Discussion of "Debt and Incomplete Markets: A Case for Nominal GDP Targeting" by Kevin Sheedy

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ESSIM, 2013

Paper

- Really nice, enjoyed reading it and liked it a lot.
- Main findings:
  1. When financial contracts are nominal and incomplete, nominal GDP targeting improves efficiency of allocations by completing the market (qualitative)
  2. These inflation fluctuations can dominate the cost of stabilization from nominal rigidities (quantitative)
- My discussion:
  1. Go through a very simple complete markets argument
  2. Comments:
     1. Nominal GDP targeting and/or inflation targeting?
     2. Simple implementation rules
     3. Distributional effects

Basic Complete Markets

- Paper: OLG model
- In my discussion textbook infinite horizon
  - two agents, with stochastic endowment of one good $y^i(s^t)$.
- Pareto problem: weights λ and $1-\lambda$, max over $c^i = \{c^i(s^t)\}_{t=0}^{\infty}$

$$\max_{c^i} W = \lambda U(c^1) + (1-\lambda)U(c^2)$$

  - subject to feasibility constraint

$$c^1(s^t) + c^2(s^t) \leq y^1(s^t) + y^2(s^t) = Y(s^t), \ \forall t, \forall s^t$$

- Solution

$$\frac{u'(c^2(s^t))}{u'(c^1(s^t))} = \frac{\lambda}{1-\lambda}$$

  - with proper Pareto weight, decentralized equil with complete set of Arrow-Debreu securities is efficient
  - if $u(c) = \log c$ then

$$c^1(s^t) = \lambda Y(s^t); \ c^2(s^t) = (1-\lambda)Y(s^t)$$

Completing the market with the price level

- Now assume technological friction: incomplete markets
  - only asset is one period non-contingent nominal bond, that pays N_t
- Suppose along AD equil agent 1 has been borrowing, such that

$$y^1(s^t) = \theta Y(s^t);\ \theta > \lambda$$

- Incomplete markets: borrowed in the non-contingent nominal bond

$$\widetilde{c}^1(s^t) = \theta Y(s^t) - N_t/P(s^t)$$

- 'Completing' the market so to make

$$\widetilde{c}^1(s^t) = c^1(s^t) = \lambda Y(s^t); \quad \widetilde{c}^2(s^t) = c^2(s^t) = (1-\lambda) Y(s^t)$$

  is possible with the appropriate countercyclical price

$$P(s^t) = N_t \left[(\theta - \lambda)\, Y(s^t)\right]^{-1}$$

  - make non-contingent bond an 'equity share in GDP'

$$N_t/P(s^t) = (\theta - \lambda)\, Y(s^t)$$

  - nominal GDP targeting

Nominal level targeting and inflation targeting

- Paper contrasts nominal GDP (NGT) vs. inflation targeting (IT)
- Since Nominal GDP=Price*Real GDP, can see NGT as combining:
  1. Targeting level of nominal variable (say price level targeting)
  2. The nominal variable is nominal GDP (thus add weight 1 on real GDP)
- Most existing arguments in the literature focus on first
  - does price level targeting help stabilize (inflation)?
- Recent interest in nominal targeting raised by the ZLB (and persistent unemployment).
  - C. Romer (NYT, 10/2011), suggesting NGT, "Dear Ben: It's Time for Your Volcker Moment"
  - Bank of England Governor-designate Mark Carney (12/2012)
  - if the ZLB binds, make up for departures from the path by temporarily targeting a higher than usual nominal growth rate
  - nominal targeting would introduce history-dependence

Nominal GDP targeting and the zero lower bound

- Woodford: such 'error-correction' better than pure IT
  - Eggertson and Woodford (2003) simple price level targeting rule

$$p_t + \alpha x_t = p^* \text{ if possible by } i_t > 0 \tag{1}$$

  - weight α a fct of underlying params (usually small)
  - from ZLB to exit, produce inflation, even if economy is booming
  - advantage over a first difference version

$$\pi_t + \alpha(x_t - x_{t-1}) = 0$$

  - this produces a deflation when exiting: even worse than pure IT
- Recent suggestions for NGT seem to add current persistent unemployment as the reason to make $\alpha = 1$.
- Context for the contrast in this paper:
  1. Nominal targeting better for stabilization (eg. ZLB makes a difference)
  2. Here: no ZLB but weight α higher bec of incomplete mkts
- **Comment**: given the interest, how does ZLB affect proposed policy?
  - could be improved? In (1) optimal p_t^* higher after larger deviations

Simple interest rules

- Here the interest rule that achieves optimal policy:

$$i_t = \rho_t^* - \left(E_t g_{t+1} + E_t d_{t+1}^* - d_t^*\right)$$

  - where $*$ denotes 'natural' (economy w/o frictions)
- The IT lit focuses on simple rules that do not involve observing 'natural' objects, which requires exact knowledge of
  - the economy's "true model", all parameter values, and the realized value (observed in real time) of all the shocks.
  - instead focus only on observed equilibrium variables
- Then test what such 'simple rules' are close to optimal
  - standard IT result: respond very strongly to inflation
- It matters: eg. in Christiano et al. (2010) we allow for news shocks
  - (unobserved) natural rate moves a lot (increases with good news)
  - but inflation does not (may fall as expected future mg. cost is lower)
  - thus standard IT highly inefficient (booms)
- **Comment**: How to characterize these simple rules here?

Distributional effects

- Paper emphasizes that inflation on purpose redistributes wealth
  - inflation: tax savers and subsidize borrowers
  - this is the reason why NGT helps efficiency
- But the Pareto problem focuses only on efficiency and ignores the underlying distribution effects
- Magnitudes can be large: Doepke and Schneider (2006)
  - under a mild 5% surprise inflation in 1989:
  - old and rich households lose in PV btw 6 and 15% of GDP
  - young (under 45) gain 45% of mean cohort net wealth
- But it is not only domestic households that are affected
  - large gov't debt: in experiment above gain btw 5-13% of GDP
  - debt held by foreigners has increased dramatically: in 2001 they would lose btw 5-8% of GDP
- **Comment**: when making inflation purposefully a redistributive policy, this raises many political economy and time-consistency issues
  - scary to even put 'politics' and 'inflation' in same sentence