

Central Banking Industrial Policy*

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Abstract

We study how central bank targeted credit operations function as a financing channel for industrial policy. We develop a model in which targeted credit relaxes financing constraints, sustains socially valuable experimentation after noisy early failures, and promotes entry into strategically prioritized sectors. Industrial policy improves welfare when targeted sectors generate sufficiently large spillovers, but may create misallocation through inaccurate targeting. Using textual analysis of People’s Bank of China communications and firm disclosures, we construct a firm-level measure of exposure to structural monetary policy by comparing the language of policy guidance with firms’ own business descriptions. Firms more exposed exhibit stronger credit growth, lower financing costs, and persistent improvements in investment, revenue, profitability, and productivity. However, targeted sectors also experience elevated firm entry and intensified competition, and banks engaged in directed lending accumulate higher non-performing loans. Our findings reveal a trade-off between dynamic productive gains and static allocative costs, highlighting a novel channel through which central banks shape industrial structure.

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1 Introduction

A central question in economics is whether governments can improve upon market outcomes by actively directing resources toward specific industries. The resurgence of industrial policy across both advanced and emerging economies, from the U.S. CHIPS and Science Act to the European Green Deal to China’s ambitious industrial plans, has reignited debate about its efficacy.¹ Yet the empirical evaluation of industrial policy faces two fundamental challenges. First, industrial policy is rarely implemented as a single, observable instrument; it operates through a web of subsidies, tax preferences, trade barriers, and directed credit that makes systematic measurement difficult, a point widely recognized across the literature (Choi and Levchenko, 2025; Juhász et al., 2024) and underscored by the recent emergence of text-based approaches that seek to identify and classify industrial policy interventions at scale (Fang et al., 2025; Juhász et al., 2025). Second, isolating the causal effects of industrial policy requires separating government intent from market responses, a task complicated by the endogeneity of policy design.

This paper addresses both challenges by studying a novel and increasingly important form of industrial policy: the use of central bank structural monetary policy (SMP) operations to direct credit toward strategically prioritized sectors. We focus on China, where the People’s Bank of China (PBoC) has developed an elaborate framework of targeted lending facilities—which encompasses relending and rediscount programs as well as “window guidance” to financial institutions—that effectively channels financial resources to government-favored industries. Whereas existing work on China’s monetary policy has emphasized the short-run stabilization role of structural tools (Dong et al., 2025) and the aggregate production-side transmission of credit expansion (Chang and Xiong, 2026), we study its longer-run industrial policy function: reshaping industrial structure over multi-year horizons through sustained, sectorally targeted credit allocation.

We note that in China’s institutional setting, the PBoC is the *implementer* rather than

¹See Juhász et al. (2024) for a comprehensive review of the new economics of industrial policy.

the initiator of industrial policy: higher-level bodies such as the State Council and the National Development and Reform Commission determine strategic sectoral priorities, and the PBoC executes these directives through its monetary policy instruments.² Unlike conventional industrial policy instruments that change infrequently, structural monetary policy exhibits high-frequency variation across sectors and over time, generating rich identifying variation. Moreover, because central bank communications are systematically documented in quarterly Monetary Policy Executive Reports (MPERs), we can construct a text-based, time-varying measure of firms’ exposure to industrial policy directives. Crucially, rather than scanning policy documents in isolation to classify which sectors receive attention, as recent text-based approaches to industrial policy measurement do (Fang et al., 2025; Juhász et al., 2025), we *compare* the language of policy communications with firms’ own disclosures of their business activities, yielding a firm-level measure of alignment between policy priorities and what each firm actually does.

We develop a simple model of central banking industrial policy that captures the core economic trade-off. In the model, entrepreneurs undertake risky projects that generate both private returns and social spillovers. Private financiers, operating under profit-maximizing criteria, liquidate projects after noisy early failures even when continued experimentation would be socially valuable. A central bank with the capacity to subsidize entry and tolerate early losses can improve welfare by sustaining firms through temporary setbacks, provided that the spillovers from targeted sectors are sufficiently large. However, the model also identifies two sources of inefficiency. First, entry subsidies may induce excessive entry by firms with negative expected social value. Second, when the government’s ability to identify high-spillover sectors is imperfect, directed credit may flow to the wrong industries, generating misallocation. The model thus yields an empirically testable prediction: exposure to

²Consistent with this institutional hierarchy, we find that the sectoral emphasis of MPERs closely follows the priorities articulated in central government documents such as the annual Government Work Reports (see Section 4 for the construction of the TIPA index). We abstract from modeling the political economy of priority selection and focus instead on measuring and testing the transmission of industrial policy as implemented through central banking.

central bank industrial policy should produce both positive long-run outcomes for targeted firms, through relaxed financing constraints and sustained experimentation, and negative side effects in the form of over-competition and deteriorating loan quality in the banking system.

To bring the model to the data, we construct a new firm-level measure of exposure to structural monetary policy: the Structural Monetary Policy Alignment (SMPA) index. Our measurement strategy exploits the textual content of two sources. The first is the “Industry Analysis” section of the PBoC’s quarterly Monetary Policy Executive Reports (2010–2022), which conveys forward-looking guidance about priority sectors. The second is the “Management Discussion and Analysis” section of firms’ annual reports, which describes their business activities. We apply two complementary natural language processing techniques. Latent Dirichlet Allocation (LDA) topic modeling (Blei et al., 2003) identifies the thematic structure of policy discussions and firm disclosures, allowing us to compute a *Topic* index based on Kullback-Leibler divergence between the topic distributions of MPERs and firm reports. Word2Vec embedding (Mikolov et al., 2013) captures the semantic context in which terms appear, yielding a *Context* index based on cosine similarity between document vectors. We combine these two measures via principal component analysis to form the SMPA index, which captures the degree to which a firm’s business activities align with the sectors emphasized in central bank forward guidance. A higher SMPA indicates greater exposure to structural monetary policy.

Our empirical analysis proceeds in four steps. First, we establish that SMPA meaningfully captures the credit channel of structural monetary policy. Firms with higher SMPA experience significantly faster growth in bank loans, with the effect cumulating over time. Twelve quarters after an MPER issuance, a one-standard-deviation increase in SMPA is associated with a 59 basis point increase in cumulative loan growth relative to initial assets. Bank credit limits similarly expand. At the same time, exposed firms enjoy lower costs of debt financing: a one-standard-deviation increase in SMPA reduces the ratio of interest

expense to total debt by 1.5 basis points over the subsequent three years. These effects are concentrated among non-state-owned enterprises and local SOEs, consistent with central SOEs already enjoying preferential credit access.

Second, we examine how financial markets incorporate SMP information. Using an event-study design around MPER announcement dates, we find that high-SMPA firms earn positive cumulative abnormal returns (CARs) over the $[-1, 1]$ window. A one-standard-deviation increase in SMPA raises announcement-window CARs by approximately 6.5 basis points. More strikingly, we document a substantial post-announcement drift: over the subsequent 378 trading days, high-SMPA firms cumulatively outperform by 2.6 percentage points, suggesting that markets do not immediately and fully impound the long-run implications of structural monetary policy.

Third, we trace the real effects of SMP exposure on firm outcomes. Following MPER announcements, high-SMPA firms exhibit significant growth in total revenue, net profits, capital investment, net worth, and cash holdings, with effects materializing within two to six quarters and persisting over the full three-year horizon. We also find improvements in total factor productivity (TFP) and R&D expenditure. A decomposition exercise confirms that the bank credit channel is the primary transmission mechanism: the interaction of SMPA with credit growth is strongly positive for investment, net worth, and leverage, indicating that the real effects operate through expanded credit supply rather than through alternative channels.

Fourth, we turn to the costs of central banking industrial policy. Using industry-level data on firm registrations, we document that industries with higher average SMPA experience significantly elevated rates of new firm entry in the two to three years following MPER issuances. The entry response suggests that directed credit induces competition in targeted sectors, consistent with the model's prediction that entry subsidies draw in marginal firms. We find evidence of misallocation: in industries with a higher fraction of zombie firms, the positive effects of SMPA on net worth and cash holdings are attenuated, suggesting that

some directed credit flows to inefficient incumbents. Most directly, we show that banks that more frequently invoke industrial policy language in their own annual reports, a proxy for engagement in directed lending, experience significantly higher non-performing loan (NPL) ratios. A one-unit increase in the log frequency of industrial policy mentions is associated with a 7–9 basis point increase in NPL ratios over the subsequent two to four years, with the effect concentrated among city commercial banks and joint-stock banks that are the primary conduits of structural monetary policy lending.

Related Literature. Our paper contributes to four strands of literature.

Industrial Policy Evaluation. A growing empirical literature evaluates the effects of industrial policy across countries and time periods. [Criscuolo et al. \(2019\)](#) use discontinuities in EU regional aid programs to identify causal effects of investment subsidies on firm employment and investment. [Juhász \(2018\)](#) exploits the Napoleonic blockade as a natural experiment to show that temporary trade protection can foster long-run industrialization in infant industries, providing some of the most credible causal evidence on the infant-industry argument. [Lane \(2025\)](#) studies South Korea’s Heavy-Chemical Industry Drive and finds that large-scale directed credit promoted rapid industrialization, with benefits persisting even after the policy’s termination, though the policy also generated transitional misallocation that was gradually reversed. [Juhász et al. \(2024\)](#) provide a comprehensive review of the “new economics of industrial policy,” emphasizing the need for systematic measurement and joint evaluation of benefits and costs. [Choi and Levchenko \(2025\)](#) surveys the empirical industrial policy literature and identifies the “lack of systematic and detailed data on these policies” as a central barrier to progress. We advance this literature by exploiting the high-frequency, cross-sector variation inherent in central bank communications to construct a continuous, firm-level measure of policy exposure. This allows us to study the dynamics of policy transmission and to capture both the intensive and extensive margins of firms’ responses within a

unified framework. Most importantly, whereas prior work focuses on either benefits *or* costs of specific industrial policies, we provide a joint assessment that quantifies both sides of the trade-off.

Industrial Policy in China. Our paper is most closely related to a growing body of work examining industrial policy in China, the world’s most active practitioner of industrial policy. [Fang et al. \(2025\)](#) use large language models to systematically decode approximately three million Chinese government documents spanning 2000–2022, identifying and classifying industrial policy instruments, targeted industries, and policy intensity at the national and subnational levels. Their analysis reveals that 80 percent of industrial policies originate from local governments and that policy tools evolve systematically from entry subsidies toward R&D support and demand-side instruments as industries mature, underscoring both the enormous scale of Chinese industrial policy and the value of text-based measurement in capturing its full scope. For specific sectors, [Barwick et al. \(2025\)](#) and [Kalouptsi \(2018\)](#) provide detailed evidence on China’s shipbuilding industry, documenting how production and investment subsidies generated substantial output gains alongside significant allocative inefficiencies from overcapacity. A series of recent papers examine China’s industrial policy toward electric vehicles (EVs). [Barwick et al. \(2024a\)](#) study the optimal design of attribute-based EV subsidies, showing that China’s notched range-based subsidy led to vehicle downsizing that undermined welfare relative to battery-capacity-based alternatives. [Barwick et al. \(2024b\)](#) estimate learning-by-doing in EV battery production and demonstrate that China’s local content requirements, combined with consumer subsidies, helped domestic battery suppliers achieve global cost competitiveness, though the benefits hinged on the precise timing of policy intervention. [Bai et al. \(2025\)](#) document knowledge spillovers from foreign joint ventures and their role in quality upgrading in China’s automobile industry. [Wang et al. \(2025\)](#) develop a model of “leapfrogging by switching lanes,” arguing that China deliberately shifted toward EVs, where the initial technology gap with foreign

competitors was much narrower than in gasoline vehicles, and show that optimal policy design features front-loaded R&D subsidies and hump-shaped purchase subsidies that phase out as domestic technology matures. These papers collectively demonstrate that industrial policy has been consequential in reshaping China’s industrial structure, but they also reveal a recurring tension between dynamic gains and static allocative costs, a tension that our paper directly examines through the lens of structural monetary policy implementation.

Closely related, [Chen et al. \(2026\)](#) show in a calibrated multi-sector model that China’s preferential credit raises aggregate TFP by reallocating resources toward high-markup sectors.³ Whereas their mechanism is a static cross-sector correction of markup dispersion, ours is dynamic and within-sector: structural monetary policy lowers entry barriers, sustains experimentation through noisy early signals, and intensifies competition, reshaping industrial organization over multi-year horizons. Both papers nonetheless find productivity gains alongside elevated zombie-firm shares, suggesting that this benefit–cost trade-off is a robust feature of directed credit. More broadly, whereas the literature on Chinese industrial policy typically measures policy through sector-level designations—five-year plan targets, subsidy eligibility, or policy-document classifications—we construct a continuous, firm-level exposure measure by comparing the text of policy communications with firms’ own business disclosures, yielding variation across firms and over time that sector-level indicators cannot provide.

Text-Based Measurement of Economic Policy. Our paper contributes to the rapidly expanding literature that uses natural language processing to measure economic policy. [Hansen et al. \(2018\)](#) apply Latent Dirichlet Allocation to FOMC transcripts to study the determinants of committee deliberation. [Cieslak et al. \(2019\)](#) use textual analysis of FOMC communications to link monetary policy to stock market cycles. [Gardner et al. \(2022\)](#) con-

³Although [Chen et al. \(2026\)](#) estimate that China oversubsidizes relative to the second-best optimum, their finding of net aggregate TFP gains from preferential credit is consistent with our reduced-form evidence that SMPA positively predicts firm-level TFP.

struct measures of central bank information shocks from the linguistic content of policy statements. In finance, [Hanley and Hoberg \(2019\)](#) use LDA to detect emerging risks from financial firm disclosures, and [Bybee et al. \(2024\)](#) show that topic-model-based news attention predicts stock returns and macroeconomic variables. [Bellstam et al. \(2021\)](#) use LDA and KL divergence to measure corporate innovation culture from firm disclosures. [Mazumder et al. \(2025\)](#) show that both LDA topic weights and Word2Vec embeddings from 10-K risk disclosures carry distinct predictive content for future aggregate risk exposures.

Most relevant to our research question, [Juhász et al. \(2025\)](#) develop a BERT-based supervised classifier to identify industrial policy interventions from the Global Trade Alert database, demonstrating that NLP methods can systematically measure industrial policy at a global scale, while [Fang et al. \(2025\)](#) employ large language models to extract and classify the content of Chinese government documents. These papers share a common logic: scan a *single* corpus of policy documents to identify *what* policies exist. Our approach is fundamentally different. We compare *two* corpora, policy communications and firm disclosures, using topic modeling and word embedding to capture the *alignment* between what the central bank signals and what each firm does. This comparison-based strategy yields a continuous, time-varying, firm-level measure of policy exposure that does not require discretionary classification of industries or labeling of policies, and that captures variation in exposure *within* sectors as well as across them.

Directed Credit and Misallocation. A fourth strand of literature examines the consequences of credit allocation for aggregate productivity. Seminal work by [Hsieh and Klenow \(2009\)](#) and [Restuccia and Rogerson \(2008\)](#) demonstrates that capital misallocation can generate large aggregate TFP losses. [Banerjee and Duflo \(2005\)](#) argue that directed credit programs in developing countries often fail because they cannot distinguish firms with genuine growth potential from those that are simply credit-constrained. Our findings contribute to this literature by showing that structural monetary policy generates a tension between

dynamic efficiency gains, from sustaining experimentation and promoting productive firms, and static allocative costs in the form of elevated entry, softened budget constraints for zombies, and deteriorating bank asset quality. The fact that SMPA positively predicts TFP suggests that, on net, the policy directs resources toward firms that use them productively, even as some leakage to inefficient firms occurs.

The remainder of the paper is organized as follows. Section 2 describes the institutional background of China’s structural monetary policy framework. Section 3 presents the theoretical model. Section 4 details the construction of the SMPA index. Section 5 describes the data and presents summary statistics. Section 6 presents the empirical results, covering credit effects, stock market reactions, real outcomes, and transmission mechanisms. Section 7 examines the costs of central banking industrial policy. Section 8 discusses implications and limitations. Section 9 concludes.

2 Institutional Background

China’s monetary policy framework is distinctive in its explicit embrace of structural objectives. While most major central banks conduct monetary policy through a single policy rate applied uniformly across the financial system, the PBoC operates a multi-instrument framework that combines conventional aggregate demand management with targeted interventions aimed at specific sectors. This duality reflects the broader institutional context of China’s economic governance, in which the central bank is expected to serve not only price stability and growth objectives but also industrial and structural transformation goals.

2.1 The Architecture of Structural Monetary Policy

The PBoC’s structural monetary policy toolkit rests on three pillars. The first is *targeted lending facilities*, through which the central bank provides low-cost funding to commercial banks conditional on their on-lending to designated sectors. Prominent examples include the

Medium-term Lending Facility (MLF), the Pledged Supplementary Lending (PSL) facility—which has directed hundreds of billions of renminbi toward shantytown redevelopment and infrastructure—and a rotating set of *relending and rediscounting* programs. Relending facilities provide short-term funding (typically less than one year) to banks, secured by high-quality collateral and targeted at specific sectors; the PBoC typically adopts a reimbursement mechanism, whereby financial institutions make loans to eligible projects at rates close to the loan prime rate and are then reimbursed by the PBoC at the relending facility rate. Rediscounting refers to the PBoC’s purchase of unexpired discounted commercial bills of exchange held by financial institutions, channeling funds to banks to support financing to specific sectors. As noted in PBoC official communications, these two instruments are frequently employed in tandem: relending facilities inject base money into the banking system, while rediscounting operates through the bill market to direct credit toward firms in targeted industries. As of 2022, outstanding structural monetary policy loans exceeded RMB 6 trillion, representing approximately 15% of the PBoC’s total assets.

The second pillar is *window guidance* (*chuangkou zhidao*), an informal but powerful mechanism through which the PBoC communicates lending priorities to commercial banks. In regular meetings with bank management, PBoC officials convey expectations about the sectoral composition of credit growth, effectively steering loan origination toward favored industries without formal regulatory mandates. Window guidance is inherently difficult to observe directly, which is one motivation for our text-based measurement approach: the MPERs are the public-facing counterpart of the guidance communicated privately to banks.

The third pillar is *differentiated reserve requirements and regulatory incentives*. The PBoC adjusts reserve requirement ratios for banks that meet targets for lending to priority sectors, and it incorporates structural lending performance into its macro-prudential assessment (MPA) framework, which determines banks’ regulatory ratings and affects their access to central bank liquidity.

2.2 MPER as a Policy Communication Channel

Central to our empirical strategy is the Monetary Policy Executive Report (MPER), the PBoC’s flagship communication vehicle. MPERs are typically released after each of the four monetary policy quarterly meetings.⁴ Each MPER contains several sections, including an overview of recent monetary policy decisions, an assessment of macroeconomic conditions, and, crucially for our purposes, a dedicated “Industry Analysis” section. This section reviews conditions in specific industries, identifies emerging trends and risks, and, most importantly, provides forward-looking guidance about which sectors warrant increased (or reduced) financial support.

The language of these reports is carefully calibrated. When the MPER states that “financial institutions should actively enhance credit support for logistics firms” (Q3 2011) or that banks are “encouraged to innovate in financing, leasing, and collateral mechanisms, with particular emphasis on expanding financial support for the industrial robotics sector” (Q4 2018), these statements carry policy weight. They are understood by commercial banks as signals of the PBoC’s sectoral priorities and are typically followed by adjustments in lending patterns. Our measurement strategy in Section 4 exploits the systematic variation in sectoral emphasis across MPERs over our 2010–2022 sample period.

2.3 Relationship to Traditional Industrial Policy

It is important to clarify the relationship between structural monetary policy and traditional industrial policy instruments, as well as the institutional hierarchy within which both operate. China’s traditional industrial policy originates from the State Council and the National Development and Reform Commission, which set strategic sectoral priorities through five-year plans, sectoral subsidies, tax incentives, trade protections, and direct state investment. The PBoC does not independently initiate industrial policy; rather, it *oper-*

⁴All MPERs are publicly available from the PBoC’s official website at <https://www.pbc.gov.cn>.

ationalizes the priorities determined by these higher-level government bodies through its structural monetary policy toolkit. This hierarchical arrangement, in which industrial policy goals are set by central government and executed through central bank credit operations, is a defining feature of China’s policy framework. Traditional industrial policy instruments are set at relatively low frequency and tend to be persistent. Structural monetary policy, by contrast, offers continuous adjustment: the PBoC can fine-tune its sectoral emphasis each quarter in response to changing economic conditions. This temporal and cross-sectoral variation, combined with the fact that SMP operates through the observable channel of credit allocation, makes structural monetary policy a uniquely informative lens through which to study the transmission of industrial policy.

Moreover, structural monetary policy operates primarily through the *financing* channel. Rather than directly subsidizing production or investment, it alters the terms on which firms in targeted sectors access external finance. This distinguishes it from fiscal industrial policy and connects it to the broader literature on financial frictions and credit allocation. Our paper thus fills a gap between two largely separate literatures: the monetary policy literature, which emphasizes aggregate stabilization and production-side credit transmission (Dong et al., 2025; Chang and Xiong, 2026), and the industrial policy literature, which studies longer-run structural transformation. We show that targeted central bank credit operations serve both functions, with the industrial policy role, operating over multi-year horizons, having been largely overlooked.

3 A Model of Central Banking Industrial Policy

We develop a simple two-period model of industrial policy operating through the financing channel. The model captures three mechanisms. First, industrial policy lowers entry barriers and induces experimentation by firms that private finance may not support, thereby promoting firm growth and competition. Second, government-backed continuation support

allows firms to survive noisy early failures and continue learning, increasing the option value of entry. Third, industrial policy may generate misallocation when support is directed toward inefficient firms or when the government misidentifies high-spillover sectors.

3.1 Environment

There is a continuum of potential firms indexed by type $p \in [0, 1]$, distributed according to cumulative distribution function $F(p)$. Type p denotes the ex-ante probability that the firm's project eventually becomes commercially successful and therefore represents a productivity measure.

The economy lasts for two periods. In period 0, firms decide whether to enter. In period 1, firms receive an interim signal about project quality. In period 2, firms that continue production realize final payoffs. Entry requires an initial investment cost $I > 0$. Entrepreneurs cannot fully self-finance projects and therefore rely on either private external finance (venture capital, or VC) or government industrial-policy support (G).

If the project succeeds, the firm generates private payoff $R > 0$. In addition, successful firms generate a social spillover $E \geq 0$, representing learning externalities, supply-chain development, technological diffusion, or other strategic-sector benefits. The social value of a successful project therefore equals

$$R + E. \tag{1}$$

3.2 Signals and Learning

After entry, firms receive an interim signal $x \in \{H, L\}$ in period 1. This signal is informative but imperfect:

$$\Pr(H \mid p) = p, \quad \Pr(L \mid p) = 1 - p. \tag{2}$$

A low signal does not imply certain eventual failure. Conditional on receiving signal L , the posterior probability that the project eventually succeeds is

$$\mu_L(p) = \alpha p, \quad (3)$$

where

$$\alpha \equiv 1 - \theta, \quad \theta \in (0, 1). \quad (4)$$

The parameter θ captures the *noisiness* of early failure signals. When θ is high (low α), early losses contain less information about long-run project quality, and the case for policy patience is stronger.

Firms receiving a low signal must incur continuation cost $K > 0$ to remain active and continue experimentation.

3.3 Private Financing

Under private VC financing, investors maximize expected private returns and continue funding only when continuation value is positive. After observing signal L , continuation occurs if

$$\alpha p R \geq K. \quad (5)$$

This yields the VC continuation threshold

$$p_L^{VC} \equiv \frac{K}{\alpha R}. \quad (6)$$

Projects with $p < p_L^{VC}$ are liquidated after low signals. Expected project success probability under VC financing is

$$\Pi^{VC}(p) = p + \mathbf{1}\{p \geq p_L^{VC}\}(1 - p)\alpha p. \quad (7)$$

The first term captures high-signal firms; the second captures low-signal firms that survive the private continuation threshold. Expected private entry value under VC financing is

$$V^{VC}(p) = \Pi^{VC}(p)R - I. \quad (8)$$

Firms enter whenever $V^{VC}(p) \geq 0$, defining the VC entry threshold p_0^{VC} .

3.4 Central Banking Industrial Policy

Now suppose the government provides industrial-policy support through the central bank, which can directly affect firms' financing conditions. Specifically, the policy has two components. First, firms in targeted sectors receive an effective borrowing cost reduction that translates into an entry subsidy $s_0 \geq 0$, lowering the effective entry cost. Second, the government is relatively more patient and forward-looking than private investors; it may continue supporting firms even after they draw low signals.

The government's objective incorporates the spillover benefit. Continuation after signal L occurs whenever

$$\alpha p(R + E) \geq K + C_g, \quad (9)$$

where $C_g \geq 0$ denotes the fiscal or distortionary cost of public funds, capturing the fact that government financing may be less efficient than market financing. The socially efficient continuation threshold is therefore

$$p_L^W = \frac{K + C_g}{\alpha(R + E)}. \quad (10)$$

Since $E > 0$, we immediately obtain

$$p_L^W < p_L^{VC}. \quad (11)$$

Proposition 1 *Suppose successful firms generate positive spillovers $E > 0$. Then there exists a non-empty interval of firms*

$$p \in [p_L^W, p_L^{VC}) \quad (12)$$

that private investors liquidate after low signals even though continued experimentation is socially efficient.

The mass $F(p_L^{VC}) - F(p_L^W)$ captures the central role of industrial policy in our model. There exists a set of firms that private finance liquidates prematurely even though continued experimentation is socially valuable.

Under industrial policy, the expected project success probability becomes

$$\Pi^G(p) = p + \mathbf{1}\{p \geq p_L^W\}(1 - p)\alpha p. \quad (13)$$

Expected private entry value under industrial policy is

$$V^G(p) = \Pi^G(p)R + s_0 - I. \quad (14)$$

The industrial-policy-supported entry threshold p_0^G satisfies $V^G(p_0^G) = 0$.

3.5 Welfare

Social welfare generated by a firm of type p under industrial policy equals

$$W(p) = \Pi^G(p)(R + E) - I - C_g. \quad (15)$$

The socially efficient entry threshold p_0^W satisfies $W(p_0^W) = 0$.

Proposition 2 *Industrial policy improves welfare if and only if induced entrants satisfy*

$$\Pi^G(p)(R + E) \geq I + C_g. \quad (16)$$

Industrial policy generates excessive entry whenever $p_0^G < p_0^W$.

3.6 Government Selection Accuracy

In practice, the government must choose among sectors with heterogeneous spillovers. Suppose the government correctly targets a high-spillover sector ($E_H > 0$) with probability q , and targets a low-spillover sector ($E_L \leq E_H$) with probability $1 - q$. Expected spillover under industrial policy is $\bar{E} = qE_H + (1 - q)E_L$. Industrial policy improves welfare only if government targeting accuracy exceeds the threshold

$$q^* = \frac{I + C_g - \Pi^G(p)(R + E_L)}{\Pi^G(p)(E_H - E_L)}. \quad (17)$$

3.7 Comparative Statics and Testable Implications

The model yields several comparative statics. The socially efficient continuation threshold satisfies $\partial p_L^W / \partial E < 0$, $\partial p_L^W / \partial R < 0$, and $\partial p_L^W / \partial \alpha < 0$, while $\partial p_L^W / \partial K > 0$ and $\partial p_L^W / \partial C_g > 0$. Industrial policy is more valuable when spillovers are larger, commercial upside is greater, and early failure signals are less informative. The wedge between private and socially efficient continuation is

$$p_L^{VC} - p_L^W = \frac{K}{\alpha R} - \frac{K + C_g}{\alpha(R + E)}, \quad (18)$$

which expands as spillovers increase.

Proposition 3 *The value of industrial policy increases with the noisiness of early failure signals.*

When θ rises (lower α), early bad signals become less informative about long-run project

quality. Both continuation thresholds increase, but the region in which private investors liquidate socially valuable projects expands, strengthening the case for policy-induced patience.

3.8 Model Predictions

The model yields four central empirical predictions. First, firms in sectors targeted by central bank industrial policy should experience *expanded credit access* and *lower financing costs* relative to firms in non-targeted sectors, reflecting the entry subsidy and continuation support mechanisms. Second, targeted firms should exhibit *superior long-run real outcomes*, including investment, revenue growth, and productivity, as the policy enables them to survive temporary setbacks that would trigger private liquidation. Third, *the benefits should accrue disproportionately in high-spillover sectors*, where the wedge between private and social continuation values is largest. Fourth, the policy should generate *observable costs*: elevated entry into targeted sectors (potentially excessive), some flow of credit to inefficient firms, and deterioration in the loan quality of banks most engaged in directed lending. We now turn to the data to evaluate these predictions.

4 Measuring Structural Monetary Policy Alignment

In this section, we describe the construction of the Structural Monetary Policy Alignment (SMPA) index. Our measurement strategy uses natural language processing to quantify the alignment between firms’ business activities and the forward-looking industrial policy content of PBoC communications. A central feature of our approach distinguishes it from existing text-based industrial policy measures: rather than scanning a single corpus of policy documents to identify and classify policy interventions (Fang et al., 2025; Juhász et al., 2025), we *compare* two corpora, PBoC policy communications and firms’ own business descriptions, to construct a measure of each firm’s *exposure* to evolving policy priorities. This comparison-based design yields a continuous, firm-level variable that varies both across firms within the

same sector and over time as policy emphasis shifts.

4.1 The MPER Text Corpus

Our primary policy text corpus consists of the “Industry Analysis” sections of all Monetary Policy Executive Reports published between 2010 and 2022, yielding 52 quarterly documents. Each report follows a standardized structure comprising five parts: *Monetary and Credit Overview*, *Monetary Policy Operations*, *Financial Market Developments*, *Macroeconomic Analysis*, and *Monetary Policy Outlook*. The Industry Analysis section is nested within Part IV “Macroeconomic Analysis” under the subsection “Assessment of China’s Macroeconomic Situation”. In this section, the PBoC reviews conditions in specific industries, identifies emerging trends and risks, and, most importantly, provides forward-looking guidance about which sectors warrant increased (or reduced) financial support.

Across our sample period, the Industry Analysis section covers a broad and evolving set of industries. Early reports in the 2010–2012 period focused heavily on traditional manufacturing sectors such as steel, coal, and non-ferrous metals, reflecting the PBoC’s concern with industrial restructuring and upgrading as well as commodity price volatility in the aftermath of the global financial crisis. Beginning around 2014, the emphasis shifted toward technology-intensive sectors, including electronics, equipment manufacturing, and new energy vehicles, consistent with the “Made in China 2025” initiative and subsequent strategic plans. More recently, green technology and digital infrastructure have received increasing attention. This temporal variation in sectoral emphasis is precisely the variation that our measurement strategy exploits.

We preprocess the texts using Jieba, a standard Chinese word segmentation package, to parse the corpus into words and phrases. Standard stopwords are removed. The resulting corpus captures the vocabulary through which the PBoC communicates its industrial policy priorities.

4.2 Topic Modeling: *Topical* SMPA Index

We first employ Latent Dirichlet Allocation (LDA) (Blei et al., 2003) to identify latent thematic structures within the collection of MPERs. As a generative probabilistic model, LDA represents each document as a probabilistic mixture of K latent topics, with each topic defined by a probability distribution over words. The model is unsupervised, requiring no labeled data.

We determine the optimal number of topics using a data-driven approach, estimating models with K ranging from 1 to 15 and selecting $K = 9$ based on perplexity and coherence scores. By analyzing key terms for each topic as well as their intensity (presented in Appendix A), we assign the following labels to the nine topics: (1) Coal, Power & Heavy Inputs, (2) Domestic Demand & Tertiary Industry, (3) Strategic Resources & Land Markets, (4) Agriculture & Rural Industrialization, (5) Automotive Industry, (6) Electronics & Equipment Manufacturing, (7) Infrastructure & Public Utilities, (8) Steel & Ferrous Metals, and (9) Hydrocarbons & Imported Energy.

To assess whether the estimated topics capture economically meaningful policy shifts, we examine the temporal variation in topic intensity documented in Figure 1. Two episodes are particularly informative.

4.2.1 Case Study: *Electronics & Equipment Manufacturing*

The semiconductor dimension of this topic received substantial narrative attention in 2014, consistent with the State Council’s June 2014 release of the “Outline for Promoting the Development of the National Integrated Circuit Industry.” Topic attention then declined over the following years as other priorities dominated the MPER.

The topic’s attention allocation, however, surged sharply in 2018Q3 and 2018Q4, making it the single largest topic in those two quarters. This timing coincides with the United States’ export controls against Chinese semiconductor firms.⁵ These actions exposed China’s

⁵The export controls began with the April 2018 seven-year ban on U.S. firms selling components and

dependence on foreign semiconductor technology as a key vulnerability in its push to become a global technology power. While developing a domestic semiconductor industry had long been a strategic priority, this event sharply raised the urgency of building a competitive domestic chip ecosystem.

The episode also illustrates a central mechanism of our model. Semiconductor development is characterized by high initial uncertainty and frequent early setbacks, which may lead private financiers to liquidate projects prematurely even when continued experimentation is socially valuable. The structural monetary policy response, as reflected in the sharp rise in MPER attention to this topic, provided the patient capital and continuation support necessary to sustain firms through these noisy early failures—precisely the channel formalized in Proposition 1. This example demonstrates that our measure captures high-frequency industrial-policy shocks that are invisible to instruments based on Five-Year Plans (Cen et al., 2024), which are revised only every five years.

4.2.2 Case Study: *Coal, Power & Heavy Inputs*

The estimated model produces two distinct energy topics. “Coal, Power & Heavy Inputs” captures the PBC narrative around the domestic energy-heavy-industry complex, while “Hydrocarbons & Imported Energy” captures oil, gas, and nuclear fuel along with the external dependence on energy imports. The clean separation between the two topics—self-reliance of coal-fired domestic energy versus dependence on imported hydrocarbons—is reassuring about the model’s ability to identify economically distinct policy narratives from text alone.

The Coal topic receives low narrative attention throughout most of the sample, but it dominates all other topics in 2021Q1, 2021Q2, and 2022Q1. This timing aligns with China’s thermal coal crisis of 2021–2022, when severe supply disruptions triggered power shortages across more than 100 cities. In the preceding years, the 2016–2018 supply-side structural reform, combined with intensified production safety campaigns and the 2020 carbon neu-

technology to ZTE and was reinforced in October 2018 when Fujian Jinhua Integrated Circuit was added to the U.S. Entity List.

trality pledge, led to the widespread closure of coal mines and the elimination of substantial outdated production capacity. When thermal coal prices subsequently skyrocketed, power plants suffered large operating losses, and private financiers had little incentive to extend credit to an industry facing both acute distress and an unfavorable long-run policy outlook. The surge in MPER attention to coal during this period thus reflects structural monetary policy stepping in to provide credit facilities and lower financing barriers for a systemically important industry that profit-maximizing private financiers would not support. This is precisely the scenario captured by our model: the government sustains firms through temporary setbacks that would trigger private liquidation when the social value of continued operation exceeds the private return.

It is worth emphasizing that coal has never been designated as an “encouraged industry” in any Five-Year Plan during our sample period. This example therefore highlights a distinctive feature of structural monetary policy relative to traditional industrial policy—its flexibility in responding to industries in acute distress, even when those industries are not aligned with the government’s stated long-term strategic priorities. Together with the 2018 semiconductor episode, this episode also illustrates that the model is about social-planner credit allocation under market failure, not about cherry-picking sunrise industries.

We then apply the same LDA model to the “Management Discussion and Analysis” (MD&A) section of firms’ annual reports, generating firm-level topic distributions. The *Topic* index for firm i in quarter t is defined as the negative Kullback-Leibler (KL) divergence between the topic distribution of the most recent MPER and the topic distribution of firm i ’s annual report:

$$Topic_{i,t} = -D_{KL}(P_{\text{MPER},t} \parallel P_{\text{Firm},i}). \quad (19)$$

A higher (less negative) *Topic* index indicates stronger alignment between the firm’s business activities and the industries emphasized in the PBoC’s forward guidance.

4.3 Context Modeling: *Contextual* SMPA Index

While LDA captures *what* topics are discussed, it ignores word order and context. Indeed, Mazumder et al. (2025) show that both types of signals contain distinct predictive content for future firm-level risk exposures. To capture *how* language is used, including semantic relationships, synonyms, and nuanced policy expressions, we employ Word2Vec (Mikolov et al., 2013). Word2Vec maps each word to a dense, low-dimensional vector such that semantically similar words are positioned close together in the vector space. The model is trained on the combined corpus of MPERs and annual reports.

This approach is particularly valuable for analyzing Chinese policy documents, which employ deliberate and context-dependent language. For example, the phrases “accelerating the development of high-tech manufacturing” and “providing specialized medium-to-long-term financial support for technology-driven enterprises” use different terminology but convey the same policy objective of supporting technological innovation. Word2Vec captures this conceptual alignment through vector proximity.

We construct the *Contextual* SMPA index as the cosine similarity between the document-level Word2Vec embedding of the most recent MPER and that of firm i ’s annual report:

$$Context_{i,t} = \frac{\mathbf{V}_{MPER,t} \cdot \mathbf{V}_{Firm,i}}{\|\mathbf{V}_{MPER,t}\| \|\mathbf{V}_{Firm,i}\|}. \quad (20)$$

Values closer to 1 indicate stronger semantic alignment between a firm’s core activities and the structural monetary policy priorities.

5 Data and Measurement Validation

In this section we describe the data sources, document summary statistics, and validates the SMPA component indices against credit market outcomes. We close the section by motivating and constructing a single composite SMPA index.

5.1 Data Sources and Sample Construction

Our empirical analysis combines several data sources. Balance sheet and income statement data for Chinese A-share listed firms are obtained from the China Stock Market and Accounting Research (CSMAR) database and the Wind database. Stock return data are sourced from CSMAR. Bank-level data, including non-performing loan ratios, are obtained from bank annual reports and the Wind database. Firm registration data for the entry analysis come from the State Administration for Market Regulation.

We construct a panel dataset at the firm-quarter frequency spanning 2010 through 2023. Following standard practice, we exclude firms in the banking, financial, and insurance sectors due to their distinct regulatory environment and balance sheet characteristics. We also exclude real estate firms and firms designated as Special Treatment (ST or *ST). Firms listed for less than one year are dropped to avoid IPO-related anomalies. Our final sample comprises 131,224 firm-quarter observations covering 3,794 unique firms. All continuous variables are winsorized at the 1st and 99th percentiles.

For our analysis of bank asset quality, we construct a separate bank-level panel covering 195 Chinese banks (6 state-owned, 12 joint-stock, 96 city commercial, and 81 rural commercial banks) over the period 2010–2023. We measure each bank’s engagement with structural monetary policy by counting the frequency of the terms “sectoral policy,” “industrial policy,” and “structural monetary policy” in their annual reports.

5.2 Variable Definitions and Summary Statistics

Our dependent variables capture several dimensions of firm outcomes. For credit effects, we measure cumulative changes in bank loans and credit limits relative to initial total assets: $\Delta Loan_{i,t+h} = (Loan_{i,t+h} - Loan_{i,t-1}) / Assets_{i,t-1}$. The cost of debt financing is the ratio of interest expense to total debt. For stock market reactions, we compute cumulative abnormal returns (CARs) over various windows around MPER announcement dates, using the value-weighted market return as the benchmark. For real effects, we compute cumulative changes

in total revenue, net profit, capital expenditure, net worth, total liabilities, and cash holdings, all scaled by initial total assets. TFP is estimated using the [Levinsohn and Petrin \(2003\)](#) method. R&D expenditure is scaled by total assets.

Our main explanatory variables concern the SMPA measurement. Besides the two component indices, we also consider a single composite SMPA index, which is constructed as the first principal component of standardized component indices. To distinguish the effects of structural monetary policy from those of traditional industrial policy, we construct an analogous Traditional Industrial Policy Alignment (TIPA) index. The TIPA index follows the same PCA-based procedure as the composite SMPA but uses the central government’s annual Government Work Reports as the policy text source instead of MPERs.⁶ We include TIPA as a control in all our regressions to partial out the effects of general industrial policy exposure. Other firm-level controls include size (log market value), age (log firm age), leverage, market-to-book ratio, government subsidies scaled by assets, earnings per share, current ratio, ROE, illiquidity (Amihud ratio), turnover, and local government fiscal stress.

Table 1 presents summary statistics for the key variables. The Topical and Contextual indices are standardized by construction. The Topical index has mean zero and unit variance with a range of $[-1.99, 1.94]$; the Contextual index similarly has mean zero and unit variance with a range of $[-4.09, 6.09]$. The two indices have a correlation of 0.31, confirming that they capture distinct dimensions of policy alignment. The average firm in our sample has a market value of approximately RMB 6.4 billion, leverage of 42%, and is roughly 9 years old.

5.3 Properties of the SMPA Components and Validation

Before using our text-based measures to study the broader effects of structural monetary policy, we validate them against the credit market outcomes that the policy is designed to influence. If the Topical and Contextual indices genuinely capture exposure to structural

⁶The Government Work Report, delivered by the Premier at the National People’s Congress, articulates broad industrial policy priorities but lacks the quarterly frequency, financial-sector focus, and implementation specificity of the MPERs.

monetary policy, they should predict subsequent growth in bank credit and declines in financing costs. Moreover, if the two indices carry complementary information, as we hypothesize, then each should retain explanatory power when both are included in the same regression. This finding would motivate the construction of a composite index.

We begin by examining whether higher Topical and Contextual SMPA indices predict faster growth in bank credit. We estimate:

$$\frac{Loan_{i,t+h} - Loan_{i,t-1}}{Assets_{i,t-1}} = \beta_h \cdot Index_{i,t} + \gamma_h \cdot \mathbf{X}_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t}, \quad (21)$$

where $Index_{i,t}$ is either the Topical index, the Contextual index, or both jointly, $h \in \{1, 2, 4, 6, 8, 12\}$ quarters, $\mathbf{X}_{i,t}$ is a vector of firm-level controls, and α_i and δ_t are firm and quarter fixed effects. Standard errors are clustered at the firm level.

Table 2 reports the results. In Panels A and B, which include each index separately, both the Topical and Contextual coefficients are positive at all horizons: the former/latter become statistically significant from $h = 6/h = 2$ quarters onward. A one-standard-deviation increase in the Topical index is associated with cumulative loan growth of 0.34% at $h = 12$; the corresponding figure for the Contextual index is 0.74%. The Contextual index induces more prompt and larger responses, suggesting that the semantic dimension of policy alignment is at least as informative as the topical dimension.

Panel C includes both indices jointly. The coefficients on both Topical and Contextual remain positive and significant, with only modest attenuation relative to the separate specifications. At $h = 12$, the Topical coefficient is 0.28% and the Contextual coefficient is 0.68%. The fact that both indices retain significance at the 1% level when included together confirms that they capture distinct, complementary information about firms' exposure to structural monetary policy.

Several additional features warrant emphasis. First, the effects cumulate over time, consistent with the model's prediction that structural monetary policy operates through a

sequence of lending decisions rather than a one-time shock. Second, the inclusion of firm and quarter fixed effects means that the estimates are identified from variation in policy emphasis *within* firms over time, rather than from cross-sectional differences between permanently targeted and non-targeted industries. Third, the effects are economically meaningful: at the 12-quarter horizon, cumulative loan growth for a firm at the 75th percentile of the Contextual (Topical) index is approximately 90 (50) basis points higher than for a firm at the 25th percentile. Finally, the TIPA index enters insignificantly or even negatively in all regression specifications, indicating that traditional industrial policy alignment does not independently drive credit expansion once we control for structural monetary policy alignment.

5.4 The Composite SMPA Index

The validation exercise establishes that the Topical and Contextual indices each carry independent information about firms' exposure to structural monetary policy. Because both indices predict credit growth with significant and distinct coefficients, a composite measure that aggregates their information should yield a more powerful measure of policy alignment than either component alone. To this end, we construct the composite SMPA index using PCA, as described in Section 5.2. The first principal component loads positively on both the Topical and Contextual indices, with loadings of 0.71 and 0.70 respectively, confirming that it captures common variation in policy alignment across both dimensions. We use the standardized composite SMPA index as our baseline measure in all subsequent analysis.

To verify that the composite retains the predictive content of its components, we re-estimate the loan-growth specification above using the composite SMPA in place of the two component indices. Table 3 reports the results. The composite SMPA enters positively at all horizons and becomes statistically significant from $h = 2$ onward. A one-standard-deviation increase in SMPA is associated with cumulative loan growth of 0.11% at $h = 4$, 0.20% at $h = 6$, 0.33% at $h = 8$, and 0.59% at $h = 12$ (all relative to initial assets). The effects cumulate over time, consistent with the model's prediction that structural monetary policy

operates through a sequence of lending decisions rather than a one-time shock. We use the composite SMPA as our main explanatory variable throughout the remainder of the paper.

Ownership heterogeneity. Table 4 examines heterogeneity by ownership type. The credit effects are concentrated among local state-owned enterprises (SOEs) and non-SOEs. For central SOEs, the coefficients are small and statistically indistinguishable from zero. At the 12-quarter horizon, a one-standard-deviation increase in the composite SMPA index raises cumulative loan growth by 0.55% for local SOEs and 0.65% for non-SOEs, compared to a negligible 0.01% for central SOEs. This pattern is consistent with central SOEs already enjoying preferential access to bank credit regardless of SMP exposure; structural monetary policy appears to extend credit access at the margin to firms that are more likely to be credit-constrained.

Credit limits. We find similar patterns for bank credit limits (Table 5), which capture total authorized borrowing capacity rather than actual loan balances. The SMPA index positively predicts growth in credit limits, with effects becoming significant at $h = 6$ and strengthening through $h = 12$. The magnitudes are larger than for loan balances: at $h = 12$, the Contextual index coefficient reaches 1.0 percentage point, suggesting that structural monetary policy operates in part by expanding banks' willingness to commit future credit.

Cost of debt financing. Does structural monetary policy also reduce the price of credit? Table 6 reports regressions of the cost of debt on each index, separately and jointly. Across all three post-announcement windows (t to $t + 3Q$, $t + 4Q$ to $t + 7Q$, and $t + 8Q$ to $t + 11Q$), the SMPA index carries negative and statistically significant coefficients at the 1% level. A one-standard-deviation increase in the index is associated with a 0.8, 1.0 and 1.5 bps reduction in the effective interest rate for the first, second, and third year subsequent to the SMP shock. While modest in absolute terms, this represents a 2–4% reduction relative to the mean cost of debt, and the effect persists for up to three years.

6 Market Valuation and Firm Fundamentals

Having established that the SMPA index captures meaningful variation in firms’ exposure to structural monetary policy, we now examine how this exposure affects financial market valuations and real economic outcomes. We organize the analysis around three questions. First, do financial markets price SMP information at the time of MPER announcements? Second, does SMPA exposure translate into persistent improvements in firm fundamentals? Third, what is the transmission mechanism linking policy alignment to real outcomes?

6.1 Stock Market Reactions

6.1.1 Announcement Returns

We next examine financial market responses using an event-study design:

$$CAR_{i,t}^{[h,H]} = \beta \cdot SMPA_{i,t} + \gamma \cdot \mathbf{X}_{i,t} + \alpha_i + \delta_t + \varepsilon_{i,t}. \quad (22)$$

Table 7 presents results for the $[-1, 1]$ window around MPER announcements. The SMPA coefficient is 0.065 (s.e. = 0.014), implying that a one-standard-deviation increase in SMPA is associated with a 6.5 basis point increase in the three-day CAR. The individual components, *Topic* and *Context*, are also significant, confirming that both dimensions of policy exposure are priced by the market.

6.1.2 Post-Announcement Drift

A more striking finding emerges from longer-horizon returns. Table 8 examines CARs over post-announcement windows ranging from $[2, 63]$ to $[2, 378]$ trading days. High-SMPA firms exhibit a pronounced positive drift: the SMPA coefficient rises from 1.26 (s.e. = 0.09) at the $[2, 126]$ window to 1.85 (s.e. = 0.12) at $[2, 252]$ and 2.63 (s.e. = 0.16) at $[2, 378]$. A firm at the 75th percentile of SMPA outperforms a firm at the 25th percentile by approximately

1.8 percentage points over the subsequent year and 2.6 percentage points over 18 months.

The existence of a post-announcement drift suggests that markets do not immediately and fully impound the implications of structural monetary policy. This could reflect limited attention, the gradual nature of credit transmission, or uncertainty about the implementation of policy guidance.

6.1.3 Pre-Trends and Robustness

An important concern is that high-SMPA firms may be on differential trends prior to MPER announcements. Table 10 examines pre-announcement CARs over four backward-looking windows. The coefficients on SMPA are small, inconsistent in sign, and generally insignificant after accounting for the TIPA control. This supports the interpretation that the announcement and post-announcement effects reflect new information arriving through MPERs rather than pre-existing differential trends.

6.2 Real Effects on Firm Outcomes

We now examine whether the credit expansion and favorable market valuation translate into real economic outcomes. For each outcome variable Y , we estimate cumulative changes scaled by initial assets.

6.2.1 Cash Flow Effects

Table 12 reports results for total revenue and net profit. For total revenue, the SMPA coefficient becomes positive and significant from $h = 2$ onward, reaching 0.66 (s.e. = 0.10) at $h = 12$. Net profit effects follow a similar pattern: SMPA positively predicts profit growth from $h = 4$ onward, with a coefficient of 0.087 (s.e. = 0.020) at $h = 12$.

6.2.2 Balance Sheet and Investment Effects

Table 14 examines capital investment, net worth, leverage, and cash holdings. Capital expenditure responds strongly: the SMPA coefficient on cumulative investment growth reaches 0.78 (s.e. = 0.17) at $h = 12$. Net worth similarly increases (coefficient = 2.94 at $h = 12$, s.e. = 0.31), as do total liabilities (coefficient = 2.18, s.e. = 0.28) and cash holdings (coefficient = 0.88, s.e. = 0.11). These patterns indicate that structural monetary policy exposure is associated with a broad-based expansion of firm balance sheets.

6.2.3 Productivity and Innovation

Does structural monetary policy improve firm efficiency, or does it simply inflate balance sheets? Table 16 reports results for R&D expenditure. SMPA positively predicts R&D spending across all post-announcement windows (coefficients of 0.022–0.024, all significant at the 1% level).

More directly, Table 17 reports results for TFP estimated using the [Levinsohn and Petrin \(2003\)](#) method. SMPA positively predicts TFP in all three post-announcement windows: 0.46 (s.e. = 0.18) in $[t + 4Q, t + 7Q]$, 0.98 (s.e. = 0.20) in $[t + 8Q, t + 11Q]$, and 0.40 (s.e. = 0.21) in $[t + 12Q, t + 15Q]$. These are economically meaningful magnitudes: at the peak, a one-standard-deviation increase in SMPA is associated with a TFP improvement of nearly one percentage point.

6.3 Transmission Mechanism: The Bank Credit Channel

The model predicts that structural monetary policy operates through the financing channel. To test this directly, we interact SMPA with credit growth and examine whether the interaction predicts real outcomes beyond the direct effect of credit expansion. Table 18 reports the results. The interaction term $SMPA \times \Delta Credit$ is positive and significant for capital investment (from $h = 4$), net worth (from $h = 4$), and leverage (at $h = 4$ and $h = 6$). This indicates that the real effects of structural monetary policy are amplified when credit

actually flows. The direct effect of SMPA remains significant in many specifications, suggesting that the policy exposure measure also captures dimensions of policy support, such as implicit guarantees or improved business confidence, that operate beyond the pure credit channel.

7 Misallocation and Bank Asset Quality

The preceding section documented substantial benefits of structural monetary policy. However, the model also predicts that central banking industrial policy can generate costs through excessive entry, misallocation, and deterioration in bank loan quality. We now examine these costs.

7.1 Firm Entry and Competition

The model predicts that entry subsidies (s_0) should draw new firms into targeted sectors. Using data from the State Administration for Market Regulation, we compute industry-level entry rates and regress changes in entry rates on industry-average SMPA.

Table 19 reports the results. Industry-level SMPA positively predicts new firm entry in the two to three years following MPER issuance. The coefficient is 0.36 (s.e. = 0.12) in the $[t + 5Q, t + 8Q]$ window and 0.33 (s.e. = 0.17) in the $[t + 9Q, t + 12Q]$ window. Moving from the 25th to the 75th percentile of industry SMPA is associated with an increase in the entry rate of approximately 35–40% of its mean.

The entry response has two interpretations. On the one hand, entry reflects the intended consequence of industrial policy: lowering barriers for entrepreneurs in strategically important sectors. In a Schumpeterian framework, entry fuels creative destruction and, over time, selects more productive firms. On the other hand, entry subsidies can induce excessive entry when the marginal entrant’s social value is negative. The net welfare effect depends on whether the induced entry is predominantly by high-productivity firms that would otherwise

be credit-constrained or by marginal firms attracted by subsidized financing. Table 20 provides suggestive evidence by examining new firm *growth rates*: the coefficient on industry SMPA is positive and significant at longer horizons, consistent with the selection of better firms over time.

7.2 Misallocation: The Role of Zombie Firms

A key concern with directed credit is that it may flow to inefficient incumbents. We interact SMPA with the fraction of zombie firms in each industry. Table 21 reports the results. The interaction $SMPA \times Ind_Frac_Zombie$ is negative and significant for net worth accumulation (at $h = 6$ and $h = 8$) and cash holdings (at horizons $h = 4$ through $h = 12$). In industries with a high zombie share, the beneficial effects of SMPA on firm balance sheets are substantially attenuated. At $h = 12$, moving from the 25th to the 75th percentile of the zombie share reduces the SMPA effect on net worth by approximately 15%.

This pattern suggests that credit directed through structural monetary policy channels is not perfectly targeted. Some portion flows to firms that survive on subsidized credit despite being fundamentally unprofitable. The level of Ind_Frac_Zombie is consistently negative and significant across all outcome variables, indicating that a higher zombie share also generates negative spillovers for non-zombie firms in the same industry.

7.3 Bank Asset Quality

The most direct evidence of costs comes from the banking sector. If structural monetary policy induces banks to extend credit to riskier borrowers or to relax lending standards, this should manifest in higher non-performing loan (NPL) ratios. We construct a bank-level measure of engagement with industrial policy by counting the frequency of relevant terms in each bank’s annual report.

Table 22 reports regressions of bank NPL ratios on the log frequency of industrial policy mentions. The coefficient is positive and significant across horizons $[t + 4Q, t + 7Q]$ through

$[t + 12Q, t + 15Q]$, ranging from 0.075 to 0.093. A one-unit increase in log mention frequency is associated with a 7–9 basis point increase in the NPL ratio.

Table 23 explores heterogeneity across bank types. The effect is concentrated among city commercial banks (coefficients of 0.09–0.13) and, to a lesser extent, joint-stock banks (coefficients of 0.04–0.07). State-owned banks and rural commercial banks show no significant relationship. This heterogeneity maps cleanly onto the institutional structure of structural monetary policy implementation: city commercial and joint-stock banks are the primary counterparties for PBoC targeted lending facilities and the primary recipients of window guidance, while the large state-owned banks have diversified loan portfolios that dilute the impact of any single directed-lending program.

8 Discussion

Our findings paint a nuanced picture of central banking industrial policy. On the benefit side, structural monetary policy successfully channels credit to targeted firms, lowers financing costs, and enables them to expand investment, revenue, and productivity. On the cost side, we document elevated entry into targeted sectors, some credit leakage to inefficient zombie firms, and rising NPL ratios at the banks most engaged in directed lending.

Whether the benefits outweigh the costs depends on parameters that our empirical analysis can illuminate but not definitively quantify. The model identifies three critical parameters: the magnitude of sectoral spillovers (E), the government’s targeting accuracy (q), and the distortionary cost of public funds (C_g). Our findings speak to each. The strong positive effects of SMPA on TFP and R&D suggest that structural monetary policy does, at least in part, support genuinely productive activities. The fact that these effects persist and strengthen over three years is inconsistent with a pure “subsidy to zombies” narrative. Second, targeting accuracy appears imperfect but not random. The SMPA measure captures meaningful variation in firms’ alignment with policy priorities, yet the zombie-firm results indicate that

some directed credit misses its intended targets. Third, the fiscal costs, as proxied by bank NPLs, are real but modest relative to the scale of credit expansion. A back-of-the-envelope calculation suggests that a one-standard-deviation increase in SMPA is associated with a 7–9 basis point increase in NPL ratios at exposed banks, against a cumulative loan expansion of 59 basis points of assets at exposed firms. Even under conservative assumptions about loss given default, expected credit losses are an order of magnitude smaller than the real output gains.

Our analysis is specific to China’s institutional context. The PBoC’s window guidance mechanism has no close analogue in the monetary policy frameworks of advanced economies, although the ECB’s TLTROs and the Bank of Japan’s growth-sector lending programs represent related forms of structural monetary policy. Our methodological contribution, using text-based measures to quantify firm-level exposure to central bank communications, could be applied in these contexts.

9 Conclusion

This paper provides the first systematic evaluation of industrial policy implemented through central bank structural monetary operations. Using a novel text-based measure of firm-level exposure to the People’s Bank of China’s forward guidance, the Structural Monetary Policy Alignment (SMPA) index, we trace the transmission of structural monetary policy from credit allocation through financial market pricing to real economic outcomes.

Our findings reveal a central tension in credit-based industrial policy. By relaxing financing constraints and providing patient capital, structural monetary policy enables firms to survive temporary setbacks, expand investment, and improve productivity. These benefits are economically significant and persist over multi-year horizons, consistent with a model in which policy-induced experimentation generates real option value. At the same time, the policy induces elevated entry into targeted sectors, some flow of credit to inefficient firms,

and deterioration in bank loan quality. These costs are quantitatively visible in the data.

Our paper makes three contributions. First, we bring the perspective of monetary policy implementation to the evaluation of industrial policy, highlighting the role of central bank instruments as a flexible and empirically tractable channel through which governments direct resources across sectors. Second, we develop a replicable, comparison-based methodology for measuring firm-level exposure to sectoral policy. Whereas existing text-based approaches scan policy documents to identify and classify industrial policy interventions, our method compares central bank communications with firms' own business disclosures to construct a continuous measure of policy alignment that varies across firms, within sectors, and over time. Third, we provide a unified empirical assessment of both benefits and costs of structural credit allocation, documenting the trade-off that our theoretical model identifies.

The resurgence of industrial policy across the global economy makes these questions increasingly urgent. As central banks are called upon to support industrial transformation, the green transition, and supply-chain resilience, understanding the transmission, benefits, and costs of structural monetary policy becomes a first-order task for both research and policy.

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A LDA Topics and Terms

This section provides a brief economic interpretation of each of the nine estimated topics. Figure A1 provides a visualization of top 20 terms for each topic, with the word cloud font proportional to the topic-specific term frequency. Accordingly, the labels assigned are intended to convey the dominant policy narrative that each topic captures; they do not exhaust the substantive content of any single topic.

Topic 1: Coal, Power & Heavy Inputs. This topic captures the PBC narrative around the traditional energy–heavy-industry complex. The four leading terms—coal, electricity, textiles, and energy—jointly identify the cluster of upstream energy inputs and high-energy-intensity downstream users. The co-occurrence of *government*, *green*, and *pillar industry* reflects the policy framing of the legacy heavy-industry sector and its gradual decarbonisation. The topic is most active when the PBC discusses short-run coal-power supply conditions, energy-intensity targets in traditional industries, and the financing of legacy heavy-industry fixed-asset investment.

Topic 2: Domestic Demand & Tertiary Industry. The leading terms *commerce*, *capital*, *consumption*, and *tertiary industry* anchor this topic in the narrative of domestic demand and the expansion of the service sector. The smaller terms (*personal housing*, *housing*, *vacancy*, *cement*, *steel*) tie the topic to the property cycle and to the upstream materials that move with it. The topic captures the demand-side and tertiary-sector leg of structural monetary policy, including re-lending facilities directed at services, consumption, and household credit.

Topic 3: Strategic Resources & Land Markets. This topic combines two clusters that are conceptually fused in Chinese policy discourse: strategic commodities (crude oil, non-ferrous metals, high-energy-consumption materials) and the land market (home purchasing, land transactions, commercial land use). The term *commercial nature* refers to the legal category of commercial-use land, reinforcing the property-allocation reading. The topic is most active when the PBC addresses commodity-import dependence, strategic reserve policy, and the macro-prudential management of land-related credit.

Topic 4: Agriculture & Rural Industrialization. The first six terms are agricultural, but the appearance of *financial services*, *special funds*, *industrialization*, and *infrastructure* in the second

half of the term list reveals the true subject of the topic: rural industrialization supported by specialized financial plumbing. The topic captures the rural-finance leg of structural monetary policy, including targeted re-lending for agricultural modernization, county-level commercial banks, and rural-revitalization lending.

Topic 5: Automotive Industry. The leading terms *automobiles* and *industry chain* anchor the topic. The combination of *green* and *innovation capacity* points to the new-energy-vehicle dimension. The topic captures the canonical automotive engine framing of Chinese industrial policy, including targeted credit for NEV supply chains.

Topic 6: Electronics & Equipment Manufacturing. The leading terms *manufacturing*, *electronics*, *services*, *equipment*, *industry chain*, and *machinery* identify the electronics and capital-goods manufacturing cluster. The topic’s high attention in 2018Q3–Q4 aligns with the U.S. export controls on Chinese semiconductor firms, illustrating the topic’s role as a high-frequency sensor of strategic technology shocks.

Topic 7: Infrastructure & Public Utilities. The leading terms *railways*, *transportation*, *infrastructure*, and *facilities* identify the asset side of the topic, and smaller terms *investment and financing*, *special funds*, *banking industry*, and *financial services* also cover the financing side. The topic captures the infrastructure-finance leg of structural monetary policy, including policy-bank lending, local-government financing-vehicle refinancing, and PPP-related structural instruments.

Topic 8: Steel & Ferrous Metals. The first three terms (*steel industry*, *steel products*, *steel enterprises*) unambiguously identify the steel sector. The smaller terms (*black metals*, *chemicals*, *processing industry*) extend the topic to the broader ferrous-metals complex. The presence of *structural* and *concentration* reflects the post-2016 supply-side reform and capacity-consolidation framing of the sector.

Topic 9: Hydrocarbons & Imported Energy. The leading terms *oil*, *consumption*, *processing industry*, *imports*, and *natural gas* identify the hydrocarbons cluster, with *nuclear fuel* and *coking* extending the topic to the broader imported-energy complex. The high weight on *dependence* in the term list reflects the policy framing of external energy dependence and the management of energy-supply security. The clean separation between this topic and Topic 1 (coal-fired domestic energy) is a useful diagnostic: LDA correctly distinguishes the self-reliance narrative around coal-fired power

from the dependence narrative around imported hydrocarbons.



Figure A1: Word Cloud. This figure presents word clouds for the topics estimated from MYER text issued between 2010 and 2022. The topics are identified using LDA. Each word cloud displays the 20 most representative words for a given topic, with larger words indicating higher estimated topic-word importance.

B Variable Definitions

Variable	Definition
<i>Topic</i>	The Kullback-Leibler (KL) divergence is calculated as the topic distribution between the “Industry Analysis” section of Monetary Policy Execution Reports (MPERs) and the “Management Discussion and Analysis” section of annual reports by employing Latent Dirichlet Allocation (LDA) topic model.
<i>Context</i>	The cosine similarity is calculated between the “Industry Analysis” section of Monetary Policy Execution Reports (MPERs) and the “Management Discussion and Analysis” section of annual reports by using the Word2Vec model.
<i>SMPA</i>	The composite measure for firms’ exposure to SMP shocks by standardizing the first principal component (PC) of <i>Topic</i> and <i>Context</i> .
<i>TIPA</i>	The firms’ exposure to traditional industrial policies by standardizing the first PC of KL divergence for topic modeling and cosine similarity for context modeling of “Management Discussion and Analysis” section of annual reports and Government Work Reports.
<i>Size</i>	The natural logarithm of the total market value.
<i>Leverage</i>	Total assets divided by total liabilities.
<i>Subsidy</i>	The government subsidies divided by total assets.
<i>Age</i>	The natural logarithm of the firm’s age.
<i>MB</i>	The ratio of the market value of a firm’s equity to its book value of equity.
<i>Fiscal_Stress</i>	Defined as the ratio of a region’s general budget balance to its total revenue, computed as $(\text{Revenue} - \text{Expenditure})/\text{Revenue}$, capturing the relative fiscal pressure of the local government.
<i>Current Ratio</i>	Current assets divided by current liabilities.
<i>PE Ratio</i>	Net profit divided by the total number of shares.

<i>ROE</i>	Net profit divided by shareholders' equity.
<i>Liquidity</i>	The Amihud illiquidity ratio is calculated as the average ratio of absolute stock return to trading volume.
<i>Turnover</i>	The proportion of a company's outstanding shares that are traded.
<i>Cost of Debt Financing</i>	The cost of debt financing is the ratio of interest expenses to total liabilities.
<i>Bank Credit</i>	Cumulative change in the sum of long-term loans and short-term loans, expressed as a fraction of initial total assets.
<i>Capital Investment</i>	Cumulative change in total fixed capital, expressed as a fraction of initial total assets.
<i>Cash Holding</i>	Cumulative change in cash holding, expressed as a fraction of initial total assets.
<i>Net worth</i>	Cumulative change in net worth (ATQ - LTQ), expressed as a fraction of initial total assets.
<i>Net Profits</i>	Cumulative change in net profit, expressed as a fraction of initial total assets.
<i>Total Revenue</i>	Cumulative change in total revenue, expressed as a fraction of initial total assets.
<i>Ind_Frac_Zombie</i>	The fraction of zombie firms in each industry in a given quarter.

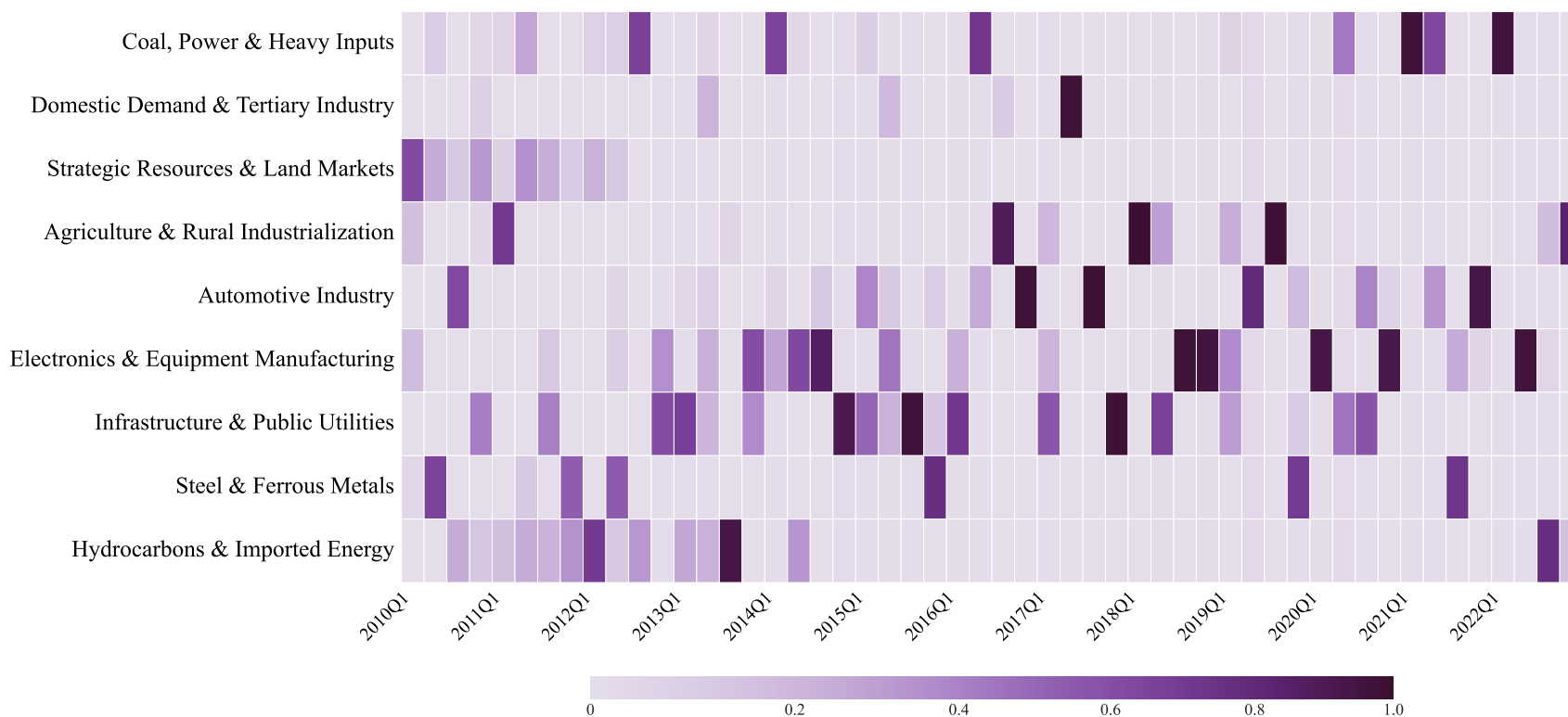


Figure 1: MPER Text Allocated to Each Topic. This figure plots the estimated topic proportions from the MYER text from 2010 to 2022. Rows correspond to the nine topics identified by the topic model, and columns correspond to report dates. Cell shading represents the estimated probability assigned to each topic in a given report, with darker cells indicating higher topic proportions.

Table 1: Summary Statistics.

This table reports summary statistics for balance sheet variables. *Topic* is the Kullback-Leibler (KL) calculated divergence using the Latent Dirichlet Allocation (LDA) topic model. *Context* is the cosine similarity calculated using the Word2Vec model. *SMPA* conducts principal component analysis (PCA) on *Topic* and *Context* to extract the first principal component, followed by the standardization of the results.

	Observations	Mean	SD	Min	P25	Median	P75	Max
<i>Topic</i>	131,224	0.000	1.000	-1.989	-0.892	-0.146	0.893	1.944
<i>Context</i>	131,224	0.000	1.000	-4.090	-0.682	0.002	0.664	6.086
<i>SMPA</i>	131,224	0.000	1.000	-3.797	-0.717	-0.051	0.679	5.085
<i>TIPA</i>	131,224	-0.020	1.025	-2.106	-0.775	-0.035	0.699	2.290
<i>Size</i>	131,224	22.585	0.983	20.902	21.872	22.424	23.138	25.659
<i>Age</i>	131,224	2.185	0.760	0.693	1.609	2.303	2.833	3.332
<i>MB</i>	131,224	2.606	1.945	0.837	1.384	1.980	3.064	12.097
<i>Leverage</i>	131,224	0.418	0.208	0.049	0.251	0.409	0.569	0.934
<i>Subsidy</i>	131,224	0.508	0.570	0.000	0.150	0.339	0.646	3.390
<i>PE</i>	131,224	0.131	0.422	-1.112	0.022	0.054	0.133	2.815
<i>Cur_Ratio</i>	131,224	2.587	2.807	0.306	1.140	1.667	2.826	18.112
<i>Fiscal_Stress</i>	131,224	0.762	0.708	0.080	0.294	0.448	1.199	3.728
<i>ROE</i>	127,204	0.041	0.078	-0.350	0.011	0.035	0.073	0.283
<i>Liquidity</i>	127,204	0.049	0.057	0.002	0.014	0.030	0.060	0.356
<i>Turnover</i>	127,204	0.083	0.230	-0.184	-0.062	0.011	0.146	1.122

Table 2: The Effect of *Topic* and *Context* on Bank Loans.

This table examines the effects of *Topic* and *Context* on firms' bank credit financing. The dependent variable is the cumulative change in bank loans scaled by initial total assets, defined as $(Loan_{i,t+x} - Loan_{i,t-1})/Assets_{i,t-1}$. Panel A includes *Topic* only, Panel B includes *Context* only, and Panel C includes both variables simultaneously. All regressions include firm and quarter fixed effects. Standard errors are clustered at the firm level and reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
Panel A: Topic Only						
<i>Topic</i>	0.017	0.028	0.050	0.131***	0.216***	0.338***
	(0.016)	(0.021)	(0.032)	(0.046)	(0.061)	(0.094)
<i>TIPA</i>	-0.061**	-0.083**	-0.047	-0.026	-0.093	-0.136
	(0.026)	(0.039)	(0.065)	(0.096)	(0.131)	(0.208)
<i>Size</i>	0.290***	0.256***	-0.303*	-1.670***	-4.201***	-12.084***
	(0.061)	(0.095)	(0.176)	(0.282)	(0.431)	(0.833)
<i>Age</i>	-0.523***	-0.722***	-0.951***	-0.810*	-0.635	0.769
	(0.111)	(0.174)	(0.310)	(0.482)	(0.705)	(1.271)
<i>MB</i>	0.252***	0.457***	1.039***	1.861***	2.931***	5.678***
	(0.022)	(0.035)	(0.068)	(0.110)	(0.166)	(0.311)
<i>Subsidy</i>	0.471***	0.723***	1.194***	1.697***	2.023***	2.279***
	(0.067)	(0.106)	(0.171)	(0.228)	(0.293)	(0.441)
<i>PE</i>	0.122***	0.204***	0.199**	0.302**	0.137	-0.163
	(0.041)	(0.057)	(0.095)	(0.131)	(0.185)	(0.281)
<i>Cur_Ratio</i>	0.069***	0.145***	0.328***	0.563***	0.788***	1.197***
	(0.011)	(0.018)	(0.035)	(0.056)	(0.079)	(0.121)
<i>Fiscal_Stress</i>	0.258*	0.409*	0.448	0.590	1.035	1.744
	(0.139)	(0.228)	(0.390)	(0.600)	(0.874)	(1.404)
<i>Constant</i>	-5.715***	-4.942**	7.142*	35.952***	90.430***	259.926***
	(1.368)	(2.126)	(3.906)	(6.213)	(9.392)	(17.851)
Observations	131,223	131,222	127,522	120,128	112,734	98,335
R-squared	0.083	0.110	0.168	0.227	0.281	0.387

Panel B: Context Only

<i>Context</i>	0.035 (0.027)	0.093** (0.038)	0.153** (0.062)	0.210** (0.089)	0.334*** (0.121)	0.740*** (0.197)
<i>TIPA</i>	-0.061** (0.026)	-0.082** (0.039)	-0.046 (0.065)	-0.022 (0.096)	-0.090 (0.131)	-0.139 (0.208)
<i>Size</i>	0.289*** (0.061)	0.253*** (0.095)	-0.309* (0.175)	-1.680*** (0.282)	-4.214*** (0.431)	-12.108*** (0.833)
<i>Age</i>	-0.526*** (0.111)	-0.729*** (0.174)	-0.960*** (0.310)	-0.825* (0.482)	-0.642 (0.705)	0.767 (1.271)
<i>MB</i>	0.251*** (0.022)	0.456*** (0.035)	1.037*** (0.068)	1.857*** (0.110)	2.926*** (0.166)	5.675*** (0.310)
<i>Subsidy</i>	0.471*** (0.067)	0.724*** (0.106)	1.196*** (0.171)	1.700*** (0.228)	2.029*** (0.293)	2.291*** (0.441)
<i>PE</i>	0.122*** (0.041)	0.203*** (0.057)	0.198** (0.095)	0.299** (0.131)	0.132 (0.185)	-0.170 (0.281)
<i>Cur_Ratio</i>	0.069*** (0.011)	0.145*** (0.018)	0.328*** (0.035)	0.563*** (0.056)	0.789*** (0.079)	1.199*** (0.120)
<i>Fiscal_Stress</i>	0.255* (0.139)	0.400* (0.228)	0.433 (0.390)	0.566 (0.599)	0.997 (0.872)	1.662 (1.401)
<i>Constant</i>	-5.675*** (1.368)	-4.846** (2.126)	7.305* (3.903)	36.237*** (6.212)	90.806*** (9.395)	260.674*** (17.854)
Observations	131,223	131,222	127,522	120,128	112,734	98,335
R-squared	0.083	0.110	0.168	0.227	0.281	0.387

Panel C: Topic and Context

<i>Topic</i>	0.015 (0.016)	0.020 (0.022)	0.038 (0.033)	0.116** (0.047)	0.191*** (0.061)	0.276*** (0.096)
<i>Context</i>	0.032 (0.028)	0.089** (0.039)	0.145** (0.063)	0.188** (0.090)	0.295** (0.122)	0.680*** (0.200)
<i>TIPA</i>	-0.061** (0.026)	-0.083** (0.039)	-0.047 (0.065)	-0.026 (0.096)	-0.094 (0.131)	-0.149 (0.208)
<i>Size</i>	0.289*** (0.061)	0.254*** (0.095)	-0.307* (0.176)	-1.676*** (0.282)	-4.209*** (0.431)	-12.101*** (0.833)
<i>Age</i>	-0.526*** (0.111)	-0.728*** (0.174)	-0.959*** (0.310)	-0.817* (0.482)	-0.635 (0.705)	0.765 (1.271)

	(0.111)	(0.174)	(0.310)	(0.482)	(0.705)	(1.271)
<i>MB</i>	0.251***	0.457***	1.038***	1.859***	2.929***	5.678***
	(0.022)	(0.035)	(0.068)	(0.110)	(0.166)	(0.310)
<i>Subsidy</i>	0.471***	0.724***	1.196***	1.699***	2.026***	2.287***
	(0.067)	(0.106)	(0.171)	(0.228)	(0.293)	(0.441)
<i>PE</i>	0.122***	0.204***	0.198**	0.301**	0.135	-0.165
	(0.041)	(0.057)	(0.095)	(0.131)	(0.185)	(0.281)
<i>Cur_Ratio</i>	0.069***	0.145***	0.328***	0.562***	0.788***	1.197***
	(0.011)	(0.018)	(0.035)	(0.056)	(0.079)	(0.121)
<i>Fiscal_Stress</i>	0.256*	0.401*	0.434	0.569	1.000	1.659
	(0.139)	(0.228)	(0.390)	(0.599)	(0.873)	(1.402)
<i>Constant</i>	-5.686***	-4.863**	7.271*	36.142***	90.677***	260.502***
	(1.369)	(2.127)	(3.905)	(6.216)	(9.397)	(17.854)
Observations	131,215	131,214	127,515	120,123	112,731	98,335
R-squared	0.083	0.110	0.168	0.227	0.281	0.387
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES

Table 3: The Effect of *SMPA* on Bank Loans.

This table shows how *SMPA* affects firms' bank credit financing. We examine the effects on firms' bank loans using cumulative changes relative to initial total assets. Specifically, we calculate $(Loan_{i,t+x} - Loan_{i,t-1})/Assets_{i,t-1}$ for dependent variable, representing the cumulative percentage change with respect to the initial value. Regressions include firm and quarter fixed effects, with standard errors clustered at the firm level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
<i>SMPA</i>	0.029 (0.019)	0.061** (0.026)	0.105*** (0.040)	0.203*** (0.058)	0.327*** (0.077)	0.592*** (0.119)
<i>TIPA</i>	-0.062** (0.026)	-0.084** (0.039)	-0.049 (0.065)	-0.027 (0.096)	-0.095 (0.131)	-0.148 (0.208)
<i>Size</i>	0.290*** (0.061)	0.255*** (0.095)	-0.305* (0.176)	-1.674*** (0.282)	-4.207*** (0.431)	-12.092*** (0.833)
<i>Age</i>	-0.525*** (0.111)	-0.724*** (0.174)	-0.955*** (0.310)	-0.814* (0.482)	-0.634 (0.705)	0.766 (1.271)
<i>MB</i>	0.251*** (0.022)	0.457*** (0.035)	1.039*** (0.068)	1.860*** (0.110)	2.930*** (0.166)	5.679*** (0.311)
<i>Subsidy</i>	0.471*** (0.067)	0.723*** (0.106)	1.194*** (0.171)	1.698*** (0.228)	2.025*** (0.293)	2.282*** (0.441)
<i>PE</i>	0.122*** (0.041)	0.204*** (0.057)	0.199** (0.095)	0.301** (0.131)	0.136 (0.185)	-0.163 (0.281)
<i>Cur_Ratio</i>	0.069*** (0.011)	0.145*** (0.018)	0.328*** (0.035)	0.562*** (0.056)	0.787*** (0.079)	1.196*** (0.121)
<i>Fiscal_Stress</i>	0.257* (0.139)	0.405* (0.228)	0.441 (0.390)	0.574 (0.600)	1.008 (0.873)	1.690 (1.404)
<i>Constant</i>	-5.700*** (1.368)	-4.916** (2.125)	7.185* (3.905)	36.080*** (6.211)	90.603*** (9.390)	260.222*** (17.849)
Observations	131,215	131,214	127,515	120,123	112,731	98,335
R-squared	0.083	0.110	0.168	0.227	0.281	0.387
Firm FE	YES	YES	YES	YES	YES	YES

Quarter FE	YES	YES	YES	YES	YES	YES
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Table 4: Ownership Heterogeneity.

This table reports the effect of *SMPA* on bank credit financing with different ownership. We examine the effects on firms' bank loans using cumulative changes relative to initial total assets. Specifically, we calculate $(Loan_{i,t+x} - Loan_{i,t-1})/Assets_{i,t-1}$ for dependent variable, representing the cumulative percentage change with respect to the initial value. Panel A reports results for central state-owned enterprises, Panel B for local state-owned enterprises, and Panel C for non-state-owned enterprises. Regressions include firm and quarter fixed effects, with standard errors clustered at the firm level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
Panel A: Central SOEs						
<i>SMPA</i>	-0.046	-0.017	-0.033	0.000	-0.007	0.014
	(0.052)	(0.069)	(0.105)	(0.164)	(0.236)	(0.353)
Observations	16,751	16,750	16,385	15,658	14,930	13,481
R-squared	0.065	0.081	0.117	0.154	0.194	0.284
Panel B: Local SOEs						
<i>SMPA</i>	0.073*	0.095*	0.185**	0.329***	0.428***	0.553**
	(0.039)	(0.053)	(0.082)	(0.115)	(0.153)	(0.235)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.063	0.084	0.131	0.184	0.240	0.360
Panel C: Non-SOEs						
<i>SMPA</i>	0.020	0.050	0.082	0.173**	0.312***	0.645***
	(0.024)	(0.032)	(0.051)	(0.074)	(0.097)	(0.150)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.098	0.131	0.200	0.266	0.324	0.433
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Table 5: Credit Limits and Heterogeneity.

This table shows how *SMPA* affects firms' bank credit limits and ownership heterogeneity. We examine the effects on firms' bank credit limits using cumulative changes relative to initial total assets. Specifically, we calculate $(Credit_{i,t+x} - Credit_{i,t-1})/Assets_{i,t-1}$ for dependent variable, representing the cumulative percentage change with respect to the initial value. Regressions include firm and quarter fixed effects, with standard errors clustered at the firm level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
Panel A: All firms						
<i>SMPA</i>	-0.012	0.022	0.126	0.312*	0.500**	1.001***
	(0.071)	(0.094)	(0.141)	(0.183)	(0.236)	(0.375)
Observations	56,579	56,579	55,179	52,379	49,579	44,105
R-squared	0.074	0.106	0.165	0.222	0.272	0.354
Panel B: Central SOEs						
<i>SMPA</i>	-0.038	0.011	-0.348	0.039	-0.129	0.052
	(0.202)	(0.282)	(0.422)	(0.514)	(0.657)	(0.935)
Observations	8,688	8,688	8,505	8,139	7,773	7,045
R-squared	0.060	0.086	0.139	0.184	0.221	0.278
Panel C: Local SOEs						
<i>SMPA</i>	-0.084	-0.133	0.109	-0.037	0.066	0.373
	(0.141)	(0.183)	(0.272)	(0.363)	(0.466)	(0.693)
Observations	18,342	18,342	17,955	17,181	16,407	14,867
R-squared	0.079	0.109	0.175	0.237	0.294	0.391
Panel D: Non-SOEs						
<i>SMPA</i>	0.074	0.139	0.326*	0.575**	0.822***	1.457***
	(0.089)	(0.114)	(0.175)	(0.226)	(0.288)	(0.497)
Observations	29,549	29,549	28,719	27,059	25,399	22,193
R-squared	0.084	0.120	0.183	0.245	0.294	0.381
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES

Controls	YES	YES	YES	YES	YES	YES
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Table 6: The Effect of *SMPA* on the Cost of Debt.

This table reports the effect of *SMPA* on firms' cost of debt financing. The dependent variable is the ratio of interest expense to total debt as extracted from annual reports. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
	[t, t+3Q]	[t+4Q, t+7Q]	[t+8Q, t+11Q]
<i>SMPA</i>	-0.008*** (0.001)	-0.010*** (0.004)	-0.015*** (0.004)
<i>TIPA</i>	0.002 (0.002)	0.024*** (0.007)	0.016** (0.007)
<i>Size</i>	-0.149*** (0.014)	0.007 (0.025)	0.101*** (0.025)
<i>Age</i>	-0.001 (0.016)	0.371*** (0.044)	0.359*** (0.047)
<i>MB</i>	-0.011* (0.006)	-0.081*** (0.008)	-0.061*** (0.008)
<i>Subsidy</i>	-0.001 (0.009)	0.013 (0.016)	0.030* (0.017)
<i>PE</i>	-0.028*** (0.004)	0.013 (0.009)	0.014 (0.010)
<i>Cur_Ratio</i>	-0.001 (0.002)	-0.097*** (0.005)	-0.054*** (0.006)
<i>Fiscal_Stress</i>	-0.024 (0.023)	0.095 (0.060)	0.061 (0.061)
<i>Constant</i>	2.915*** (0.308)	1.265** (0.540)	-0.963* (0.542)
Observations	131,216	127,519	112,731
R-squared	0.501	0.651	0.652
Firm FE	YES	YES	YES
Quarter FE	YES	YES	YES

Table 7: Stock Market Reactions to SMP Shocks.

This table presents the impact of *SMPA* on stock returns on the days when the PBoC issued MPERs. The dependent variable is cumulative abnormal return and is indicated under each column heading. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CAR[-1, 1]	CAR[-1, 1]	CAR[-1, 1]	CAR[-1, 1]	CAR[-1, 1]	CAR[-1, 1]	CAR[-1, 1]	CAR[-1, 1]
<i>Topic</i>	0.032*** (0.012)	0.034*** (0.012)			0.024** (0.012)	0.026** (0.012)		
<i>Context</i>			0.096*** (0.019)	0.091*** (0.019)	0.091*** (0.019)	0.085*** (0.019)		
<i>SMPA</i>							0.066*** (0.014)	0.065*** (0.014)
<i>TIPA</i>		0.015 (0.014)		0.017 (0.014)		0.015 (0.014)		0.014 (0.014)
<i>Size</i>		0.326*** (0.031)		0.322*** (0.031)		0.323*** (0.031)		0.325*** (0.031)
<i>Age</i>		0.114** (0.058)		0.106* (0.058)		0.108* (0.058)		0.112* (0.058)
<i>Leverage</i>		-0.066 (0.114)		-0.064 (0.114)		-0.063 (0.114)		-0.064 (0.114)
<i>ROE</i>		-0.433** (0.181)		-0.438** (0.181)		-0.436** (0.181)		-0.434** (0.181)
<i>Subsidy</i>		0.007		0.008		0.007		0.007

Table 8: Long-horizon Drift.

This table presents the impact of *SMPA* on stock returns drift over long horizons. The dependent variable is cumulative abnormal return and is indicated under each column heading. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	CAR[2, 63]	CAR[2, 126]	CAR[2, 252]	CAR[2, 378]
<i>SMPA</i>	-0.090 (0.065)	1.257*** (0.090)	1.854*** (0.124)	2.626*** (0.156)
<i>TIPA</i>	0.167** (0.069)	-0.028 (0.121)	-0.666*** (0.198)	-1.731*** (0.250)
<i>Size</i>	-8.860*** (0.225)	-16.050*** (0.390)	-28.887*** (0.656)	-38.499*** (0.872)
<i>Age</i>	-0.594* (0.319)	-1.483*** (0.566)	-4.570*** (1.003)	-7.801*** (1.373)
<i>Leverage</i>	0.567 (0.688)	1.327 (1.201)	-1.617 (2.066)	-5.628** (2.780)
<i>ROE</i>	10.299*** (0.997)	11.977*** (1.494)	11.665*** (2.235)	13.796*** (2.664)
<i>Subsidy</i>	-0.401** (0.163)	-0.486* (0.288)	-0.364 (0.484)	0.219 (0.633)
<i>Liquidity</i>	8.286*** (1.403)	17.990*** (2.089)	26.296*** (3.164)	28.155*** (3.959)
<i>PE</i>	-0.128 (0.138)	-0.556*** (0.191)	-0.957*** (0.257)	-1.306*** (0.299)
<i>Turnover</i>	-4.040*** (0.318)	-4.925*** (0.491)	-7.265*** (0.716)	-6.710*** (0.870)
<i>Constant</i>	197.991*** (5.069)	358.430*** (8.781)	650.311*** (14.824)	869.251*** (19.707)
Observations	127,204	127,204	123,508	116,122
R-squared	0.139	0.195	0.293	0.379
Firm FE	YES	YES	YES	YES

Quarter FE	YES	YES	YES	YES
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Table 9: Heterogeneity in Drift.

This table presents the impact of *SMPA* on stock returns, examining variations across equity ownership. The dependent variable is cumulative abnormal return and is indicated under each column heading. Panel A reports results for central state-owned enterprises, Panel B for local state-owned enterprises, and Panel C for non-state-owned enterprises. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)
	CAR[-1, 1]	CAR[2, 63]	CAR[2, 126]	CAR[2, 252]	CAR[2, 378]
Panel A: Central SOEs					
<i>SMPA</i>	0.002	-0.008	0.952***	1.754***	1.897***
	(0.035)	(0.165)	(0.244)	(0.321)	(0.370)
Observations	16,306	16,306	16,306	15,940	15,212
R-squared	0.121	0.129	0.190	0.270	0.340
Panel B: Local SOEs					
<i>SMPA</i>	0.117***	-0.003	0.722***	1.430***	1.902***
	(0.026)	(0.111)	(0.154)	(0.215)	(0.249)
Observations	32,485	32,485	32,485	31,746	30,269
R-squared	0.116	0.148	0.202	0.288	0.359
Panel C: Non-SOEs					
<i>SMPA</i>	0.057***	0.002	1.460***	1.959***	2.928***
	(0.019)	(0.089)	(0.124)	(0.172)	(0.227)
Observations	78,413	78,413	78,413	75,822	70,641
R-squared	0.137	0.159	0.213	0.313	0.402
Firm FE	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES

Table 10: Pre-Trends.

This table presents the impact of *SMPA* on stock returns before SMP shocks. The dependent variable is cumulative abnormal return and is indicated under each column heading. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	CAR[-252, -189]	CAR[-189, -126]	CAR[-126, -63]	CAR[-63, -2]
Panel A: MYERs of Q1, Q2, Q3, and Q4				
<i>SMPA</i>	0.024	0.469***	-0.125**	0.635***
	(0.066)	(0.065)	(0.059)	(0.066)
Observations	119,874	122,977	125,403	127,173
R-squared	0.132	0.132	0.206	0.170
Panel B: MYERs of Q1 and Q2				
<i>SMPA</i>	-0.636***	0.078	0.246***	1.134***
	(0.099)	(0.095)	(0.089)	(0.100)
Observations	58,012	59,249	61,534	63,287
R-squared	0.165	0.190	0.247	0.189
Panel C: MYERs of Q3 and Q4				
<i>SMPA</i>	0.424***	0.799***	-0.376***	0.143*
	(0.091)	(0.098)	(0.082)	(0.085)
Observations	61,861	63,728	63,869	63,886
R-squared	0.170	0.134	0.223	0.212
Panel D: MYERs of Q1 and Q2 Dummy				
<i>SMPA * Q1Q2</i>	-0.429***	-0.542***	0.038	1.219***
	(0.122)	(0.126)	(0.110)	(0.115)
<i>SMPA</i>	0.206**	0.699***	-0.141*	0.099
	(0.084)	(0.087)	(0.075)	(0.079)
Observations	119,874	122,977	125,403	127,173
R-squared	0.132	0.132	0.206	0.171
Panel E: MYERs of Q3 and Q4 Dummy				
<i>SMPA * Q3Q4</i>	0.429***	0.542***	-0.038	-1.219***
	(0.122)	(0.126)	(0.110)	(0.115)

<i>SMPA</i>	-0.223**	0.158*	-0.103	1.318***
	(0.097)	(0.095)	(0.086)	(0.096)
Observations	119,874	122,977	125,403	127,173
R-squared	0.132	0.132	0.206	0.171
Firm FE	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES
Controls	YES	YES	YES	YES

Table 11: Robustness.

This table presents robustness checks for the impact of SMP shocks on stock returns. Columns (1)–(3) report results using alternative event windows. Columns (4)–(7) report results using the sample that includes real estate firms. Columns (8)–(11) report results after excluding Q4 MYERs. The dependent variable is cumulative abnormal return and is indicated under each column heading. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

[illegible]

Table 12: Cash Flow Effects.

This table shows how *SMPA* affects firms' cash flow. We examine the effects on firms' total revenue and net profit using cumulative changes relative to initial total assets. Specifically, we calculate $(Y_{i,t+x} - Y_{i,t-1})/Assets_{i,t-1}$ for all variables, representing the cumulative percentage change with respect to the initial value. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t,t+1Q]	[t,t+2Q]	[t,t+4Q]	[t,t+6Q]	[t,t+8Q]	[t,t+12Q]
Panel A: Growth in Total Revenue						
(Cum. Change in Total Revenue over Assets)						
<i>SMPA</i>	-0.031 (0.023)	0.148*** (0.025)	0.242*** (0.037)	0.458*** (0.049)	0.529*** (0.066)	0.662*** (0.104)
<i>TIPA</i>	-0.060*** (0.020)	-0.091*** (0.030)	-0.129*** (0.049)	-0.208*** (0.075)	-0.310*** (0.107)	-0.116 (0.172)
<i>Size</i>	-0.836*** (0.059)	-1.502*** (0.087)	-3.441*** (0.155)	-6.298*** (0.251)	-10.076*** (0.382)	-19.353*** (0.720)
<i>Age</i>	0.070 (0.088)	0.138 (0.132)	0.180 (0.240)	0.631 (0.393)	0.875 (0.594)	2.149** (1.065)
<i>MB</i>	0.577*** (0.026)	0.903*** (0.039)	1.627*** (0.066)	2.575*** (0.107)	3.689*** (0.159)	6.167*** (0.289)
<i>Subsidy</i>	0.713*** (0.060)	0.981*** (0.094)	1.345*** (0.156)	1.759*** (0.222)	1.940*** (0.287)	1.700*** (0.400)
<i>PE</i>	0.112* (0.062)	0.152* (0.090)	0.194** (0.096)	0.291* (0.158)	0.236 (0.196)	0.150 (0.297)
<i>Cur_Ratio</i>	0.078*** (0.013)	0.108*** (0.018)	0.158*** (0.031)	0.278*** (0.049)	0.380*** (0.072)	0.623*** (0.124)
<i>Fiscal_Stress</i>	0.399*** (0.114)	0.659*** (0.178)	0.958*** (0.315)	1.141** (0.529)	1.480* (0.774)	0.660 (1.287)
<i>Constant</i>	17.436*** (1.304)	31.631*** (1.931)	74.222*** (3.454)	136.093*** (5.562)	219.068*** (8.446)	422.930*** (15.826)
Observations	131,215	131,214	127,515	120,123	112,731	98,335

R-squared	0.139	0.194	0.229	0.287	0.336	0.445
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Panel B: Growth in Net Profit
(Cum. Change in Net Profit over Assets)

<i>SMPA</i>	-0.011 (0.009)	0.013 (0.009)	0.032*** (0.011)	0.098*** (0.013)	0.086*** (0.015)	0.087*** (0.020)
<i>TIPA</i>	-0.021*** (0.006)	-0.026*** (0.008)	-0.031** (0.012)	-0.060*** (0.015)	-0.070*** (0.019)	0.052** (0.025)
<i>Size</i>	-0.547*** (0.020)	-0.800*** (0.028)	-1.281*** (0.040)	-1.846*** (0.055)	-2.382*** (0.069)	-3.475*** (0.108)
<i>Age</i>	0.208*** (0.026)	0.278*** (0.033)	0.289*** (0.050)	0.404*** (0.072)	0.421*** (0.094)	0.597*** (0.140)
<i>MB</i>	0.220*** (0.010)	0.275*** (0.013)	0.373*** (0.018)	0.467*** (0.024)	0.569*** (0.029)	0.710*** (0.040)
<i>Subsidy</i>	0.359*** (0.026)	0.381*** (0.033)	0.229*** (0.040)	0.270*** (0.047)	0.237*** (0.049)	0.184*** (0.065)
<i>PE</i>	-0.150*** (0.023)	-0.142*** (0.028)	-0.134*** (0.031)	-0.161*** (0.041)	-0.085** (0.040)	-0.037 (0.045)
<i>Cur_Ratio</i>	-0.011** (0.005)	-0.011** (0.005)	-0.018** (0.008)	-0.006 (0.010)	-0.008 (0.013)	0.014 (0.018)
<i>Fiscal_Stress</i>	0.063 (0.052)	0.098 (0.061)	0.123 (0.086)	0.189 (0.128)	0.156 (0.150)	-0.135 (0.188)
<i>Constant</i>	11.269*** (0.442)	16.687*** (0.607)	27.404*** (0.871)	39.674*** (1.204)	51.602*** (1.508)	75.893*** (2.346)
Observations	131,215	131,214	127,515	120,123	112,731	98,335
R-squared	0.065	0.064	0.093	0.128	0.173	0.243
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES

Table 13: Ownership Heterogeneity of Cash Flow Effects.

This table reports ownership heterogeneity in the effect of *SMPA* on firms' cash flow. Panel A reports results for total revenue, and Panel B reports results for net profit. The dependent variable is the cumulative change in the corresponding outcome relative to initial total assets, calculated as $(Y_{i,t+x} - Y_{i,t-1})/Assets_{i,t-1}$. Within each panel, results are separately reported for central state-owned enterprises, local state-owned enterprises, and non-state-owned enterprises. Regressions include firm and quarter fixed effects, with standard errors clustered at the firm level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t,t+1Q]	[t,t+2Q]	[t,t+4Q]	[t,t+6Q]	[t,t+8Q]	[t,t+12Q]
Panel A: Total Revenue						
<i>Central SOEs</i>						
<i>SMPA</i>	-0.085 (0.068)	0.253*** (0.078)	0.529*** (0.116)	0.681*** (0.134)	0.813*** (0.206)	0.679** (0.300)
Observations	16,751	16,750	16,385	15,658	14,930	13,481
R-squared	0.171	0.238	0.234	0.261	0.284	0.351
<i>Local SOEs</i>						
<i>SMPA</i>	-0.066 (0.049)	0.141*** (0.054)	0.138* (0.076)	0.368*** (0.097)	0.405*** (0.125)	0.339* (0.177)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.098	0.150	0.198	0.262	0.314	0.430
<i>Non-SOEs</i>						
<i>SMPA</i>	0.006 (0.028)	0.137*** (0.031)	0.228*** (0.046)	0.434*** (0.064)	0.480*** (0.084)	0.690*** (0.141)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.160	0.215	0.254	0.316	0.371	0.483
Panel B: Net Profit						
<i>Central SOEs</i>						
<i>SMPA</i>	-0.047** (0.019)	-0.008 (0.020)	0.043* (0.026)	0.085*** (0.027)	0.067** (0.033)	0.057 (0.040)
Observations	16,751	16,750	16,385	15,658	14,930	13,481
R-squared	0.042	0.057	0.081	0.101	0.131	0.187

<i>Local SOEs</i>						
<i>SMPA</i>	0.011	0.047***	0.053***	0.106***	0.102***	0.075***
	(0.015)	(0.014)	(0.018)	(0.019)	(0.022)	(0.029)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.060	0.060	0.079	0.111	0.143	0.197
<i>Non-SOEs</i>						
<i>SMPA</i>	-0.016	-0.011	0.008	0.069***	0.057**	0.071**
	(0.013)	(0.013)	(0.016)	(0.020)	(0.023)	(0.033)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.078	0.074	0.107	0.146	0.196	0.271
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Table 14: Balance Sheet Effects.

This table shows how *SMPA* affects firms' balance sheet conditions and real outcomes. We examine the effects on firms' capital investment, net worth, total liabilities, and cash holding using cumulative changes relative to initial total assets. Specifically, we calculate $(Y_{i,t+x} - Y_{i,t-1})/Assets_{i,t-1}$ for all variables, representing the cumulative percentage change with respect to the initial value. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
Panel A: Capital Investment						
(Cum. Change in Capital Expenditure over Assets)						
<i>SMPA</i>	-0.009 (0.017)	0.011 (0.025)	0.073 (0.045)	0.226*** (0.070)	0.383*** (0.098)	0.783*** (0.167)
<i>TIPA</i>	-0.024 (0.025)	-0.057 (0.041)	-0.101 (0.076)	-0.082 (0.120)	-0.066 (0.171)	-0.249 (0.288)
<i>Size</i>	0.457*** (0.069)	0.301*** (0.113)	-0.964*** (0.226)	-3.684*** (0.376)	-7.892*** (0.579)	-21.314*** (1.222)
<i>Age</i>	-1.470*** (0.121)	-1.941*** (0.198)	-2.389*** (0.389)	-2.161*** (0.631)	-1.438 (0.947)	2.443 (1.827)
<i>MB</i>	0.288*** (0.025)	0.612*** (0.043)	1.590*** (0.090)	2.953*** (0.150)	4.700*** (0.230)	9.446*** (0.478)
<i>Subsidy</i>	0.689*** (0.073)	1.225*** (0.126)	2.156*** (0.237)	2.924*** (0.337)	3.429*** (0.446)	3.772*** (0.706)
<i>PE</i>	0.004 (0.039)	0.097 (0.064)	0.083 (0.116)	0.031 (0.176)	-0.147 (0.257)	-0.469 (0.453)
<i>Cur_Ratio</i>	0.116*** (0.014)	0.217*** (0.023)	0.447*** (0.048)	0.715*** (0.075)	0.991*** (0.104)	1.484*** (0.178)
<i>Fiscal_Stress</i>	0.224 (0.195)	0.447 (0.328)	0.701 (0.642)	0.807 (1.019)	0.934 (1.452)	-1.185 (2.279)
<i>Constant</i>	-6.816*** (1.556)	-2.761 (2.546)	25.305*** (5.042)	84.107*** (8.322)	174.801*** (12.657)	463.373*** (25.954)
Observations	131,215	131,214	127,515	120,123	112,731	98,335

R-squared	0.207	0.236	0.276	0.321	0.366	0.461
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Panel B: Net Worth
(Cum. Change in Net Worth over Assets)

<i>SMPA</i>	-0.048 (0.034)	-0.048 (0.049)	0.190** (0.081)	0.643*** (0.126)	1.324*** (0.179)	2.942*** (0.309)
<i>TIPA</i>	-0.091* (0.049)	-0.145* (0.079)	-0.133 (0.138)	-0.020 (0.216)	0.143 (0.313)	0.603 (0.528)
<i>Size</i>	-1.120*** (0.127)	-2.880*** (0.210)	-8.735*** (0.402)	-18.251*** (0.654)	-31.633*** (1.016)	-67.969*** (2.061)
<i>Age</i>	-0.094 (0.200)	-0.064 (0.330)	-0.149 (0.644)	0.410 (1.074)	1.575 (1.630)	6.491** (3.065)
<i>MB</i>	1.974*** (0.070)	3.374*** (0.115)	6.718*** (0.216)	10.814*** (0.340)	15.651*** (0.499)	26.024*** (0.879)
<i>Subsidy</i>	2.121*** (0.143)	3.364*** (0.237)	5.506*** (0.430)	7.069*** (0.633)	8.451*** (0.869)	8.954*** (1.238)
<i>PE</i>	0.003 (0.096)	0.024 (0.146)	-0.065 (0.253)	-0.282 (0.375)	-0.376 (0.535)	-1.650* (0.944)
<i>Cur_Ratio</i>	-0.343*** (0.030)	-0.518*** (0.048)	-0.843*** (0.087)	-1.033*** (0.136)	-1.127*** (0.190)	-0.825** (0.331)
<i>Fiscal_Stress</i>	0.649** (0.320)	1.143** (0.564)	1.643 (1.021)	2.596 (1.587)	3.364 (2.312)	1.816 (3.528)
<i>Constant</i>	23.091*** (2.790)	60.543*** (4.600)	187.977*** (8.864)	394.987*** (14.324)	686.618*** (22.114)	1,481.725*** (44.337)
Observations	131,215	131,214	127,515	120,123	112,731	98,335
R-squared	0.158	0.210	0.292	0.360	0.420	0.528

Panel C: Leverage

(Cum. Change in Total Liabilities over Assets)

<i>SMPA</i>	0.023 (0.036)	0.154*** (0.049)	0.365*** (0.081)	0.752*** (0.121)	1.183*** (0.173)	2.176*** (0.284)
<i>TIPA</i>	-0.083* (0.049)	-0.125 (0.076)	-0.075 (0.135)	0.126 (0.211)	0.100 (0.297)	-0.125 (0.474)
<i>Size</i>	-0.058	-0.687***	-3.321***	-8.609***	-17.063***	-41.621***

	(0.126)	(0.200)	(0.387)	(0.663)	(1.034)	(2.040)
<i>Age</i>	0.049	0.048	0.149	0.859	1.798	7.003**
	(0.217)	(0.344)	(0.645)	(1.052)	(1.611)	(3.026)
<i>MB</i>	1.107***	1.850***	3.669***	6.224***	9.441***	17.341***
	(0.053)	(0.083)	(0.156)	(0.271)	(0.414)	(0.770)
<i>Subsidy</i>	1.511***	2.273***	3.552***	4.823***	5.998***	6.396***
	(0.137)	(0.223)	(0.399)	(0.580)	(0.770)	(1.141)
<i>PE</i>	0.160*	0.337**	0.496**	0.841***	0.611	-0.143
	(0.097)	(0.139)	(0.214)	(0.313)	(0.458)	(0.769)
<i>Cur_Ratio</i>	0.294***	0.467***	0.851***	1.296***	1.777***	2.791***
	(0.025)	(0.039)	(0.076)	(0.125)	(0.189)	(0.334)
<i>Fiscal_Stress</i>	0.487	0.879	1.423	1.962	2.535	1.171
	(0.323)	(0.539)	(0.976)	(1.558)	(2.244)	(3.569)
<i>Constant</i>	-0.252	12.728***	69.284***	182.957***	366.524***	898.938***
	(2.823)	(4.490)	(8.665)	(14.764)	(22.827)	(44.294)
Observations	131,215	131,214	127,515	120,123	112,731	98,335
R-squared	0.122	0.162	0.224	0.280	0.333	0.445

Panel D: Cash Holding

(Cum. Change in Cash Holding over Assets)

<i>SMPA</i>	-0.021	-0.013	0.095**	0.176***	0.468***	0.875***
	(0.027)	(0.031)	(0.043)	(0.057)	(0.071)	(0.105)
<i>TIPA</i>	-0.062**	-0.101**	-0.107*	-0.154*	-0.205*	-0.184
	(0.030)	(0.043)	(0.064)	(0.088)	(0.113)	(0.168)
<i>Size</i>	-1.092***	-1.767***	-3.521***	-6.073***	-9.376***	-18.657***
	(0.072)	(0.101)	(0.167)	(0.246)	(0.352)	(0.685)
<i>Age</i>	2.209***	3.174***	4.408***	5.954***	7.446***	11.116***
	(0.130)	(0.187)	(0.301)	(0.446)	(0.616)	(1.059)
<i>MB</i>	0.958***	1.420***	2.234***	3.216***	4.219***	6.418***
	(0.038)	(0.054)	(0.083)	(0.118)	(0.158)	(0.278)
<i>Subsidy</i>	1.003***	1.264***	1.584***	1.839***	1.902***	1.842***
	(0.082)	(0.116)	(0.179)	(0.236)	(0.297)	(0.429)
<i>PE</i>	-0.076	-0.024	-0.110	-0.031	-0.344*	-0.408

	(0.066)	(0.085)	(0.110)	(0.140)	(0.176)	(0.279)
<i>Cur_Ratio</i>	-0.313***	-0.448***	-0.770***	-0.991***	-1.228***	-1.388***
	(0.024)	(0.032)	(0.047)	(0.062)	(0.079)	(0.122)
<i>Fiscal_Stress</i>	0.047	0.107	-0.092	0.046	0.403	-0.710
	(0.172)	(0.243)	(0.398)	(0.602)	(0.804)	(1.166)
<i>Constant</i>	18.368***	30.883***	67.409***	120.494***	190.736***	390.526***
	(1.593)	(2.240)	(3.697)	(5.408)	(7.614)	(14.648)
Observations	131,215	131,214	127,515	120,123	112,731	98,335
R-squared	0.089	0.117	0.180	0.243	0.303	0.407
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES

Table 15: Ownership Heterogeneity of Real Balance-Sheet Effects.

This table reports ownership heterogeneity in the effect of *SMPA* on firms' real balance-sheet outcomes. Panel A reports results for capital investment, Panel B for net worth, Panel C for leverage, and Panel D for cash holding. The dependent variable is the cumulative change in the corresponding outcome relative to initial total assets, calculated as $(Y_{i,t+x} - Y_{i,t-1})/Assets_{i,t-1}$. Within each panel, results are separately reported for central state-owned enterprises, local state-owned enterprises, and non-state-owned enterprises. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t,t+1Q]	[t,t+2Q]	[t,t+4Q]	[t,t+6Q]	[t,t+8Q]	[t,t+12Q]
Panel A: Capital Investment						
<i>Central SOEs</i>						
<i>SMPA</i>	-0.033 (0.053)	0.020 (0.082)	0.146 (0.144)	0.271 (0.207)	0.464 (0.325)	1.078** (0.504)
Observations	16,751	16,750	16,385	15,658	14,930	13,481
R-squared	0.125	0.146	0.179	0.224	0.269	0.364
<i>Local SOEs</i>						
<i>SMPA</i>	0.065* (0.038)	0.104* (0.059)	0.218** (0.104)	0.571*** (0.159)	0.789*** (0.223)	1.265*** (0.386)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.145	0.163	0.208	0.262	0.319	0.435
<i>Non-SOEs</i>						
<i>SMPA</i>	-0.032 (0.020)	-0.026 (0.030)	0.025 (0.053)	0.109 (0.083)	0.193* (0.112)	0.407** (0.193)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.251	0.290	0.342	0.387	0.430	0.518
Panel B: Net Worth						
<i>Central SOEs</i>						
<i>SMPA</i>	-0.077 (0.096)	-0.018 (0.142)	0.359* (0.213)	0.766** (0.313)	1.088** (0.522)	1.920*** (0.725)
Observations	16,751	16,750	16,385	15,658	14,930	13,481
R-squared	0.139	0.182	0.250	0.311	0.364	0.462

<i>Local SOEs</i>						
<i>SMPA</i>	-0.041	-0.022	0.228	0.703***	1.305***	2.226***
	(0.063)	(0.088)	(0.142)	(0.210)	(0.296)	(0.479)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.123	0.166	0.238	0.307	0.376	0.501
<i>Non-SOEs</i>						
<i>SMPA</i>	-0.021	-0.039	0.148	0.500***	1.203***	3.058***
	(0.045)	(0.064)	(0.111)	(0.179)	(0.253)	(0.472)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.174	0.232	0.321	0.390	0.448	0.553

Panel C: Leverage

<i>Central SOEs</i>						
<i>SMPA</i>	-0.071	0.075	0.269	0.637	0.655	1.463
	(0.099)	(0.145)	(0.255)	(0.424)	(0.637)	(1.090)
Observations	16,751	16,750	16,385	15,658	14,930	13,481
R-squared	0.090	0.119	0.161	0.194	0.237	0.325
<i>Local SOEs</i>						
<i>SMPA</i>	0.136*	0.275***	0.462***	0.872***	1.095***	1.889***
	(0.077)	(0.102)	(0.167)	(0.230)	(0.323)	(0.479)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.098	0.134	0.189	0.246	0.305	0.428
<i>Non-SOEs</i>						
<i>SMPA</i>	-0.006	0.117*	0.367***	0.764***	1.295***	2.217***
	(0.045)	(0.062)	(0.101)	(0.154)	(0.212)	(0.363)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.141	0.187	0.258	0.320	0.376	0.489

Panel D: Cash Holding

<i>Central SOEs</i>						
<i>SMPA</i>	-0.009	0.044	0.331***	0.311**	0.614***	0.805***
	(0.067)	(0.086)	(0.114)	(0.149)	(0.199)	(0.298)
Observations	16,751	16,750	16,385	15,658	14,930	13,481

R-squared	0.088	0.109	0.158	0.208	0.255	0.344
<i>Local SOEs</i>						
<i>SMPA</i>	0.014	0.006	0.106	0.177**	0.471***	0.670***
	(0.048)	(0.055)	(0.073)	(0.089)	(0.110)	(0.159)
Observations	33,536	33,536	32,795	31,313	29,831	26,881
R-squared	0.069	0.092	0.141	0.201	0.259	0.366
<i>Non-SOEs</i>						
<i>SMPA</i>	-0.039	-0.035	0.024	0.107	0.363***	0.803***
	(0.036)	(0.043)	(0.060)	(0.082)	(0.101)	(0.151)
Observations	80,928	80,928	78,335	73,152	67,970	57,973
R-squared	0.099	0.129	0.200	0.267	0.332	0.440
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Table 16: Impact of *SMPA* on R&D.

This table presents the impact of firms' *SMPA* on R&D. The dependent variable is the ratio of R&D expenses to total assets. Regressions include firm and quarter fixed effects, with standard errors clustered at the firm level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
	[t,t+3Q]	[t+4Q,t+7Q]	[t+8Q,t+11Q]
<i>SMPA</i>	0.022*** (0.004)	0.024*** (0.004)	0.010** (0.004)
<i>TIPA</i>	-0.027*** (0.008)	-0.033*** (0.008)	-0.026*** (0.008)
<i>Size</i>	0.042 (0.032)	-0.016 (0.030)	-0.054* (0.029)
<i>Age</i>	-0.324*** (0.046)	-0.302*** (0.046)	-0.218*** (0.049)
<i>MB</i>	0.068*** (0.009)	0.036*** (0.009)	0.017** (0.008)
<i>Subsidy</i>	0.251*** (0.026)	0.089*** (0.020)	0.062*** (0.019)
<i>PE</i>	-0.036*** (0.010)	-0.025*** (0.010)	0.005 (0.010)
<i>Cur_Ratio</i>	-0.018*** (0.006)	-0.008 (0.005)	-0.003 (0.006)
<i>Fiscal_Stress</i>	0.029 (0.048)	0.027 (0.050)	0.021 (0.057)
<i>Constant</i>	1.668** (0.714)	3.114*** (0.665)	3.834*** (0.644)
Observations	131,216	127,519	112,731
R-squared	0.826	0.837	0.850
Firm FE	YES	YES	YES
Quarter FE	YES	YES	YES

Table 17: Impact of *SMPA* on TFP.

This table presents the impact of firms' *SMPA* on total factor productivity (TFP). We estimate firm-level total factor productivity using the method proposed by Levinsohn and Petrin (2003). Regressions include firm and quarter fixed effects, with standard errors clustered at the firm level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
	[t+4Q,t+7Q]	[t+8Q,t+11Q]	[t+12Q,t+15Q]
<i>SMPA</i>	0.455** (0.183)	0.977*** (0.202)	0.401* (0.211)
<i>TIPA</i>	-2.093*** (0.343)	-2.289*** (0.363)	-0.985** (0.389)
<i>Size</i>	39.529*** (1.301)	26.277*** (1.386)	14.145*** (1.384)
<i>Age</i>	1.216 (2.112)	1.814 (2.401)	2.166 (2.640)
<i>MB</i>	-5.499*** (0.458)	-2.536*** (0.492)	-0.654 (0.493)
<i>Subsidy</i>	2.440*** (0.857)	1.639* (0.911)	1.302 (0.874)
<i>PE</i>	-1.367*** (0.470)	-0.715 (0.506)	-0.768 (0.547)
<i>Cur_Ratio</i>	-1.635*** (0.242)	-0.752*** (0.273)	-0.073 (0.277)
<i>Fiscal_Stress</i>	5.027* (2.734)	7.248** (3.074)	7.801** (3.120)
<i>Constant</i>	-10.766 (28.425)	281.385*** (30.625)	552.711*** (31.091)
Observations	129,059	110,858	96,618
R-squared	0.888	0.883	0.884
Firm FE	YES	YES	YES
Quarter FE	YES	YES	YES

Table 18: Credit Channel Mechanism.

This table shows how *SMPA* affects firms' balance sheet conditions and real outcomes of the bank credit channel. We examine the effects on firms' capital investment, net worth, total liabilities, and cash holding using cumulative changes relative to initial total assets. Specifically, we calculate $(Y_{i,t+x} - Y_{i,t-1})/Assets_{i,t-1}$ for all variables, representing the cumulative percentage change with respect to the initial value. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
Panel A: Capital Investment						
(Cum. Change in Capital Expenditure over Assets)						
<i>SMPA * Credit</i>	0.003	0.046	0.140**	0.303***	0.336**	0.303
	(0.025)	(0.038)	(0.070)	(0.111)	(0.165)	(0.303)
<i>SMPA</i>	-0.017	-0.011	0.019	0.093	0.141*	0.276**
	(0.015)	(0.023)	(0.039)	(0.058)	(0.079)	(0.133)
<i>Credit</i>	1.383***	2.460***	5.287***	8.808***	13.089***	23.293***
	(0.038)	(0.067)	(0.149)	(0.256)	(0.398)	(0.794)
<i>Observations</i>	131,215	131,214	127,515	120,123	112,731	98,335
<i>R-squared</i>	0.286	0.347	0.435	0.509	0.572	0.667
Panel B: Net Worth						
(Cum. Change in Net Worth over Assets)						
<i>SMPA * Credit</i>	0.070	0.054	0.305**	0.509**	0.697**	1.018*
	(0.057)	(0.079)	(0.129)	(0.202)	(0.304)	(0.553)
<i>SMPA</i>	-0.051	-0.060	0.151*	0.519***	1.073***	2.368***
	(0.034)	(0.048)	(0.079)	(0.121)	(0.168)	(0.289)
<i>Credit</i>	0.515***	1.228***	3.849***	8.012***	13.558***	26.696***
	(0.071)	(0.120)	(0.256)	(0.458)	(0.733)	(1.385)
<i>Observations</i>	131,215	131,214	127,515	120,123	112,731	98,335
<i>R-squared</i>	0.160	0.217	0.316	0.404	0.482	0.606
Panel C: Leverage Ratio						
(Cum. Change in Total Liabilities over Assets)						
<i>SMPA * Credit</i>	0.020	0.084	0.175**	0.279**	0.270	0.413

	(0.038)	(0.054)	(0.082)	(0.124)	(0.182)	(0.305)
<i>SMPA</i>	-0.009	0.081**	0.221***	0.432***	0.623***	1.073***
	(0.028)	(0.037)	(0.056)	(0.081)	(0.110)	(0.180)
<i>Credit</i>	5.679***	8.175***	14.049***	21.368***	30.342***	50.599***
	(0.052)	(0.080)	(0.147)	(0.258)	(0.420)	(0.806)
<i>Observations</i>	131,215	131,214	127,515	120,123	112,731	98,335
<i>R-squared</i>	0.424	0.492	0.588	0.657	0.711	0.788

Panel D: Cash Holding

(Cum. Change in Cash Holding over Assets)

<i>SMPA * Credit</i>	-0.024	0.003	0.054	0.009	0.120	0.037
	(0.032)	(0.039)	(0.052)	(0.070)	(0.099)	(0.165)
<i>SMPA</i>	-0.027	-0.025	0.075*	0.132**	0.388***	0.704***
	(0.026)	(0.031)	(0.042)	(0.056)	(0.068)	(0.100)
<i>Credit</i>	1.070***	1.266***	1.956***	2.964***	4.345***	7.821***
	(0.039)	(0.054)	(0.090)	(0.141)	(0.210)	(0.405)
<i>Observations</i>	131,215	131,214	127,515	120,123	112,731	98,335
<i>R-squared</i>	0.106	0.133	0.203	0.275	0.347	0.467
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Table 19: New Firm Entry Rate.

The dependent variable is the new firm entry rate, calculated as the change in the new firm entry rate from the year (the mean entry rate of 4 quarters) before the SMP shock to the first, second, or third year after the SMP. The explanatory variable is the industry-level average SMPA. Standard errors are in parentheses. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)
	[t+1Q, t+4Q]	[t+5Q, t+8Q]	[t+9Q, t+12Q]
Industry_SMPA	0.072 (0.107)	0.357*** (0.115)	0.328* (0.169)
Constant	0.113*** (0.029)	0.341*** (0.031)	0.486*** (0.042)
Observations	720	652	584
R-squared	0.248	0.331	0.403
Industry FE	YES	YES	YES
Quarter FE	YES	YES	YES

Define

$$EntryRate_{i,t} = \frac{NewEntry_{i,t}}{Total_{i,t-1}},$$

where $NewEntry_{i,t}$ is the number of new firm registrations in industry i during quarter t , and $Total_{i,t-1}$ is the stock of incumbent firms in industry i in quarter $t-1$. The change is

$$\Delta EntryRate = EntryRate_{T+n} - EntryRate_{T-1}.$$

Table 20: New Firm Growth Rate.

The dependent variable is the new firm growth rate. The explanatory variable is the industry-level average SMPA. Standard errors are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)
	[t+1Q, t+4Q]	[t+5Q, t+8Q]	[t+9Q, t+12Q]
<i>Industry_SMPA</i>	0.006 (0.029)	0.073** (0.033)	0.100* (0.048)
<i>Constant</i>	0.272*** (0.008)	0.619*** (0.009)	1.069*** (0.012)
Observations	720	652	584
R-squared	0.453	0.592	0.704
Industry FE	YES	YES	YES
Quarter FE	YES	YES	YES

The new firm growth rate calculated as the change in the new firm growth rate from the year (the cumulative number of new firm registrations for 4 quarters) before the SMP shock in quarter t to the first, second, or third year after the SMP:

$$\Delta GrowthRate = GrowthRate_{T+n} - GrowthRate_{T-1}.$$

Table 21: Zombie Firm Externalities.

This table shows the externalities of zombie firms. *Ind_Frac_Zombie* measures the fraction of zombie firms in a given industry in a given quarter. *Nonzombie* is an indicator variable equal to 1 for firms not classified as zombie firms. We examine the effects on firms' capital investment, net worth, total liabilities, and cash holding using cumulative changes relative to initial total assets. Specifically, we calculate $(Y_{i,t+x} - Y_{i,t-1})/Assets_{i,t-1}$ for all variables, representing the cumulative percentage change with respect to the initial value. Regressions include firm and quarter fixed effects. Standard errors clustered at the firm-quarter level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	[t, t+1Q]	[t, t+2Q]	[t, t+4Q]	[t, t+6Q]	[t, t+8Q]	[t, t+12Q]
Panel A: Capital Investment						
(Cum. Change in Capital Expenditure over Assets)						
<i>SMPA*Ind_Frac_Zombie</i>	0.017	0.033	0.035	0.055	0.022	0.014
	(0.017)	(0.026)	(0.044)	(0.061)	(0.080)	(0.120)
<i>SMPA</i>	-0.010	0.013	0.057	0.170***	0.260***	0.549***
	(0.017)	(0.024)	(0.041)	(0.060)	(0.080)	(0.125)
<i>Ind_Frac_Zombie</i>	-0.071**	-0.083*	-0.187**	-0.339***	-0.453***	-0.745***
	(0.030)	(0.045)	(0.075)	(0.110)	(0.154)	(0.262)
Observations	112,658	112,657	109,388	102,855	96,217	83,052
R-squared	0.227	0.262	0.312	0.365	0.415	0.510
Panel B: Net Worth						
(Cum. Change in Net Worth over Assets)						
<i>SMPA*Ind_Frac_Zombie</i>	-0.056	-0.078	-0.108	-0.250**	-0.372***	-0.252
	(0.039)	(0.053)	(0.079)	(0.106)	(0.137)	(0.197)
<i>SMPA</i>	-0.073**	-0.076	0.130*	0.505***	1.054***	2.540***
	(0.036)	(0.048)	(0.074)	(0.107)	(0.142)	(0.220)
<i>Ind_Frac_Zombie</i>	-0.465***	-0.686***	-1.295***	-1.993***	-2.340***	-2.557***
	(0.065)	(0.089)	(0.137)	(0.192)	(0.262)	(0.417)
Observations	112,658	112,657	109,388	102,855	96,217	83,052
R-squared	0.180	0.240	0.325	0.395	0.457	0.564
Panel C: Leverage Ratio						
(Cum. Change in Total Liabilities over Assets)						

<i>SMPA*Ind_Frac_Zombie</i>	0.098*** (0.037)	0.147*** (0.050)	0.181** (0.075)	0.143 (0.100)	0.066 (0.131)	0.060 (0.189)
<i>SMPA</i>	0.013 (0.036)	0.123** (0.048)	0.291*** (0.073)	0.598*** (0.105)	0.917*** (0.139)	1.691*** (0.214)
<i>Ind_Frac_Zombie</i>	-0.273*** (0.062)	-0.423*** (0.083)	-0.947*** (0.126)	-1.570*** (0.178)	-2.301*** (0.248)	-3.422*** (0.409)
Observations	112,658	112,657	109,388	102,855	96,217	83,052
R-squared	0.138	0.185	0.255	0.319	0.379	0.495

Panel D: Cash Holding

(Cum. Change in Cash Holding over Assets)

<i>SMPA*Ind_Frac_Zombie</i>	0.005 (0.029)	-0.022 (0.034)	-0.109*** (0.041)	-0.125*** (0.048)	-0.187*** (0.058)	-0.159** (0.074)
<i>SMPA</i>	-0.028 (0.030)	-0.039 (0.034)	0.056 (0.043)	0.113** (0.053)	0.384*** (0.063)	0.743*** (0.088)
<i>Ind_Frac_Zombie</i>	-0.066 (0.049)	-0.061 (0.057)	-0.160** (0.070)	-0.298*** (0.085)	-0.361*** (0.104)	-0.663*** (0.148)
Observations	112,658	112,657	109,388	102,855	96,217	83,052
R-squared	0.100	0.132	0.197	0.264	0.328	0.435
Firm FE	YES	YES	YES	YES	YES	YES
Quarter FE	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES

Table 22: NPL of Banks.

The dependent variable is the non-performing loan (NPL) ratio of banks. The explanatory variable is natural logarithm of words frequency. Regressions include bank and year fixed effects, with standard errors clustered at the bank level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	[t+4Q,t+7Q]	[t+8Q,t+11Q]	[t+12Q,t+15Q]	[t+16Q,t+19Q]
Panel A: Without Controls				
<i>Counts</i>	0.076*	0.094**	0.123***	0.100**
	(0.040)	(0.041)	(0.037)	(0.040)
<i>Constant</i>	1.510***	1.534***	1.545***	1.570***
	(0.010)	(0.011)	(0.009)	(0.010)
Observations	1,679	1,669	1,490	1,317
R-squared	0.699	0.686	0.684	0.690
Panel B: With Controls				
<i>Counts</i>	0.075**	0.076**	0.093***	0.059
	(0.036)	(0.038)	(0.033)	(0.037)
<i>Size</i>	0.222**	0.523***	0.650***	0.578***
	(0.104)	(0.114)	(0.101)	(0.099)
<i>Age</i>	-0.122	-0.084	-0.116	-0.029
	(0.229)	(0.232)	(0.232)	(0.225)
<i>Leverage</i>	-6.374***	-5.776***	-4.550***	-4.475**
	(1.722)	(1.782)	(1.691)	(1.838)
<i>ROA</i>	-54.457***	-26.619**	-7.293	6.441
	(11.504)	(10.381)	(10.079)	(9.074)
<i>Cash</i>	-0.546	0.196	0.406	0.230
	(0.444)	(0.452)	(0.492)	(0.437)
<i>Deposit</i>	0.155	0.180	0.238	0.209
	(0.165)	(0.192)	(0.212)	(0.203)
<i>Constant</i>	2.362	-6.431**	-10.973***	-9.453***
	(2.714)	(2.881)	(2.703)	(2.849)

Observations	1,628	1,615	1,442	1,278
R-squared	0.728	0.714	0.714	0.711
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 23: Heterogeneity across Bank Types.

The dependent variable is the non-performing loan (NPL) ratio of banks. The explanatory variable is natural logarithm of words frequency. Regressions include bank and year fixed effects, with standard errors clustered at the bank level. Standard errors clustered at the firm level are reported in parentheses. All continuous variables are winsorized at the 1st and 99th percentiles. *, **, and *** indicate statistical significance at 10%, 5%, and 1%, respectively.

	(1)	(2)	(3)	(4)
	[t+4Q,t+7Q]	[t+8Q,t+11Q]	[t+12Q,t+15Q]	[t+16Q,t+19Q]
Panel A: State-Owned Banks				
<i>Counts</i>	-0.044	-0.051*	0.045	0.138
	(0.039)	(0.021)	(0.064)	(0.101)
Observations	69	69	63	57
R-squared	0.861	0.850	0.833	0.866
Panel B: Joint-Stock Banks				
<i>Counts</i>	0.042	0.043	0.070*	0.043
	(0.024)	(0.026)	(0.037)	(0.034)
Observations	142	142	130	118
R-squared	0.868	0.847	0.732	0.695
Panel C: City Commercial Banks				
<i>Counts</i>	0.090*	0.110**	0.131***	0.079
	(0.051)	(0.048)	(0.041)	(0.049)
Observations	1,000	992	899	807
R-squared	0.672	0.644	0.665	0.678
Panel D: Rural Commercial Banks				
<i>Counts</i>	-0.041	-0.105	0.026	0.046
	(0.078)	(0.090)	(0.080)	(0.062)
Observations	417	412	350	296
R-squared	0.852	0.847	0.842	0.842
Bank FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Controls	YES	YES	YES	YES