

Discussion of “Managing Credit Booms and Busts:
A Pigouvian Taxation Approach” by
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Motivation

- If credit frictions are prevalent, the interaction between debt accumulation and asset prices can give rise to booms and busts.
- During booms, rise in asset prices relaxes credit constraints inducing further borrowing.
- During busts, tightening of credit constraints leads to fire-sales of assets, further tightening of credit, eventual collapse of asset prices.
- Existence of these feedback effects create an externality.
- Could Pigouvian taxation help restore socially optimal equilibrium?

Key Ingredients of the Model

- Budget constraint:

$$c_t + d_t + \theta_{t+1}p_t = e_t + \theta_t(p_t + y_t) + \frac{d_{t+1}}{R}$$

- Collateral constraint:

$$\frac{d_{t+1}}{R} \leq \phi \theta_t p_t$$

- When d is sufficiently high such that the constraint binds, agents fire-sell their asset $p \downarrow$, constraint binds even further...
- Under competitive equilibrium (Laissez-faire), an externality arises because agents do not internalize that their borrowing decision affects future asset prices.

Social Planner's Problem and Pigouvian Taxation

- Social planner's problem differs from Laissez-faire in that the planner internalizes that future asset prices and insiders' borrowing capacity depend on the aggregate debt.
- The collateral constraint becomes:

$$\frac{d'}{R} \leq \phi \hat{p}(m, y, m + d' / R).$$

- Pigouvian taxation:

$$\tau(m_t, y_t) = \frac{\lambda_{t+1} \phi \frac{\partial p_{t+1}}{\partial m_{t+1}}}{E_t[u'(c_{t+1})]} \quad \text{with} \quad T_t = \tau_t w_{t+1} / R$$

- Optimal magnitude of this tax on average is 2.41%, making a case for capital controls.

Main Contribution

- Macro models with financial frictions: Aiyagari and Gertler (1999), Bernanke, Gertler and Gilchrist (1999), Durdu, Mendoza and Terrones (2009), Mendoza (2008), Mendoza and Smith (2006), Korinek (2009),...
- Role of externality: Caballero and Krishnamurthy (2001), Korinek (2008), Lorenzoni (2008), Uribe (2006),...
- Role of stabilization policies: Benigno et al. (2008), Bianchi (2009), Durdu (2009), Durdu and Mendoza (2006),...

Comments

- Very timely, interesting project!
- Some caveats apply regarding policy implications.
- Lessons from Durdu and Mendoza (2006):
 - DSGE asset pricing model in which Fisherian deflation of asset prices induce crisis.
 - Domestic agents face collateral constraints.
 - Foreign traders incur per-trade and recurrent trading costs.
 - An IFO provides ex-ante price guarantees (PG) offered to foreign traders and finances it with lump-sum taxation.

Lessons from Durdu and Mendoza (2006), Cont'ed

- PG can undo the effect of financial frictions but introduces moral-hazard-like distortions.
- Effectiveness of guarantees depend on
 - The level at which they are set.
 - Whether they are state-contingent or not.
 - If elasticity of foreign investor demand is high guarantees improve domestic welfare with sharp increases in value of foreign traders.
 - Otherwise, only high levels of price guarantees can undo the frictions but this would cause welfare losses.
- Bottomline: policy action is not always preferable, it may do more harm than good if not carefully designed!

Sensitivity and general issues

- Sensitivity of the results:
 - What if outsiders can hold domestic equity?
 - What if the Markov chain is symmetric?
 - What other key ingredients of the model can affect the tax rate?
- Is policy intervention always good?
 - If optimal tax is time-varying, could uncertainty about future level and timing of changes increase volatility?
 - Does it make sense to tax inflows if they are permanent rather than transitory? If not, how can policy makers identify whether inflows are permanent or transitory?

Further general issues

- What happens when the tax rate is set higher or lower than socially optimal level?
- If over-taxation is costly, how can countries internalize its adverse consequences?
- If these costs are not internalized, could over-imposition of controls— relative to what is optimal from a world-wide social welfare viewpoint— have adverse long-run impact?

Technical comment on Carrol's Endogenous Grid Point (EG)

- EG relies on changing the time convention of the state variables.
- The standard approach, e.g., in neoclassical growth model, uses as state variable capital at the beginning of the period.
- EG proposes to rewrite the problem using the total amount of resources available in the next period.
- The latter alternative does not require the use of a numerical root finder. Caveat: applicable only to simple models.
- If labor is endogenous, it is not possible to fix a grid on market resources (see Barillas and Fernandez-Villaverde, 2007).