The Political Origin of Credit Cycle

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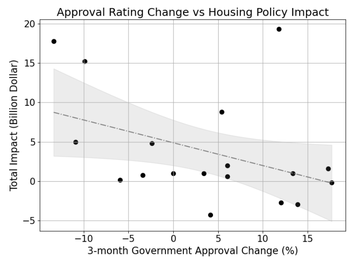
1. Introduction

Motivation:



- Recent studies, such as Mian et al. (2010), have highlighted the significant role of government credit policies in driving credit expansions, traditionally viewed as exogenous shocks in credit cycle theories.
- These government policies, however, are often subject to political dynamics due to strategic motives inherent in governmental decision-making.
- A motivating example is observed from 1977 to 2008, where the scale of HUD's Mortgage Purchasing Plan inversely correlated with shifts in the government's approval ratings over preceding three-month periods.

Research Questions:

- How does the credit cycle link to the political cycle?
- What is the reason behind this linkage?

This paper:

- Our study uncovers a predictive link between decreasing government popularity and subsequent rises in the credit-to-GDP ratio in advanced economies.
- We rationalize our findings within a qualitative model that considers:
  - In financial market with significant **information friction**, governments use credit policies as a tool to counteract the effects of changes in popularity.
  - In financial market where **entry barriers** are prevalent, fiscal policy becomes the government's strategy to respond to political fluctuations.
- We further show a correlation between falling government popularity and the relaxation of macroprudential policies in advanced economies.

2. Government Popularity Predict Credit Fluctuation

2.1 Data

- Our dataset encompasses 22 advanced economies based on Mendoza and Terrones (2012) classification.
- The study period spans annual data from 1984 to 2016.
- We employ the ICRG Government Stability Index to measure popularity, has been shown to correlate strongly with polling approval rates (Herrera et al., 2020).
- Economic indicators, including private and household credit-to-GDP ratios, are sourced from the IMF and World Bank.

2.2 Simple Projection

- We start from a simple projection. The panel regression for estimating subsequent credit fluctuation:

$$\Delta_j d_{i,t+j} = \beta_0 + \beta_j \Delta GS_{i,t} + \gamma X_{i,t} + \rho_i^j + \epsilon_{i,t}^j$$

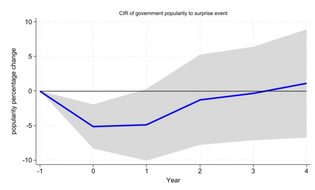
where $\Delta_j d_{i,t+j}$ is the j-year change in credit-to-GDP ratio. $\Delta GS_{i,t}$ is the change in government stability index. $X_{i,t}$ is a set of control variables.

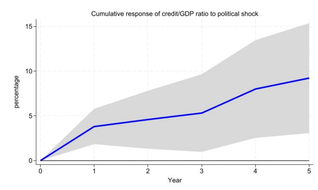
	(1) $\Delta_2 d_{i,t+2}^{Private}$	(2) $\Delta_2 d_{i,t+2}^{HH}$
$\Delta GS_{i,t}$	-0.075**	-0.067**
	(0.033)	(0.030)
Country FE	Yes	Yes
Economic controls	Yes	Yes
N	679	624
R^2	0.130	0.151

The significant negative coefficient shows that changes in government stability strongly predict future credit-to-GDP ratio fluctuations.

2.3 Event study

- We identify a set of exogenous negative popularity shock events across countries, for instance: Assassination of Pim Fortuyn (2002, Netherland), No WMDs discovered (2003, USA), The Blood Scandal (1991, France)
- Local projections using an event dummy indicate that these events significantly decrease popularity(left) and increase the credit-to-GDP ratio(right).





2.4 IV regression

- Credit levels may be influenced by external non-political factors, with forward-looking presidential approval potentially indicating changes in economic performance. Predictable credit market growth could be tied to higher economic confidence and trust in the government, potentially leading to an upward bias.
- To address simultaneity issues, we use two instruments for predicting government popularity changes:
  - **Instrument 1: Past popularity** (López-Salido et al., 2017): Popularity is mean-reversion, the predictable component of government popularity do not reflect recent economic news.
  - **Instrument 2: Exogenous negative popularity shock events.**
- IV regression results:

	(1) $\Delta_2 d_{i,t+2}^{Private}$	(2) $\Delta_2 d_{i,t+2}^{HH}$	(3) $\Delta_2 d_{i,t+2}^{Private}$	(4) $\Delta_2 d_{i,t+2}^{HH}$
$\Delta GS_{i,t}$	-0.718***	-0.453**	-0.700**	-0.496*
	(0.241)	(0.208)	(0.280)	(0.265)
Country FE	Yes	Yes	Yes	Yes
Economic controls	No	No	Yes	Yes
N	675	613	660	610
KP-F stat	57.6	54.3	59.4	54.8

3. Model

3.1 Set up

- Borrowers, indexed by $i \in [0,1]$, each have a unique type ρ_i (private information) indicating their probability of repayment.
- The utility function for borrowers is:

$$\frac{\nu(\bar{C} + L + \tau)^{1-\gamma}}{1-\gamma} - RL - T, \quad L = 0 \text{ or } L \geq \kappa \tag{1}$$

- The entry barrier κ in financial markets includes a minimum investment amount and fixed costs for loan origination.
- Lenders offer contracts (L, r) without identifying borrower types. The credit supply is infinitely elastic at a risk-free rate $1 + r_f$. The credit market equilibrium:

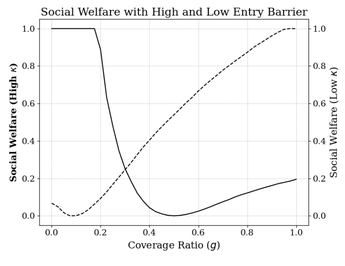
$$1 + r_f = E[\rho_i | i \in \mathcal{H}](1 + r) = \frac{\int_{i \in \mathcal{H}} \rho_i \cdot (1 + r) di}{\int_{i \in \mathcal{H}} di} \tag{2}$$

where $\mathcal{H}$ denotes borrowers with positive loan amounts.
- **Proposition:** For a given $r_f > 0$, there exists an equilibrium contract rate (L^*, r^*) such that: For all $i < \bar{I}$, borrowers choose to borrow the entry level amount: $L_i = L^* = \kappa$. For all $i \geq \bar{I}$, borrowers do not participate in the market: $L_i = 0$.

3.2 Government Policy

- **Government's Credit Policy (Loan Guarantee):** The government guarantees a portion g of the promised repayment.The expected cost to the government, which arises from its commitment to cover the portion $\int_{i \in \mathcal{H}} (1 - \rho_i) g (1 + r) L_i \, di$
- **Government's Fiscal Policy:** The government finances the public transfer τ today through tax payment tomorrow. The government borrows in the sovereign debt market with a government borrowing rate r_g ($r_g \geq r_f$).
- The social welfare is the sum of the utility of the net-borrowers and non-borrowers. Government maximizes the Social welfare given the government budget constraint.

Cost and Impact of Credit Policy Based on Coverage Ratio (g) and κ:

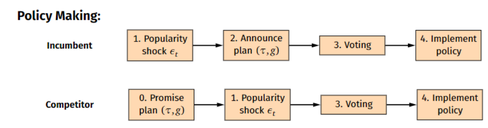


- The total cost of credit policy, a concave function of g, increases with riskier borrowers at the extensive margin due to information friction.
- In economies with large κ, a higher g is needed to attract borrowers, initially reducing social welfare due to the cost of supporting riskier borrowers.
- In economies with small κ, near-universal credit market participation occurs as g approaches one, potentially enhancing social welfare if $r_f < r_g$.

3.3 Political economy equilibrium

Game Structure:

- Voting occurs each period.
- The popularity shock ϵ_t is realized before voting.
- The game proceeds repetitively:
  - the incumbent and the competitor have $1 - d$ probability to retire each period;
  - the incumbent retires if losing the re-election.



The incumbent and the competitor maximize the expected duration in office:

$$T_t = E_\epsilon[P_t(1 + dT_{t+1})] \tag{3}$$
$$S_t = E_\epsilon[P_t dS_t + (1 - P_t)(1 + dT_{t+1})] \tag{4}$$

Grimm Trigger Equilibrium: The two parties settle on a suboptimal policy in the absence of negative popularity shocks, allowing the incumbent to address such shocks if they occur. If one party deviates, the other will follow suit, leading to reduced utility for both due to the recursive nature of the structure.

4. Model Verification

4.1 Data

- We use the IMF's Integrated Macroprudential Policy (iMaPP) Database, developed by Alam et al. (2019), to analyze the link between political popularity and Macroprudential policy changes, represented by dummy indices for policy actions (+1 for tightening, -1 for loosening, 0 for no change) across 17 instruments, which we aggregate into an annual composite index.

4.2 Popularity and subsequent macroprudential policy

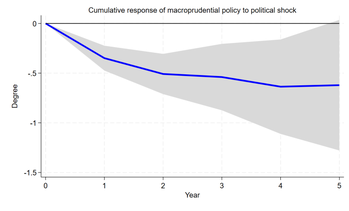
- Regression model: $MaPP_{i,t} = \beta_0 + \beta_1 \Delta GS_{i,t-1} + \beta_2 \Delta GS_{i,t-2} + \rho_i + \epsilon_{i,t}$

	(1) $MaPP_{i,t}$	(2) $MaPP_{i,t}$	(3) $MaPP_{i,t}$
$\Delta GS_{i,t-1}$	0.445*		0.399*
	(0.232)		(0.225)
$\Delta GS_{i,t-2}$		0.612**	0.586**
		(0.246)	(0.245)
Sum of two lags			0.984***
			(0.331)
R^2	0.147	0.152	0.157
Number of observations	591	590	590
Country FE	Yes	Yes	Yes
Time Trend	Yes	Yes	Yes

- **The significant positive coefficients suggest, On average, regulation has been loosed over when previous period experienced political popularity decline**

4.3 Macroprudential policy respond to political suprise event

- **Significant Negative Reaction:** The graph shows a notable easing in macroprudential regulations in response to unexpected political events, as indicated by the cumulative impulse response following a drop in political popularity.



- **Policy Tool as the Crucial Link Between Political and Credit Dynamics:** Our theoretical model, supported by empirical evidence, indicates that policy tools are key in linking political dynamics to credit behavior. In particular, governments utilize credit policy to mitigate the effects of decreasing political popularity.