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (million dinar)</th>
<th>Indexes, 1930=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1928</td>
<td>8411</td>
<td>60.6</td>
</tr>
<tr>
<td>1929</td>
<td>9344</td>
<td>67.3</td>
</tr>
<tr>
<td>1930</td>
<td>13880</td>
<td>100.0</td>
</tr>
<tr>
<td>1931</td>
<td>12170</td>
<td>87.7</td>
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<td>1932</td>
<td>10226</td>
<td>73.7</td>
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<td>1933</td>
<td>9662</td>
<td>69.6</td>
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<td>1934</td>
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<td>1935</td>
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<td>72.9</td>
</tr>
<tr>
<td>1936</td>
<td>10671</td>
<td>76.9</td>
</tr>
<tr>
<td>1937</td>
<td>11770</td>
<td>84.8</td>
</tr>
</tbody>
</table>

Savings deposits were growing in Yugoslavia before the economic and financial crisis broke out. In 1930, the total savings deposits and dinar current account balances amounted to 13.88 billion dinars. After that period, due to the crisis, confidence in the banking and financial systems eroded, resulting in withdrawal of a part of the savings deposits. Savings deposits decreased to 9.66 billion dinars in 1933, and to 9.78 billion dinars in 1934. This indicates that around 30 percent of savings deposits were withdrawn between 1930 and 1933. Savings did not recover until 1935, when they surpassed 10 billion dinars and resumed an upward trend throughout the years that followed. A decrease in total savings deposits was generally accompanied by a decrease in nominal national income in Yugoslavia. The ratio of total savings to national income in current prices was between 27 and 28 percent during the Great Depression, which was relatively positive given the level of development of the Yugoslav economy at the time.
Remittances from emigrants were an additional source for the replenishment of foreign currency reserves. A part of the savings was also associated with the inflow of remittances. Until the Great Depression of 1929, the inflow was substantial, reaching 887.6 million dinars (around 15.6 million dollars at the official exchange rate of the period), or around 1.5 percent of the national income. After 1929, remittances continued to decrease to about 120 million dinars in 1934.

Between 1929 and 1934, a total of 3,439 businesses went bankrupt. Most of these bankruptcies were registered in 1929 and 1930 (1,062 and 608, respectively). From the adoption of the Law on Out-of-Court Bankruptcy Settlement on 1 May 1930 to the end of 1934, there were a total of 2,698 such settlements, with the number peaking in 1932 (1,146). This indicates a significant increase in the bankruptcies of businesses during the period of economic and financial crisis.

Figure 15: Assets of the National Bank of Yugoslavia, 1920-1939 (million dinars). Source: Annual Reports of the National Bank of the Kingdom of Yugoslavia.
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Regulatory responses to the ‘roots of all evil’: The re-shaping of the bank-industry-financial market interlock in the US Glass-Steagall and the Italian 1936 Banking Acts

Federico Barbiellini Amidei
federico.barbielliniamidei@bancaditalia.it

and

Claire Giordano
claire.giordano@bancaditalia.it
Banca d’Italia

Abstract
This paper provides a historical comparison between the 1930s banking regulations introduced as a response to the domestic banking crises in Italy and the US, with respect to the bank-industry-financial market linkages. The resulting separation in commercial and investment banking in the US is shown to be different from the barrier erected between banks and industry in Italy. This was also due to the dissimilar roles played and responsibilities held by the banks in the two countries, as conceived by contemporaries. Questionable securities dealings by commercial banks were initially considered a major cause of the US stock market crash; the intricate ownership and credit relationships between the mixed banks and industrial firms were a key factor in Italy’s crisis, where the financial market was less developed. Commercial banks’ direct and indirect engagement in securities activities was thus banned by law in the US; equity and debt stakes in industrial clients, as well as significant maturity mismatches, were de facto forbidden in Italy. The explanation of the tenor of the two sets of legislation, supported by documents found in historical archives, is then followed by a close inspection of banking data, in an attempt to gauge the immediate impact on banking activities and external corporate finance in the two countries.

JEL: N20, N40

Keywords: Banking legislation, Great Depression, Italy, US

1. Introduction

As is well-known, the 1930s banking crises triggered a sweeping legislative response in many countries, such as Greece (1931), Bulgaria (1931), Czechoslovakia (1932), the United States (1933, 1935), Finland (1933), Turkey (1933), Switzerland (1934), Germany (1934), Romania (1934), Belgium (1934, 1935, 1937), and Italy (1936-1938). Each country’s regulatory action tended to be crafted to address what was considered the main cause of the recent domestic banking crisis, so as to prevent the occurrence of similar ones in the future. Notwithstanding some similarities, each act was country-specific and aimed at eradicating different types of ‘evils’—hence, the usefulness of cross-country analyses. The present paper provides a historical comparison between the 1933 and 1935 US Banking Acts and the 1936 Italian Banking Act, in particular the parts relative to the redefinition of the links between banks, industry and financial markets.

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2 The opinions expressed in this paper are those of the authors and not necessarily those of the Banca d’Italia.
Our first claim, in fact, is that the Italian Banking Act greatly differed in this respect from what the—surprisingly scanty—existing comparative literature seems to assert, also because little attention has thus far been given to the second of the US Banking Acts. The general conclusion that in Italy, too, the 1930s banking legislation primarily aimed at splitting up commercial and investment banking is here strongly questioned. An examination of this topic not only contributes to historical knowledge, but also appears to be quite timely, as economists, regulators and politicians worldwide are debating and redesigning the new regulatory architecture after the 2007-8 crisis. An in-depth analysis of the historical predecessors of the current law proposals and the ‘evils’ they aimed to address, as well as an attempt to capture via an inspection of historical banking data the 1930s regulations’ immediate effects on the banks’ activities and the industry’s external financing may thus be useful for gaining a better understanding of the current debate and its policy implications.

To achieve the two-fold aim of this paper, we have analysed the US Congressional Record and the Italian Parliamentary acts. In the Italian case, the 1936 Banking Act was actually designed within the walls of the Istituto per la Ricostruzione Industriale (IRI); hence, we have analysed contemporary documents of the IRI, as well as of the main banks of the time and of the Bank of Italy. This research into ‘official’ documents was supplemented with an analysis of papers published by contemporary economists and commentators in scientific journals in the two countries, as well as of relevant articles in the press of the time.

The paper is structured in the following way: the second section briefly discusses the evolution of the US and Italian banking sectors and of their relations with the financial markets in the decades prior to the 1930s. After recounting the banking crises in the two countries and the rescue measures undertaken, the third section focuses on the letter of the two sets of legislation, with respect to the bank-industry-financial markets linkages, in order to stress analogies and differences. The fourth section presents data concerning different categories of credit institutions during and after the introduction of the new legislation. Finally, we draw our conclusions in the fifth section.

2. The Italian and US banking sectors in the decades prior to the 1930s

Since the nineteenth century, a differing evolution of the banking systems in the two countries can be tracked. In Italy, after the 1893-1894 financial crisis, the French crédit mobilier model for commercial banks was replaced by the German-type universal banking model. The period before World War I was thus characterized by the expansion of ‘mixed banks’ (banche miste) which came to play a leading role in corporate finance. They advised and assisted IPOs, frequently underwriting large amounts of shares to be gradually placed thereafter on the market. Trustees of the banks routinely sat on the boards of the main client firms, becoming actual ‘inside directors’ who interfered heavily with the strategic and organizational issues of the corporations (Amatori and Colli 1999, 89). Furthermore, banks, acting as safe-keepers of stocks for their clients, were generally able to exercise the relative voting rights without being disclosed as official stockholders (Conti 1993, 317). Relative to Germany, in Italy, where legal institutions were weaker, the banks resorted to more intense relationships with the bourse players and used contango loans on stocks (riporti su azioni). As a result, banks acquired relevant market-maker positions in the three main stock exchanges (Milan, Turin and Genoa) and were partly responsible for the rapid increase of equity prices. Italian commercial banks thus on the one hand freely underwrote and traded

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3 In October 1981, a seminar held in Boston under the joint sponsorship of the Banco di Roma and the MIT analysed the evolving relationship between banking and industry in the inter-war period in a sample of countries, Italy and the US included. A special issue of the Journal of European Economic History was the result. To our knowledge, apart from these studies, the only existing systematic comparison between the Italian and the US 1930s Banking Acts is Giani and Vannini (2010).

4 We therefore consulted the historical archives of the Bank of Italy (ASBI), Comit, (ASBCI), IMI (ASIMI), IRI (ASIRI) and Ufficio Italiano Cambi (UIC).


6 When resorting to contango loans, the borrower sold securities owned by him to the lender (in this case, the bank), undertaking to repurchase them at a later date at a predetermined price.
securities—mainly stocks—in-house; on the other hand, they lent long-term, accepting securities and real estate as collateral. Autonomous investment trusts and investment banks therefore did not appear in Italy, since the mixed banks engaged, unconstrained, in the entire array of financial services.

The 1907 stock market crash, which also led to the collapse of Italy’s third-largest mixed bank, cracked ‘the illusion […] that the stock exchange [was] an institution able to play a functional role in the mobilisation of savings to finance [the country’s] industrial development’ (Bonelli 1971, 159) and thwarted the future development of Italy’s securities markets. Moreover, the traders in the Genoa stock market were identified as the main culprits of the 1907 crisis, and this led to the enactment of new, restrictive financial regulation in 1913 (Baia Curioni 1995). In particular, the law reserved outcry trading on the stock market exclusively to exchange and securities brokers (agenti di cambio), thus cutting out all other financial intermediaries, such as mixed banks. The so-called ‘single capacity’ principle (Siciliano 2002) was also introduced: brokers could only act for account of their clients, and not for their own. However, these provisions were enforced only in 1925. During this time lapse, a conflict between brokers and mixed banks, who were obviously against the elimination of direct access to the stock markets, broke out. Yet, the 1913 law also favoured mixed banks by setting restrictions on the brokers’ activities. In particular, brokers could not engage in banking activities or become stakeholders of private banks; neither could they obtain monopolistic control over listed securities’ tradings. Banks thus traded securities among their customers and took only the net transaction to the market. A ‘shadow system’ dominated by the mixed banks hence became a forum of exchanges, thus subtracting liquidity from the official market and reducing the significance of the prices determined there (Barbiellini Amidei and Impenna 1999). In conclusion, the 1913 law actually reined in the role of brokers in financial intermediation, leaving the stage clear for an unprecedented financial market-impairing expansion of (unregulated) mixed banks.

In contrast, in the US, according to the 1864 National Banking Act, national banks could not underwrite, trade, or hold equities, for their own or for their customers’ account. The National Banking Act also set restrictions on their real estate loans. In light of their weaker portfolio restrictions, state banks were able to capture this part of the market (White 1983, 23-24), but in general real estate formed only a small part of banks’ portfolio (White 2009, 20). As a result of these regulations, commercial banks played only a small role in the expanding equity markets. Due to their restrictions in security dealings until World War I, national banks also suffered from competition coming from mushrooming investment trusts, which operated under looser state laws. Trust companies first appeared in the US in the 1820s and were initially engaged in personal asset administration. From the 1850s onwards, they became closely connected to the security exchanges: they could receive deposits of money in trust and purchase corporate securities. From the 1880s onwards, they also began to lend on collateral of securities and buy paper in the market, thus moving into the more traditional banking business (Krooss and Blyn 1971). Forbidden from engaging in trust operations, national banks organized state-chartered trust affiliates. Similarly, to evade the restriction on securities dealings and underwritings, they formed dedicated state-chartered affiliates. The 1913 Federal Reserve Act allowed national banks to exercise trust powers directly, thus leading to the gradual disappearance of national bank trust affiliates. It also loosened the restrictions on loans on real estate by national banks.

Investment banks also began to develop in the US in the second half of the nineteenth century, often joining together in syndicates, which were managed by originating houses, such as J. P. Morgan and Kuhn Loeb, as well as Lehman Brothers and Goldman Sachs after 1906. These (unregulated and unsupervised) houses negotiated directly with issuing corporations, advising them and defining the type and terms of the security and the details of the offering. In general, corporate debt was the main security transacted. Representation of investment banks on boards of directors became common. Investment houses could take the entire issue themselves or organize a ‘purchase syndicate’ in which institutional investors (that is, state-chartered commercial banks, security affiliates, and investment trusts) and wealthy individuals were invited to participate by the originator and contractually agreed, via a ‘syndicate agree-

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7 Ministerial Decree of 7 March 1925, No. 222.
8 This was especially true after 1902, when the Optimal Comptroller of the Currency (OCC) also began restricting investment banking activities by national banks (Kotz 1978, 35).
9 See Carosso (1970) and Mahoney (2001) for detailed accounts of the development of investment banks in the US.
ment’, to sell the securities at a uniform price at specified times and places. In the case of large flotations, the originating houses could ask several commercial banks to form a ‘banking syndicate’ to lend the purchasers the necessary funds. The distribution process was slow: syndicate agreements often lasted for a year, and the process of distribution usually lasted several months.

World War I was a turning point in both countries, in that it changed the structure of their financial systems. In the US, commercial banks also began dealing in securities on a large scale; in Italy the German-type mixed banks evolved into actual holding companies of industrial firms.

In the US, both commercial and investment banks alike had participated heavily in distributing government bonds to finance the war effort. This nationwide sales drive had two important effects: (a) it enabled the banks to develop an efficient distribution network for securities; and (b) it made the public, even that of modest means, more receptive to purchasing securities (Kelly 1985, 42-43). Furthermore, in the bull securities market of the 1920s, corporations began approaching the public equity and bond markets directly in order to raise funds. New securities offered by corporations increased fourfold in that decade, from $2.788 million in 1921 to $9.377 million in 1929 (Kotz 1978, 43). The obverse side of this growth was a decline in commercial bank borrowing on corporate balance sheets, a ‘technical revolution in debt financing’ (Klebaner 1991, 320). The downsizing of commercial banks’ traditional lending business was also due to an increase in competition from other financial institutions, such as investment, finance or insurance companies (Kroszner 1996, 74); commercial banks thus had to seek employment for their funds elsewhere. Only the smaller and weaker firms remained dependent on banks as they found it difficult to raise funds through a bond or stock issue. Thus ‘banks’ new financial services were not begun as part of a speculative lark (…) [but] represented a move by these firms to offset the decline of their traditional business and meet the challenges presented by trust companies and investment banks’ (White 1984, 102), as Table 1 illustrates. As a result, in the 1920s, US commercial banks were heavily involved in credit extension, security distribution, and in the exercise of fiduciary and trust functions.


<table>
<thead>
<tr>
<th>Years</th>
<th>1920</th>
<th>1921</th>
<th>1922</th>
<th>1923</th>
<th>1924</th>
<th>1925</th>
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<th>1927</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest earnings</td>
<td>91.3</td>
<td>92.0</td>
<td>89.5</td>
<td>89.6</td>
<td>89.9</td>
<td>86.8</td>
<td>87.8</td>
<td>86.6</td>
<td>85.9</td>
<td>86.9</td>
<td>85.9</td>
</tr>
<tr>
<td>Fees</td>
<td>6.3</td>
<td>4.5</td>
<td>7.5</td>
<td>7.9</td>
<td>8.0</td>
<td>10.5</td>
<td>9.5</td>
<td>11.0</td>
<td>11.8</td>
<td>11.0</td>
<td>11.9</td>
</tr>
</tbody>
</table>

Investment banks’ activities also changed in these years. A new stratum was added below underwriting syndicates, known as ‘selling groups’ (Mahoney 2001, 8), whose members committed to purchase securities only to the extent that they could find buyers. It was still the originating house, however, who decided the terms of distribution. The distribution process was speeded up and could now last only a matter of days. Also due to a general improvement of the quality of available information on corporate profits, investors moved into equity purchases. The number of share-owners thus passed from half a million in 1900 to two million investors in 1920 (Barron Baskin and Miranti 1997). By 1929, established investment bankers were complaining that their business was decreasing in profitability due to a general hike in competition. The entry of commercial banks especially posed a threat because of (a) the greater capital that the former could devote to underwriting if they chose; (b) the larger sales staff they had available; and (c) the large pool of potential clients they had in their depositors. Rather than lend funds for short periods to investment banking syndicates, as they had done previously, commercial banks began to use those funds in direct competition (Mahoney 2001, 18).

Commercial banks engaged in security businesses in two ways. They could operate via state-chartered securities affiliates, which were often tiny and operated from the same premises of the parent banks, while benefiting from their parents’ name and reputation (Kroszner and Rajan 1994, 812). Alternatively, national banks could directly deal in investment securities via their internal ‘captive’ bond departments, as this was unofficially approved by the OCC. However, they could not deal with equity, nor could they of-

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10 Interlocking directorates and overlapping officers were also common.
fer residential mortgages internally. Table 2 points out the increasing number of national banks engaged in securities activities in the 1920s. By 1929, commercial banks and their security affiliates had equalled investment banks in terms of volume of securities underwritten (Peach 1941, 20).

Table 2: Number of US national banks engaged in securities business via in-house departments and affiliates. Source: Peach (1941, 83).

<table>
<thead>
<tr>
<th>Year</th>
<th>1922</th>
<th>1923</th>
<th>1924</th>
<th>1925</th>
<th>1926</th>
<th>1927</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-house departments</td>
<td>62</td>
<td>78</td>
<td>97</td>
<td>112</td>
<td>128</td>
<td>121</td>
<td>150</td>
<td>151</td>
<td>126</td>
<td>123</td>
<td>109</td>
<td>102</td>
</tr>
<tr>
<td>Security affiliates</td>
<td>10</td>
<td>17</td>
<td>26</td>
<td>33</td>
<td>45</td>
<td>60</td>
<td>69</td>
<td>84</td>
<td>105</td>
<td>114</td>
<td>104</td>
<td>76</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>95</td>
<td>123</td>
<td>145</td>
<td>173</td>
<td>181</td>
<td>219</td>
<td>235</td>
<td>231</td>
<td>237</td>
<td>213</td>
<td>178</td>
</tr>
</tbody>
</table>

Many small investors might still have shied away from buying securities, not having sufficient capital to buy a diversified portfolio of stocks. This need was satisfied by the lightly regulated investment trusts, whose number increased (from 40 before 1921, to 265 in 1929; Carosso 1970, 287), or by public utility holding companies in the case of utilities. Many trusts dealt in securities, participated in underwriting, and made short-term loans (Carosso 1970, 282); some even bought shares in other trusts, ‘a definite pathology’ (Williams 1932, 26). Investment banks soon began sponsoring them, succumbing ‘to the investment trust mania that swept American finance in the late 1920s’ (Carosso 1970, 291): by 1929, over 60 percent of trusts were sponsored by investment banks, brokers, or dealers (Kotz 1978, 48). The latter profited from the distribution of the trusts’ securities and received management fees for operating the trust, which in turn could lend money to its sponsoring investment bank, could deposit funds in it, and could be used to purchase securities that the investment bank underwrote.

In Italy, a new type of financial institution appeared during and immediately after World War I. On the industry side, big corporations made intensive use of financial holdings (and after 1923, of shares with multiple voting rights), in order to guarantee control while at the same time minimizing the capital, risk and responsibility of managers and shareholders, and in order to intervene in the stock market so as to sustain prices and disguise refinancing operations and indebtedness levels. On the banking side, the Italian mixed banks increasingly resorted to more intricate financial relationships with industry, through ‘under the line’ operations, with the recourse to front agents funded by contango loans to buy and sell stocks on behalf of and in the interest of the banks, as well as through the institution of holding companies and of controlling syndicates (Conti 1993, 323). Prophetic were the words of the contemporary Italian economist Sraffa:

The greatest danger entailed in the financing of industry by banks is to be found in the consequent close relations between bank and industry, [in the general tendency towards] the formation of large ‘groups’ of companies of the most varied kinds concentrated around one or more banks, mutually related by the exchange of shares and by the appointment of Directors common to them (Sraffa 1922, 195).

The danger arising in this picture from ‘the contrast between the shortness’ of Italian banks’ debts and ‘the non-liquidity of their credits’ was heightened by the significance of their big debtors conti di corrispondenza amongst their deposits (‘by far the more important’):

Most of the deposits of each bank thus belong to the same group of persons and concerns to which the bank makes loans [...] Thus, in substance, a large part of the deposits constitute the common capital of a group of industrial concerns [...]. In such conditions, should a bank refuse its industrial clients the loans they require, it would also lose their deposits (Sraffa 1922, 196).

As the CEO of the Banca Commerciale Italiana (hereafter Comit), one of the three main mixed banks, would later say:

The physiological symbiosis had turned into a monstrous Siamese twinning. The banks were still ‘mixed’ banks formally, but substantially they had become banques d’affaire […]. Nor was this enough: to protect themselves […] the banks had bought back practically all their capital: they owned
themselves via the ownership of the financial holdings by them created and financed to guarantee ‘the control’ over their capital. […] The Siamese twinning led to catoblepismo\textsuperscript{11} (Mattioli 1962, 28).

Both the US and Italy experienced an unprecedented stock market boom in the 1920s (Ciocca and Toniolo 1984, Minsky 1984). In Italy, the 1922-1925 boom was fuelled by the mixed banks’ purchases, motivated by the huge profit opportunities; in the US 1922-1929 boom, where ‘the universal bank format, in which banks own equity and households own liabilities of banks, was not the practice’ (Minsky 1984, 247), the banks were still involved in the financing of equity positions, as securities were used for collateralized borrowing, as well as through their involvement in the securities underwriting, dealing, and distributing process.

In Italy, when the stock market weakened already in 1925, the banks stepped in to stem the falling value of equities. They tried to recover liquidity through the strategy of fictitious sales and transfers of securities to new captive holding companies (Battilossi 2000). Unable to reverse the bear market on their own, they jointly created the Società Finanziamento Titoli (Softit) in order to ‘purchase and sell securities, receive and extend contango loans, offer and collect funds on listed securities and engage in any correlated financial operation’,\textsuperscript{12} so as to support the market price of securities. Softit received heavy financial support from the Bank of Italy and the Treasury. Since this attempt, too, failed—Softit was forced to restructure its debt and soon after wound down its activity—the banks had no alternative but to hold on to their equity portfolios in order to limit their losses. The other side of the story was that industrial enterprises became even more dependent on bank lending as an external source of funding. The return to the gold standard in 1927, at an overvalued rate for the lira, also encouraged Italian banks to become indebted abroad, in particular with US investors, on a short-term basis—a strategy which proved to be losing when these funds were withdrawn at the onset of the Great Depression.

As a delayed response to the 1920s banking crisis in Italy, which saw the collapse of a large mixed bank and the bailout of another (the Banco di Roma), the first commercial banking regulation was enacted in 1926.\textsuperscript{13} The law introduced restrictions on lending to any single borrower, but admitted exceptions which were successfully exploited by the main banks; thus it did not effectively deal with the dangerous bank-industry interconnections. In the US, the McFadden Act was passed one year later (in 1927) in an opposite attempt to lift existing restrictions. The law, in fact, further encouraged non-farm real estate loans by national banks, and it made internal bond (but not stock) operations officially permissible for national banks, on par with the state-chartered ones.\textsuperscript{14}

3. The 1930s banking crises and regulatory responses

3.1 The 1930s banking crises and crisis-management measures in Italy and the US

The October 1929 stock market crash is commonly considered the starting date of the Great Depression. It also marked the beginning of a ‘new era in commercial bank lending’ (Go 1999) in the US. Some of the large city banks began to provide borrowers—mainly utility and manufacturing firms—with one- to-three year loans, as the sharp decline in corporate profits, followed by the collapse of the bond market in late 1930, left many corporations with no recourse but to resort to bank loans to finance their operations. Some short-term loans were converted into term loans.

The first banking panic began to develop in late 1930. This was to be the first of four (Friedman and Schwartz 1963, Bordo and Haubrich 2009). The failure of the large New York-based commercial Bank of United States in December 1930, the largest in US history up to that time, had a particularly adverse effect on depositor confidence.\textsuperscript{15} Security dealings, conducted by its affiliates, were pinpointed as the

\textsuperscript{11} This word is untranslatable, but it implies the pathological manifestation of a perverse auto-referential concentration and entanglement of powers (see Onado 2003, 404).
\textsuperscript{13} Royal decrees of 7 September 1926, No. 1511, and 6 November 1926, No. 1830.
\textsuperscript{14} Underwriting and distributing securities (bonds and stocks) beyond the banks’ home cities was still forbidden by branching restrictions; again, state-chartered affiliates were organized to circumvent the ban.
\textsuperscript{15} Up to that time most bank failures had occurred in rural areas; furthermore, the Bank of United States had over $200 million of deposits, as well as a distinctive name which made it resemble more an official bank than an ordinary state-chartered commercial bank (Friedman and Schwartz 2008, 26-27).
main cause of the bank’s failure. In general, the Federal Reserve System stressed that the bank failures (which mostly involved small or non-member banks) were due to bad bank management or inevitable reactions to prior speculative excesses. The influential leading banks in the past had clashed with the rural banks mainly over branching issues and thus also showed little concern for their failures (White 1984, 136-137). No action was taken as a result.

The initial banking crisis did not last long, as bank failures declined in early 1931. In their scramble for liquidity, however, banks dumped their low-grade corporate bonds, whose prices fell and thus increased the pressure on the bond market. By reducing the market value of bond portfolios of banks, declines in bond prices in turn reduced the margin of capital, and in this way contributed to subsequent bank failures (Friedman and Schwartz 1963). The onset of the second banking crisis is dated March 1931 and was aggravated by the repercussions from the banking panic in Central Europe in the summer, as well as by Great Britain’s departure from the gold standard in September. After a failed attempt of creating a cooperative of banks, which would have aided ailing members in October 1931, President Hoover promoted the creation of the Reconstruction Finance Corporation (RFC) in January 1932 to make one-year loans to banks and to railroads owned by them, which were on the verge of default, but on ‘full and adequate security’. The RFC was funded mainly through the Treasury which, in turn, sold bonds to the public. After the creation of the RFC, the banking panic subsided, although ‘the two developments may have been unrelated’ (Friedman and Schwartz 2009, 45).

A month later, the first Glass-Steagall Act was enacted on 27 February 1932; it was an emergency measure, which mainly broadened the collateral that the Federal Reserve System could hold against loans to individual banks. It was declared by Glass to be an ‘immediate relief of a very distressing situation’; he was then ‘prepared to go ahead with the permanent legislation which we have in mind’. A new peak in bank failures happened in March 1932, and only in April, under heavy congressional pressure, did the Federal Reserve System embark on large-scale open market purchases. Bank failures again subsided. By the end of 1932, however, a new banking panic ensued. The required publication of the names of banks borrowing from the RFC led in fact to bank runs and proved to be an enormous disincentive against using this facility.

The assets of US commercial banks shrank by almost one-third between 1929 and 1932, and almost 40 percent of these banks actually failed (Goldsmith 1968). Furthermore, by 1932 an estimated 2,000 investment banks and brokerage firms had also gone out of business. J. P. Morgan’s deposits fell by nearly half, from $504 million in 1929 to $319 million in 1932, while Kuhn Loeb’s deposits were reduced six-fold, from $88.5 million to $15.2 million (Kotz 1978, 52). Many investment trusts failed, too, and their total assets shrank by around 60 percent between 1930 and 1933 (Goldsmith 1968).

On 6 March 1933, the new President Roosevelt declared a nationwide banking holiday until 9 March, the day on which Congress enacted an Emergency Banking Act, authorizing emergency issues of Federal Reserve Bank notes and allowing the RFC to invest in the preferred stock, capital notes and debentures of commercial banks, as well as to make loans using bank preferred stock as collateral. Insolvent banks were closed, in an attempt to lessen the uncertainty driving the panic. This was followed by the US leaving the gold standard in April 1933.

Italy, too, was not unaffected by the Great Depression and banking crises. Industrial output contracted by a quarter between 1929 and 1932 (Toniolo 1980). Confronted with deflation and falling demand, industrial firms could hardly rely on financing from retained profits, while at the same time they saw the real value of their debts increase. They could thus only turn to banks for further loans. Banks were forced to ‘hold, if not increase, the credit extended to industry, which otherwise would have found itself in a

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18 ‘I think it is fair to say that what happened in Germany, in England, and in Central Europe generally has been a cause of disturbance in the mental attitude of bankers and business men in this country. [...] We cannot control conditions in foreign countries, but we can do our best to counteract their disastrous effects on our own industries by providing a bulwark for the banks upon which the strain falls most heavily’ (Remark by Walcott, Congressional Record-Senate, 7 January 1932, p. 1465).
19 See the studies by Mason (2001, 2003) for an empirical assessment of the impact that the RFC had on the US economy from a political economy perspective.
20 Remark by Glass, Congressional Record-Senate, March 3 1932, p. 5245.
situation of [...] financial imbalance [...]’; on the other hand, it was impossible to float industrial shares on the internal markets:

Financial markets practically stopped working: they did not absorb new issues anymore to demobilise banks’ industrial credits, but instead demanded long and continuous interventions by the banks to avoid sharp drops in prices, that would have discouraged the already few investors [...] (Banca Commerciale Italiana 1931, 10).

The withdrawal of foreign lines of credit made banks’ activity ever more dependent on credit from the Bank of Italy. By the beginning of 1931, Comit and Credito Italiano (hereafter Credit) had no alternative but to turn to the government which secretly mandated loans to them, via the Liquidation Institute, ultimately financed by the Bank of Italy.21 In turn, the banks accepted a restriction on their activities to ‘ordinary’ credit operations, as they were forbidden to hold any stake in industrial or real estate firms.

As Italy’s industrial enterprises saw their long-term credit lines cut off by these agreements, a state-owned long-term credit institution was created in the same year.22 The *Istituto Mobiliare Italiano* (IMI) was to finance itself on the market through the issuance of ten-year bonds with state guarantees, as it was banned from collecting deposits (Art. 3).23 The IMI’s bonds could be listed, by law, on the stock exchange; they could be taken to the Bank of Italy to be discounted; and they could be accepted by public entities as cautionary deposits (Art. 6). Thus funded, the IMI was supposed to extend loans to industrial firms, on the collateral of securities or real estate, as well as to hold equity stakes in the firms and to engage in trust activities (Art. 2-3). Hence the IMI, in its first years, potentially was: a medium-term credit institution (extending mortgages and funds fuelled by bond issues); a financial holding (buying financial assets and extending credit on the security of stock); an investment bank (issuing, underwriting, and managing bonds and equity); and an investment trust (able to manage savings of private and institutional investors, a sort of forerunner of mutual funds)—all functions which defined the *credito mobiliare* activity (Lombardo 1998, 38-39). The idea was to create ‘a credit institution at the centre if not an actor of the industrial development programmes’ (Confalonieri 1983, 22), which would fill the void left by the imminent demise of mixed banking. Industrial firms with sound collateral could thus obtain loans from the IMI and then use such funds to pay back their bank loans; to close the circle, banks could then free themselves from their long-term credits to these clients and hence limit themselves to ‘ordinary’ credit thereafter. The final outcome should have been a conversion, in the firms’ balance sheets, of long-term bank debt into long-term debt towards the IMI. Also, the control over industry would have been transferred from banks, representing private interests, to the state, which represented the public interest.

In practice, however, few loans were extended, due to the under-funding of the institution and the strictly conservative outlook of its first managers.24 Fiduciary activities were not undertaken, as the IMI management believed that it had to use this instrument gradually in financial markets ‘which almost totally lacked in experience and traditions’ and where the public was not yet mature.25 Furthermore, in the period between 1931 and 1936, the IMI was ‘crowded out’ by other ‘special credit institutions’ (Lombardo 1998, 293-308). As a result, the alleviation of the mixed banks’ balance sheet was minimal, and the IMI was not able to solve the intricate proprietary relationships between bank and industry.

Italy’s banking crisis was finally settled in March 1934 by three deals (*Convenzioni*) between the state and each of the main mixed banks (Comit, Credit, Banco di Roma). The latter committed themselves to maintaining the nature of commercial credit banks, devoid of shares and credit stakes in industrial firms. In return, they were freed both from their excessive debt burden towards the Bank of Italy and from their excessive credit exposure towards firms. All industrial securities in the banks were transferred to the *Sezione Smobilizzati* of the Industrial Reconstruction Institution (IRI), created the previous year, which absorbed the existing Liquidation Institute.26 The IRI also had a Financing Section, which was similar to

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21 *Convenzione* of 20 February 1931, in ACS, ASIRI, serie nera, cart.1 and *Convenzione* of 31 October 1931, in ASBCI, Sofindit, cart. 374, fasc. 1. The latter is also published in Guarino and Toniolo (1993).
22 Royal legislative decree of 13 November 1931, no. 1398.
23 ASBI, Fondo Beneduce, b. 9, fasc. 4.
24 ‘Memorandum by Comit to the Minister of Finance, Jung’ of 14 November 1932, in ASBCI, Carte Mattioli, cart. 1; ‘Letter by Toeplitz to Jung’ of 6 December 1932, in ASBCI, Carte Mattioli, cart. 1.
25 Remark by Mayer, Meeting of MI Board of Directors, in ASIMI, Verbali del Consiglio di Amministrazione-IMI, vol. 1, 1931-34, II session, p. 18. Mutual funds only developed in Italy many decades later, in the 1980s.
26 Law of 23 January 1933, No. 5.
the IMI, in that it aimed at making loans to businesses, but for a twenty-year period (vs ten years for the IMI). To finance its activities, the IRI issued long-term bonds bearing a fixed interest rate, guaranteed by the state. Therefore, the IRI not only was able to offer much needed fresh capital to Italy's industrial world, but also set up a plan to (partially) repay what the Bank of Italy had previously injected into the mixed banks. It became a permanent institution in 1937.

3.2 The banking acts in the two countries

In Italy, the 1934 Convenzioni set the foundations of a new Banking Act which, after a parliamentary iter of nearly two years, saw the light in 1938. The legislative history of the second Glass-Steagall Act was much briefer, extending from its introduction as a bill in March 1933 to its enactment in June of that same year.

The US Act’s explicit aims were manifold: in particular, (a) provision for the safer and more effective use of the assets of banks; (b) regulation of inter-bank control; and (c) prevention of the undue diversion of funds into speculative operations. In Steagall’s words,

‘... the purpose of the regulatory provisions of this bill is to call back to the service of agriculture and commerce and industry the bank credit and the bank services designed by the framers of the Federal Reserve Act. The purpose is to strengthen the banking structure, to establish adequate credit requirements, to provide more effective regulation and supervision, to eliminate dangerous and unsound practices, and to confine banks of deposit to legitimate functions and to separate them from affiliates or other organizations which have brought discredit and loss of public confidence.’

In particular, Sections 3, 7 and 11 of the act restricted the activities of member banks. Federal Reserve Banks could refuse facilities to banks that were using credit for the speculative carrying of or trading in securities (Sec. 3). Restrictions were set on bank capital represented by loans secured by security collateral (Sec. 7). Banks were forbidden to act as a medium or agent of any non-banking corporation in making securitized loans or loans to brokers/dealers (Sec. 11).

It is Sections 16, 20, 21 and 32 that are commonly known as the Glass-Steagall Act. Section 16 commences by defining the ‘business of banking’ as ‘discounting and negotiating promissory notes, drafts, bills of exchange, and other evidences of debt; [...] receiving deposits; [...] buying and selling exchange, coin and bullion; [...] loaning money on personal security; [...] obtaining, issuing and circulating notes [...]’. It then moves on to prohibit national commercial banks from underwriting any issue of securities, as well as imposing severe restrictions on purchasing investment securities for their own account, with a complete veto for stocks. Section 20 instead forced member banks to divest themselves of their security affiliate relationships. Hence, Sections 16 and 20 together mandated the separation between commercial banking and investment banking. Investment banks thus gained monopoly over the securities markets activities. However, ‘[t]he bill does not [...] prohibit member banks from lending to investment banks and thus assisting in flotations’. It did however raise the question about the legality of term loans which had been developing as a reaction to the financial market crises. The issue was clarified by the later 1935 Banking Act. A further step in setting a barrier between commercial and investment banking was taken by forbidding director and employee interlocking within the banking sector (Section 32). Finally, Section 19 required banking holding companies (BHCs) to divest themselves of investment banking affiliates within five years in order to avoid the commercial-investment banking separation being circumvented in this manner. Having restricted commercial banks, the Banking Act then proceeded to protect

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27 The long parliamentary iter was not due to any particular opposition, which was virtually non-existent, but administrative delays and deadlines.
28 Speech of Steagall in the House of Representatives on 20 May 1933, reported in Congressional Record-Appendix, 22 May 1933, p. 4039.
29 While commercial banks were removed from the field of investment banking, they retained their trust activities, as they were recognized as traditional banking services. As a result, commercial banks could purchase and sell equity securities on behalf of fiduciary customers, and they could also vote the securities they held in trust.
30 Extension of remarks by Bacon in the House of Representatives on 22 May 1933, reported in Congressional Record-Appendix, 23 May 1933, p. 4148.
31 ‘The unholy alliance between the brokerage office and the bank must be broken. Up to now it has been possible for directors and officers of a brokerage house to be directors of a national or member bank. This has grave dangers. It violates the fundamental principle of the lawyers’ code of ethics—that of undivided allegiance. In banking as elsewhere, no man can serve two masters. [...] If the men who are to determine the type and character of the banks’ investments are at the same time promoters and sellers of these securities, the bank will be prevented from acting with untrammeled judgement’ (Remark by Koppleman, Congressional Record-House, 22 May 1933, p. 3996).
them. Section 21, in fact, forbids investment banks from collecting any type of deposits, which became a source of funds, covered by mandatory insurance, only for commercial banks.

In the same year, another ‘reformatory and far-reaching piece of legislation’ was passed: the Securities Act. In President Roosevelt’s words, the Securities Act was designed ‘to correct some of the evils which have been so glaringly revealed in the private exploitation of the public’s money’ (cited in Merz 1934, XXI; italics are ours). It raised the cost of underwriting, by imposing mandatory disclosure of information concerning security sales and a twenty-day waiting period between the filing of the registration statement and the beginning of retail selling. The 1933 Securities Act, concerned chiefly with supervising IPOs, was soon thereafter supplemented by the Securities and Exchange Act of 1934, which extended federal controls over trading on the national exchanges. Information disclosure hence had to be regularly released for the whole period in which the securities were exchanged on the market.

What emerges clearly from an analysis of the US Congress Record is that, once the divorce between commercial and investment banking had been successfully attained, a new issue raised its head: how to finance industry. Corporations were in fact dissuaded from issuing new securities by the additional costs imposed on IPOs by the Securities Act and by the fact that the Banking Act prohibited commercial banks to underwrite them. This outright ban was then not followed by the realization of the avowed expectation of the setting up of ‘large investment houses’ ‘such as exist in Great Britain and continental Europe’, ‘to be conducted by experienced bankers rather than by blacksmiths and speculators’33. The Industrial Advances Act of 19 June 1934 was a first step towards solving the problem. Federal Reserve banks were thus authorized to make direct loans to or purchase obligations of any established business, unable to obtain assistance through customary credit channels. The maturity of such obligations could not exceed five years. Furthermore, the RFC’s authority was enlarged by permitting direct loans, of a maximum of five years, to non-bank institutions ‘on adequate security’.34 On 31 January 1935, the law was further liberalized: loans by the RFC could be extended ‘upon such security as in the judgement of the board would reasonably assure payment of the loans’,35 and the maturity of loans was extended to ten years.

But these were emergency measures; permanent legislation was again called for. The result was the 1935 Banking Act, passed on 23 August. First, national banks were permitted to grant loans on real estate with fewer restrictions than before. The underlying rationale of the provision was the following:

[The Act was] to increase the ability of commercial banks to serve their communities, to provide a greater outlet for the banks’ funds, and to promote business recovery by opening up the mortgage market and reviving the construction industry. [...] Few banks are purely commercial, since a large part of the deposits in the banks represents savings. Member banks hold in the aggregate as much as $10,000,000,000 of savings funds. Separation of commercial banking from savings banking in this country at the present time is an academic question, as it could not be accomplished now without disrupting the banking system. So long, moreover, as commercial banks continue to accept and hold a large amount of the people’s savings they should use at least a part of these funds in long-time loans and investments.36

Second, corporate notes that matured in over one year were explicitly allowed to be taken to re-discount. Third, while commercial banks had been excluded by the 1933 Banking Act from some lines of business they had previously sought out, regulations were changed to induce them to move into long-term lending to households and business. In addition to revising the powers of banks to make real estate loans, examination practices were altered. While previously the standard acceptable maximum maturity for a loan had been six months, after which examiners had usually classified loans exceeding this term as ‘slow’, and banks were pressured to liquidate them, bank examiners were now instructed not to question a loan’s viability merely because its maturity period was more than six months (Société des Nations 1939, 17; White 2009, 28). Fourth, express permission to national banks to buy and sell stocks for the account of customers, but under no circumstances for their own account, was stated in the new

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34 Remark by Kelly, Congressional Record-House, 15 January 1934, p. 642.
36 Remark by Steagall, Congressional Record-House, 1 May 1935, p. 6981-6982.
remained unchallenged. A new, more limited notion of defined in the IRI environment; thus the IRI’s control over industrial stakes in firms and trust activities respect to its founding law of 1931: its restricted purpose was to intermediate between the collection of Convenzioni of the Bank of Italy; to a committee of ministers, led by the Prime Minister. Head of the Inspectorate was, however, the Gov- ernor of the Bank of Italy; de facto, the Inspectorate never operated separately from the central bank.

Let us now turn to Italy’s legislation in the same years. The 1936 Banking Act took two years to be passed in parliament. However, its roots can be traced back for another two years, at least to the 1934 Convenzioni. Furthermore, the law matured mainly in the IRI environment, and therefore externally to parliament, mainly ignored by the press and the general public. The act created a new regulatory and supervisory authority, the Inspectorate for the Safeguard of Savings and for Credit Activity, subordinated to a committee of ministers, led by the Prime Minister. Head of the Inspectorate was, however, the Governor of the Bank of Italy; de facto, the Inspectorate never operated separately from the central bank.

The tight inter-relations between banks and industry were pinpointed as the main cause of the 1930s banking crisis, as the ‘root of all evil’ (IRI 1937; italics are ours). To avoid the recurrence of a similar crisis, the solution adopted was the division of the banking system into two different sectors, insulated from one another so that a crisis of one part would not necessarily expand to the other (Cassese 1988). The new perimeter of regulation included two separate categories of institutions, distinguished according to the maturity of their liabilities, short-term vs medium/long-term. The former category—which included the three ex-universal banks (named Banks of National Interest, BINs), public law credit institutions (IDP), deposit-taking institutions, savings banks, pawn banks, and rural banks—was regulated by Title V of the law, a dense collection of requirements and restrictions. The latter category was made up of publicly controlled entities (including IMI) and was subjected to Title VI, which simply transferred to the Inspectorate the existing regulatory and supervisory powers attributed by previous ad hoc laws to various regulating entities.

A special mention goes to the IMI. Due to another law of 1936, which closed down the IRI’s Financing Section and assigned the IMI’s presidency to the Governor of the Bank of Italy, the latter institution was officially defined as the main credito mobiliare institution. However, the IMI’s new position was defined in the IRI environment; thus the IRI’s control over industrial stakes in firms and trust activities remained unchallenged. A new, more limited notion of credito mobiliare was assigned to the IMI, with respect to its founding law of 1931: its restricted purpose was to intermediate between the collection of

37 Title II of the law was the Investment Advisers Act, which required this category, too, to register with the SEC and outlawed fraudulent and deceitful practices. It was, however, ‘not much more than a mere census-taking of persons in the investment advisory business’ (Congress Report cited in Carosso 1970, 384).
38 What is commonly defined as the Italian Banking Act of 1936 is actually made up of the law of 7 March 1938, with amendments made by the successive 7 April 1938 law. These two laws were the result of the conversion of two legislative decrees, respectively, of 12 March 1936 (No. 375) and 17 July 1937 (No. 1400).
39 On the subject, see Giglioibanco and Giordano (2010).
40 Separation was formally reversed in 1947, when supervisory responsibilities were again assigned directly to the Bank of Italy.
41 These were: Banco di Napoli, Banco di Sicilia, Banca Nazionale del Lavoro (BNL), Istituto Bancario S. Paolo di Torino, and Monte dei Paschi di Siena (MPS).
42 In 1946, Title V was extended by law to the medium- and long-term institutions created after 1936, such as Mediobanca, and thus not enumerated in the original Title VI (DLCPS 23 August 1946, No. 370). Hence, within this category were included those that were created before 1946, which continued to be regulated by their founding laws and by the few articles of Title VI, and others which were instead under the penetrating control of Title V.
funds on the financial markets via the issuance of bonds and the financing of industrial and commercial firms via mortgages, which covered their intermediate and long-term needs not covered by retained profits, newly collected capital and credit from the large deposit-taking banks (Lombardo and Zamagni 2009, 59). The IMI was de facto excluded from any transaction on the financial market which could lead to the acquisition of concerns in firms’ capital, with the exception of stock obtained as collateral of the mortgages extended. The crowding-out action on the part of the IRI was evident.

Going back to the 1936 Banking Act, the idea was that of a ‘functional specialization according to maturity’, short-term liability credit institutions were to extend short-term loans, whereas medium and long-term liability ones were to extend medium- and long-term loans. ‘Since a clear-cut distinction between the two types of credit is not possible, the inescapable needs of clarity in laws led to fixing the discriminating criterion, not from the point of view of the credit activity but of the necessarily complementary one of the collection of savings’. While the 1934 Convenzioni explicitly forced the BINs to respect this separation, the 1936 law was more subtle in stating that certain types of investments required the regulator’s authorization (Art. 32, 33 and 35). The aim was not only to align the time-span of banks’ assets and liabilities, but also to forbid deposit-taking banks from holding equity stakes in industry.

Notwithstanding World War II and the fall of the Fascist regime, the 1936 Banking Act and its underlying principles survived:

Deposit banks must […] keep well away from undertakings that involve them in the risks of the productive process, and must engage only in those necessary to cover cash outflows which emerge in the period between cost registration and revenue collection in the short term, and must prefer, as a means of extending credit, the discounting of short-term commercial paper or the opening of credit lines guaranteed by self-liquidating securities, retaining in any case the right to call back their loans at their discretion (Ministero per la Costituente 1946, 217).

Since in some sectors long-term institutions were not able to satisfy the industrial demand, short-term liability institutions requested and attained the authorization to lend medium-term, drawing on funds with similar maturities. Hence the Special Credit Sections of the Banco di Napoli and of the Banco di Sicilia were established, as well as the Mediobanca on the initiative of the three BINs. Finally, relative to the issue of credito mobiliare institutions holding shares, the prevailing opinion […] is that a restriction cannot be introduced, both because the contribution to the capital of a firm is a form of industrial financing typical of credito mobiliare institutions and because the acquisition of shares by the institutions must very often, for technical reasons, be combined with extension of credit (Ministero per la Costituente 1946, 236).

The Bank of Italy equally clarified certain aspects of the Banking Act, also to better distinguish between short-term and medium-term credit institutions. In 1949, the Bank of Italy thus specified how medium-term credit institutions could only collect funds by issuing bonds, notes with a maturity between 18 and 60 months, and 12-to-60-month deposit certificates (which were to be called ‘deposit certificates for long-term credit’ to avoid any ambiguity). The main issue was to ‘regulate the nature of deposits and of the securities representing deposits, in order to avoid the collection of funds whose name could deceive the saver’. In general, therefore, short-term credit institutions could extend credit and collect savings up to one year; medium-term credit institutions could do so from one to five years. Another noteworthy point is that medium- and long-term liability institutions could not collect funds from short-term liability banks and hence could not circumvent the maturity separation in this manner.

The 1936 legislation also disciplined the ownership of short-term liability banks, which had to be public limited companies or limited partnerships based on capital. Their shares had to be registered,

44 See, for example, the Report by the Fascist Confederation of Workers of Credit and Insurance Institutions of May 1935, p. 8, reported in Cassese (1988).
46 These clarifications came as a result of protests from the association of savings banks, which denounced Mediobanca, backed by the BINs, of invading their business by collecting deposits.
47 The latter two sources of funds could not exceed 15 times the equity of the institutions. Bank of Italy instructions, ‘Mediobanca—disposizioni di massima’, 22 October 1949, pratica 2/8, p. 1 in ASBI.
48 Letter from Menichella, Governor of the Bank of Italy to the Treasury, 14 December 1946, p. 4, in ASBI.
49 Letter from the Banca di Credito Finanziario to Associazione Nazionale per le Casse di Risparmio, dated 28 April 1947, p. 2, in ASBI.
50 Letter from the Inspectorate to the Banca di Credito Finanziario, 1 May 1946, p. 2 in ASBI, and the subsequent reply, 18 July 1946, p. 2, in ASBI. However, the divide between short- and long-term within savings banks and Istituti di diritto pubblico was more blurry.
so as to hinder speculative manoeuvres by identifying the agents responsible. However, the control that industrial firms could have over banks was not explicitly regulated. Again, it had been forbidden in 1934 for the BINs. It was however not de facto allowed for the other banks, too, in that (a) they were mainly state-owned—private banks’ assets dropped from 55.6 percent of the total in 1927 to only 16.96 percent in 1936 (Ferri and Garofalo 1994, 138)—and (b) moral suasion exercised by the Bank of Italy in the following years helped avoid such interlinkages. Finally, limits were introduced on interlocking directorates: Bank directors were forbidden from sitting not only on the boards of other banks, but also of industrial firms, unless duly authorized.

Thus far we have referred to the bank-industry relationship, but what about the bank-financial market ties? The only two articles concerning securities in the 1936 Italian Act are Art. 2, which states that ‘[the] very issue of stock, bonds, notes and securities of any type is subject to authorization by the Inspectorate, when it is undertaken by [short-term liability] banks subject to the control of the Inspectorate or when such securities are placed on the securities market of the Republic’s Bourses’, and Art. 45, which asserts that ‘[s]hort-term liability banks […] cannot participate in underwriting syndicates of stocks, bonds, notes and securities of any type that are not of the State or guaranteed by the State, nor can they offer assistance in placing them, if the issue has not been pre-emptively authorized by the Inspectorate’. It is clear that deposit-taking institutions in Italy were allowed to underwrite and deal in all kinds of securities, in bonds and also stocks, prior to the authorization of the issue by the Inspectorate (later the Bank of Italy).

3.3 A systematic comparison

We now move on to draw some more systematic comparisons between the two sets of legislation. Relative to their actual contents, the two regulatory responses responded to different evils to be eradicated. In Italy, the main worry was to hinder banks and firms from being owned simultaneously by each other, with subsequent negative consequences on bank’s risk-taking behaviour and the firms’ investment policy, as well as from immobilizing unwitting depositors’ short-term savings in long-term assets. In the US, the emphasis was on the questionable trading practices of commercial banks in the financial markets and hence on the speculative use of deposits, as well as on banks’ biased relationship towards their private clients, to which they offered low-quality securities due to the existing conflicts of interest as underwriters and distributors. Subsequently, in Italy the priority was that of setting a barrier between the banking and the industrial sector; in the US it was that of limiting commercial banks’ activity in the financial markets. To own or to be owned by non-financial companies was one major issue underlying Italian mixed banking; the simultaneous engagement in banking and securities activities was the problem underlying American broad banking. Both a debt stake (via long-term loans) and an equity stake (via ownership or control of stock) in industrial firms were to be banned in the first country; commercial and investment activities taking place in the same bank, in house or via affiliates, were to be forbidden in the second country. Let us concentrate now on five related key issues.

(1) The use of deposits. It is clear that a main preoccupation in both countries was to impede the banks from employing deposits in risky undertakings. In Italy the new legislation aimed at preventing them from being tied up in long-term loans and equity stakes; in the US it stopped them from being used in speculative transactions on the stock markets. There are, therefore, some subtle differences. In Italy, deposits had been used to invest directly in industrial enterprises; in the US, people believed that the deposits had been ‘gambled’ on the financial markets. In the former country, deposits had been used to support specific industrial firms, which were often, in addition to being the banks’ main borrowers, also their main depositors. Not only was concentration of risk extremely high, but Italian bankers ended up being involved in the entrepreneurship of firms, with all the connected risks. In the US, instead, deposits were invested in more diversified securities activities, in order to benefit from the numerous profit opportunities offered by the bull market; hence the US bankers had turned into professional stock market

51 Discussion at the Camera on 23 May 1936.
52 However, there was a loophole in the act: banks could attend the shareholders’ meetings of the firms whose stocks they held in their portfolio as collateral, due to contango loans, or as temporary deposits by clients. This possibility was abolished by law only in 1974 (Law No. 216 of 7 June 1974).
players, with all the risks linked to that activity. This differing use of deposits in the two countries was thus due to the dissimilar set of incentives and/or conflict of interests with which commercial bankers were presented, but it was also due to the different degree of development of financial markets in the two countries. As we have seen, in Italy the capital and bond markets were underdeveloped, and bank lending was the industrial firms’ priority channel of funding. Therefore, the new regulation acted directly on the bank-industry channel in Italy, and not on the bank-financial market-industry channel, as it did in the US.

Furthermore, while the Italian legislation focused on the use of short-term deposits (with a maturity of less than one year), the US legislation excluded investment banks from receiving any type of deposit whatsoever, short-term or long-term. “[T]he result was to make investment banks dependent on commercial banks for credit’ (Kotz 1978, 54). The veto for investment banks to collect deposits was introduced also due to the fact that the 1933 US Banking Act introduced deposit insurance. Investment banks, which were not subject to the regulation and supervision imposed on commercial banks, were thus to be excluded from the newly introduced government safety net. In Italy, no deposit insurance was introduced, also because most banks passed under the control of the state and consequently an implicit guarantee was already present.53

In conclusion, the aim of regulation in Italy was to protect the unwitting short-term depositors, while in the US it was to protect savers and private investors alike. Both sets of legislations thus aimed at defending the public interest, but via two different channels: in the US, via a safe and efficient market for securities, as well as via deposit insurance; in Italy via the limit on bank exposure to entrepreneurial risk and via the state owning a ‘golden share’ in the banking system.

(2) Commercial vs investment banking. The US Glass-Steagall Act, as discussed above, led to a virtually complete divorce between commercial and investment banking. While some exceptions were allowed for trading bonds and other ‘investment securities’ (that is, trading upon the order and for account of customers, and trading for their own account if authorized by the OCC and respecting certain quantitative ratios), underwriting securities, as well as trading in stocks, were banned entirely. The desire to avoid the ‘speculative orgy’ of the 1920s, presumably fuelled by commercial banks, was evident. It is true that in Italy, too, mixed banks had contributed to the boom and bust of the stock market in the 1920s, but this aspect was not perceived as the main problem. This was also because many transactions were undertaken outside the official markets and because the stock market was not at the epicentre of corporate finance. Hence, in Italy, banks could participate in underwriting syndicates of stocks and bonds, if the issue was authorized by the Inspectorate. The Inspectorate’s authorization was, in general, granted, as the activity of banks in the following decades shows. Italian banks in the 1950s, and in particular the two main BINs, had in fact a ‘bridge function’ between their client firms and the stock exchange, as well as a great placing power of the former’s shares and bonds (Barbiellini Amidei and Impenna, 1999). Yet, the credits that the banks had were never transformed into equity stakes.

It is noteworthy that in the US the Securities Act and the Securities Exchange Act were introduced to regulate the securities markets, while in Italy new financial market regulation was introduced only in 1974. Again, this is a significant sign that stock market activities were not considered the main ‘root of all evil’ in the latter country. Whereas in the US the aim was to restore confidence in the financial markets as a whole, in Italy the focus was on rebuilding trust in the banking system, which was dominant in any case. We may even push the argument further by stating that the 1936 Italian Banking Act crystallized the bank-orientation of the financial sector, while the US Banking and other financial New Deal Acts opened the way to a new evolutionary path of the financial markets, with different weights and roles of both commercial and investment banks, also in the face of the development of the other old and new financial institutions (such as insurance companies and mutual/pension funds, respectively). The importance of financial markets in the US was actually increased in the end. The 1933 Banking Act ensured that banks were more restricted than markets. It is true that the latter were set under the control of the SEC; however, this commission was not only a regulator, but also became a guarantee of the integrity of the markets (Allen and Gale 2000, 34).

53 In Italy, the Fondo Interbancario di Tutela dei Depositi (Interbank Fund for the Safeguard of Depositors) was created in 1987 as a voluntary consortium; only in 1993 did it become obligatory for all banks, except for credit cooperatives which have their own specific fund.
(3) Maturity mismatches. The 1936 Italian Banking Act—clarified, as seen above, also by later documents produced by the Bank of Italy—aimed at minimizing banks’ maturity mismatches between banks’ assets and liabilities, by introducing temporal specialization. The maturity of assets had to be symmetrical to that of the credit institutions’ liabilities, as decided by law. In the US, on the contrary, ‘separation of commercial banking from savings banking’ was defined as an ‘academic question’, not feasible in practice.\(^54\) Hence, the issue was debated and known to contemporaries in the US, but regulation in that direction was not deemed a priority. Furthermore, the industrial world was suffering from a scarcity of funds; hence commercial banks were actually urged to use their deposits in long-time loans and investments.\(^55\) As we have seen, the development of term lending by commercial banks in the US was primarily a response to the deepening depression, whereas in Italy it was perceived as one of the causes of the banking crisis. Direct term loans to businesses were then further encouraged by the 1935 Banking Act, which loosened pre-existing restrictions.

Another significant difference is that while investment banks could—and, after the ban on deposits, had to—rely on funding from commercial banks in the US, in Italy the medium- and long-term liability institutions could not receive loans from the short-term ones, to eliminate the possibility of a circumvention of the temporal separation in this sense.\(^56\)

(4) Bank specialization and competition. An interesting analogy in both sets of regulation is the introduction of bank specialization, albeit of different forms, and hence of a limitation of competition in each defined sector. In the US, commercial banks obtained a monopoly over the deposit business and traditional banking business in general, while the investment banks obtained it over securities markets activities. Similarly, in Italy short-term liability credit institutions controlled short-term lending, and long-term liability credit institutions controlled long-term lending.

(5) Bank vs industry. Relative to the bank-industry link, Italian banks could no longer hold equity stakes in industrial firms (via the Convenzioni and via denial of authorization by the regulating entity). Conversely, industrial firms could not own or control banks (again via the Convenzioni and the moral suasion by the Bank of Italy). In the US, this veto was not introduced;\(^57\) yet, to vote their banks’ stock, the owning firms for instance had to shed their investment bank affiliates. Again, the US Americans’ worry was not that of severing the bank-industry link, but that of stopping banking holding companies from getting around the commercial-investment banking separation. The 1933 US Banking Act thus only eliminated the control that commercial banks had over non-financial firms via securities affiliates. Therefore, if the latter act did set some restrictions on the bank-industry link, it did so only indirectly, as a result of regulations aimed at other purposes.\(^58\)

US commercial banks actually heightened the control they had over industrial enterprises via an increase in term lending (Go 1999), further encouraged after 1935. This form of control was obviously lost by Italian deposit banks. Another form of control was that of interlocking directorates. Bank directors could sit on the boards of non-financial corporations in the US; in Italy they were not allowed to do so, unless authorized by the regulator.

\(^54\) Remark by Steagall, Congressional Record-House, 1 May 1935.
\(^55\) ‘There are thousands of small banks whose time deposits are almost if not quite as large as their demand deposits. If these banks are to continue in operation, they must loan on real-estate securities’ (Remark by Williams, Congressional Record-House, 3 May 1935, p. 7162).
\(^56\) Deposit banks in Italy could only ‘flank long-term credit institutions with pre-funding operations’ (Ministero per la Costituente 1946, 237).
\(^57\) Only in 1956, with the Bank Holding Company Act, was the ownership of banks by industrial firms more strictly regulated. This act required each company to register with the Federal Reserve and to obtain the Federal Reserve’s approval to acquire stock in a bank, if the purchase would result in ownership of more than 5 percent of the bank’s voting shares.
\(^58\) See, for example, Haubrich and Santos (2003) for a survey of the relationship between banking and commerce in the history of the US.
4. The aftermath of the regulatory responses in Italy and the US: A preliminary assessment

We now turn to inspect some data to assess the effect, if any, of the 1930s legislations on the banking system in Italy and in the US and on the latter’s ways of financing industry before, during, and after the Great Depression. We use new, unpublished historical data compiled by the Bank of Italy, as well as the official Bank of Italy, and IMI data for the Italian case. For the US, we use official data, mainly coeval statistics by the Board of Governors of the Federal Reserve System and by the Division of Research and Statistics of the FDIC for the US.

In Italy, the year 1936 marks a watershed relative to the share of corporate stocks as a percentage of commercial banks’ assets (Figure 1). They passed from an average of 2.7 percent of total assets in the three decades prior to 1929 to an average of 1 percent in the three decades following the 1936 Banking Act. The shift is even more striking for the three BINs (from 4-to-11 percent range, down to less than 1 percent; data not plotted here). Historically, even more conspicuous were the indirect relationships of the Italian mixed banks with industry, as revealed by the development of contango loans to financiers, Bourse speculators, brokers and to their listed corporate debtors, on their own stocks. Our data show that contango loans on stocks represented an important quota of total Italian banking assets and a multiple of the corporate stocks owned by banks, in particular during the period between 1900 and 1906 and in the 1922-1925 Italian stock market booms (7 percent at the peak in 1924; see Figure 1). This was again especially true for the mixed banks (in the 8-to-19-percent range at the peak in 1924). Even if contangoes were not directly restricted by the 1936 Banking Act, their share relative to bank assets dropped to negligible figures thereafter. Even in the 1960 stock market boom, nurtured by a significant increase in bank financing of brokers and speculators, the weight of contangoes on banks’ assets remained at very low levels (1.8 percent in 1960, even less for the BINs), in comparison to the pre-1936 era (Barbiellini and Impenna, 1999).

Sources for Figure 1: Our elaborations on Cotula et al. (1996), Tav. 32, p. 765, 1890-1936; Banca d’Italia, Bollettino, various years, Tav. “Attivo delle aziende di credito” and Tav. “Impieghi delle aziende di credito”, 1937-1973.
The data on stockholdings of Italian commercial banks refer to stocks and stakeholdings, including corporate bonds in the period between 1890 and 1926, held on 31 December of each year by all banks (that is, all aziende di credito, excluding small rural saving and loan associations [casse rurali], and small banking firms [ditte bancarie]). There is no data available for the decade between 1926 and 1935. See Cotula et al. (1996).
The impact of the 1936 Banking Act on the temporal specialization of banks’ activity is difficult to detect from the data on banks’ balance sheets. Before that year, in fact, there was no direct and unambiguous linkage between financing instruments and their maturity. However, when analysing the data on the composition of total assets of the credit system by different institutional categories, one can see the declining share of banks’ assets, on the one hand; on the other hand, one can gauge the rising contribution of the new Istituti di credito mobiliare, as well as the bouncing back of the old Istituti di credito fonduario and agrario (Land Credit Institutes and Agricultural Credit Institutes) after the monopoly on term lending was given to these long-term credit institutions (Figure 2). The relevance of their term financing to industry—the ratio of the loans of the Istituti di credito mobiliare to the total loans of banks was 18 percent in 1938 and over 30 percent in 1951—was not matched by any investment banking activity, as signalled by the tiny weight of stakeholdings on their balance sheets (data not plotted). This was true also for the IMI, the most important of the long-term institutions, which was endowed with investment banking tools by its founding law, but which only used them after the 1980s. Notably the development of these institutions was funded until the 1960s, mainly by bond issues on the market, and not by term deposits, as shown by the weight of bonds on the liability side of their balance sheet (data not shown).

Sources for Figure 2: Our elaborations on Cotula et al. (1996), Tav. 1, p. 60, 1890-1936; Banca d’Italia, Bollettino, various years, Tav. “Attivo delle aziende di credito” and Tav. “Attivo degli istituti di credito speciale”, 1937-1973.
We now move on to analyse (partially) comparable US data. We begin by observing the share of equity on total assets in commercial banks. Equity dropped significantly in commercial banks’ portfolios after the introduction of the outright ban on underwriting in the 1933 Glass-Steagall Act (Figure 3). Similarly to the contangoes in Italian banks, we can also analyse the evolution of loans for purchasing or carrying securities (to brokers and dealers as well as others) in US commercial banks (Figure 4). Their share on total assets was higher than that in Italy in the 1930s, but similarly declined thereafter, mirroring the financial markets’ trend before World War II, but not entirely reflecting the subsequent rebound. Concerning more specifically the funding of brokers and dealers/investment bankers, brokers’ loans similarly declined, dropping from a peak of 11 percent in 1928 to under 0.5 percent in 1931, but much more as a result of the post 1929-crash disappearance of loans by other lenders (foreign banking agencies, corporations, other brokers and individuals) than of a lower, but still significant, financing by commercial banks, which remained in the range of 4 to 6 percent of total loans in the 1930s (data not plotted).

Commercial banks were banned from engagements in security market activities, by virtue of the 1933 Banking Act, to the advantage of investment banks, of which the lack of statistical evidence is well known, and—as a result of the 1940 Investment Company Act—by virtue of investment companies, of which mutual funds were one of the main new expressions. An impressive and rapid hike in the share of mutual funds’ assets relative to those of commercial banks and in their number may be registered after 1940 (their net assets passed from 0.5 percent of commercial banks’ total assets in 1941 to 10 percent in 1965; data not plotted).

62 The data on stockholdings of US commercial banks refer to stocks held on 30 June of each year by all member banks in the period between 1925 and 1965, and to equity securities (including Federal Reserve banks’ stocks) held on 31 December of each year by FDIC insured commercial banks. Sources for Figure 3: Our elaborations on a) Banking and Monetary Statistics 1914-1970, Annual Statistical Digest, Board of Governors of the Federal Reserve System: Table 22 - Classification of Loans and Investments on June 30 call dates, 1919-1928; Table 19 - Classification of Loans on Call Dates, 1929-1941; Table 18 - Principal Assets on June 30, 1919-1941; Table 2.1 - A. Total Assets and Number of Banks and Table 2.1 - C. Loans, 1942-1970.

63 The data on loans extended by all member banks for purchasing or carrying securities refer to the loans outstanding on 30 June of each year. Sources for Figure 4: Our elaborations on Banking and Monetary Statistics 1914-1970, Annual Statistical Digest, Board of Governors of the Federal Reserve System: Table 20 - Classification of Investments on call dates, 1929-1941; Table 22 - Classification of Loans and Investments on June 30 call dates, 1925-1928; Table 18 - Principal Assets on call dates, 1914-1941; Table 2.1 - A. Total Assets and Number of Banks and Table 2.1 - C. Loans, 1942-1970.
Table 3: Medium-term business credit outstanding in the US, year-end outstanding, 1939-1940 (million USD).
Source: Our calculations based on Go (1999, 7), from Jacoby and Saulnier 1942, 30), and Carter et al. (2006).

<table>
<thead>
<tr>
<th>Year</th>
<th>Commercial Banks</th>
<th>% on Total Loans of Commercial banks</th>
<th>Life Insurance Companies</th>
<th>Federal Reserve Banks</th>
<th>RFC</th>
<th>Total</th>
<th>RFC Total</th>
<th>% on Total Loans of Commercial banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1934</td>
<td>14,9</td>
<td>6,6</td>
<td>21,5</td>
<td>0,1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1935</td>
<td>41,3</td>
<td>40</td>
<td>81,3</td>
<td>0,5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1936</td>
<td>32,7</td>
<td>63,6</td>
<td>96,3</td>
<td>0,6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1937</td>
<td>827</td>
<td>4,7</td>
<td>152</td>
<td>27,4</td>
<td>74,8</td>
<td>1085,934</td>
<td>6,2</td>
<td></td>
</tr>
<tr>
<td>1938</td>
<td>1083</td>
<td>6,7</td>
<td>319</td>
<td>30</td>
<td>107,7</td>
<td>1546,415</td>
<td>9,6</td>
<td></td>
</tr>
<tr>
<td>1939</td>
<td>1596</td>
<td>9,7</td>
<td>520</td>
<td>24,7</td>
<td>130,6</td>
<td>2281,025</td>
<td>13,9</td>
<td></td>
</tr>
<tr>
<td>1940</td>
<td>2162</td>
<td>12,4</td>
<td>900</td>
<td>15,5</td>
<td>121,3</td>
<td>3211,23</td>
<td>18,5</td>
<td></td>
</tr>
</tbody>
</table>

Finally, concerning the maturity of loans extended by commercial banks, Table 3 shows the relevant weight of term lending to industry extended by commercial banks on their total loans in the wake of the 1935 Banking Act (19 percent in 1939).

5. Conclusion

To sum up, in this paper we attempted a comparison between the 1930s banking legislation in Italy and the US, introduced in response to the severe 1930s domestic banking crises, in their redefinition of the links between banks, industry, and financial markets.

This paper hence describes the (differing) evolution of the banking systems in the two countries since the nineteenth century, with particular emphasis on the last decade in the run-up to the Great Depression. The 1930s banking crisis was severe in both countries, as was the recession in the real economy. In Italy, the 1934 secret *Convenzioni* put an end to the mixed banking model and immediately followed the creation of the IRI, which soon developed into a permanent and pervasive state-owned industrial and banking holding company. Sweeping banking legislation was then also passed, quickly and under the spotlight of the public opinion in 1933 in the US and, with a significant lag, in 1936, ‘in secret’ in Italy. Curiously, these laws turned out to be long-lasting in both countries. The 1933 US Banking Act was repealed only in 1999; the Italian Banking Act lasted until 1993.

Relative to the contents of the 1930s legislation, the different position and weight of banks, industry and stock exchange in Italy and the US, as well as the different evils perceived to be at the root of the 1930s banking crisis, led the two regulatory responses to focus on and constrain different, yet connected, aspects of banking activity. The US regulators were much more concerned with the commercial banks’ direct and active role in the stock exchange market, the key mediator in savers and firms’ exchanges. Italian regulators instead dreaded direct equity and long-term debt stakes between industrial firms and banks, which were not necessarily mediated by the stock exchange. As a result, in the US a rigid barrier between the traditional banking business (namely, collecting deposits and extending loans) and investment banking was erected, while commercial banks and industrial firms could still be tied by long-term loans, equity stakes, and interlocking directors. In Italy, on the other hand, strict limitations were set on the ties between short-term liability institutions and industrial firms, which could only be short-term and non-proprietary in nature, whereas underwriting and trading in securities continued to be allowed. In other words, while in the US the 1930s’ regulation led to a divorce between commercial and investment banking, the contemporary Italian legislation brought on a rigid separation between banking and industry (that is, non-financial activities): two divides which were not perfectly overlapping.

Finally, what emerges from Italy’s banking data confirms the intent of the 1936 Italian legislator. There is empirical evidence that corporate stocks dropped drastically in commercial banks’ portfolios after the enactment of the law, in particular those of mixed banks, proving the effectiveness of the bank-industry
divide in this sense. It is noteworthy that contango loans, which signal indirect relationships between commercial banks and industry, also decreased, although they were not directly affected by the legislation. In terms of temporal specialization, term lending to industry by long-term credit institutions markedly increased. Symmetrically, the latter proved to collect funds long-term, by issuing bonds. Relative to the US data, it is interesting to see the drastic drop of equity in commercial banks’ portfolios after the enactment of the 1933 Banking Act. A decline in loans by commercial banks to purchase securities was also registered, although they were not explicitly mentioned in the act. The 1940 Investment Banking Act instead led to a spurt in the growth and relative importance of mutual funds in savings intermediation. Finally, the data show a striking development in term lending by commercial banks in the immediate aftermath of the 1935 Banking Act. Hence, in both countries, a preliminary, visual inspection of key banking statistics prove the two sets of legislation to be enforced and quite effective in their respective intents.
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FDIC, *Statistics on Banking*, Division of Research and Statistics, various years.


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Monetary policy in Albania during economic crises

Arta Pisha
apisha@bankofalbania.org

and

Besa Vorpsi
bvorpsi@bankofalbania.org
Bank of Albania

Abstract

This paper analyses the most evident issues of monetary policy responses to resolve economic and financial crisis situations in Albania, as a Balkan country involved in both World Wars. We have utilized archival sources in order to analyse and explain monetary policy in Albania during this period. The problems and policies applied in the past to manage and resolve the respective crises make it possible not only to analyse the issue at hand, but also to draw lessons from it, since the overall results of monetary policies during crises lead to similar conclusions. Effective coordination of monetary and fiscal policies for price stability and economic development confirms the key role that the interaction between the central bank and government structures plays in crisis situations. However, for this cooperation to be effective, the central bank’s independence is one of the most important factors that help to avoid and reduce crisis effects.

While the aim of this paper is to explore and analyse the most interesting historical documents that explain Albanian monetary policy during economic crises, in addition to giving a chronological overview, we also identify and discuss monetary policy, the most significant instruments used during the crises, their results, and their main problems in order to derive some lessons and conclusions for the future.

JEL: N20, N40, N70, P20
Keywords: Monetary policy, economic and financial crises

1. Overview

Albania is a young state, as it achieved independence only in 1912, after more than five centuries under Ottoman rule. The National Bank of Albania was established in 1925. The legal monetary unit of the country was announced as the Albanian gold franc, and the currency was first issued in February 1926. The young and inexperienced central bank faced many difficulties during its operation. The capital distribution was 75 percent Italian, and 25 percent were allocated to the Yugoslav, Swiss and Belgian banks. This explains why the monetary policy was oriented toward foreign countries’ interests, mainly Italy, and not Albania’s. Like the central banks of other countries in the region in this period, the National Bank of Albania also adopted the gold standard. After 1939, when Italy occupied Albania, an inflationary policy was adopted, and the Albanian monetary system became an appendage of the Italian one. The German occupation in 1943 aggravated the situation, until Albania achieved independence in November 1944.

From the end of World War II to 1990, the State Bank of Albania supported the program for the development of the socialist economy, characterized by extreme centralization in the state’s hands. At the end of 1990, the transition of Albania’s political system reflected vital changes, with the economy enter-

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1 We are grateful for the assistance of the staff of the Bank of Albania Archive, B. Dedja and M. Papa, as well as the staff of the General Directorate of Albanian Archives, in finding the necessary sources for this paper. With their help, we managed to find old documents published by the National Bank of Albania during the first decades of the twentieth century, such as monthly and yearly bulletins, statistics, and memos on monetary policy.

2 The views and opinions expressed in this paper are those of the authors and do not necessarily reflect those of the Bank of Albania.

3 The Law on the State Bank of Albania was approved on 3 January 1945.
ing a transformation stage from a state-owned economy to a free-market one. This change breathed life into the two-tier banking system of Albania. The Central Bank of Albania faced many challenges, as it witnessed the deep crisis of 1997 and the crisis of confidence in 2002.\(^4\)

2. **The emergence of Albanian monetary authority**

The history of the Bank of Albania begins in 1913, with the first attempt to establish a national bank. In fact, Albania had been under the Ottoman rule for about five centuries. During this very long time it had neither a central bank, nor a banking system, nor a currency of its own. Only in 1912 did Albania achieve independence. The first attempt to establish a central bank was in 1913, with the establishment of the National Bank of Albania, by the Concession Act; it was managed by foreign funds and Italian and Austro-Hungarian banks. The gold reserves were to equal one-third of the bank notes in circulation. The bank had the authority to issue Albanian banknotes within the Albanian state territory. The legal monetary unit of the country was the Frang (franc). Due to the difficult conditions during World War I, this institution very soon failed.

Even though there was no real monetary system in Albania, Albanians were in the habit of using money. Until 1921, the money in circulation was a mixture of foreign (Ottoman, Austrian, Italian, Greek, Serb) currencies, especially coins. The official exchange rate was stabilized weekly in each prefecture, by the respective commission of traders. It was the Albanians’ preference for gold and silver currencies that saved the economy from the enormous losses that other countries faced because of World War I. In 1923, while there existed no central bank, reacting to the domestic economy’s and the market’s needs for more domestic currency, the government continued to authorize the local authorities to issue bank notes in different denominations, in the total amount of 80,000 Golden Frang.\(^5\) After World War I, the Albanian gold and silver savings increased considerably. The period between the two World Wars was marked by Italy’s strong economic interest in Albania.

3. **The creation of the National Bank of Albania**

In November 1920, the representatives of the new Albanian state declared non-compliance with the previous Concession Act of 1913, in order to establish the National Bank of Albania. The real history of the banking system of Albania (its credit and monetary system) begins after 1925, with the establishment of the National Bank of Albania. This roughly corresponds to the first-time compilation of statistical data on Albania, starting from 1926. The Albanian government negotiated with Italy regarding economic issues and the establishment of the new central bank in Albania with Italian-Albanian joint venture capital. Due to the agreement between the Albanian government and the Italian financial group in March 1925, the National Bank of Albania was re-established. It was decided that 49 percent of capital shares should belong to Albania, and the remaining 51 percent to the Italian financial group. In reality, due to newly emergent conditions, the capital shares changed again, to Albania’s disadvantage. The outcome was that 25 percent of the capital was allocated to Yugoslav, Swiss and Belgian banks, and the rest (75 percent) to Italy. The distribution of the capital of the National Bank of Albania (12.5 million gold francs) affected the bank’s independent status and explains the subsequent policies favouring the Italian financial group. Very soon the Italian financial and economic dominance in Albania was evident. The National Bank of Albania was incorporated in Rome in the form of a joint-stock company; the Albanian gold franc was minted at the Bank of Italy, and the bulk of the gold was deposited in Rome.

3.1. **Monetary policy developments**

In July 1925, the law entitled ‘On monetary arrangement’ was approved. This was a very important step for the new monetary system. Now, the National Bank of Albania had not only the exclusive right to issue currency, but also carried out crediting functions. It created a unified currency, called the Albanian

\(^4\) The Central Bank of Albania was established on 22 April 1992, with the approval of Law No. 7559, entitled ‘On the Bank of Albania’.

\(^5\) Based on the Law of 16 January 1923.
gold franc, which was determined as the official monetary unit. It was decided that the required gold reserves were to cover one-third of the banknotes in circulation. The circulation of the first Albanian currency unit took place in February 1926. From its establishment, the bank’s policy allowed gold deposits and sent them to the Bank of Italy in Rome. For a decade, the National Bank of Albania operated under monopoly conditions. Later it was in competition with other banks, such as the Banca di Napoli and the National Bank of Labour. Until 1926, there was free circulation of all coins (gold and silver), the silver crown, and US American, French, Italian, and Greek banknotes. Most of the population used foreign currencies, especially gold or silver coins, as they did not favour the concept of paper money. During the monetary reform of 1925, the Albanian franc was established, with 0.290323 grams of gold content, and associated with its gold coverage. For that reason, the Albanian franc was the strongest currency in Europe during the period before World War II. The prudent issuing policy of the National Bank of Albania intended for the issued money to be absorbed into the market, to create normal conditions for internal payments, price stability, and foreign exchange rate stability.

The replacement of foreign currencies was accomplished gradually, by issuing a new monetary unit, Albanian gold francs banknotes, over five years, until the total money in circulation was close to the market needs (Figure 1).\(^6\)

![Currency in circulation, 1926-30 (end of each month, in thousand Albanian francs). Source: Borgatta 1941.](image)

In order to achieve the unification of the monetary system and to make the Albanian gold franc the only official money in the market, the National Bank of Albania decided to adopt the Gold Exchange Standard. Banknotes could be converted into gold or strong foreign currencies, such as lira, dollar, pound, and the like. With a high trade deficit and other problems evident at that time, in order to manage the currency in circulation, gold export was prohibited, unless the appropriate official authorization by the National Bank of Albania had been acquired.

### 3.2. Results of the monetary policy

As indicated by the statistical data of that time, the stability of the Albanian currency in the domestic market was reflected even in the foreign markets in 1927. It was quite impressive that, for a few months in succession, the Albanian currency had a better exchange rate in the international stock exchange than several other foreign currencies, such as the US dollar (Lubonja et al. 2002). On the initiative of the National Bank of Albania, the Albanian franc was regularly rated (priced) according to the international stock exchanges of Milan, Trieste, Switzerland, and Vienna (Table 1, 2). The credit policy of the bank

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\(^6\) Borgatta (1941) refers to a market need of 14.5 billion Albanian francs in banknotes.
intended to support Italian companies acting in industry, agriculture, construction, and trade. It also supported Albanian traders who had commercial relations with Italy, as well as a limited credit policy for Albanian capital. The level of credit in the economy was lower than its needs.

Table 1: Albanian exchange rates (parity in gold US cent). Source: League of Nations.

<table>
<thead>
<tr>
<th>Year</th>
<th>Exchange rate (Fr.alb=19.30c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1927</td>
<td>100.60</td>
</tr>
<tr>
<td>1928</td>
<td>100.00</td>
</tr>
<tr>
<td>1929</td>
<td>99.60</td>
</tr>
<tr>
<td>1930</td>
<td>99.80</td>
</tr>
<tr>
<td>1931</td>
<td>100.20</td>
</tr>
<tr>
<td>1932</td>
<td>100.30</td>
</tr>
<tr>
<td>1933</td>
<td>99.40</td>
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<tr>
<td>1934</td>
<td>99.10</td>
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<td>1935</td>
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<td>1938</td>
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<tr>
<td>1939</td>
<td>99.50</td>
</tr>
<tr>
<td>1940</td>
<td>100.20</td>
</tr>
</tbody>
</table>

Note: The exchange rate shows the value of currencies as percentage of the gold parity in 1929 (yearly series). The value of currencies is given as percentage of the gold parity in 1929, when 1 Fr.alb=19.30 gold cents. The calculation has been made on the basis of the official rates in US cents in New York, adjusted to take into account the depreciation of the gold value of the dollar. The high values of the currency as a percentage of the gold parity mean appreciation, and low values mean depreciation of domestic currency (fr.alb).

This resulted in an economic slowdown. Albania faced a high foreign trade balance deficit (Figure 2). The National Bank of Albania had to take into consideration the fact that most of the population used foreign currencies, especially gold and silver coins, and did not like the concept of paper money. At that time, many countries had adopted the Gold Exchange Standard, which was seen as an appropriate standard for the bank.

Table 2: Exchange rates of Albanian gold franc to Italian lira. Source: Roselli 2006.

<table>
<thead>
<tr>
<th>Year</th>
<th>lira per 1 franc</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926</td>
<td>4.96</td>
</tr>
<tr>
<td>1927</td>
<td>3.84</td>
</tr>
<tr>
<td>1928</td>
<td>3.67</td>
</tr>
<tr>
<td>1929</td>
<td>3.66</td>
</tr>
<tr>
<td>1930</td>
<td>3.68</td>
</tr>
<tr>
<td>1931</td>
<td>3.79</td>
</tr>
<tr>
<td>1932</td>
<td>3.78</td>
</tr>
<tr>
<td>1933</td>
<td>3.65</td>
</tr>
<tr>
<td>1934</td>
<td>3.78</td>
</tr>
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<td>4.00</td>
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<tr>
<td>1936</td>
<td>6.22</td>
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<td>6.22</td>
</tr>
<tr>
<td>1938</td>
<td>6.22</td>
</tr>
<tr>
<td>1939</td>
<td>6.22</td>
</tr>
</tbody>
</table>

Notes: Yearly averages for 1927-1928; December averages for 1929-1937; June/September/December average for 1938.
4. The bimetallic period in Albania

In 1928 Albania became a kingdom. Under King Zog, the country experienced difficulties in money circulation, and Albania adjusted to the bimetallic standard. The National Bank of Albania decided to relegate the silver coin to the rank of a fractional currency, together with nickel and bronze coins. In June 1928, adjustments were made to several articles of the 1925 law entitled ‘On monetary arrangement’, as the import of nickel and silver coins, as well as the import and circulation of other foreign coins of the same material was forbidden. There were numerous debates between the Albanian and Italian governments concerning the withdrawal of silver coins from the circulation.

4.1. The results of monetary policy

The lack of coins created difficulties in transactions, and because of market speculation there was an artificially overvalued silver crown in Albania. The law obliged the Albanian monetary authority to accept the overvalued silver against gold. The bimetallic standard could not survive, as the market value of the silver coins was higher than the intrinsic value. The Albanian system had two main negative effects: a scarcity of ‘token coins’, and losses for the National Bank of Albania (Roselli 2006).

5. Monetary policy to survive the Great Depression and the challenges afterwards

The Great Depression of 1930s was the longest, most widespread, and deepest depression of the twentieth century. Until 1930, the Albanian monetary system complied with the gold exchange standard. The major part of reserves was made up of foreign currencies (US dollar, Italian lira, British pound, and so on), and the rest was gold (10 percent).

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7 Fletorja Zyrtare Nr. 64, 1928.
Table 3: The reserve composition in Albania (in %). Source: Borgatta 1941.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gold</th>
<th>Foreign currency</th>
<th>Italian treasury bills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1927</td>
<td>9.8</td>
<td>90.2</td>
<td></td>
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<tr>
<td>1928</td>
<td>7.4</td>
<td>92.6</td>
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<tr>
<td>1929</td>
<td>9.2</td>
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<td>1930</td>
<td>8.6</td>
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<td>47.2</td>
<td>12.7</td>
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<tr>
<td>1939</td>
<td>14.3</td>
<td>85.7</td>
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<tr>
<td>1940</td>
<td>14.6</td>
<td>85.4</td>
<td></td>
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<tr>
<td>1941</td>
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<tr>
<td>1942</td>
<td>14.6</td>
<td>85.4</td>
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</table>

The Albanian economy also suffered the effects of the crisis; its consequences were felt until the first half of 1935. The Albanian franc devalued at 5 to 6 percent, even though the National Bank of Albania tried to keep money in circulation based on real economy needs. This fact caused panic among the industrialists and merchants, who ran to the bank to exchange banknotes for Albanian gold coins. Under these conditions, the National Bank of Albania followed a deflationary policy by restricting currency in circulation. The period from 1933 until 1938 was characterized by shrinkage in money supply. At roughly the same time, from 1934 to 1936, the bank limited the quantity of banknotes one could exchange for gold coins. In the history of Albanian monetary policy, 1934 was the year of the greatest deflation (Figure 3).

Figure 3: Consumer price index and wholesale price index. Source: Borgatta 1941, ‘Prospetti Statistici (Provvisori)’ 1937.

After the Great Depression, in 1935, Albania experienced an upgrading of the domestic economy. At the end of 1936 and in early 1937, a considerable increase in Albanian exports to Italy made itself noticed. This was the result of the increase in financial income from exports based on the agreement concluded between the Albanian and Italian governments in the same period, as remittances from abroad increased.
Between 1933 and 1938, the National Bank of Albania tried to maintain the stability of the exchange rate. As the gold reserves were almost depleted, it decreed that people could no longer exchange money for gold. To avoid a ‘relative inflation’ which could compromise the stability of exchange rates, the monetary policy aimed at deflation, maintaining an overvalued exchange rate in Albania. The National Bank of Albania adopted a policy of high interest in 1934 and pursued one of high ‘real’ interest rates as well. After March 1936, it put into circulation 1 million gold francs, so that the Albanian gold francs became the only currency used at that time. In this period, the Albanian franc remained the only currency to maintain an unchanged parity with gold. It had only a tiny fraction of devaluation of its earlier rate when Albania was occupied by Italy in 1939, when the exchange rate was pegged to the Italian lira, gold coins disappeared, and banknotes and token coins used in their stead (Table 3). The gold share among the total reserves increased very fast, jumping from less than 10 percent before 1930 to 24.6 percent in 1931. The gold share increased continuously until 1938, when gold reserves reached 40.1 percent. The gold reserve threshold was 11.1 percent of circulation, but it climbed to more than 73 percent in 1938.

The results of the monetary policy were reflected in the stability of the Albanian gold franc: while many world currencies devaluated in real terms during the Great Depression, in 1939 the Albanian franc appreciated by 17 percent, compared to the stabilized Italian lira in 1927. From 1925 to 1939, the National Bank of Albania applied a deflationary monetary policy for the Albanian currency, by keeping money in circulation according to the economic needs and by artificially evaluating the Albanian franc.

6. World War II in Albania

During World War II, Albania suffered two invasions, one shortly after the other: the Italian occupation in 1939, and the German occupation in 1943. In this period, the Albanian monetary and economic systems were destroyed. Even the retreat of the invaders damaged the economy, as the Italians took unknown quantities of Albanian francs with them, while during the German retreat the gold reserves were stolen.

6.1. Monetary policy during the Italian Occupation, 1939-1943

The banking system in Albania underwent many changes under the Italian occupation. The Italians converted the Albanian monetary system into a simple appendage of the Italian one. Italy used the Albanian monetary system for the purpose of financing its invasion into the Balkans. Moreover, the National Bank of Albania served crediting functions. The monetary circulation exceeded the level of economic demand, causing a devaluation of the Albanian currency and therefore high inflation rates.

The Agreement of 20 April 1939 facilitated more economic and financial relations between Italy and Albania and the adoption of an economic, customs and currency union. This agreement also gave to the National Bank of Albania the monopoly on foreign exchange. The convention revoked the gold basis of the Albanian franc by pledging the Italian lira as guarantee. The currency in circulation would be covered by Italian banknotes. The Italian government imposed Italian dispositions on all commercial and bank matters of Albania. Thus, even though the Albanian franc stayed the currency unit, it was debased, disconnected from gold, and pegged to the Italian lira with a fixed exchange rate (6.25 lira to Albanian franc). It had to keep an indirect link to gold, equal to that of the Italian lira.

The backing for the monetary circulation in Albania was no longer made up of gold and foreign currencies, but exclusively of the Italian lira, in the form of banknotes, or other credits drawn on the Bank of Italy. To legalize the agreement, all correspondences from 1939 onward would refer to the Albanian gold franc simply as Albanian franc.

The impetus for the increase in import activity from Italy came from the increased transfers of financial resources into Albania. In 1939, the National Bank of Albania stated that if an Albanian trader wanted to import from third countries, he would have to make a request for the necessary exchange to

8 Published in Fletorja Zyrtime Nr. 27, 1939.
9 After October 1936, the lira was tied by fixed parity to gold (1 lira being equivalent to 0.04677 grams on fine gold), which can be considered as a sort of gold exchange standard.
the National Bank of Albania itself, a request which the bank could reject at its sole and non-transferable discretion (Fishta 1971, 192). All imports and exports were connected to Italy. The annexation of Albania to Italy was the most ruinous time-period in terms of the Albanian franc’s devaluation.

6.2. Results of the monetary policy

From 1939 to 1943, Italy adopted an inflationary policy that negatively impacted the Albanian economy. Currency in circulation rose above the economic demand in order to finance war, causing a devaluation of the Albanian currency and therefore high inflation rates. Albania was a bridge to the conquest of other Balkan countries. Currency stability was based on gold, which was disappearing from the market. Without a serious coverage in gold and under the continuous pressure of military expenses from the domestic loan of the Italian government, the monetary system was experiencing an economic disaster.

Figure 4: Consumer price indices. Source: ‘Monthly Prices Bulletin and Standard of Living Indices’ 1945.

7. Monetary policy during the German Occupation, 1943-1944

In September 1943, the Germans applied the same monetary policy as had Italy done to finance the war, bringing the currency in circulation above the level of demand and therefore causing a high devaluation of the currency and high inflation rates. Albania’s economy was falling apart even further. The National Bank of Albania, as the only operating bank in Albania, became the exclusive financier of the German military. It printed money at the discretion of the German government and financed the German military machine on the Balkans.

In September 1943, when Italy retreated from the Balkans and Germany took over, the order was given to suspend the activities of all Albanian banks. This order created a crisis in the Albanian economy and paralysed the entire banking system. All accounts were frozen, and the banks were not allowed to return deposits to their customers. The banks were prohibited from taking deposits or extending loans. We do not know exactly when Germans opened the bank’s treasury and took all the gold and cash from the vault. Albanian leaders at the time pleaded for the gold to be returned, or to be deposited in a Swiss bank account under the name of the Albanian government, but the German government did not agree and decided to keep the gold in Berlin. The National Bank of Albania performed financial and monetary operations for the German army, based on the convention of 27 December 1943 between the German army and the Ministry of Finance of the Quisling government; these payments were supposed to be in Albanian francs (Lubonja et al. 2002). When retreating in 1944, the German troops forcefully opened many of the safes in the bank’s branches, stealing whatever money or gold they could get their hands on.
8. Monetary policy after World War II and its results

On 29 November 1944, Albania achieved independence. With the Law of 13 January 1945, the State Bank of Albania was established with Albanian capital. All conventions concluded between Albania and Italy were revoked. According to the new law, the Albanian state did not recognize the former liabilities of the National Bank of Albania for gold and foreign exchange deposits. The bank was furnished with a principal capital of 10 million gold francs. For the first time the bank had the exclusive authority to issue bank notes guaranteed on gold, silver or ingot coverage, or to deposit currency within the state or abroad. It had the right to extend short-term or long-term loans to private and public entities.

There were many difficulties for the newly independent country. The currency in circulation was not exactly known. The coverage in gold, which was established as one-third of the monetary circulation, was located in Rome and then relocated to the Reichsbank in Berlin. Under these conditions, the State Bank of Albania initiated the sealing of the existing bank notes issued by the National Bank of Albania. This procedure was accomplished between 27 June and 8 July 1945. Unsealed currency was declared non-effective and worthless. Values of deposits were returned to the owners before 31 August 1945. After this measure, in 1945 the currency in circulation became evident and was reduced to 286.1 million Albanian francs (Bank of Albania 2003) (Figure 5).

Figure 5: Currency (banknotes) in circulation. Sources: Borgatta 1941, Fishta 1971.

<table>
<thead>
<tr>
<th>Year</th>
<th>Circulation in 1000 Albanian gold francs</th>
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<tbody>
<tr>
<td>1926</td>
<td>50,000.0</td>
</tr>
<tr>
<td>1927</td>
<td>100,000.0</td>
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<tr>
<td>1928</td>
<td>150,000.0</td>
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<tr>
<td>1929</td>
<td>200,000.0</td>
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<tr>
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<td>300,000.0</td>
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<td>1932</td>
<td>350,000.0</td>
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<tr>
<td>1933</td>
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<td>1934</td>
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<td>900,000.0</td>
</tr>
<tr>
<td>1944</td>
<td>950,000.0</td>
</tr>
<tr>
<td>1945</td>
<td>1,000,000.0</td>
</tr>
</tbody>
</table>

This was a significant measure, as it reinforced confidence in the Albanian currency and held back the continuous reduction of the standard of living. Also, the new state could create new monetary reserves to meet liquidity expenditures. At the same time, it made the currency in Italian and German hands outside its borders worthless. The monetary circulation was adjusted to the new social and economic conditions and terms in Albania. From this period onward, the centralization of the system was in the state’s hands. The domestic banking system consisted of one sole bank, the State Bank of Albania.

Between 1945 and 1985, Albania’s isolation was compounded by the rigid communist dictatorship, which eliminated almost all forms of private property and virtually cut off the country from outside influences and information. The State Bank of Albania supported the program for the development of the socialist economy, characterized by the system’s extremist centralization in the state’s hands. A significant development of the banking system would take place only later, in the 1990s.
9. Monetary policies under the democratic system in Albania of the 1990s and their results

At the end of 1990, the political system in Albania changed dramatically, with the economy being transformed from a state-owned to a free-market one. On 22 April 1992, the Bank of Albania was established with the approval of Law No. 7559, entitled ‘On the Bank of Albania’ (Bank of Albania 2003), which was revised later according to models taken from Western countries and the recommendations provided by international organizations. The banking system developed towards a two-tiered one, with the Bank of Albania as central bank. Thereafter, the Albanian economy faced two subsequent major challenges. The first and most destructive shock happened in 1997. After 1991, Albania experienced a drastic transition period, from a communist economic system to a capitalist one. The economy was growing fast and was reportedly healthy. International organizations were very proud of Albania’s developments towards a free-market economy. However, serious problems destroyed the financial sector, caused by the rise of economic phenomena outside the system, such as the pyramid-schemes that developed in the informal market. Especially between 1993 and 1997, one could observe the rise of such pyramid schemes. Because of the high interest rates offered by these schemes, there was an uncontrolled flow of deposits towards them. In 1997, one pyramid-scheme after another went bankrupt. The financial system collapsed, followed by negative political events that led to armed confrontations and almost a civil war. The economy faced massive destruction, causing the state to lose control and, finally, to collapse (Figure 6). Several factors influenced the emergence of the pyramid-schemes, factors that interacted with each other:

1. **Deficiency of the formal financial system.** Banks were unable to satisfy the private sector’s demand for credit, and this stimulated the growth of an informal credit market based on family ties and financed by remittances. The informal crediting companies were initially regarded as beneficial and as making an important economic contribution.

2. **Inadequate regulatory system.** The system was inadequate, as it was not clear who had the responsibility to supervise the informal market.

3. **Weak governance.** The transition period had not brought with it deep institutional reform.

4. **Lack of information.** Since Albanians had lived under a centralized and controlled system and without knowledge about the workings of an open market economy, they were unaware of the high risks of such schemes.

5. **High unemployment rate.** The interest derived from depositing money in these schemes was the main source of income for thousands of Albanian families.

Figure 6: Macroeconomic indicators (%). Source: Bank of Albania; INSTAT; Ministry of Finance.

Note: GDP 2007 semi-final.
The loss of savings in these schemes brought fear, insecurity, panic, and aggression. The country descended into anarchy and was near civil war. There was massive destruction of both private and public production sectors, and a considerable increase of prices, from 17.4 percent in 1996 to 42.1 percent in 1997. Because of the panic there was a loss of confidence in the formal financial market as well. This, in turn, led to massive withdrawals from the banks and caused liquidity crises. As a result, there was an increase of money outside the banks, up to 29.8 billion lek. The budget deficit grew because of expenditure expansion and a high level of fiscal evasion. Many people believed that the best way to safe-keep money was to convert it into foreign currency. In this situation—without inflow of foreign currency from exports on one hand, and the great public demand for foreign currency on the other—the local currency in a very short time suffered a depreciation of 44.6 percent (in 1996, 1 US dollar equalled 103.07 lek; at the end of 1997, 1 US dollar equalled 149.14 lek).

In order to resolve the crisis—in this case a lack of liquidity in cash in the second-tier banks and the total inactivity of government finance—the Bank of Albania financed almost the entire government deficit. During the first half of 1997, the Bank of Albania also bought a considerable amount of treasury bills in the secondary market. Moreover, the budget deficit of 40.1 billion lek in 1997 was financed to 7 percent from the collateralized loan of the Bank of Albania, 71 percent from the treasury bills bought from the Bank of Albania in the secondary market, and 22 percent from the treasury bills bought from second-tier banks (mainly government banks).

In December 1997, a new law entitled ‘On the Bank of Albania’ was presented. The law stipulated the bank’s independence; it set as its main targets to achieve and maintain price stability, and to determine its legal powers. In addition, it specified that the bank was independent while attaining its main objective and accomplishing the tasks assigned. Its placement in the first tier of the banking system thus granted the powers to license and supervise the entire Albanian banking system. Therefore, the Bank of Albania controlled the banking system liquidity by limiting the daily cash withdrawals from banks in both lek and foreign exchange. In September 1997, the Bank of Albania for the first time began to use the repo and reverse repo agreement with the second-tier banks, as an indirect monetary instrument. These agreements were mainly used to administer the short-term liquidity of the banking system, thus providing to banks and other financial institutions the necessary liquidities. An additional instrument used for providing short-term liquidity to the banks was the utilization of Lombard loans, a debt instrument used to assist commercial banks to overcome temporary liquidity shortages. The Bank of Albania increased public confidence in the financial system through increasing the interest rates for the lek deposits by up to 37 percent. Finally, specific interventions in the market exchange rates were performed in order to avoid speculative fluctuation of exchange rates and to achieve the maintenance of the targeted country foreign exchange reserves.
During the first half of the year, there was a sharp increase of money circulation outside banks and a decline of deposits in banks, especially demand deposits because of the public preference for liquid funds. In the second half, as a result of the monetary policy and the decrease of the budget deficit, the public confidence in banks increased. A large portion of foreign currency deposits was converted to lek deposits, due to the high interest rates offered and because of the normalization of the exchange rate during the second half of the year towards an evaluation of lek currency. At the same time, there was an inflow of money from banks outside Albania into the banking system deposits. Money outside banks/M3 declined, and total deposits/M3 increased, which indicates a return to normal conditions (Figure 8). The monetary base increased from 9 billion lek in the first quarter to 28 billion lek at the end of the second quarter, compared to the end of 1996. The public demand for liquidity forced the Bank of Albania to inject more money into the market than the normal development of the economy required. Therefore, the increase of currency in circulation in this period was the same as the increase of the monetary base (Figure 9).
In the second half of the year, when the situation was more stabilized and the banks moved from a position of shortage of liquidity to an excess of liquidity, the Bank of Albania sold from the portfolio 11.1 milliard lek, while maturing 3.2 billion lek. The government played a key role during that time, restricting and minimizing the size of the informal sector. Its priority was to finance the necessary expenses and take control of the budget deficit. Government measures for income accumulation through taxes resulted in an obvious increase of budgetary revenues by the end of the year.

10. The 2002 banking crisis

The second crisis occurred in 2002, when the Albanian banking sector consisted of one bank with state capital (the largest in the banking system), two banks with compounded capital, and 10 with private capital. It is important to mention that this year was characterized by negative political events in the country because of government elections. In March 2002, even though the economic indicators were accurate, the banking system experienced signs of panic. Oddly enough, this banking panic happened at a time when the financial situation of the banking system was at the best it had been over the previous decade. Afraid to lose their savings in the pyramid schemes and because of ‘false information’, Albanians rushed to withdraw their savings from the two major banks in the country, provoking panic and liquidity issues.

This panic was caused by several factors: (1) In 2002, the parliament approved the Act for ‘Client Deposit Insurance’, when the public had no knowledge of these deposit schemes at all. (2) The Savings Bank, which held more than 80 percent of the deposit market, was privatized. (3) The National Trading Bank, the second major bank, changed ownership. (4) Depositors in general had a lack of information and knowledge about the financial system.

The Bank of Albania managed to rescue the situation in time. Observing the obvious panic signs, the Bank of Albania made a schedule visualizing the speculative factors and the corrective measures to be undertaken in order to prevent the crisis and face it in order to maintain financial stability. The Bank of Albania basically had two roles: the first role was that of crisis administrator, by coordinating the second-tier banks and averting banking panic; the second was to ensure banking system liquidity. In this situation, the Bank of Albania pursued an educational and informational policy via explanatory TV programs and statements in the daily press, announcing a healthy financial banking system. The Bank of Albania ensured that the banking system’s liquidity was firm and that it supplied all the cash needs in the second-tier banks. It raised the interest rate of the repurchase (reverse) agreements by 1.5 points, and the other banks followed this approach by raising their deposits interest rates. The Central Bank suspended for a period of 10 days the overnight deposits, to partly complement the banking system’s liquidity demands. Inter-banking activity developed high levels of transaction volume and participants, as it had never done before.

These monetary policies were a success. In the second half of 2002, depositors’ confidence intensified, resulting in an increase in bank deposits. At the end of the year, the total deposits were at a level higher than at the end of 2001. It is important to highlight that this panic created liquidity issues only in the two major banks, without involving the other part of the banking system, and no banking failures happened. This crisis was not transmitted to other economic sectors, because the Savings Bank was not involved in credit activity, while the National Trading Bank had not even before pursued an aggressive credit activity in the market.
11. Conclusion and recommendations

When outlining the monetary policy of the Albanian state over the course of history, we can observe that monetary policy usually focused on protecting the currency value. Even though most efforts to maintain a strong currency were successful, the involvement in the World Wars was devastating. The economic recovery after World War II was slow and happened under an inexperienced government. The country’s monetary policy during these years was entirely determined by state politics, allowing the State Bank of Albania little room to manoeuvre.

In most cases of economic crisis, there were political implications causing economic and/or financial difficulties. Political climate is an important factor influencing financial stability. Under a sound political system, monetary policy is more effective. In an unstable political situation, people often become unpredictable, making it even harder to determine a monetary policy. Political instability in a country can provoke financial disorder and economic collapse. The economic situation can affect the financial situation of a country, and vice versa, creating a vicious circle. The 1997 crisis was generated mostly by macroeconomic factors associated with political events, a weak financial system, and an inefficient banking system. In a situation of economic and/or financial difficulties, it is indispensable that the central bank and the government cooperate to achieve economic and financial stability. It is also crucial to have a sound information system. Information asymmetry can create wrong expectations among the public, causing difficult financial situations that can get out of hand, as happened in the 2002 banking crisis. Public information is a necessary tool to increase the amount of available information and to present it in a manner easy to understand.

Aiming to be part of the European Monetary Union (EMU), the Bank of Albania has gradually improved its monetary policy and instruments. In fact, it has introduced and applied new developments in the area of economic analyses and the decision-making process, in line with the most recent practices of monetary management and the development of Albania’s economic and financial market. The Bank of Albania has a high level of legal independence, which guarantees the stability of the monetary system.

The 2002 banking crisis was an experience that may be utilized to avoid future incidents which can cause unnecessary damage to the banking system. Thus, it is important for monetary policy to be transparent to the public and to gain public confidence before introducing new instruments, as is for the banking system. The independence of the central bank is one of the most important factors to avoid and reduce crisis effects, especially in situations of global crisis. In the European Union, the principle of central bank independence has a quasi-constitutional basis. A unified legal base for the independence of the central bank is obligatory. In this case, we propose a unification of the indices that measure the independence of central banks, based on the EMU’s legal base. As long as there is no specific central bank independence index based on EMU criteria and no pre-accession requirement, we propose the so-called ‘Euro zone
index’ (Pisha 2008), which presents a new model for measuring central bank independence, especially in the Euro zone and in potential EMU countries. It might also be used to measure CBI in all countries which intend to have a high-level CBI, especially in EMU and EMU-candidate countries. ‘Euro zone indices’ are also proposed to serve as possible quantitative convergence criteria for central bank independence in the Euro zone.¹⁰

After a succession of wars and crises during the nineteenth and twentieth centuries, the Balkan countries now offer a perspective of stability and prosperity in the region, an important step to smooth national enmities among them. Our recommendation to ensure further success is to meet the EMU’s conditions as soon as possible. It is crucial that the Balkan countries establish bilateral relationships which will allow greater economic and political stability in the region. The European Commission has set out the rationale for moving towards a more ambitious vision for the region’s development. This will have a positive impact on the economic and financial development of the Balkan countries, reducing the effects of potential future crises. A very important role in crisis situations is played by the coordination of monetary and fiscal policies for price stability and economic development. Here, again, the independence of the central bank is crucial. Further recommendations are related to the necessity of low inflation and monetary stability, relatively low fiscal deficits, foreign direct investment (FDI) growth, close supervision of the central bank, banks’ financial stability, and transparency; however, these are outside the scope of this paper.

¹⁰ The Maastricht Convergence Criteria include price development, fiscal development, exchange rate development, and long-term interest rate development.
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Central bank losses and the case of the Deutsche Bundesbank after the breakdown of the Bretton Woods System

Martin Pontzen
martin.pontzen@bundesbank.de

and

Franziska Schobert
franziska.schobert@bundesbank.de
Deutsche Bundesbank

Abstract

Central banks care about financial strength, because central bank losses have an impact on their reputation and eventually can also influence their independence. During and after the breakdown of the Bretton Woods System, the Deutsche Bundesbank faced significant central bank losses, when the strong appreciation of the D-mark against the US dollar caused write-downs on foreign currency positions. Interest expenses on sterilization instruments, however, remained contained, as Germany tried to restrict capital inflows by using non-market-oriented measures. Eventually, the Bundesbank escaped the dilemma by focusing on internal price stability. This reduced the share of foreign currency denominated assets on its balance sheets, its main source of vulnerability at that time.

JEL: E50, E58

Keywords: Central banking, central bank losses, Bretton Woods System

1. Introduction

Why should a central bank care about losses? Central banks aim at maintaining price and financial stability; they are not profit-maximizing enterprises. Even in the extreme event of losses exceeding the capital buffer, capital can become negative, or the central bank can eventually be recapitalized by the government. Central banks, however, have to be aware of risk management and their financial strength, because financial risks can translate into reputational risks. The financial statement of the central bank reflects many of its operations, and the central bank needs to account for loss-making transactions. Reporting central bank losses is an important matter, as these can have an impact on a central bank’s reputation and thereby affect its credibility. In particular, if central bank losses exceed capital, discussions on whether and how to recapitalize the central bank can lead to a conflict with the government. Financial strength is important for a central bank, because it supports the central bank in performing its tasks independently (Stella 2003, Dalton and Dziobek 2003, Schobert 2006).

Many central banks have encountered loss-making years. This is in sharp contrast to the general opinion that seignorage should make a central bank inherently profitable. Central bank losses, however, are not that rare; the main reasons behind them are interest expenses on sterilization instruments and write-downs on foreign currency positions (Schobert 2008). Interest expenses on sterilization instruments will arise if the central bank has provided excessive liquidity due to foreign exchange interventions, financial restructuring, or fiscal financing, and then conducts liquidity-absorbing monetary policy operations. They can become costly if the interest expenses paid on sterilization instruments are higher than the return earned on their counterparts on the asset side (Mackenzie and Stella 1996). Write-downs on

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1 The views expressed here are those of the authors and do not necessarily reflect the views of the Deutsche Bundesbank.
Foreign currency positions can occur because the foreign exchange risk of a central bank usually remains unhedged. A high share of (net) foreign reserves in relation to total assets will expose the central bank to high foreign exchange risk, if the exchange rate is sufficiently flexible or appreciates. Write-downs on foreign currency positions will be practically unavoidable, if the domestic currency is on an essentially appreciating path against the reserve currencies.

Schobert (2008) has investigated central bank losses worldwide over the past two decades and concluded that interest expenses on sterilization instruments have accounted for almost half of the total central bank losses, whereas write-downs on foreign currency positions make up more than one-third. Interest expenses on sterilization instruments and write-downs of foreign currency positions often occur because the central bank is aiming at two goals at the same time. On the one hand, it intervenes in the foreign exchange market in order to prevent an unwanted appreciation of the exchange rate; on the other, it absorbs part of the liquidity created by foreign exchange interventions in order to preserve internal price stability.

Many central banks in transition and emerging market countries have tried to target these two goals at the same time, as the financial sector develops and capital account liberalization proceeds. The question of whether a mercantile motive, as suggested by Dooley et al. (2004), or conflicted virtue, as proposed by MacKinnon and Schnabl (2004), can explain this behaviour is beyond the scope of this article. As a result, however, central banks try to defend exchange rates by means of foreign exchange interventions and, at the same time, fear inflationary risks (or risks to financial stability) due to the additionally created liquidity; therefore, they sterilize interventions. Sterilized interventions may ease off over time, either because capital inflows have decreased, or because the central bank has changed its exchange rate objective. Nevertheless, monetary policy operations will continue to be liquidity-absorbing as long as the structural liquidity surplus exists. Interest expenses on sterilization instruments may decrease if the interest differential between sterilization instruments and the foreign currency portfolio narrows. A successful central bank in terms of price stability, however, can be ‘punished’ by an appreciating currency, which triggers write-downs on foreign currency positions. Chile, the Czech Republic, and Slovakia are examples of central banks which had to face central bank losses. These were triggered by interest expenses on sterilization instruments in the first few years and were later dominated by write-downs on foreign currency positions. The cumulative central bank losses during these years amounted to more than 7 percent of the GDP in the Czech Republic and Slovakia, and to more than 12 percent of the GDP in Chile (Schobert 2008).

Thus, the vulnerability of a central bank to losses can persist even when the central bank has shifted its objective to only one target. A structural liquidity surplus usually changes slowly over time, because it depends on the increase of banknotes in circulation in relation to the size of the foreign currency portfolio. In contrast, the rate of currency growth is demand-driven, and the size of the foreign currency portfolio has to be considered against the backdrop of the adequacy of foreign reserves and wider political implications.

From 1971 to 1979, the Deutsche Bundesbank faced a dilemma similar to that of many emerging market countries today. Under the Bretton Woods System, and presumably for several years after its breakdown, the Bundesbank had dual objectives: maintaining both internal and external price stability. Bundesbank losses started in 1971, at the same time as the Bretton Woods System broke down, when the strong appreciation of the D-mark against the US dollar caused write-downs on foreign currency positions. Interest expenses on sterilization instruments, however, remained contained, as Germany tried to restrict capital inflows by using non-market-oriented measures. Eventually, the Bundesbank escaped the dilemma by changing its objectives.

In the following section, we will describe the political and economic environment of the Bretton Woods System, in which the vulnerability of the Bundesbank to losses increased. In the third section, we will analyse Bundesbank losses from 1971 to 1979 in detail, and in the fourth section we will provide a conclusion.
2. The breakdown of the Bretton Woods System

In order to put the Bundesbank losses and the measures for dealing with them into a historical context, the political and economic environment during the Bretton Woods System warrants a closer look. On 15 August 1971, a Sunday, US President Nixon announced in a televised address to the nation—without warning the other member countries of the Bretton Woods System—that the US was going to remove the gold backing of the dollar. The obligation to exchange US dollars at a fixed rate of $35 per ounce had previously formed a central pillar of the post-war financial system, which was decided in 1944 at the Bretton Woods conference. Nixon’s unilateral announcement put an end to this system. To appreciate the significance of Nixon’s decision and its consequences, one should analyse the historical background of the Bretton Woods System.

The agreement was reached in the summer of 1944 in the Bretton Woods area of Carroll, a small town in New Hampshire. It was the result of a three-year-long in-depth debate among the leading economic and financial experts of the British and US governments. Under the Roosevelt administration, especially in the State Department led by Cordell Hull, it was widely recognized that the basic cause of the economic and political crises of the 1930s was a rise of protectionism. A beggar-my-neighbour policy was a vital part of this protectionism. National governments devalued their domestic currencies in order to promote their exports. They fought against their immediate problems at home at the expense of neighbouring countries.

Considerations regarding the shape of the post-war world economy were already discussed in 1941, when Roosevelt met British Prime Minister Winston Churchill and when they decided on the terms of the Lend Lease programme, under which the United States supplied the United Kingdom and other nations with vast amounts of war material in return for other benefits, such as military bases. To the surprise of the British side, the US insisted on inserting a paragraph about free trade and free access to markets in the Atlantic Charter. In the end, both governments committed themselves to ‘the access of all countries, big or small, victor or vanquished, to trade raw materials in the world to promote a level playing field’. For all their differences, the US and British representatives agreed that there should be no return to the situation before World War I, when capital could move freely throughout the world. International trade should be able to develop without the constraints that had a disastrous effect on the global economy in the 1930s. But that would only be possible when capital flows were not disrupting trade and exchange rates.

The attitude of Keynes, the chief British negotiator at Bretton Woods, towards capital controls requires a more detailed explanation. Keynes stressed that a regulated capitalism, as it strove for this new agreement, would not be possible if free capital movements were allowed:

Freedom of capital movements is an essential part of the old laissez-faire system and assumes that it is right and desirable to have an equalisation of interest rates in all parts of the world. In my view the whole management of the domestic economy depends upon being free to have the appropriate rate of interest without reference to the rates prevailing elsewhere in the world. Capital control is a corollary to this (1980, 148-149, cited in Crotty 1983, 62-63).

The issue of capital controls was directly related to political developments, which signalled an end to capitalist systems after World War II. The Russian Revolution triggered a series of revolutionary upheavals in Europe itself. Every capitalist government was aware that a return to the previous system could lead to conditions like those in the 1930s and to no less explosive conflicts.

The first blemishes on the new economic order emerged in the late 1950s through the ‘eurodollar’ market and the crisis of the British pound. The currencies of Western European countries did not become fully convertible until 1958, and just before this deadline the sterling crisis emerged. The British government responded, as envisaged in the Bretton Woods framework, by imposing restrictions on capital movements. This decision, however, hindered the activities of British banks. They were afraid of being outflanked by their transatlantic rivals if they were forced by the actions of their government to reduce international lending and sought to circumvent the restrictions. Instead of using pounds, they financed their international transactions with the dollars deposited with them and were able to continue their international activities despite the pound controls. The British government followed the development of this
new financial market with mixed feelings. On the one hand, it had to attend to the requirements of the national policy—namely, financial controls; on the other hand, it wanted to maintain and further develop London’s position as an international financial centre.

At that time, an additional problem arose: pressures on the gold backing. Under the agreements of 1944, the dollar was used as a kind of international currency, which gave the United States relative advantages over other countries. These benefits were, at least in theory, limited by the requirement that the dollar could be exchanged at a rate of $35 per ounce of gold. As is often the case with financial arrangements, the gold backing system worked well as long as it had not actually been tested. It was, however, based on a contradiction. The expansion of the international economy itself led to an increased demand for international liquidity in the form of US dollars. Thus, the relationship between gold and the dollar became more invalid the more the global economy expanded. In the 1960s, the dollar overhang rose, and the US government took measures to restrict capital flows. Again, market participants discovered that the Eurodollar market was a useful way of circumventing the actions of their own governments.

The US government also had an ambivalent attitude to the Eurodollar market. It tried to restrict the outflow of capital in order to counter the balance of payments deficit; however, the existence of the Eurodollar market also meant that foreigners were more inclined to invest their assets in dollars and thus reduced the pressure on the US currency. The growth of the eurodollar market, however, had exactly the consequences anticipated by Keynes and Harry Dexter White, the chief US negotiator at Bretton Woods. Larger amounts of financial capital could only move around the world outside of the control of governments. The system of fixed exchange rates could no longer be maintained. In 1967, the pound came under pressure, followed by the dollar in 1968. In 1971, the US trade balance was negative for the first time since World War II, reaching a qualitative turning point in Nixon’s announcement on 15 August.

Immediately after this decision, there were attempts from both Japan and the European side to revive the Bretton Woods System in some form, through the exercise of capital controls. But the US resisted all such attempts because they would have restricted its room for manoeuvre both internationally and domestically. Under Bretton Woods or any other regulatory regime, the US would have had to take measures to correct the imbalances in its international position. One way of doing this would have been to reduce military spending, especially on the Vietnam War. This would have weakened the international position of the United States. In 1971, a government working group headed by Paul Volcker (who later became chairman of the Federal Reserve) concluded that an important goal was to ‘free […] foreign policy from constraints imposed by weaknesses in the financial system’. In 1990, Volcker noted in retrospect: ‘presidents—certainly Johnson and Nixon—did not want to hear that their options were limited by the weakness of the dollar’.

Another way of reducing the external deficit, reducing the pressure on the dollar and maintaining a regulatory regime would have been spending cuts in the US. But that would have triggered a serious recession and probably also social unrest. In the ruling circles of the US, there was also considerable support for the view that the removal of the system of capital controls would allow the US to maintain its dominant position because of its weight in the global economy. Other nations would continue to hold dollars. In 1971, President Nixon’s Treasury Secretary John Connally famously told a delegation of Europeans worried about exchange rate fluctuations that the US dollar ‘may be our currency, but it’s your problem’.

The gold backing officially ended on 15 August 1971. A different policy might have led to a different course of events. The demise of the Bretton Woods System, however, could not have been prevented, as the collapse was rooted in objective trends. In a comprehensive study, James has commented:

> It required too much in terms of the coordination of national policies. Countries were more and more committed to domestic growth, while at the same time the technological forces that were driving economic growth required internationalization, of goods markets but also of capital. The crisis of the Bretton Woods system can be seen as a particular and very dramatic instance of the clash of national economic regulation with the logic of internationalism. In the circumstances of 1971, the disruption of the system followed very obviously and directly from the policies of the United States (James 1996, 207).
To put it more neutrally, the reasons for the unsustainable peg to the US dollar was probably rooted in a mixture of incompatible policies in Germany and the US and the relatively dramatic catching-up processes in Europe in the post-war period, as discussed by Abramovic (1986), and Pontzen and Schober (2008). The abolition of the gold backing of the dollar was quickly followed by the elimination of fixed exchange rates and the lifting of restrictions on capital movements during the 1980s.

3. Central bank losses at the Deutsche Bundesbank from 1971 to 1979

During and after the breakdown of the Bretton Woods System, the Bundesbank faced central bank losses almost continuously from 1971 until 1979 (Figure 1). The total losses over the seven-year period amounted to almost 4 percent of the GDP. The main reason behind this was write-downs on foreign currency positions due to the appreciation of the D-mark against its reserve currency, the US dollar. These write-downs far exceeded interest expenses on sterilization operations. They accumulated to about 46 billion D-mark during the seven loss-making years, whereas interest expenses on ‘mobilization’ and ‘liquidity’ paper, special forms of sterilization instruments, only accumulated to about 3 billion D-mark (Deutsche Bundesbank, 1971-1979).

As the Bundesbank suffered its first loss in 1971, this prompted intense discussions between the Ministry of Finance and the decision-making body of the Bundesbank, the Directorate. According to the protocol of its meeting on 6 October 1971, the Directorate discussed a questionnaire regarding write-downs on foreign currency positions and interest expenses on sterilization instruments, which had been prepared by the Ministry of Finance. The questions referred to the impact on central bank losses given different appreciation rates of the D-mark, how the Bundesbank was going to account for exchange rate changes in its financial statements, and how much the Bundesbank would receive as net interest income after subtracting interest expenses on mobilization and liquidity paper. The capital and reserves of the Bundesbank, which accounted for DEM 3.7 billion, could not buffer the immense write-downs on foreign currency positions, which in 1971 reached almost DEM 6 billion. The Directorate discussed the possible use of alternative accounting techniques. One option was not to record a loss, but to create a balancing item on the balance sheet. This was, however, based on the flawed assumption that the floating regime would only be transitory.

In early 1972, the discussions of the Directorate became more heated. Bundesbank staff proposed to cover the loss recorded in 1971 with an unremunerated claim on the government, which could be amortized using future central bank profits. The Directorate rejected the proposal and decided to record a loss carry forward on the balance sheet. In 1973, write-downs on foreign currency positions increased considerably, and the total loss of DEM 6.8 billion dwarfed the total loss of DEM 3.1 billion in 1971. During 1973, when high write-downs on foreign currency positions were already being predicted, the Directorate had to face public reactions to the expected central bank loss. Bold headlines in the national press, such as ‘The Bundesbank is broke’; ‘Is the Bundesbank about to go bankrupt?’, and ‘Revolt in the Central Bank Council’ revealed that members of the Central Bank Council, which comprised the Directorate and the presidents of the Land Central Banks, had expressed their discontent with the way in which the Bundesbank was dealing with the losses. The president of the Land Central Bank in Hamburg addressed a letter to the government and asked whether the Bundesbank could become insolvent. The president of the Land Central Bank in Hesse supported the question and suggested that the Justice Minister should declare that the Bundesbank could not become insolvent and that the Bundesbank Act should be revised accordingly. The president of the Bundesbank, Dr Klasen, then publicly announced that the Bundesbank would try to redeem its losses due to exchange rate changes from its revenue. The government would not be asked to redeem the loss by injecting cash or by giving interest-free government bonds to the Bundesbank. Until then, the Bundesbank had chosen to redeem losses through its own revenue, and it would continue to do so. If the government were to provide interest-free bonds, the question would arise as to what the Bundes-

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Anchoring would do with any profits. It would eventually have to distribute them to the government, and this would create an exchange value to foreign currency inflows. The Bundesbank Act was not revised and, at the end of 1973, the responsible member of the Directorate, Dr Emde, recommended continuing with the previous approach and recording a loss carry forward on the balance sheet. In order to take the heat out of public discussions about the central bank loss, he also recommended mentioning considerable hidden reserves due to the valuation of gold and real estate assets in the annual report.

Figure 1: Central bank losses at the Deutsche Bundesbank and exchange rate development of the D-mark/US dollar. Source: Bundesbank

Thus, the Bundesbank faced problems during the breakdown of the Bretton Woods System similar to those experienced in recent decades by central banks in many emerging market economies. It tried to defend a fixed exchange rate system which ultimately became unsustainable. Interestingly, even after the breakdown of the official exchange rate regime in 1973, the Bundesbank continued to accumulate foreign reserves, even though it officially followed a floating exchange rate regime. Foreign reserves increased even in D-mark terms, despite the fact that the D-mark was strongly appreciating against the US dollar. Apparently, the Bundesbank still had an exchange rate objective that was not only driven by national interests, but also by international and European cooperation.

In Figure 2, this is shown by the development of net foreign assets together with the development of banknotes in circulation, the main liquidity-absorbing factor of the Bundesbank’s balance sheet. The difference between net foreign assets and banknotes in circulation is used as an initial approximation of the size of the structural liquidity surplus created by the accumulation of foreign reserves. The fact that net foreign assets exceeded banknotes in circulation (a ratio of net foreign reserves/banknotes > 1) suggests that there was a structural liquidity surplus in the German banking system. The structural liquidity surplus prevailed with only a few exceptions from early 1954 until late 1980.

This is supported by the evidence shown in Figure 3. During this time, net monetary policy operations were liquidity-absorbing. Whether this becomes costly for a central bank depends on the share of market-oriented monetary policy operations and the interest differential of these domestically conducted operations compared to the return on foreign reserves. The Bundesbank was able to reduce these costs because it introduced several forms of capital account restrictions, such as the introduction of the cash deposit requirement for borrowing abroad from March 1972 to September 1974 (Deutsche Bundesbank 1985, 18). Additionally, it relied on a complex system of minimum reserves that not only differentiated according to the type of liability, but also had progressive stages, meaning that average minimum reserve requirements steadily increased as the volume of deposits grew. Until 1978, the Bundesbank sometimes also imposed higher reserve ratios on liabilities to non-residents than on the same type of liabilities to residents. Special minimum reserve ratios on the increment in liabilities subject to reserve requirements were likewise introduced and, the last time an incremental reserve ratio was imposed (from January to May 1978), the total reserve ratio virtually reached the legal limit of 100 percent.
Figure 4 shows that the restrictive measures included in the current account holdings of banks were the most important liquidity-absorbing monetary policy instrument, whereas the more market-oriented means of liquidity absorption—selling mobilization and liquidity paper—only temporarily gained significance. It is interesting to note that the special German sterilization instruments, mobilization and liquidity paper, are linked to the restructuring of the financial system after World War II with equalization claims (Pontzen and Schober 2008, Pontzen 2001). Its use shows one more advantage of the German approach to restructuring the financial system after World War II. Equalization claims ultimately also supported liquidity management during times of surplus liquidity. The Bundesbank Act stipulated that the Bundesbank could request that the government convert all or part of the equalization claims held on the Federal Government (totalling at about 8 billion D-mark) into treasury bills or treasury discount paper, thereby ‘mobilizing’ it. In reality, therefore, mobilization paper constituted issues by the Bundesbank and not by the Federal Government. In 1968, a clause was added to the Bundesbank Act, which stated that the government had to supply the Bundesbank, on request, with further treasury bills and treasury discount paper, known as liquidity paper, up to a maximum of 8 billion D-mark if mobilization paper had been put into circulation up to the full amount of the equalization claim (Deutsche Bundesbank 1995, 48, 49). The ceiling was increased to 50 billion D-Mark in 1992.
The German restrictions on capital inflows were not sufficiently effective, as was already observed by the German Council of Experts in 1972/1973 (Sachverständigenrat 1972/73, Ziff. 224 ff.); ultimately, they were lifted. However, they became obsolete because the exchange rate objective of the Bundesbank lost importance. The vulnerability of the Bundesbank balance sheet eventually decreased because the accumulation of foreign reserves eased off and the demand for banknotes in D-Mark, and thus the base for ‘seigniorage’, strongly increased.

4. Conclusion

Central bank losses occur more often than one would expect from the monopolist in base money. Over the past few decades, and in many emerging market economies, interest expenses on sterilization instruments and write-downs on foreign currency positions have been the main causes, and this raises a very specific welfare question. Interest expenses on sterilization instruments can become excessive if the central bank pursues two objectives, seeking to combine an exchange rate target and domestic price stability with high capital mobility—in other words, if it is challenged by the impossible trinity. Interventions in the foreign exchange market lead to an accumulation of foreign reserves and create liquidity in the domestic financial system, which may be regarded as excessive (that is, risky) for price stability. This dilemma can even turn into a vicious circle, if the withdrawal of liquidity raises domestic interest rates and attracts further capital inflows, which put additional appreciating pressure on the exchange rate. Furthermore, even without intervening any further, the vulnerability of the central bank balance sheet remains, at least for some time. The foreign exchange risk will sooner or later materialize, if the central bank tries to defend an exchange rate target that is not in line with the fundamentals. If that is the case, it cannot prevent the domestic currency from appreciating against the reserve currencies and will suffer write-downs on foreign currency positions. Eventually, the central bank has to ask itself whether its policies are worth the losses.
The analysis of central bank losses at the Bundesbank during and after the breakdown of the Bretton Woods System shows similarities to the situation in many emerging market economies in the more recent past. The Bundesbank contained excessive costs at the expense of free capital mobility, because it temporarily introduced restrictions on capital inflows. The attempt to escape from the impossible trinity, however, was not sufficiently successful. The Bundesbank eventually geared its objective more strongly towards internal price stability and let the D-mark appreciate against the US dollar and European currencies. The vulnerability of the Bundesbank to losses decreased. On the one hand, the increase in net foreign assets, the main liquidity-providing autonomous factor, eased off; on the other hand, an increase in banknotes in circulation, the main liquidity-absorbing factor, remained strong, not least due to the D-Mark’s stability, which supported its demand at home and abroad.
References


Monetary policy under stress: Lessons from Turkey

Yüksel Görmez
yuksel.gormez@tcmb.gov.tr

and

Serkan Yiğit
serkan.yigit@tcmb.gov.tr
Central Bank of the Republic of Turkey

Abstract

Money is one of the most influential inventions in human history; so is central banking, which has taken more than two millennia to come into existence after early types of money appeared. Since their emergence, central banks have had many faces, from gold-backed money issuer to inflation targeter. However, monies have always been under threat, in terms of both monetary and financial stability. Central banking in Turkey and monetary policy adaptations during the 1990s offer many lessons in terms of the cost of mistakes in reaching sustainable price stability. When financial stability and external sustainability is continuously under threat due to the impact of fiscal dominance parallel to external account deficits, extreme central banking practices are unavoidable. These practices have changed in the case of the Turkish experience of having to adjust more than 40 times in a single month the daily interest rate quotations and of having to hold, also in a single month, more than 14 treasury auctions. For many years, Turkey’s monetary policy failed to reach any goals other than preventing a catastrophic financial collapse. Especially the following lesson has been learned: when dedication to economic stability lacks any clear expectations regarding a sustainable fiscal outlook, then in the following years the cost of price stability increases to the point of destructive proportions.

JEL: E52, G01, E58

Keywords: Monetary policy, financial crises, central banks

1. Introduction

Monetary policy has once again become a central topic of interest for scholars and practitioners, not only because of the destructive global crisis, but also because of its impact on the future of central banking. Surprisingly, many of the recently applied unconventional innovations (such as the Term Auction Facility [TAF] by the Federal Reserve) regarding the implementation of monetary policy has come from practitioners in developed economies, as opposed to the innovations resulting from earlier financial crises over the last four decades.

The recent global economic crisis has heightened interest in historical episodes of high volatility in financial markets which led to the loss of employment and welfare. Excluding the economic crises observed in the Ottoman Empire, the Turkish economy has faced many difficulties in maintaining price and financial stability standards. Especially after the oil price shocks of the 1970s, the fundamental balance of the economy was lost, and one crisis followed another, from the collapse of external balance in 1979 to the collapse of the banking system in 2001.

This study focuses on monetary policy implementation during unstable macroeconomic conditions from 1990 to 2002. A unique data set will be used to investigate how central banks survive under extremely difficult conditions and how fast they can react to prevent a total collapse of the financial system.

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1 We would like to thank all members of the South-East Europe Monetary History Network for encouraging us to prepare this paper.
2 The opinions expressed in this paper are the authors’ and do not necessarily reflect those of the Central Bank of the Republic of Turkey. Usual disclaimers apply.
The data consists of the quotation structure of the monetary policy operations and of information on how often and how fast it has changed. While the following section will rationalize the existence of a single currency in a given economic area and discuss why multiple currencies cannot survive, the third section will relate central banking activities to the defence of the integrity of the single money unit in a given economic zone in order to investigate the basic social function of monetary policy and central banks. Also, the backing of a given currency will be investigated in this section. Then, we will summarize the macroeconomic conditions in Turkey from 1990 to 2002, a time-frame that may well be identified as a period of crisis, in order to describe the difficult conditions under which monetary policy was implemented at that time. The section thereafter will constitute the main part of the study: it explains Turkey’s experience with the implementation of monetary policy under extreme crisis conditions and deduces possible lessons for other central banks around the world. Finally, we will investigate any potential restructuring needs of central bank tool-kits in the light of the experiences of the Central Bank of the Republic of Turkey (CBRT) during these difficult years and conclude with several recommendations.

2. Rationale for one type of money

Around 700 BC, the Lydians, a group of seafaring people from Asia Minor, were the first in the Western world to produce coins. The Lydians used coins to expand their vast trading empire. From stones to cattle, over the course of human history many different items have fulfilled the function of money in one way or another. For instance, in Germany cigarettes turned into monetary units when they were used in prisoner-of-war camps during World War II (Radford 1945). However, it is generally agreed upon that money started to play a more significant role with a more clearly perceived division of labour. Division of labour increased the demand for transactions to an amount not seen in barter economies. Money eliminates the need to know about the buyer in a transaction. Without money, both transaction sides need to understand the bilateral exchange value of one commodity for all other commodities. As specialization increases in an economy, the matrix of commodity over commodity rates increases as well, to infinity. As Meltzer has explained:

If there are \( n \) commodities, there are at least \((n(n-1))/2\) separate values. The number of bilateral exchange ratios (prices) rises quickly. With \( n = 100 \) commodities, there are at least 4,950 prices to know. At \( n = 500 \), the number is 124,750, and with \( n = 1,000 \), there are at least 499,500 prices. Without a unit of account, trade would be very limited by costs of information. Use of a unit of account to express value reduces the number of prices from \((n(n-1))/2\) to \( n \) (Meltzer 1998, 12).

The solution to this problem is to create a unit of account that fulfils all functions of money, form store of value to medium of exchange. Goacher (1993) has summarized certain features that money needs in order to sustain ease of use by individuals: the basic feature is acceptability because, without being generally and immediately acceptable, money may not function at all. Portability is another important feature, since heavy and physically inconvenient things may not be accepted as money due to the difficulties of moving it around. Divisibility is required to guarantee that all transactions for different values can be undertaken. Denominations should be available in order to enable both very small and very large value payments at the same time. Durability is needed to allow for safety so that money will keep its form under normal circumstances and will not be damaged easily, for instance by heat or cold. Homogeneity is a necessary feature to serve in a unique physical form in order to prevent possible confusion. The forms of money should not be confusing. Recognizability is preferable to ensure that there is no need for a special expertise to identify money and that it has a nature ‘easy to capture’, not only for adults, but for children and the elderly as well. Being unforgeable, or at least not easily so, is another necessary feature, because forgeable money may not survive, as the cost of production is very low compared to its purchasing power. Easily forgeable money may also lead to over-issue and to its incapability to defend its integrity.

Most crucial among these features, money needs to defend its integrity by keeping its purchasing power stable in the medium- to long term. Unstable money faces many threats, from the risk of dollarization, to a new definition by the demise of zeros beyond a certain threshold of inflation. It is generally agreed that central banking has evolved to find the best practices in keeping the purchasing power of money stable in the long run. However, the immortality of money may deserve special attention, in the
sense that, even in times of extreme economic and financial instability, the medium of exchange function survives to a certain extent. Current examples of this argument may be observed in countries such as Iraq and Zimbabwe, where political and economic difficulties have caused all those different dangers that may threat the integrity of money in circulation.

3. The rationale of central banks

Central banks were not among the mainstream financial institutions until the seventeenth century, when the innovation of money and banking matured and became extensively used by common people. As money allowed capital accumulation, financial services created a demand for banking, and the systemic nature of banks led to the creation of central banks. If price stability had survived without any systemic financial stress, then the world would probably have done much longer without central banks to act as a bank for all banks.

Table 1: Early central banks. Source: Bank of England.

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<th>Central banks</th>
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<td>Sveriges Riksbank</td>
<td>1668</td>
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<td>Bank of Japan</td>
<td>1882</td>
<td>1883</td>
<td>1890</td>
</tr>
<tr>
<td>Bank d’Italia</td>
<td>1893</td>
<td>1926</td>
<td>1900</td>
</tr>
<tr>
<td>CBRT</td>
<td>1930</td>
<td>1930</td>
<td>2002</td>
</tr>
</tbody>
</table>

Heightened borrowing requirements of rulers who were forced to sell licences to print money, as well as the need for debasement and a tool to sustain financial stability created pressure that led to the emergence of central banks. The first was established in Sweden, as Sveriges Riksbank, in 1668. In 1694, the Bank of England came into existence, and the Banque de France began operation in 1800. Between 1668 and 1863, central banks were founded in quick succession, while the period between 1873 and 1914 was dominated by the gold standard, which prevented central banks to act as a main determinant of price stability and allowed them only to adjust money to gold movements and gold price changes.

Table 2: Number of central banks. Source: Bank of England.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of central banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>18</td>
</tr>
<tr>
<td>1910</td>
<td>20</td>
</tr>
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<td>1920</td>
<td>23</td>
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<td>1940</td>
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<td>1970</td>
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</tr>
<tr>
<td>1980</td>
<td>137</td>
</tr>
<tr>
<td>1990</td>
<td>161</td>
</tr>
</tbody>
</table>
From 1914 to 1945, central banking was adapted to the extraordinary conditions of World War I and II. The importance of price stability and the public demand for sound monetary policy implementation increased in this era. The restructuring period of central banking from 1945 to 1971 was shaped by fixed exchange rates regimes. Semi-active monetary policies under the Bretton Woods Agreement were the main determinant of price stability in this period when the US Dollar served as anchor currency for all others.

It is worth mentioning that most of the central banks were private financial institutions with money-issuing licences until the beginning of the nineteenth century. However, most of them were taken over and nationalized, maybe also because of the value of seigniorage revenues. Private central banking is no longer a common practice. Still, central banking as it is practiced today shares its early history with that of private central banks.

To summarize the short history of central banking (Bordo 2002), the period from 1668 to 1873 may best be described as the era of emergence. From 1873 to 1914, the gold standard dominated central banking, and price stability was outsourced to the price of gold as determined by the conditions of supply and demand. From 1914 to 1945, central banking experienced an experimental defence of monetary and financial stability under the conditions of World War I and II. From 1945 to 1971, the international Bretton Woods Agreement underwrote basic functions of global central banking, and the US dollar dominated the global financial system, as the Federal Reserve guaranteed to buy and sell gold based on any demand or supply from other central banks.

From 1971 to 1980, the search for price stability looked to financial stability as the main policy tool; preserving credibility was the most important issue in this period. From 1980 to 1990, monetary targeting was a popular operational framework, as inflation was taken to be a monetary phenomenon. Thus, many different monetary aggregates were reinvented or redefined during those years in order to find the correct link to price developments. Most of these initiatives failed, and central banking faced serious criticism. From 1990 to 2007, central banks enjoyed great credibility in most parts of the world, because they had invented inflation targeting to sustain price stability and succeeded in creating enormous wealth; this is sometimes described as the ‘great moderation’.

In a nutshell, the rationale of central banks may best be defined as defending price stability. Lately, the most popular framework used in this struggle is inflation targeting, and there are strong arguments that it is superior to the gold standard in the medium-term (Bordo et al. 2003). However, it may be argued that central banking in the coming years will undergo an evolutionary process in order to return to the extremely successful years of the 1990s and early 2000s. Some of the challenges will be addressed in the sections below.

4. Basic functions of central banks

There have been many diverse assumptions about the societal functions of central banks, from the guardian of national currency, to the banker of all banks. In this paper, we accept most of these arguments; Figure 1 shows a summary of the functions of central banking.
The above figure shows that any central bank in defence of the integrity of a national currency needs to have a law to realize the legal tender function of money and to conceive network externalities by having a single currency. Multiple currencies may cause confusion in a given monetary zone and decrease the societal benefits of having a single unit of account. Moreover, against the risk of dollarization or currency competition in the long run the central bank needs a clear mandate that would socially constitutionalize price stability, which will underwrite the guarantee of long-term purchasing power sustainability and allow generational saving movements in order to transfer today’s consumption potential to future spending.

The defence of the medium of exchange function of any national currency also helps to sustain price stability, and vice versa. Finally, as the latest global crises remind us, it is not enough to defend the unit of account and medium of exchange function of money in order to sustain economic stability: Financial stability is also required to defend the store of value function, and a clear regulatory and supervisory framework is necessary, with full transparency and ease of entry. There have been attempts to outsource financial stability to independent regulatory and supervisory institutions in terms of an individual health check of financial institutions, whereas ‘overall stability’ still remains the sole responsibility of central banks. Economic stability fits into the centre of this figure.

### 4.1. The Backing of central banks

In order to sustain economic stability, central banks may not pull a rabbit out of the hat all the time. A relatively strong economy needs, first of all, the real backing of the currency, which may best be shown in Figure 2.
For the past, a currency represents the amount of goods and services consumed. For the present, the amount of consumption is disrupted by the taxation imposed on the revenues and the disposable income left to the holder of the currency. It may be taken as given that, when the amount of taxation is optimal, then the biggest agent in any given economy—either a country or a monetary union—is financially at its strongest. Finally, in the long run, the currency is backed by the economic activity that creates a sustainable source of profits generated by relative productivity. As a result of such an economic structure, taxes can be imposed in order to collect enough revenue to generate the needed social spending or similar transfers, without creating additional borrowing requirements and without crowding out private investment. Productivity in this sense needs the backing of relative technological and entrepreneurial effectiveness and efficiency. As a result, debt accumulation may not create a threat to the sustainability of the purchasing power of the currency, and present consumption may be delayed for future comfort. Any risk arising from private-sector leveraged positions may also be addressed by nationalizing private losses as far as the fiscal position allows, without increasing the risk premium.

Once the backing of a currency is strong enough, central banking may best be described as the art of reacting to business cycles, by decreasing rates in times of slow-down and hiking rates in times of heating. A strong fiscal policy would also make available a stimulus package when needed. For economies enjoying strong profitability encouraged by a comparative advantage of productivity, there may seem to exist no risk of crowding out private investment. Such a backing is not an occasional phenomenon—that is, it is not enough to have it once—but it is always necessary to update the status quo in a sustainable manner, by keeping the relative productivity close to its capacity. All other options involve great effort in order to convince the general public of the legitimacy of the measures needed for price stability and of the destructive consequences caused by high and volatile inflation. It may be argued that central banking is a more difficult job in places where the above-mentioned balance is absent, whereas central banks in strongly-backed money zones may enjoy a relatively higher economic stability that could best be measured as higher growth and lower inflation rates.

Monetary policy implementation is presumably on the safe side when the backing of a currency has enough space to counter any risk of price instability. The tool-kit of central banks allows countering temporary price pressures. Once the backing of the currency weakens, central banks experience difficult times. The next section will address such a phenomenon, taking as example the Turkish experience with implementing monetary policy under the stressful conditions prevalent from 1990 to 2002, a period generally described as a lost decade. Before describing how Turkish monetary policy decision-makers struggled to defend price and financial stability on the brink of collapse, it may be helpful to discuss the basic economic conditions of this difficult period.

5. Economic conditions in Turkey from 1990 to 2002

The period from 1990 to 2002 may simply be described as an era of low and volatile levels of growth rates under a high and volatile price level and the threat of imminent financial collapse. In fact, the destruction of internal and external balance began with the first oil price shock in the early 1970s and became unavoidable after the second oil price shock. The lack of hard currency let to phrases such as ‘in need of 70 cents’; imported goods covering basic needs were in short supply. The economic crisis in 1980 triggered an era of permanently high and volatile inflation, parallel to the low and volatile growth rates. The liberalization programs supported by the export-led growth strategies of the early 1980s failed to achieve price stability. Moreover, the capital account was opened prematurely in 1990, without taking the necessary precautions against increasing the foreign exchange rate risk. Last but not least, a customs union was signed with Europe, without receiving necessary convergence funds to help the economy to increase its resilience.

Accumulated risk in the external account and the excessive borrowing requirements of the public sector led to the first crisis of the period, in 1994. Six banks failed or were forced to merge with public banks, which were already beginning to struggle with the so-called ‘duty losses’ that represent the cost of operations imposed by the authorities. ‘Unacceptably’ high rates of interest became almost the norm, being as exaggerated as up to 50 percent of the Treasury’s borrowing rate for a period of three months. The decade
was not internationally accommodative in terms of a better growth performance. From Latin America to Russia and the Far East, a contagious wave of emerging market collapses exacerbated Turkey’s economic situation. Moreover, a devastating earthquake hit Turkey in 1999, leading to a massive loss of life. As had happened so many times before, the IMF was virtually the only option for a permanent recovery from this crisis, and a tablita regime was designed to bring back the ‘good old days’ of high growth with low inflation. The IMF program had a pattern of ill funding and a lack of vision for risk regarding the exit strategy. An early warning in November 2000 was not fully analysed for an overview of the program, and in February 2001 the Turkish economy experienced a costly collapse. The following part of this section will summarize fundamental economic indicators for this decade in order to give additional information about the conjuncture and compares some of the indicators to similar countries or groups of countries.

Figure 3: Growth performance. Source: World Bank.

Two of the contractions occurred as a result of the banking crisis in 1994 and the economic crisis in 2001, whereas the contraction in 1999 was mainly caused by the consequences of the earthquake and the contagious impact of the Far Eastern Asia and Russian crises. In comparison to other regions, Turkey had the highest volatility of growth rates as well.

Figure 4: Relative inflation performance. Source: World Bank.
For many decades, Turkey had been counted among the countries with the highest inflation, but the gap in this period expanded even further. The curious feature of high and volatile inflation was the fact that hyper-inflation never constituted an issue, even though many countries (especially in South America) faced this problem, ending with a redesigning of their currencies either by declaring a new name or simple dropping zeros.

As popular indicators for sovereign risk measurement after global crises, the destructive implications of public sector financial imbalances are very well exemplified in Turkey’s case. As with the misuse of the advances of the CBRT to the Treasury, the public sector borrowing requirements (PSBR) were always at the highest level and for the whole period rarely came close to the Maastricht Criteria of 3 percent. The figure also ignored the burden of duty losses for public banks, which was almost at 40 percent. One impact of this high level was the miraculously short duration of domestic borrowing. There were times when the Treasury borrowed for less than two months, and almost the entire debt stock had to be rolled over more than once in a single year.

A PSBR/GDP ratio higher than 4 percent for almost 13 years could have resulted in a perfect crowding out. For the period as a whole, private credit almost saw no change in the level, which means that the public sector consumed all the savings in order to compensate for the unsustainably high level of borrowing requirements.
6. Fiscal conditions in Turkey from 1990 to 2002

During the difficult years described in the section above, central banking struggled to sustain price stability without adding further distortions to financial and economic stability. In fact, monetary policy operations prioritized wholesale and retail payment system efficiency and financial stability. This was not an easy task. The major obstacles changed from internal to external imbalances. Reserves, both national—which may be described as the cash balances of the Treasury—and international, had always been scarce. Most of the time, short-term advances from the CBRT to the Treasury were utilized to the highest limit, which was artificially increased with additional budgets allocated by the parliament in the second half of most years.

When measured based on the ratio of domestic debt stock to GNP, fiscal dominance may not indicate a serious challenge to the effectiveness of the monetary policy. Throughout the entire 1990s, that ratio never went above 50 percent. As a consequence, it may be assumed that monetary policy could have been the dominant factor in the demise of inflation. This was not the case, and persistent and volatile inflation was the main part of this conjuncture. The main tool—that is, increasing the real interest rate to a certain threshold, so that there should be a heightened interest in local currency investment instruments which bring an appreciation of the national currency—did not work in this period. This phenomenon has been explained by Blanchard (2004): when the central bank action to increase the real interest rate also leads to a rise in the probability of default in sovereign borrowing, then the expected result may turn into depreciation instead of appreciation. A vicious circle may be created, feeding into a higher rate of inflation, mainly driven by the exchange rate pass through reversing the original intention of the central bank to control inflation.

If the problem was not the stock of debt, then one may raise the question of duration. In the early 1990s, the borrowing structure of the Treasury was well-advertised. Every week, the CBRT conducted one of 12-, 9-, 6- and 3-month term auctions in the name of the Treasury. Accordingly, 13 benchmark bills were lined up for redemption at any point in time. As far as the Treasury cash balance allowed, there was no ‘irregular-term’ or ‘broken-term’ auction, and instant needs were taken from the ‘short-term advance’ account until the end of 1993. From then on, the borrowing strategy was broken, and ‘irregular’ auctions were called very often. The impact was that the already scarce funds from the private sector were consumed by the Treasury, a phenomenon generally called ‘crowding out’.

Figure 7: Monthly number of Treasury borrowing auctions. Source: CBRT.

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3 The 12-month auction was for 364 days; after 91 days, another auction, with the same redemption date, for 273 days was executed; 182 days later, the term was 182 days; finally, after 273 days, a 91-day auction was held. As a result, there were four auctions for one redemption day, with a lag of 91 days.
The problem of fiscal dominance was not only reflected by the number of Treasury borrowing auctions. The maturity of auctions was shortened as well. For example, according to the Treasury data published by the CBRT, during the first half of 1994, more than 10 auctions were executed with a maturity shorter than 33 days. The number of auctions per month jumped to more than 10. This was a reflection of the public accounts’ need for cash to execute major public spending. The Treasury was so much in need of additional cash that even regular monthly civil service salary payments were threatened.

Figure 8: Term treasury borrowing auctions. Source: CBRT.

Shortened maturities increased the roll-over risk of the domestic debt stock, which supported a possible explosion of default risks. As a result, foreign exchange rate volatility increased to unprecedented levels. For a couple of weeks, official rates and market rates were separated as well. A run on the Turkish lira occurred, and the CBRT lost reserves while trying to limit extreme volatility. Expectations eroded fast, leading to shrinkage of credit supply. Transmission mechanism collapsed; banks avoided their intermediation role and started hoarding cash. The first half of 1994 experienced a severe banking crisis. Only after the local elections was a new economic program declared, known as the 5 April Decisions.4 In order to re-establish a treasury bond market, ‘super bonds’ with a maturity of three months and a net interest rate of 50 percent were offered to the public, as banks did not show any demand. This strategy proved successful, and a potential default on domestic debt was prevented, even if the structural problem of high borrowing needs were not under control.

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4 One critical part of this stabilization program was to limit the amount of short-term advances to the Treasury. There was a descending ratio of short-term advances to the Treasury, creating a bottom-line 3-percent limit before 1998, compared to 15 percent. In the 2001 crisis, advances were declared entirely illegal.
From 1994 onwards, fiscal balance sustainability was always a factor increasing the risk premium. As a result, the real interest rate on the local currency was extremely high. The cost of original sin increased the demand for external borrowing, and exchange rate volatility put additional pressure on dollarization incentives. The lack of a credible economic program due to unstable political conditions relying on coalition governments triggered higher real interest rates, and the interest burden itself turned out to play a part in the financial unsustainability.

This unsustainable fiscal outlook was even more complicated by creative solutions such as duty losses, a term referring to compulsory payments imposed on public banks for treasury liabilities, with a promise to pay later, without a specific term or maturity date. Looking for a credible solution, the IMF agreed to a stand-by, and a disinflationary program based on a tablita regime was prepared for 2000, with a calendar for structural reforms. Unfortunately, the reality of ill funding, the lack of ownership, and the lack of an alternative plan led to the collapse of the economic stability program. The Treasury once had to borrow for 29 days—a record in terms of its extremely short day-to-maturity. After six years, the banking system collapsed again, leading to a contraction. The cost of the banking restructuring was close to 20 percent of the GNP (Pazarbaşıoğlu 2002).

**7. Monetary policy under stress**

Difficulties surrounding the fiscal balance and the increasing cost of domestic borrowing did not create an ideal environment for monetary policy to control inflation. In fact, the operational framework matured fast, as the marketization initiatives of the CBRT from the late 1980s bore fruit. There was a well-functioning debt management system, including regular auctions and the indepthness of the local currency money market, and the foreign exchange market was enough to sustain effective trade. Even a gold market was established in order to limit unofficial trade in this commodity. The CBRT played a blind-broker role in most of these markets, providing a settlement guarantee. Before the 1994 crisis, there was a properly functioning money market and a foreign exchange market including banknotes, and the open market operation desk had been quite active in managing daily liquidity.

One costly lesson learned during the period of volatile financial markets in Turkey in the 1990s was that, unless there is a convincing (or credible) fiscal balance outlook, monetary policy has a limited capacity to eliminate distortions of the proper functioning of financial markets. A detailed analysis of financial outlook unsustainability is beyond the aim of this paper; however, in order to deduce recommendations regarding the accumulation of fiscal problems we can enumerate the delay in the privatization process, the absence of full commitment to economic stabilization programs announced from year to

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5 One may argue that, other than in cases where central banks needed help with liquidity management, this short-term borrowing is one of the shortest-term public sector borrowing operations ever recorded.
year, unreliable budgeting, creative fiscal solutions (such as duty losses, ill-planned dropping of capital controls and customs unions without a compatible financial aid to finance transformation), behind-the-curve supervision and a regulation process lacking independent boards, as well as a lack of coordination in the implementation of economic policies mainly due to coalition governments. The monetary cost of all these (and other unnamed) factors is quite obvious, and the following section will address them in detail.

One of the basic functions of central banking is the lending given to financial institutions as a last resort, when short-term liquidity is not evenly distributed among market participants. Even in the mid-1980s, the Turkish financial sector was lacking a liberal market micro-structure. The experiment of liberalizing the banking system with a free deposit interest rate settlement led to the expansion of unofficial banking activities, and as soon as there occurred an intervention into these unregulated financial services, there was a banking crisis in 1983. With this lesson in mind, new liberalization initiatives have taken a step-by-step approach; in 1987, the Treasury’s borrowing was programmed annually, and the CBRT started open market operations with a government bond portfolio. Public credits were depressed, and in the following years one could observe the emergence of money and forex markets. With the help of this marketization, the CBRT now had greater control over its balance sheet, and a monetary program was announced in 1990 and successfully implemented in subsequent years.\footnote{Monetary targeting was one of the most popular monetary policy strategies in these years, not only in Turkey, but also in England, where more than 20 monetary aggregate definitions were designed in order to find the right definition with a direct link to price developments. Unfortunately, all of them failed, financial liberalization and deepening considered the main reasons for this failure. The Turkish experience with monetary targeting was a success in terms of achieving targets, as far as pre-agreed short-term advances levels to the Treasury were kept under control.}

The CBRT challenged the short-term activities in the financial sector and managed structural problems such as dollarization and a low level of reserves through compulsory forex transfers from the financial system. A successfully designed operational framework decreased the cost of fragilities. However, from the beginning of 1993, the economic outlook eroded seriously, and no stability program could create credibility. Through the end of that year, the Treasury failed to convince the market participants that the cash position outlook was credible to sustain redemptions. From January 1994 onwards, there was a run on the Turkish lira, and the managed float forex regime lost its credibility. Financial volatility skyrocketed in the first quarter of the year. All the gains from liberalization initiatives were lost; monetary policy developments became a day-to-day event, as evidenced by the disappearance of the two-way overnight interest rate quotation that was given to the market after the open market operations desk had become active. Figure 10 shows the two-way quotations for borrowing and lending rates. Missing from this figure is the period when the CBRT was unable to give a daily direction to the markets.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure10}
\caption{Central bank quotes for overnight lending and borrowing. Source: CBRT.}
\end{figure}
In order to increase the readability of Figure 10, overnight interest rate quotations above 120 percent have been omitted. Until the first quarter of 1994, the difference between the lending and borrowing rate was ignorable, since the money markets were actually in balance and rarely in need of the intermediary role of the CBRT. Yet, the crises destroyed this stability, and the spread never returned to its previous levels throughout the 1990s. Obviously, the total cancellation of the quotation was the lowest point of the period. It meant that the function of lender of last resort was not utilized for more than overnight lending. Monetary policy became a daily and entirely market-based liquidity management activity to prevent a systemic collapse.

The same period also brought new records in terms of short-term interest rates, as listed in Table 3. The figures represent overnight interest in the money market blind-brokered by the CBRT. It may be argued that these rates show how monetary policy can be surrounded by extremely volatile conditions once an economy loses its perspective on a credible economic stability program.

Table 3: Extreme short-term interest rates (%). Source: CBRT

<table>
<thead>
<tr>
<th>Date</th>
<th>Interest rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 March 1994</td>
<td>240.00</td>
</tr>
<tr>
<td>11 March 1994</td>
<td>720.00</td>
</tr>
<tr>
<td>21 March 1994</td>
<td>400.00</td>
</tr>
<tr>
<td>22 March 1994</td>
<td>450.00</td>
</tr>
<tr>
<td>23 March 1994</td>
<td>500.00</td>
</tr>
<tr>
<td>25 March 1994</td>
<td>700.00</td>
</tr>
<tr>
<td>29 March 1994</td>
<td>600.00</td>
</tr>
</tbody>
</table>

Unfortunately, these numbers were not some of the highest interest rates ever observed in the Turkish economy. The economic crises in 2000 and 2001 brought even higher rates, as can be see in Table 4.

Table 4: Extreme short-term simple interest rates (%). Source: CBRT

<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>30 November 2000</td>
<td>400.00</td>
</tr>
<tr>
<td>1 December 2000</td>
<td>999.00</td>
</tr>
<tr>
<td>4 December 2000</td>
<td>1950.00</td>
</tr>
<tr>
<td>5 December 2000</td>
<td>600.00</td>
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<td>20 February 2001</td>
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<td>21 February 2001</td>
<td>6200.00</td>
</tr>
<tr>
<td>22 February 2001</td>
<td>3000.00</td>
</tr>
<tr>
<td>23 February 2001</td>
<td>800.00</td>
</tr>
</tbody>
</table>

The interest rate on 21 February 2001, 6,200 percent, may well be taken as one of highest rates ever recorded in an organized money market, if not the highest. The difficulties surrounding the implementation of monetary policy may be documented with alternative measures as well, as presented in Figure 11.
Figure 11 shows the number of monthly changes of the CBRT’s lending and borrowing quotations. Recently, most emerging markets, especially inflation targeters, have settled rates once a month and refrained from making very frequent changes. If the argument for central banking as a form of art holds at all, then it was the 1990s in Turkey that required such artful manoeuvres. More than 40 changes in the quotes in a single month is an extreme example of crisis management while under the threat of systemic collapse; in those years, it was extremely difficult to defend financial stability, as price stability only attracted limited attention, if any at all.

Such a high-frequency short-term interest rate management may be called ‘instantaneous’ monetary policy. As Figure 10 exhibits, the spread between lending and borrowing rates was also quite high, reflecting the volatility in the short-term interest rates. We can conclude that the monetary transmission mechanisms in these years were not effective or efficient. It is worth mentioning that the data covers only the CBRT’s actions on the Interbank money market, which excludes open market operations such as repos or direct sales.

The Turkish example of central banking is not a success story if one considers the 1990s. The burden of fiscal instability and the lack of political commitment to economic stability reflected themselves in great costs in terms of higher and unstable real interest rates with extreme volatility. The monetary policy operational framework was functional, but the high and volatile short-term rates showed the obvious lack of a strong backing of the Turkish lira.

In those years, new denominations were frequently issued in order to manage the currency in circulation. The highest denomination ever issued was the 20 million lira banknote. As is tradition among central banks, there were six different denomination sizes in circulation at any given time. Whenever the biggest denomination value share in the total circulation exceeded a certain threshold—for example, 80 percent—then a new banknote entered the system, and the smallest banknote was turned into a coin. In 2005, when a certain price level stability was attained, six zeros were dropped and the inflation of the last three decades was left behind.

During the 1990s, the foreign exchange reserve level of the CBRT did not signal a better outlook either. In fact, in order to finance the severe need for hard currency, the forex deposits from workers living abroad were collected in the CBRT’s balance sheet. In 1998, in a single year, double-digit interest was paid to US Dollar and Euro accounts for a term of three years. However, the external liabilities of the Treasury always created pressure on the reserve level, and under the managed float regime the CBRT was involved in the market almost on a daily basis, through direct buying or selling, or through compulsory transfers from banks. Foreign exchange interventions occurred as well, but the details are beyond the scope of this paper.
One outcome of these difficult years was that the concept of independent central banking gained more attention, even if only gradually. The 1994 financial crisis showed the limits of the short-term advances to the Treasury. After the 2001 economic crisis, a clear mandate to the CBRT was made into a law, declaring that the aim of monetary policy can only be price stability and that growth is conditional to this mandate. Short-term advances to the Treasury were entirely prohibited. Short-term interest rates were to be decided by seven members of the Monetary Policy Committee, another part of the reforms. Since then, most of the structural problems have been addressed, and Turkey has enjoyed fast growth with decreasing and less volatile inflation levels. Recently, both short-term interest rates and inflation have remained in the single digits.

The turbulent years of the 1990s left one positive legacy for the current framework of monetary policy implementation. Since the Monetary Policy Committee has to make decisions on a monthly basis, the CBRT has enough experience with liquidity management in order to direct interest rates to the level demanded by the members. And, at least from the point of view of an operational framework, the latest financial crises taught a number of lessons to the CBRT, as the 1990s posed much greater problems than the more recent difficulties surrounding monetary policy implementation.

8. Future challenges for central banking

The recent global financial crises are not a unique phenomenon from a historical perspective. Quite the contrary is the case: there are well-documented observations that the number of crises has increased (Eichengreen and Bordo 2002).

Figure 12: Number of crises around the world. Source: Eichengreen and Bordo 2002.

As in the past, every crisis has led to new questions that could not be answered with the given paradigms. Following the recent financial crises, central banks have faced many challenges, as presented in the following list.

(1) It was once believed that financial stability is an outcome of price stability, if an independent supervisory and regulatory authority supervises the financial system. This argument seems no longer valid, and the regulatory and supervisory roles of central banks may make a comeback.

(2) Monetary unions represented by the European Central Bank and dollarization trends in countries such as Peru or Panama may have been useful ideas only a few years ago, but this is no longer the case. The future of monetary unions is more complicated now; faith in dollarization has greatly diminished.
(3) The role of international financial institutions has been heavily criticized for a long time, but recently even Europe has been looking to establish an institution akin to a European Monetary Fund. The Financial Stability Forum has been restructured as Financial Stability Board in order to address global financial stability issues. Moreover, organizations such as the G-7, G-10 or G-20 have all been addressing issues that central banking has not been able to manage properly at the national or international level.

(4) The basic operational monetary policy tool has always consisted of short-term interest rates, but the decade-long experience of Japan and current events in the US have brought to the fore discussions of zero-bound interest rates. So far, quantitative easing has been offered as a solution, but no one can know for certain whether such a policy would prove effective and successful. The world of central banking needs answers to the question of what to do when the monetary transmission mechanism is weakened in periods of heightened stress.

(5) The optimal monetary policy operational framework does not seem to create a general agreement. Operational tool-kits have differed a great deal, even among developed countries, let alone developing ones. It is unclear whether tool-kits can remain so different in nature for so long if economies undergo synchronization to a certain extent.

(6) The impact of financial deepening has always been regarded as accommodative to monetary policy, but after the recent global crisis, the danger of leverage has received more attention and has been described as destructive to price stability.

(7) The idea of ‘too big to fail’ has become increasingly complicated. There seems to exist no agreement among financial stability authorities on how to avoid the heavy cost imposed on public accounts arising from the collapse of systemically important institutions.

(8) The systemically important institution in itself is under discussion. Previously, only financial institutions were regarded as systemic, but we now know with certainty that non-traditional institutions such as insurance companies may turn out to be systemically important.

(9) The technology of electronic money (e-money) was an important trend a decade ago, even if it now no longer seems to attract as much attention as it did before. Still, this technology is gradually emerging, and with the help of virtual life and the advances of payment system technologies, those national currencies that are not being managed in a relatively successful manner may face challenges from stronger currencies. Potential future runs on a particular currency and the speed of a potential run have not been considered sufficiently, even if e-money technology has the capacity to empower currency substitution not only for the store of value function, but also for the medium of exchange function.

The long list of future challenges itself may actually provide possible solutions. Here, we argue that the following are the most probable developments in the area of central banking in the near future:

(1) Central banks will turn into societal and market-oriented institutions. Interventionist tool-kits will be added to the operational framework, and monetary policy will exhibit more international coordination in order to limit contagious risks.

(2) Monetary (and financial) policy committees will pay more attention to expertise, self-efficiency, and credibility, rather than governmental perceptions of appointments. Political appointments for interventionist short-term policies may be rarer events.

(3) Fiscal rules will replace debt management and borrowing strategies in order to sustain a credible and non-dominating fiscal balance in the long run.

(4) Capacity build-up may overrule many other functions of monetary policy. Central banks will have to become the best and most effective monetary policy analysis centres. This is necessary for challenging all strategic and analytical economic analysis centres so as not to stay behind the curve. The best way to accumulate credibility is to correctly forecast the future, implement monetary policy accordingly, and overrule counter-arguments regularly. Turning out to be correct once is not enough for sustainable credibility, and national and international fragilities put almost instant pressure on the analytical capacities of central banks.
(5) Efficiency in data dissemination and analysis as well as risk management may help central banks to empower expectation management strategies through convincing reports and documents.

(6) Transparency of decision-making processes is becoming more and more important and constitutes a part of accountability as well.

(7) Central banks’ monetary policy operational tool-kits need a kind of optimization in such a way as to pay interest on deposits and issue liquidity bills for short-term fund management. Actions may be needed to underwrite central bank losses as well.

9. Conclusion

Central banks may be considered a twentieth-century phenomenon. Their operation began as private institutions, and their total number did not reach double digits for many centuries, as gold was the dominant monetary value. Under the pressure of increasing nationalism and the collapse of the gold standard, almost every independent nation-state wanted to have a central bank to circulate and oversee its national currency. In the first half of the twentieth century, inflation was seen as a destructive economic disease, and the Bretton Woods Agreement was a reaction to defend global price stability. From 1972 onwards, inflation returned, and many central banks including the Federal Reserve had difficulties in preserving low inflation levels. They instituted double-digit interest rates in order to return to a stable price environment.

For the golden equation of higher growth rates with low and predictable inflation, any central bank needs a strong currency. With fiat money, gold backing is not applicable to sustain public trust in future purchasing power. We argue that fiat money is backed with relative productivity superiority when compared to other money systems. Productivity here refers to real economic activity that can sustain a well-balanced tax base for the government as the biggest economic agent of any economy. With a guaranteed future profit base that will be taxed to finance public spending, any threat to financial stability may be managed by nationalizing private losses.

When the real backing of fiat money loses power, then monetary policy may face extremely difficult conditions. Turkey has experienced this very phenomenon. During the 1990s, the CBRT faced such challenges. Price stability was a distant reality, and the monetary policy operational framework implicitly targeted financial stability, including payment system operationality, in order to prevent a total collapse. In 1994, short-term interest rates fluctuated in three digits, and extreme levels were tested, close to the limits of four digits. Unfortunately, five-digit short-term interest rates occurred during the 2001 crisis. Even if this was so because of the defensive strategies of the tablita regime, the impact on economic activity was devastating, and the cost of financial sector restructuring in the 2001 crisis was more than 20 percent of the GNP.

The CBRT lacked a convincing economic stability program during the 1990s because of unstable political conditions. Extremely high public sector borrowing requirements consumed all the available funds, and crowding out had a destructive impact on private investment and consumption. The Treasury sometimes arranged more than 10 auctions per month; in some cases, the duration of fresh borrowing was as short as 29 days. When fiscal imbalances reached such a level, the CBRT’s monetary policy turned into an instantaneous, moment-by-moment activity. As a result, the efficient and effective day-to-day settlement of the financial sector accounts depended on extremely frequent decisions. The CBRT failed to provide a lending and borrowing rate quotation during the 1994 crisis, and the financial markets found themselves under daily settlement risk, depending on the daily preferences of liquidity management decisions. The extremely high spread between the lending and borrowing rate lasted for several years in the mid-1990s. The end result of this difficult period was the extremely expensive cost of internal debt: 50 percent for three months during the second quarter of 1994.

Price stability under fiat money requires a strong backing of currency. Once the credibility of the backing is in question, the monetary policy operational framework needs additional attention in order to prevent extreme short-term interest rates. As mentioned above, the CBRT faced five-digit short-term rates
in 2001. Other central banks around the world face the same risk as well, if the strategic management for operational framework deficiencies is not carefully addressed. These deficiencies include complexities such as the problem of ‘too big to fail’, the uneven distribution of global liquidity, the risk of immeasurable factors such as leveraged positions, and unstable global financial conditions when G-7 central banks are hesitant about the outlook of global economic stability. According to the experience of the CBRT during the 1990s, under fiat money standard, an extreme short-term interest rate level is a destructive risk. Other monetary policy authorities are not immune to that risk, unless enough attention is paid to the strong backing of a particular currency.

During the difficult years described above, central banking in Turkey has struggled to sustain price stability without adding further distortions to economic stability. As of today, compared to other systemically important countries, the economic outlook seems much better, as was signalled by the rating agencies and the economic indicators’ resilience to the lack of an IMF program. It seems that a home-made economic stability program has found success, at last.
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