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Logic of bad assets with state-banks

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The 2008-09 global financial crisis dramatically reverses the trend away from privatizing the world toward nationalizing it. Whereas major banks were *de facto* nationalized or quasi-nationalized in the core of world market as the last resort to save capitalism, the norm of state banks in the periphery has ironically gained moral high ground. The objective of this paper is to examine bad asset woes associated with the gilded state bank model. Our study reveals that while state banks are characterized by trade-off between political control and fiscal subsidy, both moral hazard jointly contribute to pile-ups of bad assets with state banks. Politically and economically, state bank model is costly and non-sustainable in the long term. This conclusion is not only meaningful for the banking sector in developing economies, but it also has implications in the recent bank bailout and exit in developed countries.

Key words: state banks bad assets political control moral hazard
JEL classification: D82 G21 P16

1. Introduction

It is a common phenomenon for a government to impose political control over commercial entities in the market context around the world. Political control covers a wide spectrum of administrative interventions on firm decision-making process, business management, senior-executive appointment, resource allocation, and revenue distribution. When a nation is faced with either rapid structural changes or intense external shocks, the government is most likely to escalate political control over key commercial institutions in various ways to cope with uncertainty caused. Among many others, political control over large commercial banks is one of the most important strategies that the government employs to stabilize the economy or pursue other political objectives.

There exist two kinds of political control on commercial banks. The first is categorized as direct administrative intervention. When the government nationalizes a bank by possessing a significant portion or even majority of bank equity shares, it is able to manipulate director board, determine senior executives, and affect business decisions to fulfill policy goals.¹ The second belongs to indirect legal restriction and moral influence. The government usually puts policy-intended pressure on banks--both state and private ones--through its legitimate powers including moral coercion, liquidity provision, financial regulations and supervisions, and lender of last resort. framework, legal system and political heritage will determine its particular ways and specific forms of political control over banks. Notwithstanding, the government will enforce political control on state-owned banks in a direct, explicit and regular manner, while conducting influence on private banks in an indirect, implicit and sporadic approach. The former is much stronger and more comprehensive than the latter, because clearly-defined private ownership coupled with independent and an effective legal system poses binding restrictions on randomness of administrative interventions on banks. Historical track records as well as recent authoritative deeds illustrate that it is inevitable and irresistible for the governments of both developed and developing countries to introduce direct control or influence on banks which are nationalized or recapitalized by government to target on policy objectives.²

In the early post-WWII era, there was a global trend of nationalizing banks to implement the political and social goals. While all banks were owned by the states in the previous Soviet bloc, state banks also prevailed in the continental European industrialized economies and vast newly-independent developing countries. Beginning in the late 1970s, however, privatization together with relaxation of political control swept the banking sector to improve corporate governance and promote economic efficiency. Following these two trends, state banks and private banks coexist in the

global banking industry (La Porta et al, 2002; Andrews 2006).

The recent financial woes occurred in the capitalist core areas dramatically have reversed the trend of privatizing the world. When financial markets were in extreme panic and balance sheets of all key financial institutions utterly deteriorated, a fully-fledged government intervention was used as the last resort to halt the meltdown of the global financial system. It is the coincidence that the governments in the United States and Western European countries took unprecedented measures in recent years, injecting trillions of dollars in the form of liquidity provision, asset guarantees, bank recapitalization, and equity possession to prevent troubled but systemically important financial institutions, especially commercial banks from collapse. These practices have significant impacts on the future development of the global banking sector. While many major banks were *de facto* nationalized or quasi-nationalized in developed countries, norm of state banks prevailing in developing and transitional economies have been euphemistically justified and ironically gained moral high land. In this context, state bank model, or its less strict version, is gilded and becomes fashionable internationally.

Yet, full-fledged administrative bailout and profound political involvement in the banking sector will incur enormous costs in the long run. There are direct costs born to the government due to subsidies, aids and bailout to nationalized, quasi-nationalized, or government-guaranteed banks.³ Besides, there are also indirect costs caused by complex interactions and a consequent vicious-cycle of fiscal subsidy, rent-seeking and moral hazard between politicians and executives around state banks. These costs will eventually boil down to a huge pile-up of bad assets with state banks, which is finally shifted to the public. This phenomenon recurs everywhere in the world.⁴

Although escalation of political control based upon state ownership or guarantee of banks may be a practical and feasible option for the involved governments to stabilize financial markets in a moment, it is highly necessary to comprehend its long-term costs, and to have a thorough understanding of bad assets troubling state banks.⁵ The objective of this paper is to establish a framework to examine insight logic of bad assets caused by interaction of political control, fiscal subsidy and moral hazard around state banks, and to document unsustainable characteristics of the gilded state bank model. ,

2. Literature review

There are numerous sources which contribute to development of bad assets with state banks. First of all, changes in exogenous variables and external environment will lead to accumulation of bad assets in banking sector, including both private banks and state banks. For instance, sudden movements in the exchange rate may damage the balance sheets of firms and individuals, causing an increase in non-performing loans and endangering the stability of the banking system (Billmeiera and Bonato, 2004). Falling asset prices will also affect the banking system through wide-spread borrower default, while deriving explicit solutions and balance sheet effects even far from the steady state (Von Peter, 2009). Besides, a variety of institutional factors, such as shifts in legal, political, sociological, economic, and banking structures may also contribute to problem bank loans (Breuer, 2006).

On top of these, macroeconomic fluctuation functions as primary driving forces behind buildup of banks' problem loans, and the volume of problem loans is highly sensitive to cyclical developments and will usually increase during economic downturns (Oddvar Berge, and Godding Boye, 2007). As such, the impact of the business cycle, especially recession on loan-loss provisions and incremental bad-asset portfolios in the banking sector is significant and long-lasting (Mario, 2007). Although the business cycle affects profitability and bad debts, the timing of a default does not invariably coincide with the turning point of the recession, so bank performance may lead or lag behind the business cycle (Matthews, Murinde, and Zhao, 2007).

In aggregate, changes in nominal, real and institutional factors, including volatility of macro-economic variables, institutional shifts and business cycles, are all shown as important determinants of accumulation of bad assets in the banking sector. Not surprisingly, these external factors again reclaim themselves in the recent financial crisis.

countries to direct state-owned banks to extend policy-banks are intensively examined to diagnose causes and consequences of policy lending. -performing loans (NPLs) accounted for 26 percent of total assets with the major state banks⁷. A two-decade-long policy lending created huge bad-debt burden in the loan portfolios of the four large state-owned specialty banks that dominated all aspects of banking system in China (Bonin, 1999); of which the most glaring problem is a large fraction of bad loans resulted from poor lending decisions made for SOEs, largely due to political or other non-economic reasons (Allen, Qian and

between loss-making state-owned firms and state-owned commercial banks. This did not materialize by chance but, rather, was the negative side of the policy choice for gradual transition, which left unprofitable state-owned enterprises in business while, due to political interference, state-owned commercial banks could not stop lending to them and, later, had to bear the losses created by their inefficient operations (Ferri, 2009).

Generally, state banks have historically and logically faced direct control and continuous pressure from central and local governments to grant policy loans for political purposes, rather than for profit maximization. This fact is consistent for state banks in many nations. It is hardly resistible for governments in both developing and developed economies to direct state banks for extending preferential loans to politically-favored firms, even if the loans yield negative net present value for state banks. We name the policy-originated bad assets as bad-asset type II of state banks.

Thirdly, an *ad hoc* moral hazard originating from information asymmetry coupled with soft budget constraints contributes to the accumulation of bad assets in state banks. On the one hand, information asymmetry (between outsiders and insiders) of banks will
people (bank managers) take too little care
to prevent accidents (Arnott and Stiglitz, 1986). For instance, there is a problem of
in which banks choose a risky asset portfolio, paying out
high profits or bonuses if the gamble succeeds but leaving depositors, or their insurers,
with the losses if the gamble fails (Kane, 1989). Banks may also use fraudulent lending

out of the banks even if it leads to insolvency. (Akerlof and Romer, 1993). Regardless of whatever regulatory measures taken by the government, moral hazard problem does not disappear. Most observers agree that moral hazard plays an important role in financial crises (Hellmann, Murdock and Stiglitz(2000). Moreover, government interventions, such as deposit insurance and bail-out action, are most likely to worsen the problem of moral hazard. These measures will distort the incentive structure in which large gains go to bank insiders and large losses to the government (Mishra and Urrutia 1995 Boyd, and Nicolo, 2005).

On the other hand, soft budget constraints are a unique feature with state sectors. When state owned enterprises (SOEs) incur losses, the government often provides them with additional funding, cuts taxes, and offers other compensations. Coincidentally, the

managers of SOEs also expect to receive financial assistance from the state (Kornai, 1986). This phenomenon may be due to various exogenous reasons, including the need for gaining political support, and so forth (Kornai, 1998). It may also be caused by endogenous factors, such as a time inconsistency for an inefficient, uncompleted investment project, for which the state may have incentives to refinance it as the marginal benefit of refinancing exceeds the marginal cost of abandoning it (Dewatripont and Maskin 1995). Besides, soft budget constraints

Because the state is accountable for the losses arising from policy burdens of SOEs, the

constraints (Lin and Tan, 1999). State banks, exactly the same as other SOEs, are faced with severe soft budget constraint.

To maintain political control over state banks for pursuing non-economic objectives, the government will sooner or later refinance or bail out inefficient and loss-making state banks rather than privatizing them. In this context, pervasive moral hazard in banking sector is gravely exacerbated--managers of state banks not only have informative advantage, but also possess applicable channels to optimize fiscal subsidy for their own interests. Therefore, the *ad hoc* moral hazard, due to the mixture of soft budget constraints in state banks and informational asymmetry prevailing in banks, is an important source of bad asset accumulation in state banks. We brand this kind as bad-asset type III.

While bad-asset type I is categorized as macro environment-created defectives for state banks, both bad-asset types II and III belong to stakeholder behavior-related inferiors. Although the existing literature discusses causes and consequences of bad assets in the bank sector from many facets, there is still lack in-depth analysis of documenting comprehensive insights of bad assets with state banks. The aim of this paper is to fill this void. Specifically, we will establish a theoretical model in this paper to reveal interactions between politicians and managers in fiscal subsidy and rent-seeking activities, so as to explain logic of accumulation in bad-asset types II and III in state banks.

3. Bad asset type II

Shleifer and Vishny (1994–1996) pioneered research in the relationship between politicians and state firms. They revealed that when managers control firms, politicians use subsidies to induce them to pursue political objectives such as over-employment; when politicians control firms, managers use bribery to convince them not to push too much for political objectives. Their model shows that the inefficiency of state firms results from push of politicians for political objectives. In other words, state firm troubles are basically due to the agency problem with politicians rather than that with managers, and managers' discretion problems are usually minor relative to political discretion problems.

This analytical framework can be directly employed to explain the formation of

bad-asset type II for state banks. Generally, senior executives of state banks are responsible for regular managerial work and routine business in the market environment, but politicians still maintain political control on state banks for pursuing their non-economic objectives. The Chinese state banks are a good example of this kind. Although

5 $b = b_2 + b_1$

The notations are defined as follows:

n = excessive loan beyond maximal-profit level under political control;

g = fiscal subsidy to state bank;

b_1 = rent paid to politician from bank manager;

α = proportion of manager's bonus or option in profit based on performance;

β = proportion of fiscal subsidy manager retained;

r = actual cost of capital;

b_2 = rent paid to manager from bank clients.

In a normal context of political control, the state-bank manager arranges excessive loan n above maximal-profit loan level to abide by an implicit contract when he is granted with managerial authority. $B(n)$ is the political benefit for the politician from excessive loan. Fiscal subsidy g is set by the politician, but it may be affected by the manager's rent seeking activity. $C(g)$ is the cost of subsidy to the bank. α is defined as performance bonus or incentive option for the manager, and βg is his retained part of the fiscal subsidy. Both belong to variable or additional income of the manager

$b=b_1+b_2$; but fiscal subsidy g is free from rent-seeking activity. The aggregated utility function is:

$$(9) \quad U_p + U_m = [B(n) - C(g) + b_1] + [-n + g - (b_1 + b_2)]$$

The first order conditions relative to n, g , are:

$$(10) \quad n =$$

$$(11) \quad g =$$

The politician obtains rent from the manager for the appointment, and the manager collects

politician in the next period. The politician's reaction is to stop supplying subsidy in the current period, and replace the non-cooperative manager in the next period. However, the probability of this occurrence is extremely low unless the manager's bonus share in profit π are very high to induce him to break the mutually-agreed implicit promise.

The above analysis shows that it is inevitable for state banks to provide politically-expected excessive loan (or portfolio) associated with direct or indirect fiscal subsidies from the government as long as political control on them are maintained. The Shleifer-Vishny model explains that political control is the main source of bad-asset type II for state banks. In this regard, the agency problem of the politician dominates the creation of bad assets while the manager's agency problem accommodating. Nevertheless, there lacks interpretation of how bad-asset type III is originated and the politician's role in provision of bad assets of state banks may be exaggerated. In particular, it is necessary to depict the role and consequence of severe *ad hoc* moral hazard caused by a mixture of soft-budget constraint for state banks and informative asymmetry between the politician and the manager. We will discuss this issue in the following section.

4. Bad asset type III

So long as the manager is granted with bank operating power, he is by no means in a passive position in implementing political orders. On the contrary, the manager has authority and will actively optimize his own interest in the tenure. There are three sources for the manager to create additional income other than formal salary payment: 1) bonus and/or option in profit generated π ; 2) a portion of fiscal subsidy retained

g ; and 3) net rent obtained (b_1+b_2) . Generally, the manager cannot totally decide the first type of revenue, but he is able to determine the other two. After learning for a period of time, he realizes that the second and third types of revenue generated from excessive loans may be much higher than the first. Because government bears unlimited obligation to state banks and serious asymmetric information exists between the politician and the manager regarding balance sheets in general and policy-loan loss in particular, the managers are most likely to take informative advantage of actively inflating excessive loans so as to optimize net extra income from rent collection and fiscal subsidy. This will produce grave moral hazard, which is the main cause of bad-asset type III for state banks.

We will construct a bank credit supply model to explain how bad-asset type III is developed with the effects of rent seeking and fiscal subsidy under political control. Assume that the bank just produces one output — a homogenous loan in credit market, and the loan supply is a function of real cost of capital (r).

Lemma 5 In a perfect market without political control, there is neither fiscal subsidy nor rent-seeking activity, i.e., $g = b = 0$. The credit supply curve (or supply of

loanable funds) is expressed as function of real cost of capital (real rate of interest)

$$(16) \quad q_s = f(r) = m r^{2a-1} \left(\frac{c}{r}\right)^{1-a} r^a$$

where $m = c^{1-a}$, $c > 0$ is a constant parameter, and a is elasticity of loan quantity supplied relative to real capital cost r ; that is, as real capital cost increases (decreases) by 1%, the quantity of the loan supplied will rise (drop) by $a\%$, and $a > 1/2$. According to Equation (16), the locus of the credit supply curve relies on the magnitude of a . Figure 1 depicts different loci of the credit supply curves as a varies.¹⁰

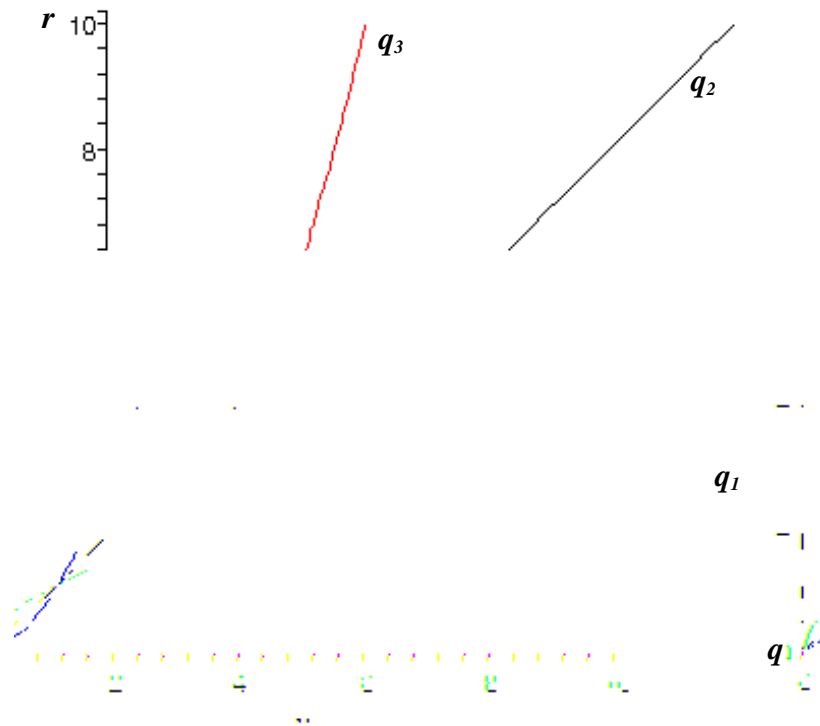


FIGURE I
loci of loan supply curves under perfect market

$$a > 1: q_1 \quad a = 1: q_2 \quad \frac{1}{2} < a < 1, q_3$$

Under perfect market conditions, the bank loan supply curve is a typical positive function of real cost of capital because it is not distorted by either fiscal subsidy or rent-seeking activity. Banks will supply a greater loan quantity as r rises, ceteris

the loan supplied is rather complicated, and it is hardly captured by a simple linear or quadratic expression. In Equation (17), hence, $c - b/r$ expresses the direct effect of

the rent seeking activity, and $e^{-\frac{g}{r}}$ captures the joint effect of rent seeking and fiscal subsidy on the loan supplied. Again, a

the

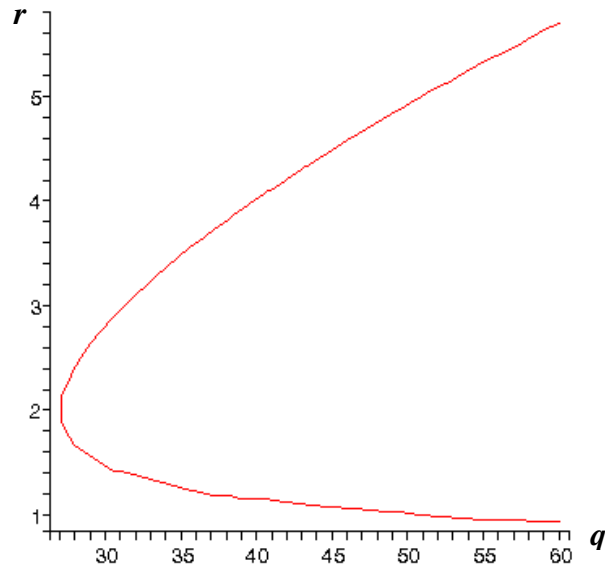


FIGURE II

Locus of credit supply curve under political control

To verify the generality of this credit supply curve, we conducted dynamic simulation tests and proved robust generalization of the credit supply curve drafted in Figure 2 (The Appendix presents the testing results). In other words, as long as $a > 1, b > 0, g > b > 0, c > 0$ the credit supply curve q_s, r will maintain similar curvature or shape shown by Figure 2. Moreover, the minimal value can be derived

$$(21) \quad V = (c - b)^{1-a} \frac{a-1}{2a-1} (g(b) - b)^{2a-1} e^{2a-1}, \frac{a-1}{2a-1} (g(b) - b)$$

This is the turning point of the curve. Above this point the credit supply curve has positive slope, and below it the curve has a negative slope.

Lemma 7 Under political control, fiscal subsidy and rent seeking create two possible intersections between the credit supply curve and the credit demand curve. Corresponding to these, there exist dual equilibriums, one is a stable and global equilibrium, and the other is unstable and local equilibrium

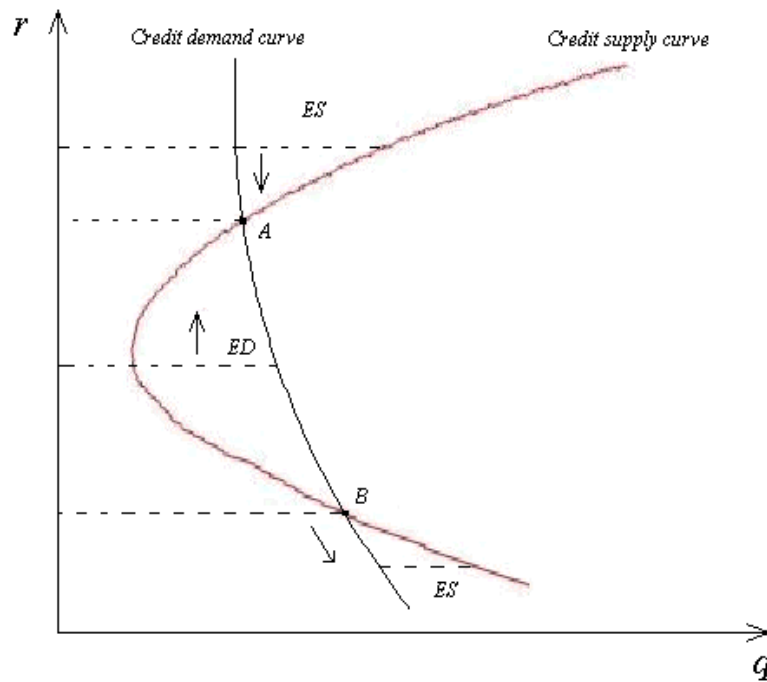


FIGURE III
Credit equilibria under political control

The credit supply curve will bend back at the turning point under the circumstances of political control for state banks. Given the fact that a credit demand curve is a negative function of real cost of capital and its elasticity is less than a credit supply curve,¹³ the distorted credit supply curve will meet with the normal credit demand curve twice. One is at the point A, which is a global equilibrium, and the other is at the point B which yields a local equilibrium. These cases are shown in Figure 3. Assume that a disturbance brings the market away from the equilibrium A, creating excess credit demand (supply) below (above) it. However, excess demand (supply) will drive real capital cost upward (downward), so that the market will eventually converge to the initial equilibrium A. In this scenario, market force works perfectly and the point A is characterized as a global equilibrium. On the contrary, if a shock causes the market to deviate from point B, excess credit supply (demand) will drive real capital cost to continue declining (increasing), so that it diverges away from the starting point B and falls down to disequilibrium forever.

Thanks to fiscal subsidy and rent-seeking activity, a portion of the credit supply curve is negatively sloped and the absolute value of the credit supply curve is bigger than that of the credit demand curve $e_d r < e_s r < 0$. This means that the state-bank managers may take advantage of asymmetric information to extend excessive loan beyond the optimal level for the purpose of seeking personal benefit from fiscal subsidy

and rent collection even if the real capital cost declines. This kind of excessive loan is different from the policy-led loan discussed in the previous Section, because it originates from the state-bank managers' moral hazard, while the extra policy-loan is due to the politicians' policy problem of fulfilling political objectives. Moreover, the managers have a high intention to muddy and mix moral hazard-created bad assets with policy-led bad loans, so that the government will at last bear all bad-assets incurred.

Indeed, the moral hazard problem of executives is quite common in the banking sector regardless of bank ownership types as long as there is asymmetric information between agents and principals. However, the *ad hoc* moral hazard problem of state-bank managers caused by mix of information asymmetry and soft-budget constraint is much more gravely devastating and socially destructive than others. Under the circumstances, the government gives unlimited liability to state banks, and state-bank managers have little worry of negativity of balance sheet, nor any concern about company bankruptcy. Besides, they can negotiate with politicians to formalize and perpetuate trade-off mechanism between political control and fiscal subsidy, and also have funnels to technically legalize the rent income from all illegal sources, while shifting costs are transferred to the public. As a result, rules of the market game requiring hard budget constraints for all players are anything but null for state banks.

5. Conclusions

This paper studies logic of bad asset problem with state banks. While bank bad-assets type I are caused by common factors such as volatility of external variables and business cycle for entire banking sector, bad-asset type II and III are due to unique features of state banks.

By employing the Shleifer-Vishny model, we explain that political control over and fiscal subsidy to state banks will lead to policy-favored loans. They are the main cause of bad-asset type II with state banks, regardless of the existence or non-existence of rent-seeking activity. In this regard, the agency problem of politicians dominates creation of this type of bad asset in state banks. Moreover, we construct a general credit supply model to incorporate fiscal subsidy and rent-seeking activity to interpret the origination of bad-asset type III with state banks. Our model shows that fiscal subsidy is not only de

Appendix: Robustness Tests for Stability of Credit Supply Curve

To verify robust stability of the credit supply function under political control given by equation (17), we conduct the following dynamic simulating tests.

Robustness test 1 By keeping elasticity a fixed and randomly changing parameters g and b , we obtain a curve depicted on the right in Figure 4. Then keeping a fixed and randomly varying parameters g , b and $g-b$, we get another curve with similar locus shown on the left in Figure IV.

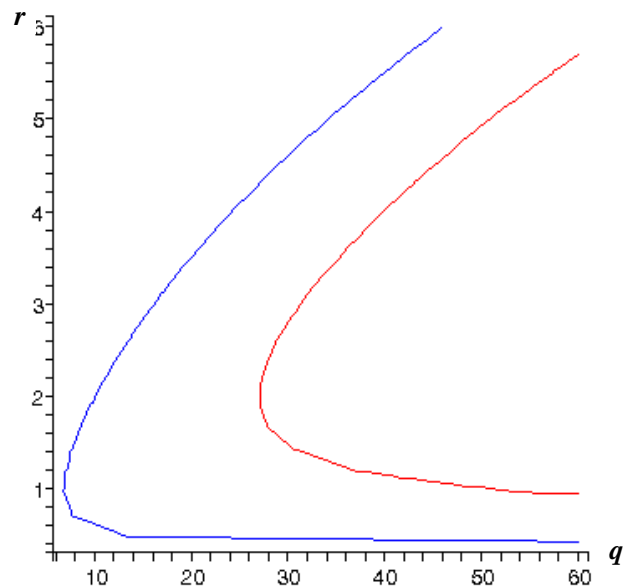


FIGURE IV

Dynamic loci of state-bank credit supply function under political control a fixed g
 b $g-b$ variables

Robustness test 2 By changing elasticity a within the range $a \in (1, N]$ and $N \in \sup\{i\}$ and keeping other parameters unchanged, we obtain a curve on the right in Figure 5. Then randomly varying the value of a , we get another curve with the similar locus depicted on the left in Figure V.

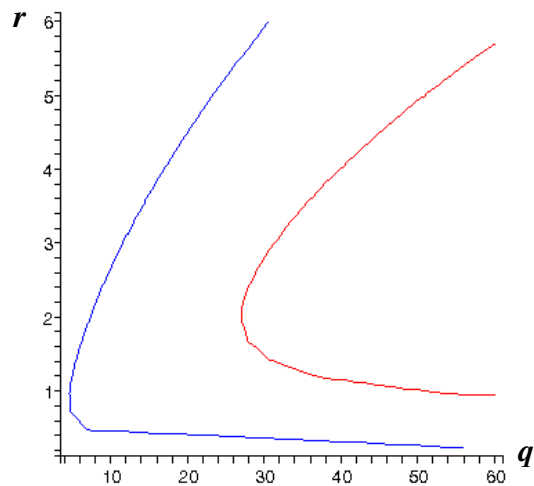


FIGURE V
 Dynamic loci of state-bank credit supply function under political control
 a variable other parameters unchanged

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