Executive Authority and Household Bailouts*

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Abstract

How does executive authority affect household behavior? I develop a model in which the executive branch of the government is partially constrained. These constraints credibly limit intervention under normal conditions but can be overridden when a sufficiently large fraction of the population is in distress. Households anticipate this and strategically coordinate their financial risks through public markets, creating collective distress that compels government bailouts. Weaker constraints lower the threshold for intervention, making implicit guarantees more likely. The model explains why implicit guarantees are prevalent in China and predicts that such guarantees may discontinuously emerge elsewhere as executive constraints gradually weaken.

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1 Introduction

Executive authority is arguably the key institutional difference that separates modern economies. The Founding Fathers of the United States envisioned a system in which the legislative and judicial branches of government place significant constraints on executive power. In contrast, the architects of the People's Republic of China designed a system of "democratic centralism," concentrating executive authority in the Central Committee of the Communist Party. In practice, however, all countries lie somewhere between these idealized forms; China's leadership faces various practical constraints, while U.S. presidents have steadily expanded their discretionary power.[1] Much of economic theory implicitly assumes strong constraints on executive power, an assumption that aligns with the traditional U.S. model of governance. Yet, as executive authority varies across countries and evolves over time, it is increasingly important to understand its impact on economic behavior.

In this paper, I introduce *partial constraints* on executive power into a parsimonious model of financial markets. The core assumption is that these constraints credibly restrict executive intervention in normal conditions, but can be overridden when a sufficiently large share of the population is in distress. These partial constraints generate strategic complementarities because households understand that their collective action can induce government intervention.

I next demonstrate that financial markets provide households with a coordination mechanism. Market prices provide a public signal of the aggregate beliefs and actions of households across the country, which allows them to align their risk exposures, effectively tying themselves to a common financial fate. When one investor fails, they all fail together. This

[1] Executive authority in the U.S. arguably began to expand with the Polk administration (Schlesinger, 2004) and considerably accelerated during the late twentieth century (Neustadt, 1991).

widespread coordinated distress compels the government to provide a bailout, thus giving rise to self-fulfilling "implicit government guarantees."

The likelihood of intervention depends on the strength of executive constraints. Executives with greater authority face fewer institutional barriers to intervention and are more responsive to widespread distress.[2] That is, when executive constraints are weak, even a relatively small coalition of distressed households can trigger a bailout.

This yields two important implications. First, implicit government guarantees will be more prevalent in China because it is often clear to households that the central government has the ultimate authority to provide a bailout. Second, implicit guarantees do not arise if executive constraints are sufficiently strong. However, once executive constraints weaken past a critical threshold, a new equilibrium emerges in which households now have an incentive to coordinate, and implicit guarantees become an inherent feature of the financial system.

This paper makes three core contributions. First, it introduces a new perspective on bailouts by shifting the focus from firms to households. Traditional models assume an economy with heterogeneous agents, in which large firms or banks take on excessive risk, threatening household consumption and prompting government intervention. I relax the assumption of heterogeneity and demonstrate that bailouts can arise even in a setting with homogeneous agents. The key mechanism is endogenous pricing, which generates endogenous heterogeneity: distressed households receive bailouts funded by a tax on non-distressed households, and both the bailout and tax are priced in equilibrium. Prices adjust such that ex ante identical households are indifferent between being taxed and being bailed out, leading them to endogenously sort into "safe" and "risky" households.

[2] Acemoglu and Robinson (2005) argue that less constrained executives are relatively more sensitive to widespread distress because "in nondemocratic societies, the poor are excluded from political power, but pose a revolutionary threat, especially during periods of [economic] crisis."

This paper also contributes to the bailout literature by explaining how millions of disparate households, lacking explicit coordination mechanisms, can align their behavior to induce government intervention. While coordination is straightforward in concentrated industries like banking, it is less clear how decentralized investors can achieve similar outcomes. I build on insights from the global games literature to show that public financial markets serve as a coordination device. Market prices provide households with a common signal, allowing them to infer whether their collective investment behavior is likely to trigger a government bailout.

Finally, this paper contributes to the political economy of finance by demonstrating that financial markets serve as a mechanism for collective action. The existing literature typically argues that markets are politically significant because a broad or influential segment of the population is exposed to market risk. I show, instead, that it is executive discretion that makes markets politically important. When the executive has the authority to intervene, financial markets provide an avenue for households to coordinate their investments in ways that generate political pressure for government action. This insight suggests that as executive constraints erode, financial markets may play an increasingly central role in shaping government policy responses.

1.1 Related Literature

This paper contributes to the commitment literature by introducing partial executive constraints and a collective moral hazard problem. Kornai (1980) argues that the ability (or inability) to credibly commit to policies is a defining institutional difference between modern economies. Building on this insight, the soft-budget constraint literature has traditionally focused on firm-level moral hazard, where the government struggles to commit not to bail

out a single distressed firm (Kornai et al., 2003; Lin and Tan, 1999; Qian and Roland, 1998; Qian and Weingast, 1997). By introducing public financial markets, I extend this analysis to the household level, showing that partial constraints give rise to strategic complementarities which generate a collective moral hazard problem.

These strategic complementarities link the commitment and bailout literatures. Executive discretion generates coordination incentives among households, just as it does among firms in traditional bailout models. Moreover, endogenous pricing allows me to relax the assumption of heterogeneity, and I replicate the seminal results from the bailout literature: there are strategic complementarities, as in Farhi and Tirole (2012); households coordinate to become "too numerous to fail," as in Acharya and Yorulmazer (2007); and implicit guarantees reduce welfare, as in Chari and Kehoe (2016).

A central puzzle is how do millions of disparate households, without direct coordination, align beliefs? My model addresses this by showing that market prices serve as a coordinating device. Unlike in Diamond and Dybvig (1983), where expectations alone can drive bank runs, bailout beliefs in my model must be reflected in observable signals. Market prices aggregate dispersed beliefs and reveal whether a sufficient fraction of the population is exposed to risk. This insight builds on the global games literature, where public signals determine the success of a coordinated "attack" (Atkeson, 2000; Morris and Shin, 2002). Furthermore, when the signal is sufficiently precise, as shown by Angeletos and Werning (2006) and Hellwig et al. (2006), self-fulfilling prophecies re-emerge, just as in my model.

This mechanism is particularly relevant in China, where no firm or bank is under any illusion that it is "too big to fail," but rather, it is households that collectively believe that *they* are the ones that are too important to fail (Zhu, 2016). Investors often expect that the government will intervene to prevent failures in the stock market (Brunnermeier et al.,

2022; Ding et al., 2021; Huang et al., 2019), the banking sector (Acharya et al., 2020; Chen et al., 2020), the credit market (Allen et al., 2023; Cong et al., 2019; Dong et al., 2021; Jin et al., 2023; Liu et al., 2023; Walker et al., 2021; Zhang et al., 2022; Zhang and Wang, 2020), and the real estate sector.[3] My model provides a theoretical foundation for why such beliefs are not merely cultural or irrational, but are rather endogenous to a system in which the government has a high-degree of authority.

Household-level bailouts also occur in the United States. Cieslak and Vissing-Jorgensen (2021) document that the Federal Reserve has frequently adopted accommodative policies following market downturns, often citing concerns about household balance sheets. While the standard interpretation attributes these actions to macroeconomic stabilization motives, my model offers a complementary political explanation. Distinguishing between these channels is an important direction for future theoretical and empirical work.

More broadly, this paper contributes to the growing field of Chinese financial theory, which studies how investors respond to a large and powerful state. Brunnermeier et al. (2017) argue that financial markets can override policy commitments, while Brunnermeier et al. (2022) show that investors rationally price expected intervention. My model combines the endogenous pricing of the latter with the commitment problem of the former. Furthermore, by introducing partial constraints, my core contribution to this literature is to demonstrate that China's financial markets exhibit strategic complementarities.

Finally, this paper contributes to the emerging literature on the politics of finance. It has

[3]China's ongoing real estate crisis began with a government crackdown on developers, leading to the collapse of more than half of the fifty largest real estate firms. (See "How China's property crisis has unfolded, from Evergrande to Country Garden," Financial Times, October 23, 2023. `https://www.ft.com/content/a387a533-5995-43a9-b472-ce5691969657`. Accessed March 4, 2025.) Rather than rescuing developers, both the central and local governments have stepped in with dozens of policies to support homeowners and house prices. These including giving strict seniority to households that have pre-purchased homes, lowering downpayment requirements, and directly purchasing residential properties at above market rates (Chang et al., 2023).

long been recognized that aggregate economic conditions shape political outcomes (Kayser and Peress, 2012; Lewis-Beck, 1985; Nordhaus, 1975; Tufte, 2020), and recent research argues that broad-based participation in the stock market increases political concern for financial performance (Kerner, 2020; Pagliari et al., 2020; Pond and Zafeiridou, 2020). However, this literature assumes that markets matter politically because investors are also voters. In contrast, I show that markets are important because, when executive constraints are weak, households can coordinate through markets to compel policy responses, even in the absence of direct political participation.

The remainder of the paper is organized as follows. Section 2 introduces the baseline model, and Section 3 analyzes the equilibrium under full constraints and full discretion. Section 4 presents the main analysis, studying partial executive constraints and the coordinating role of market prices. Section 5 extends the model to an investment economy and explores the implications of ex ante discretion, showing that the overall effect of executive discretion on welfare is ambiguous. Section 6 applies the model to three recent episodes in Chinese financial history: the 2015 stock market bailout, the 2022 Henan banking scandal, and the ongoing real estate crisis. Section 7 concludes by arguing that executive discretion undermines the principle of *caveat emptor* by shifting financial responsibility from households to the executive.

2 The Model

2.1 Agents, Preferences, and Assets

Consider a two-date endowment economy ($t = 0, 1$) with a unit mass of identical households indexed by $i \in [0, 1]$ and a government. The government consists of an executive subject to

institutional constraints, parameterized by θ. Each household is endowed with one unit of a risky asset and one unit of a safe asset. There is one aggregate unit of each asset, and both pay off consumption goods at date $t = 1$.

With probability q, the economy enters a good state, and the risky asset pays off a quantity $R > 1$. With probability $1 - q$, the economy enters a bad state, and the risky asset pays nothing. The safe asset always pays a fixed quantity 1. Since $qR > 1$, the risky asset has a higher expected payoff than the safe asset.

Households are risk-averse and derive utility from final period consumption c_i according to the following kinked utility function:

$$u(c_i) = \begin{cases} \alpha c_i & \text{, if } c_i < D \\ c_i + (\alpha - 1)D & \text{, if } c_i \geq D \end{cases} \tag{1}$$

The utility function is linear and continuous, with a kink at the destitution threshold $0 < D < 1$ (see Figure 1). Households are considered "destitute" when consumption falls below D. Formally, the marginal utility of consumption is $\alpha > 1$ when $c_i < D$ and 1 when $c_i \geq D$.

I assume that the executive seeks to maximize aggregate welfare:

$$U = \int_0^1 u(c_i)di \tag{2}$$

Because the utility function is linear and kinked, the executive has an endogenous incentive to redistribute resources such that no household falls below D.[4] The kinked utility function

[4]Preventing widespread destitution is one of the fundamental responsibilities of any government, and in China the notion that market intervention is necessary to prevent destitution has remained an important concern for over two millennia. The importance of preventing widespread destitution is discussed by Mencius

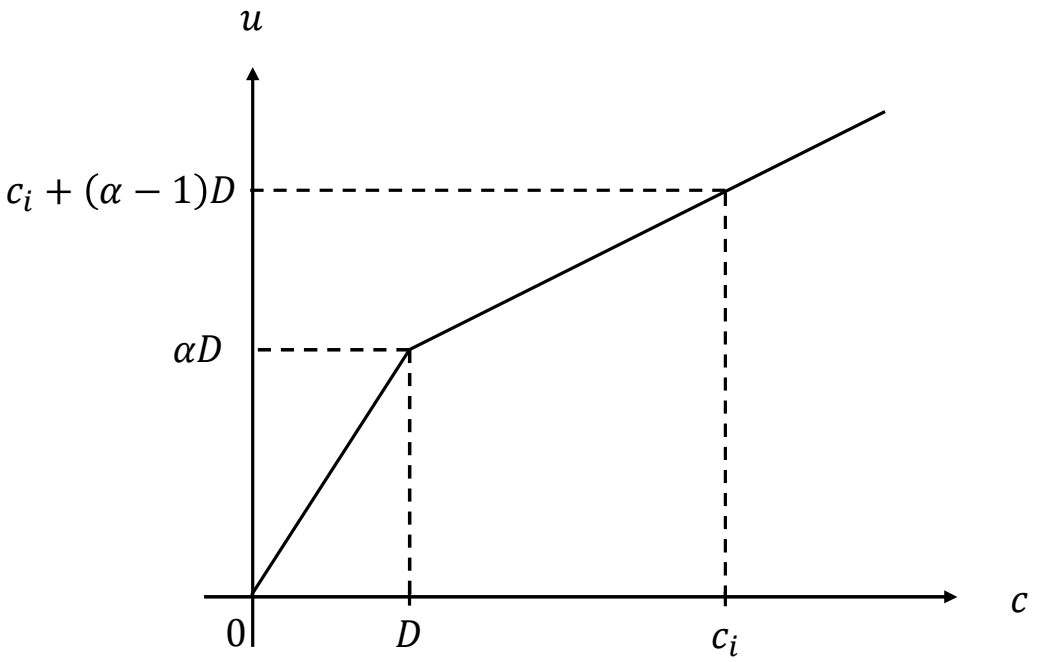

Figure 1: **Linear Utility Function Kinked at D.**

is chosen for analytical tractability. Under smooth utility, the redistribution motive would require an explicit assumption that the executive values minimum consumption guarantees. Appendix A explores this extension in detail and shows that the key results hold.

At $t = 0$ households engage in trade and form portfolios of safe and risky assets. I normalize the price of the safe asset to 1, and the endogenously determined price of the risky asset is denoted by p. Each household thus has initial endowment $e_i = 1 + p$. Households decide what fraction w_i of their wealth to invest in the risky asset, and what fraction $1 - w_i$ to invest in the safe asset.

and in the *Book of Rites*, and moreover Li Kui and the *Guanzi* promote market intervention as a tool for preventing destitution (Will and Wong, 1991).

2.2 Executive Authority and Bailouts

To maximize welfare, the executive engages in ex post transfers, bailing out any household whose asset payoffs fall below the destitution threshold D. However, as Kydland and Prescott (1977) emphasize, such bailouts create a well-known moral hazard problem: rational households, anticipating intervention, have an incentive to take on excessive risk.

The fundamental parameter of the government is θ, which captures the institutional constraints placed on the executive. This parameter is common knowledge and lies in the unit interval:

$$\theta \in [0, 1]. \tag{3}$$

Under full constraints ($\theta = 1$), the executive is completely bound and has no discretion to intervene. In this case, no bailouts occur, and the moral hazard problem is fully resolved. At the other extreme, under full discretion ($\theta = 0$), the executive faces no institutional constraints and will bail out all destitute households.

In Section 3, I analyze these two polar cases. These corner solutions provide useful benchmarks for the main analysis in Section 4, which focuses on the empirically relevant case of partial constraints, $\theta \in (0, 1)$.

Households can choose any portfolio $w_i \in [0, 1]$, but for expositional clarity, Table 1 presents outcomes for two benchmark strategies: full investment in the safe asset ($w_i = 0$) and full investment in the risky asset ($w_i = 1$). That is, each household has wealth $1 + p$ and allocates it toward purchasing either the safe asset at price 1 or the risky asset at price p. Under full constraints ($\theta = 1$), no bailout occurs, and asset payoffs are received in full. Under full discretion ($\theta = 0$), the executive intervenes by taxing the safe asset to fund a bailout for any household whose consumption falls below D. The total tax burden is B, and

is applied to the safe asset payoff in the bad state.[5] The risky asset is not taxed, as it pays zero in the bad state.

	No-Bailouts $\theta = 1$		Bailouts $\theta = 0$	
	Safe	Risky	Safe	Risky
Good State	$(1+p)$	$\frac{(1+p)}{p}R$	$(1+p)$	$\frac{(1+p)}{p}R$
Bad State	$(1+p)$	0	$(1+p)(1-B)$	D

Table 1: **Household Payoffs Under Full Constraints ($\theta = 1$) and Full Discretion ($\theta = 0$).** This table presents payoffs to households if they choose to invest all their wealth in the safe asset ($w_i = 0$) or in the risky risky ($w_i = 1$).

Both the price of the risky asset (p) and the size of the bailout (B) are determined endogenously in equilibrium.

2.3 Timing of the Economy

The timing of the economy is as follows:

Date 0

1. Households receive endowment of safe and risky assets.
2. Households choose a portfolio of safe and risky assets.

Date 1

1. The asset payoffs are realized.
2. The executive decides whether to intervene with a bailout.
3. Households consume, and the economy closes.

[5] Though the tax is implemented as a lump-sum transfer at the aggregate level, it appears as a proportional loss from the investor's perspective.

3 Equilibrium Analysis

I characterize the set of pure strategy subgame perfect Nash equilibria, where household decisions satisfy both budget constraints and market-clearing conditions. An equilibrium is defined as a pair (p, w), consisting of a risky asset price p and a set of portfolio weights $w_i \in w$ for all households i, such that no household has an incentive to deviate given the aggregate outcome. This section analyzes the two benchmark cases: full executive constraints ($\theta = 1$) and full executive discretion ($\theta = 0$). These cases serve as reference points for the main analysis of partial constraints in Section 4.

3.1 Executive Problem

The executive seeks to maximize aggregate expected utility as defined in equation 2. If $\theta = 1$, institutional constraints are binding, the executive is unable to intervene, and no bailout occurs at $t = 1$. In contrast, if $\theta = 0$, the executive has full discretion and will implement ex post transfers to raise the consumption of any destitute household to the threshold level D. These transfers are financed through a tax B on the safe asset.

3.2 Household Investment Problem

At date $t = 0$, households choose how to allocate their wealth between the safe and risky assets. They take market prices and the executive's bailout strategy as given, and do not observe the investment decisions of other households.

3.2.1 No Bailouts ($\theta = 1$)

First, suppose $\theta = 1$, so the executive is fully constrained and cannot provide a bailout. The subscript k will denote variables under this full constraints scenario. Since there are no bailouts, household consumption at time $t = 1$ is thus a random variable equal to,

$$c_k(w_i) = \begin{cases} w_i(1+p)\frac{R}{p} + (1-w_i)(1+p) & \text{, w.p. } q \\ (1-w_i)(1+p) & \text{, w.p. } 1-q \end{cases} \tag{4}$$

where q is the probability of the good state. Given prices p, an individual household thus chooses a portfolio w_i to maximize expected final period utility,

$$\max_{w_i \in [0,1]} \mathbb{E}\left[u(c_k(w_i))\right] \tag{5}$$

If a household invests a sufficiently large amount in the risky asset, then it will become destitute when the risky asset fails. This happens at the portfolio $\bar{w}_k$ that sets consumption in the bad state (the second line in equation 4) equal to D. That is,

$$\bar{w}_k = 1 - \frac{D}{1+p} \tag{6}$$

Note also that $\bar{w}_k$ is an endogenous function of prices p.

Substituting final period consumption (equation 4) into the utility function (equation 1)

and taking expectations yields the following expected utility function:

$$\mathbb{E}\left[u(c_k(w_i))\right] = \begin{cases} (1+p)\left[\frac{qR}{p}w_i + (1-w_i)\right] + (\alpha-1)D & \text{, if } w_i \leq \bar{w}_k \\ (1+p)\left[\frac{qR}{p}w_i + [1+(\alpha-1)(1-q)](1-w_i)\right] + q(\alpha-1)D & \text{, if } w_i > \bar{w}_k \end{cases} \tag{7}$$

Taking derivatives with respect to w_i yields the slope of the expected utility function,

$$\frac{d\mathbb{E}\left[u(c_k(w_i))\right]}{dw_i} = \begin{cases} (1+p)\left[\frac{qR}{p} - 1\right] & \text{, if } w_i \leq \bar{w}_k \\ (1+p)\left[\frac{qR}{p} - [1+(\alpha-1)(1-q)]\right] & \text{, if } w_i > \bar{w}_k \end{cases} \tag{8}$$

Note that expected utility is piecewise linear in w_i, with a kink at $\bar{w}_k$. The slope is constant in each region, and the sign of the slope determines the household's optimal portfolio decision.

Figure 2 presents expected utility as a function of portfolio choice at the equilibrium price $p_k^* = qR$, which is equal to the expected payout of the risky asset. Expected utility is flat when $w_i \leq \bar{w}_k$ and decreasing beyond that point. Thus, any portfolio in the range $w_i \leq \bar{w}_k$ is optimal, but households will strictly avoid $w_i > \bar{w}_k$.

When $p > qR$, the slope of the expected utility function is negative in both segments (see equation 8), and thus expected utility is a decreasing function of w_i. The risky asset is too expensive and each household i will choose $w_i = 0$, however, in this case markets will not clear because no one holds the risky asset.

When $p < qR$, the slope is positive when $w_i \leq \bar{w}_k$, and when $w_i > \bar{w}_k$ the slope is either negative, zero, or positive. That is, expected utility increases in w_i, and then after crossing $\bar{w}_k$ it either peaks, plateaus, or continues increasing. In any case, in order to maximize

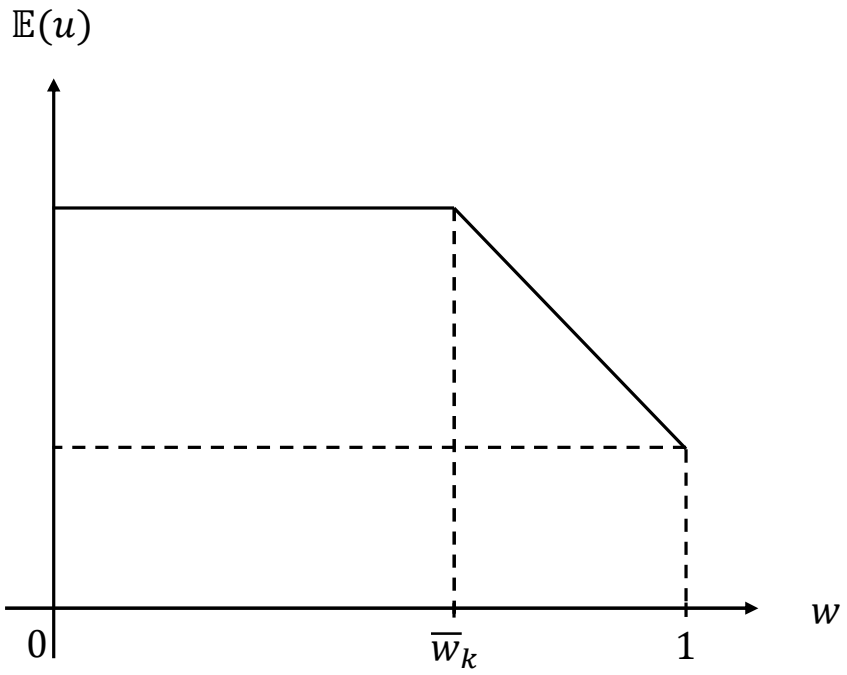

Figure 2: **Expected Utility at Equilibrium p_k^*.**

utility, each household will choose a portfolio of at least $\bar{w}_k$. However, again, markets will not clear.[6]

Thus, the only possible equilibrium consists of a pair (p_k^*, w_k^*) such that, $w_{k,i}^* \leq \bar{w}_k$ for all i, markets clear, and

$$p_k^* = qR. \tag{9}$$

Market clearing requires that total demand equal one: $\int_0^1 w_{k,i}^* \frac{(1+p_k^*)}{p_k^*} di = 1$. Letting $W_k^* = \int_0^1 w_{k,i}^* di$, this implies,

$$W_k^* = \frac{qR}{1+qR}. \tag{10}$$

No household has an incentive to deviate to a $w_i > \bar{w}_k^*$ because doing so would push

[6]Market clearing requires that supply equal demand, $1 = \int_0^i w_i \frac{(1+p)}{p} di$. If $w_i > \bar{w}_k$, then the right hand side is equal to $\bar{w}_k \frac{(1+p)}{p}$, and substituting in equation 6, this is equal to $1 + \frac{1-D}{p}$, which is strictly greater than 1 because $0 < D < 1$. Supply does not equal demand, and thus markets do not clear.

consumption in the bad state below D, and because there are no bailouts, the household would incur a utility cost without any offsetting gain.

In particular, as households are all identical, the set of equilibrium weights includes the "no-trade" portfolio where everyone holds their initial endowment. This occurs when the total wealth invested in the risky asset divided by its price is equal to one ($w_i^* \frac{(1+p_k^*)}{p_k^*} = 1$) for all i, which implies that $w_i^* = \frac{p_k^*}{1+p_k^*}$. Here, w_i^* is strictly less than $\bar{w}_k^*$, and satisfies market clearing.[7]

At any equilibrium (p_k^*, w_k^*), no household chooses a portfolio that pushes them into destitution and thus the utility cost of destitution is not incurred. Total ex ante expected aggregate welfare is then,

$$\mathbb{E}\left[U(p_k^*, w_k^*)\right] = 1 + qR + (\alpha - 1)D. \tag{11}$$

3.2.2 Bailouts ($\theta = 0$)

If the executive has full discretion ($\theta = 0$) over transfers at $t = 1$, then any destitute household will receive a bailout. Let d denote the full discretion case. With $\theta = 0$, the executive bails out all destitute households, funding the transfer through a tax B on the safe asset. The size of B depends endogenously on prices p and the distribution of portfolio choices w.

Let $\bar{w}_d$ denote the risky asset portfolio weight above which a household will become destitute when the risky asset fails. If $w_i > \bar{w}_d$, households are destitute, receive a bailout,

[7] To see this, note that $w_i^* = \frac{p_k^*}{1+p_k^*} < \bar{w}_k^* = 1 - \frac{D}{1+p_k^*}$, and the inequality holds because $D < 1$.

and have consumption of,

$$c_d(w_i|w_i > \bar{w}_d) = \begin{cases} w_i(1+p)\frac{R}{p} + (1-w_i)(1+p) & \text{, w.p. } q \\ D & \text{, w.p. } 1-q \end{cases} \tag{12}$$

Note that households who expect to be bailed out receive exactly D in the bad state, placing them above the kink in the utility function and avoiding the marginal utility penalty associated with destitution.

Similarly, if $w_i \leq \bar{w}_d$, households are not destitute, do not receive a bailout, and consumption is,

$$c_d(w_i|w_i \leq \bar{w}_d) = \begin{cases} w_i(1+p)\frac{R}{p} + (1-w_i)(1+p) & \text{, w.p. } q \\ (1-w_i)(1+p)(1-B) & \text{, w.p. } 1-q \end{cases} \tag{13}$$

Note also that the tax B applies equally to all investors holding the safe asset, not just to the non-destitute households.

The second line of equation 13 can be rearranged to solve for the threshold portfolio $\bar{w}_d$. At $\bar{w}_d$, consumption in the bad state is equal to D, and thus,

$$\bar{w}_d = 1 - \frac{D}{(1+p)(1-B)} \tag{14}$$

Substituting the consumption equations 12 and 13 into the utility function (equation 1)

and taking expectations gives expected utility,

$$\mathbb{E}\left[u(c_d(w_i))\right] = \begin{cases} (1+p)\left[\frac{qR}{p}w_i + (1-w_i)\left[1-B(1-q)\right]\right] + (\alpha-1)D & \text{, if } w_i \leq \bar{w}_d \\ q(1+p)\left[\frac{R}{p}w_i + (1-w_i)\right] + (1-q)D + (\alpha-1)D & \text{, if } w_i > \bar{w}_d \end{cases} \tag{15}$$

and the slope of the expected utility function is,

$$\frac{d\mathbb{E}\left[u(c_d(w_i))\right]}{dw_i} = \begin{cases} (1+p)\left[\frac{qR}{p} - \left[1-B(1-q)\right]\right] & \text{, if } w_i \leq \bar{w}_d \\ (1+p)q\left[\frac{R}{p} - 1\right] & \text{, if } w_i > \bar{w}_d \end{cases} \tag{16}$$

Finally, for convenience, denote the fraction of destitute households as,

$$A \equiv \int_{i|w_i > \bar{w}_d} 1di. \tag{17}$$

Figure 3 plots expected utility as a function of w_i at the equilibrium value of p_d^*. Note that for any value of p, the slope of the utility function (equation 16) is strictly positive when $w_i > \bar{w}_d$ because $\frac{R}{p} > 1$.[8] This means that in equilibrium the A^* households that choose $w_i^* > \bar{w}_d$ will invest all their wealth in the risky asset, $w_i^* = 1$, in order to maximize utility.

Thus, if a fraction A^* of households are destitute and have lost all their wealth, then the equilibrium size of the bailout will be,

$$B^* = DA^* \tag{18}$$

Note also that, in contrast to the full constraints case, the expected utility function is discontinuous at $\bar{w}_d$. Evaluating equation 15 at $\bar{w}_d$, and substituting in the endogenous

[8]This is true because the payoff to the risky asset is risky. As long as $q > 0$, then $p < R$.

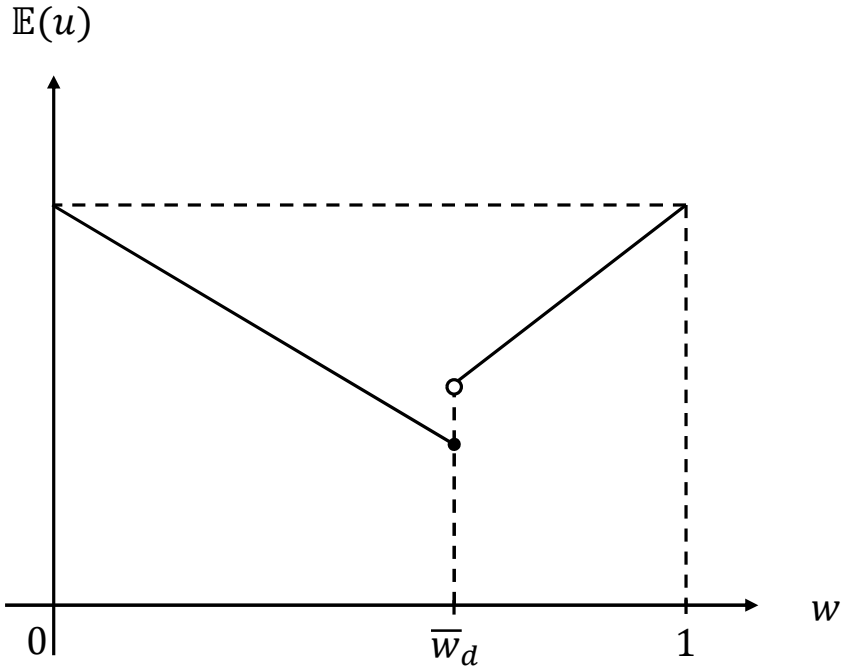

Figure 3: **Expected Utility at Equilibrium p_d^*.**

bailout $B^* = DA^*$, it is clear that expected utility is higher from the right than the left. Intuitively, this is because when households have $0 < w_i \leq \bar{w}_d$, they are paying the same price as households with $w_i > \bar{w}_d$, but they do not receive any bailout benefits. This again holds for any value of p.

If expected utility discontinuously increases at $\bar{w}_d$, and is strictly increasing above $\bar{w}_d$, then in equilibrium expected utility must be decreasing for $w_i \leq \bar{w}_d$, otherwise, all investors will choose $w_i = 1$ and markets will not clear. If the slope of the utility function is negative for $w_i \leq \bar{w}_d$, then if anyone holds the safe asset, they will hold the portfolio $w_i = 0$ (see Figure 3).

This leads to the following proposition,

Proposition 1. ***Endogenous Household Separation:*** *In equilibrium a fraction A^* of*

households put all their wealth in the risky asset, and a fraction $1 - A^*$ *put all their wealth in the safe asset.*

Proof. See the discussion above. □

Proposition 1 demonstrates that, though all agents are ex ante identical, the bailout endogenously creates heterogeneity through the pricing mechanism. Distressed households receive bailouts funded by a tax on the non-distressed households, and both the bailout and tax are priced in equilibrium. Ex ante, households sort themselves into "safe" and "risky" households.

By generating endogenous heterogeneity I can explain the presence of bailouts without relying on firms or banks, and thus, Proposition 1 extends the bailout literature down to the household-level.

In order for markets to clear, it must be that the unit supply of the risky asset is equal to the total wealth invested in the risky asset divided by its price, or $1 = A\frac{1+p}{p}$. Rearranging yields the market clearing condition,

$$A = \frac{p}{1+p}. \tag{19}$$

In equilibrium, risky and safe asset households must be indifferent, otherwise markets will not clear. This indifference condition requires that $\mathbb{E}\left[u(c_d(0))\right] = \mathbb{E}\left[u(c_d(1))\right]$, as demonstrated in Figure 3. Evaluating expected utility (equations 15) and substituting in the endogenous bailout (equation 18) and the market clearing condition (equation 19) yields the equilibrium price under full discretion,

$$p_d^* = \frac{qR}{1-(1-q)D}. \tag{20}$$

This expression shows that the risky asset is overpriced relative to its expected return, precisely because of the bailout guarantee. Plugging this into the market clearing condition (equation 19) gives the equilibrium fraction of risky asset households,

$$A^* = \frac{qR}{1 + qR - (1-q)D}. \tag{21}$$

Under full constraints, the equilibrium is defined by a price p_d^* and a set of portfolio weights w_d^* such that a fraction A^* of households have all their wealth invested in the risky asset, and a fraction $1 - A^*$ have all their wealth in the safe asset.

This thus yields the following proposition,

Proposition 2. ***Demand and Prices under Discretion:*** *Discretion increases the equilibrium demand and price of the risky asset.*

Proof. The equilibrium demand for the risky asset is $W_d^* = \int_0^1 w_i di = A^* = \frac{qR}{1+qR-(1-q)D}$, and recall that under full constraints the equilibrium demand is $W_k^* = \frac{qR}{1+qR}$ (equation 10). $(1-q)D < 1$ because $D < 1$, and thus $W_d^* > W_k^*$.

Furthermore, $(1-q)D < 1$ implies that $p_d^* = \frac{qR}{1-(1-q)D} > qR = p_k^*$. □

Because the government bails out all destitute households to level D, ex ante welfare under full discretion is:

$$\mathbb{E}\left[U(p_d^*, w_d^*)\right] = 1 + qR + (\alpha - 1)D \tag{22}$$

Note that, due to the assumed kinked linear utility function, this is numerically equivalent to welfare under full constraints (equation 11). Though I have framed this as a moral hazard problem, there is no welfare effect in the baseline model for purely technical reasons. However, Appendix A demonstrates that under a smooth concave utility function, implicit

government guarantees indeed reduce welfare.[9]

The next section considers the more realistic case of partial executive constraints, which introduces strategic interaction among households and leads to coordination dynamics in financial markets.

4 Analysis of Executive Authority

This section presents the main analysis of the paper. I first show that partial executive constraints generate strategic complementarities: households understand that, under certain conditions, their coordinated investments can induce a government bailout. However, in economies with millions of disparate households, it is not obvious how such coordination can emerge. I then show that financial markets play a central role in facilitating collective action. By aggregating the beliefs and behaviors of market participants, market prices produce a public signal that allows households to align their risk exposures. Investors use this mechanism to tie themselves to common financial risks, such that when these risks materialize, a broad cross-section of society becomes simultaneously imperiled. This widespread, synchronized distress overrides partial executive constraints and compels the government to intervene, giving rise to self-fulfilling implicit guarantees.

This framework yields two key implications: (1) implicit government guarantees are more likely to arise when the executive has a high-degree of authority, and (2) strong executive constraints prevent guarantees, but as these constraints gradually weaken, eventually a threshold is crossed beyond which guarantees emerge discontinuously.

[9]Furthermore, Section 5 analyzes the model in an investment setting and also demonstrates that implicit government guarantees reduce welfare.

4.1 Intermediate Executive Constraints, $\theta \in (0, 1)$

Recall that the parameter θ captures the institutional rules, legal constraints, and political norms that limit executive power. In this section I analyze intermediate values of execute constraints, $\theta \in (0, 1)$. This captures the reality that all executives face some degree of constraint ($\theta > 0$), and no executive is perfectly bound ($\theta < 1$). For example, the Chinese central government possesses a high degree of discretionary authority, but this power is not absolute. The fiscal federalism literature (Qian and Roland, 1998; Qian and Weingast, 1997) shows that central government is partially constrained by economic frictions and administrative structure. Applied to my model, partial constraints imply that the Chinese government will not bail out every failing market. For instance, in 2018, the collapse of China's P2P lending market prompted no intervention.

In contrast, the executive branch of the U.S. government operates under a stronger system of checks and balances, and its authority is more constrained. Yet its θ is also bounded away from one. In moments of systemic crisis, constraints can be rewritten, for instance, during the 2008 financial crisis, the U.S. Treasury lacked clear legal authority to act until Congress passed the Troubled Asset Relief Program (TARP).[10]

4.2 Partial Constraints and Credible Commitments

Executive constraints enable governments to make credible commitments not to intervene (North and Weingast, 1989). In this sense, the parameter θ also functions as a commitment device. Furthermore, executives face incentives to commit to non-intervention because

[10] As noted by the Yale Program on Financial Stability, "the Treasury itself had little legal authority to take action ... and very limited funding authority" prior to TARP. See Yale Program on Financial Stability, *US Government Crisis Response*, Yale School of Management, accessed July 18, 2024, `https://ypfs.som.yale.edu/us-government-crisis-response`.

bailouts are ex post efficient but ex ante inefficient (Kornai et al., 2003; Kydland and Prescott, 1977). When θ is high, these commitments are credible; however, as discussed above, such constraints can be overridden when there is widespread distress.

I assume that these commitments break down when a sufficiently large fraction of the population is imperiled. Recall that A denotes the share of households that become destitute when the risky asset fails. Then I assume executive constraints are overridden whenever

$$A > \theta. \tag{23}$$

When $A < \theta$, the executive can credibly claim that its hands are tied. But when $A > \theta$, the scale of distress overwhelms the partial commitment devices, and households can argue that the executive not only has the authority, but also the responsibility to act. In economies like China, where the executive enjoys broad discretionary power (i.e., low θ), bailouts are triggered even at relatively low levels of widespread distress.

4.3 Strategic Complementarities

Partial executive constraints ($\theta \in (0, 1)$) generate strategic complementarities because each household's payoff from investing in the risky asset now depends on the investment decisions of others. A bailout occurs if and only if $A > \theta$, where θ is common knowledge and the equilibrium share A of risky investors is determined endogenously. Households thus face a coordination game with common knowledge, where equilibrium outcomes depend on their shared beliefs about whether intervention will occur.

Two self-fulfilling equilibria may arise. If households believe no bailout will occur, then, just as in the full constraints case, they choose allocations that avoid destitution. No house-

hold has an incentive to deviate, as doing so would incur a utility loss in the absence of intervention. The resulting equilibrium is the same as under full constraints, (p_k^*, w_k^*).

Alternatively, if households believe a bailout will occur, then they behave as in the full discretion case. A fraction A^* of the population invests in the risky asset, the remainder in the safe asset, and the equilibrium is the same as under full discretion, (p_d^*, w_d^*).

This multiplicity underscores how executive discretion transforms household investment from an individual decision into a collective act.

4.4 Markets as a Coordination Mechanism

How do households form shared beliefs in a manner that allows for coordinated action? As shown by Morris and Shin (2002), market prices provide a public signal of aggregate beliefs and can serve as a coordination device. In this setting, prices reflect expectations about executive intervention: if the market price is p_k^*, households infer that no bailout is expected; if the price is p_d^*, they infer that a bailout is anticipated.

However, not all beliefs are consistent with equilibrium outcomes. Even if households expect intervention, a bailout will only occur if a sufficiently large share of the population is exposed to risk. If $A < \theta$, the executive can credibly commit not to act, and bailout expectations fail to materialize.

Importantly, prices also reveal whether these beliefs are internally consistent. In particular, due to the market clearing condition (equation 19), the equilibrium market price precisely reveals the share of households exposed to financial risk,

$$A^* = \frac{p_d^*}{1 + p_d^*}. \tag{24}$$

Through prices, households infer how many others have taken on risk, and whether the resulting level of distress is sufficient to overwhelm executive constraints. When $A^* > \theta$, expectations of intervention are justified—creating self-fulfilling implicit guarantees.[11]

4.5 Self-Fulfilling Implicit Government Guarantees

Defining $\bar{\theta} \equiv A^*$, this then leads to the following proposition,

Proposition 3. ***Self-Fulfilling Implicit Government Guarantees:*** *If households believe no bailout will occur, the equilibrium is (p_k^*, w_k^*). If households believe a bailout will occur, the equilibrium is (p_d^*, w_d^*). Bailout expectations are only consistent if $\theta < \bar{\theta} \equiv A^*$. That is, when executive constraints are sufficiently weak, implicit government guarantees are self-fulfilling prophecies.*

Proof. See the discussion above. □

Proposition 3 shows that financial markets provide households with a coordination mechanism through which they can strategically engage with the executive. When households know the executive has the authority to intervene, they can use market prices to align their investment behavior and collectively generate financial distress in a manner that compels intervention. In doing so, implicit government guarantees become a self-fulfilling feature of the financial system.

This ties my analysis to the political science literature on information and collective action (Kuran, 1991; Lohmann, 1993). In particular, Hollyer et al. (2015) demonstrates that

[11] Can households have heterogeneous beliefs about intervention? At a given (p, w), if household i believes a bailout will not occur, then it has an incentive to deviate unless $p = p_k^*$. Similarly, if it believes a bailout will occur, it will only choose the risky allocation if $p = p_d^*$. Thus, in equilibrium, market prices and clearing conditions eliminate belief heterogeneity, and all households must hold consistent expectations about whether intervention will occur.

public economic data reduces informational uncertainty and thus increases the frequency of collective action. In my setting, market prices play a similar coordinating role. Unlike official statistics, however, which can be easily censored, market prices are inherently public and difficult to suppress, making financial markets a uniquely durable vehicle for collective action.

4.5.1 Weakening Executive Constraints

Analyzing the comparative statics of the model yields the following result:

Corollary 1. ***Discontinuous Guarantees.*** *Implicit government guarantees arise discontinuously as executive constraints are gradually weakened.*

Suppose $\theta > \bar{\theta}$. As executive constraints weaken (i.e., as θ decreases), implicit government guarantees do not arise immediately. Although the executive has more discretionary authority, the A^* destitute households are still insufficient to override commitment devices, and bailout expectations remain inconsistent.

However, once θ falls below $\bar{\theta}$, the constraints on executive power become weak enough that coordinated household investments can overwhelm them. At this point, bailout beliefs become consistent, and implicit guarantees emerge endogenously as a new equilibrium.

4.5.2 Market-Specific Implicit Guarantees

The model also implies that implicit guarantees are market-specific:

Corollary 2. ***Market-Specific Implicit Government Guarantees.*** *Implicit guarantees depend on market-specific fundamentals.*

Recall that implicit guarantees arise when $A^* > \theta$, and that A^* increases with both market size (R) and the destitution threshold (D) (see equation 21). This implies that guarantees are more likely to emerge in larger markets and when the socially acceptable standard of living is higher. As either R or D increases, a discontinuous transition may occur in which implicit guarantees arise.

4.5.3 Household-Level Bailouts

This model replicates several core results from the bailout literature, but at the household level. Consistent with Acharya and Yorulmazer (2007) and Farhi and Tirole (2012), agents can become "too many to fail." Households also face strategic complementarities similar to those faced by banks in Farhi and Tirole (2012). In that setting, coordination arises easily because banks observe each other's positions. In contrast, in my model, households do not observe peer portfolios directly. Instead, coordination is facilitated by market prices, which provide a public signal that aggregates dispersed information about household behavior.

Moreover, Chari and Kehoe (2016) emphasize that regulation can serve as a credible commitment device by tying the hands of the government. In the present framework, this corresponds to increasing θ, which, if raised above the threshold $\bar{\theta}$, can eliminate self-fulfilling implicit guarantees.

4.5.4 Collective Action

Proposition 3 highlights that financial markets are politically salient because they enable private individuals to coordinate publicly and exert collective pressure on the state. When executive authority is high, as in China, financial markets become an especially potent channel for such coordination. This helps explain why financial market risk is viewed not

merely as an economic concern, but as a matter of national security.

Since 2018, Xi Jinping has repeatedly emphasized that "financial market risk is a matter of national security,"[12] and in 2023 Xi initiated major institutional reforms by creating the Central Finance Commission – a party-level "super regulator" directly under the oversight of the Central Committee of the Communist Party.[13] These developments underscore a central implication of the model: executive authority makes financial markets politically significant by enabling markets to function as a vehicle for collective action.

5 Investment Analysis

The previous analysis shows that *ex post* discretion reduces welfare by encouraging excessive risk-taking. However, the Chinese government's high degree of executive authority also enables *ex ante* intervention. In this section, I extend the model to an investment economy to study both *ex post* and *ex ante* discretion.

I assume that households are ex ante identical and have equal access to an investment technology. This gives rise to a classic tragedy of the commons: because investment returns are non-excludable, each household overinvests relative to the social optimum. Implicit guarantees exacerbate this inefficiency by further inflating demand for risky projects.

Despite these challenges, both full ex ante constraints and full ex ante discretion can resolve the commons problem, though through different mechanisms. With constraints, the executive relies on well-defined property rights to allocate investment opportunities. With

[12] See "Xi Jinping presided over the first meeting of the Central Financial and Economic Commission" (*Xi Jinping zhuchi zhaokai zhangyang caijing weiyuanhui di yi ci huiyi*), Xinhua News Agency, April 2, 2018, `https://www.gov.cn/xinwen/2018-04/02/content_5279304.htm`. Accessed January 11, 2024.

[13] This new commission subsumed many of the powers of national and regional regulatory agencies, including the banking, insurance, and securities regulators. See "China signals tighter Communist party control of financial sector," Financial Times, October 31, 2023, `https://www.ft.com/content/7b174dfd-2417-4a46-8481-f6255348e2a2`. Accessed July 16, 2024.

discretion, the executive can potentially achieve the first-best by directly selecting which projects are implemented.

5.1 Investment Model

Consider a two-date investment economy ($t = 0, 1$) with a unit mass of identical, risk-averse households indexed by $i \in [0, 1]$, and a government consisting of an executive subject to institutional constraints θ. As in the baseline model, households have a kinked linear utility function (equation 1), and the executive seeks to maximize aggregate welfare. Each household is endowed with one unit of consumption goods at $t = 0$.

There are two technologies: a risk-free storage technology and a risky investment project. Both yield consumption goods at $t = 1$. At $t = 0$, each household chooses a portfolio by deciding what fraction w_i of their endowment to invest in the risky project, and what fraction to store for safe consumption.

Let $I \equiv \int_0^1 w_i \, di$ denote the aggregate investment in the risky project. If the project succeeds, which occurs with probability q, it yields output $F(I) = IR(I)$; otherwise, it yields nothing. The production function $F(I)$ is increasing and concave, with $R(I) > 1$ and $R'(I) < 0$. That is, the risky project exhibits decreasing returns to scale.

5.2 No Bailouts ($\theta = 1$)

Under full constraints, households know they will not receive a bailout. I assume that the expected return on the risky project decays sufficiently quickly such that households optimally limit their investment to $w_i \leq \bar{w}_k$ in order to avoid destitution.[14]

[14]This condition is satisfied when the marginal utility from risky investment under destitution is less than that from the safe asset, i.e., $qR(I) < 1 + (\alpha - 1)(1 - q)$.

In this case, households behave as if they are risk-neutral, and each chooses w_i to maximize expected consumption, given aggregate investment I:

$$\max_{w_i \in [0,1]} \; q w_i R(I) + (1 - w_i). \tag{25}$$

Since utility is linear in w_i, each household invests in whichever asset yields the highest expected return. However, because $R(I)$ decreases with I, investment in the risky project continues until households are indifferent between the risky and safe assets.

The equilibrium level of investment under full constraints, denoted I_k^*, satisfies the condition:

$$qR(I_k^*) = 1. \tag{26}$$

This outcome exhibits a classic tragedy of the commons. Since the risky project is freely accessible, households equate average rather than marginal returns, leading to inefficient overinvestment. As a result, the expected return on the project is pushed down to the return of the safe asset.

5.3 Bailouts ($\theta = 0$)

Now suppose the executive has full discretion to provide ex post bailouts. As shown in Appendix B.1, the equilibrium level of aggregate investment, I_d^*, satisfies:

$$qR(I_d^*) + (1 - q)\frac{D}{1 - I_d^*} = 1. \tag{27}$$

The second term reflects the expected bailout payment, which is strictly positive. This implies that the expected return from the investment project must be lower than in the

no-bailout case: $qR(I_d^*) < 1$. Since $R'(I) < 0$ and $qR(I_k^*) = 1$, it follows that $I_d^* > I_k^*$. That is, implicit government guarantees lead to overinvestment relative to the full commitment benchmark.

Ex post discretion exacerbates the tragedy of the commons. Households know that if the risky project fails, they will be bailed out at the expense of those who store their wealth. This implicit transfer reduces the payoff to storage while increasing the effective return on the risky project, encouraging further investment. As in the no-bailout case, households invest until the average return on risky investment is equal to the return on (taxed) storage.

5.4 Ex Ante Discretion

The tragedy of the commons arises because any household can invest in the risky project. Projects are often intangible ideas, and the barriers to entry for implementing them are limited. However, both constraints and discretion can be used to restrict access to investment opportunities, potentially bringing the economy closer to the first-best allocation.

Under full constraints, ideas can be protected through intellectual property rights. This limits the number of investors, helping to eliminate the overinvestment problem. Yet, this introduces the classic problem of financial frictions: entrepreneurs often lack sufficient capital to fund investment and must rely on external finance.

Under full discretion, the executive can directly allocate investment projects. If it can credibly limit who invests, it can both prevent overinvestment and avoid financial frictions.[15]

Expected aggregate welfare is maximized when a fraction I^* of households invest in the

[15]This analysis assumes projects are exogenous. In reality, ideas are endogenous and depend on innovators capturing the rents to their innovations. Discretion can suppress this incentive, which may counteract the welfare benefits of project allocation.

risky project such that:

$$qR(I^*) + qI^*R'(I^*) = 1. \tag{28}$$

Because $R'(I) < 0$, the second term is negative, implying that $qR(I^*) > 1$. That is, at the first-best, the risky project yields an expected return greater than the risk-free rate. This leads to the following proposition:

Proposition 4. ***Ex Ante Discretion:*** *If the executive can credibly restrict access to investment, it can implement the first-best allocation and improve welfare.*

Proof. Since $qR(I^*) > qR(I_k^*) > qR(I_d^*)$ and $R'(I) < 0$, it follows that $I^* < I_k^* < I_d^*$. Welfare is maximized at I^*, and thus $U(I^*) > U(I_k^*) > U(I_d^*)$. □

This logic echoes the findings of Chari and Kehoe (2016), who argue that welfare improves when governments can prevent investors from entering inefficient projects. In China, this type of discretion is plausible in certain sectors, such as heavy industry or strategic technologies, where the state can restrict market entry and reserves projects for state-owned enterprises. However, in other markets, particularly real estate, it is much harder to limit investment. One reason is that local governments rely heavily on land sales for fiscal revenue, making it difficult to credibly restrict household participation in the property sector.

The broader lesson is that the welfare effects of ex ante constraints and discretion depend on the nature of the projects and the structure of the economy. In some cases, constraints may be more effective at achieving efficiency; in others, discretion may be preferable. While ex post discretion reduces welfare by encouraging overinvestment, the overall impact of discretion is ambiguous.

6 Applications

This section discusses three recent episodes in China's economic history that illustrate the empirical relevance of the model. Each case highlights how households formed beliefs about implicit government guarantees, and how these beliefs, combined with executive discretion, shaped financial market behavior and compelled state intervention.

6.1 2015 Stock Market Crash

Prior to 2015, Chinese investors did not believe that the government would intervene to bail out the domestic stock market. The Chinese equity market has long been described as a "casino," characterized by short-term speculative behavior. The average investment horizon of a Chinese retail investor is just 35–50 *days* (Jones et al., 2021), and equity holdings are not a major component of household retirement savings (Gan et al., 2014; Jiang, 2020). Just as the government is not expected to bail out gamblers in Macau, it was not expected to intervene in the stock market. In the language of this paper, θ was believed to be relatively high, as society did not view the government as responsible for rescuing speculative investors.

In 2015, however, a massive leverage-fueled bubble developed in China's domestic stock market. The bubble peaked in June, and as prices collapsed, the central government intervened. Authorities formed a "National Team" of state-owned banks, state-owned securities firms, and state-owned enterprises, instructing them to use their balance sheets to support prices. This intervention arrested the decline, and the market ultimately settled at a level far above its pre-bubble valuation (Huang, Miao, and Wang, 2019).

Following this episode, domestic investors revised their beliefs about the government's willingness to intervene. If they now believe that the stock market is "too important to fail,"

then my model predicts these bailout expectations will be priced in, leading to a sustained deviation from fundamentals. This can be observed in the persistent premium between shares listed on the domestic A-share market (Shanghai and Shenzhen) and those listed on the international H-share market (Hong Kong). These dual-listed shares represent claims on the same underlying firms and should, under the Law of One Price, trade at similar valuations (Froot and Dabora, 1999).

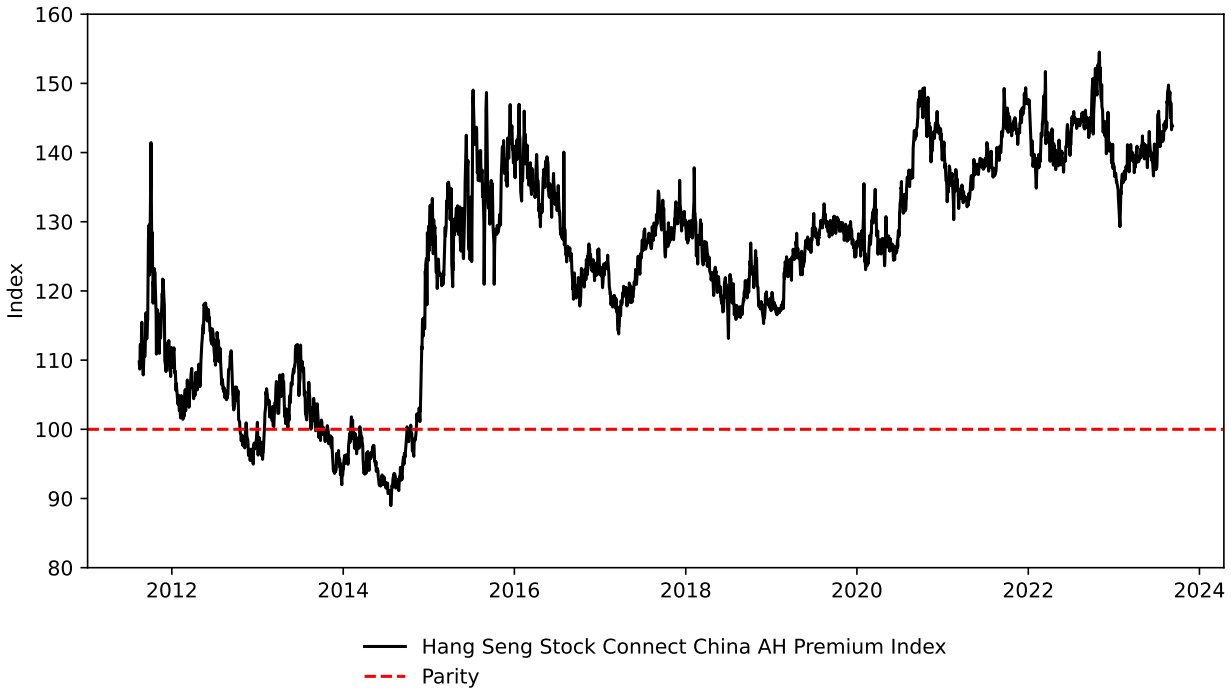

Figure 4: **Dual-Listed Share Premium.** This figure plots the price ratio for dual-listed shares that trade on the domestic A-share market versus the international H-share market. The dashed horizontal line represents parity. Data was obtained from the China Stock Market & Accounting Research Database (CSMAR).

As shown in Figure 4, prior to 2015, the dual-listed share premium fluctuated around parity. Since the intervention, however, A-shares have traded at a persistent premium of 20% to 50%. Arguably, the most plausible explanation is the emergence of an implicit

guarantee priced into A-shares but not H-shares. Domestic A-shares are held primarily by Chinese households, while H-shares are largely held by international investors, and a welfare maximizing central government has very little incentive to bailout foreign investors. According to Proposition 2, A-share prices reflect the implicit guarantee, while H-share prices reflect only fundamentals, generating a persistent valuation gap ($p_d^* > p_k^*$).

In short, prior to 2015, households believed the that θ was sufficiently high and priced equities accordingly. The 2015 bailout revised beliefs about θ downward, and once $A > \theta$, implicit guarantees were priced in. As the model predicts, prices rose above fundamental values, reflecting the emergence of self-fulfilling implicit government guarantees.

6.2 2022 Henan Banking Scandal

On April 18, 2022, over 400,000 households across China suddenly found themselves unable to withdraw funds from their online accounts at four rural banks in Henan province.[16] Their money, totaling nearly 40 billion renminbi, had vanished.[17] These households, spread across China, immediately sought assistance from their local police, local government, and local courts, demanding compensation. But these local officials could do nothing; this was matter for the Henan government.

Households began organizing themselves on social media and in the early hours of July 10, 2022 hundreds of depositors gathered at the People's Bank of China office in Zhengzhou, Henan. They put up portraits of Mao Zedong, waved Chinese flags, and unfurled banners

[16]The banks were the Yuzhou New Minsheng Rural Bank, Shangcai Huimin Rural Bank, Zhecheng Huanghuai Rural Bank, and Kaifeng New Oriental Rural Bank. The scandal also involved two banks in Anhui. See "The reason behind the difficulty of online withdrawals at dispersed village banks," The Paper, May 19, 2022, `https://www.thepaper.cn/newsDetail_forward_18154342` (in Chinese). Accessed July 16, 2024.

[17]See "Henan New Fortune Group: Equity infiltration into 13 village banks suspected of transferring nearly 40 billion yuan," Upstream News, June 29, 2022, `https://news.ifeng.com/c/8GyE4LdokbB` (in Chinese). Accessed July 16, 2024.

protesting against the local government officials in Henan that allowed this to happen. The protesters were not covered under deposit insurance, as technically they held investment accounts, but they argued that these banks fell under the jurisdiction of local and national regulators and that it was the state's responsibility to provide restitution.

The protesters' slogans reflected the executive authority of the central government. The top leadership has the power, and the protesters argued the moral responsibility, to act. Their slogans included "Li Keqiang (the premiere), check on the Henan government" and "Does Xi Jinping know?"[18] The implication is that, if Xi Jinping knew about this scandal, he would have already intervened.

These protests gained sympathy across the country because these were not reckless investors. These investors thought they were being prudent by investing in regulated banks. Many other households across the country were also invested in rural banks, and the same situation could have befallen them too.

The hundreds of protesters on the steps of the People's Bank of China building were then surrounded by two rows of police officers. Then, men in white shirts, with no identifying badges or labels, formed two rows behind the police. The rows of white-shirted men then ran in perfect formation into the group of protesters and beat them up and sent them home.[19]

The following day the Henan Banking and Insurance Regulatory Bureau and the Henan Provincial Local Financial Supervision Bureau announced that up to RMB 50,000 would be reimbursed per household. The bailout was subsequently revised upwards several times, and by August 13, over 436,000 depositors were set to receive a total bailout of more than RMB

[18]These slogans were "*Li Keqiang, cha Henan*" and "*Xi Jinping zhidao zhe jianshi le ma?*"

[19]See "Victims of one of China's worst financial scandals attacked by unidentified men in white at protest," South China Morning Post, July 10, 2022, `https://www.scmp.com/video/scmp-originals/3184929/victims-one-chinas-worst-financial-scandals-attacked-unidentified-men`. Accessed July 16, 2024.

18.6 billion.[20]

In terms of the model, this case demonstrates how executive constraints are endogenous to political and social pressure. Though only a small share of the population was affected ($A < 1\%$), the scandal resonated broadly with other households who held similar investments. This resonance effectively reduced θ: even though the government had a legal commitment device (the investments were technically uninsured), public pressure overwhelmed it. The central government may have been constrained on paper, but A was larger than θ in practice.

Unlike the core model, there were no asset prices to coordinate beliefs. However, the coordination problem was resolved in other ways. The products were distributed via large financial institutions, such as the state-owned China Life Insurance Company, which gave the appearance of government endorsement. In this way, investors may have inferred a sufficiently large A from the prominence of the platforms, helping them form shared beliefs about the likelihood of a bailout.

6.3 2020-Present Real Estate Crisis

The real estate sector has been an important driver of China's economic growth. Rogoff and Yang (2024) estimate that, including direct and indirect channels, real estate comprised 24.4% of China's GDP in 2021. Arguably this boom has been fueled in part by implicit government guarantees. Many households treat residential real estate as a financial asset and a store of value: nearly 20% of urban households own multiple homes (Huang et al., 2020), and a large share of these homes sit vacant (Glaeser et al., 2017). In 2018, researchers at the Southwest University of Finance and Economics estimated that nearly 50 million homes

[20]These figures are as of August 13th. See "China Banking and Insurance Regulatory Commission: 5 village banks in Henan and Anhui have paid 18.04 billion yuan," Securities Times, August 13, 2022, `https://www.stcn.com/article/detail/662624.html` (in Chinese). Accessed July 16, 2024.

across China were unoccupied.[21] Despite clear signs of oversupply, households continued to purchase homes because they believed real estate was too important to fail.

The investment model in Section 5 demonstrates that each time a new housing unit is created, it is automatically endowed with an implicit guarantee. Each new house carries an implicit promise and effectively increases the shadow liabilities of the central government. As the analysis also demonstrated, in order to control this problem the government needs some way to credibly limit ex ante investment.

Initially, the central government sought to curb this dynamic by "breaking the implicit guarantee." At the opening of the 19th Party Congress in October 2017, Xi Jinping declared that "houses are for living in, not for speculation."[22] The National Party Congress takes place every five years, and is the most important political event in the country, but despite the prominence of this signal, it did not alter household behavior.

The solution, instead, has been to crackdown on the intermediaries – on the real estate developers themselves – to reduce the rate of home construction. The crackdown started in August 2020, when the twelve largest real estate developers met with the central government and were handed down a set of leverage restrictions known as the Three Red Lines.[23]

Overleveraged firms were forced to deleverage, and more than half of China's largest real estate developers have since gone into default (see footnote 3). This eroded confidence: by 2022, the volume of home sales had declined more than 30% relative to pre-crisis levels (Chang, Wang, and Xiong, 2023).

[21] See "A fifth of China's homes are empty. That's 50 million apartments," Bloomberg News, November 8, 2018, `https://www.bloomberg.com/news/articles/2018-11-08/a-fifth-of-china-s-homes-are-empty-that-s-50-million-apartments`. Accessed July 16, 2024.

[22] *Fangzi shi yong lai zhu de, bushi yong lai chao de.*

[23] *Santiao Hongxian.* The rules were: (1) the debt-to-asset ratio must be below 70%; (2) the net debt ratio below 100%; and (3) the cash-to-short-term-debt ratio above one. Firms that violated more lines faced stricter limits on liability growth.

Yet while developers were allowed to fail, the central government implemented repeated measures to support *households*. Chang et al. (2023) find that local governments sharply increased their acquisition of residential land – accounting for 32.2% of transactions in 2022, up from 14.2% in 2019 – and paid an average premium of 14.9% above market prices in 2021–22.

In parallel, the central government rolled out national policies to shore up household demand. In July 2022, Xi Jinping and the Politburo Standing Committee called for ensuring the delivery of all pre-purchased homes, effectively subordinating developer claims to those of households. By September 2022, over 70 municipal-level policies had been announced to boost demand. In late 2022, the government introduced tax incentives and lower mortgage rates, and by August 2023, mortgage rules for second-time buyers were relaxed.

Households understood from the outset that real estate was too important to fail. Housing is not just an investment – it is a foundational element of economic and social stability. This implies a naturally large A. At the same time, the central government's high degree of discretionary authority implies a low θ. In this setting, $A >> \theta$, and bailouts, though targeted at households rather than firms, became an endogenous feature of the system.

7 Conclusion

Financial markets are inherently risky and, for centuries, have operated under the legal principle of *caveat emptor*, or "let the buyer beware." Households are repeatedly reminded that financial investments can lead to losses, and that it is their personal responsibility to assess which risks they are willing and able to bear.

The central argument of this paper is that executive authority undermines this principle

by shifting responsibility from households to the state. As the 20th-century American author Stan Lee once wrote, "with great power comes great responsibility,"[24] but in the context of state power, responsibility is not merely a moral obligation – it is a foundation of political legitimacy. If the executive has the capacity to act, but refuses to intervene as millions of households lose their hard-earned life savings, what justifies its authority in the first place?

This tension makes inaction politically untenable. When faced with widespread financial distress, unconstrained executives are compelled to intervene, making implicit government guarantees not a failure of policy, but an endogenous feature of executive authority.

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[24]The original text reads "with great power, there must also come – great responsibility!" See Stan Lee and Steve Ditko, *Amazing Fantasy* no. 15 (New York: Marvel Comics, 1962).

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Appendix A Smooth Concave Utility Function

The baseline model assumes a kinked linear utility function. In this appendix, I show that the core results are robust to adopting a smooth concave utility function. The overall setup remains the same as in Section 2, except that households now have a utility function satisfying $u(c) > 0$, $u'(c) > 0$, and $u''(c) < 0$.

To accommodate this functional form, the definition of destitution must be slightly modified. I assume a household is considered destitute whenever its utility falls below $u(D)$, where D denotes the destitution threshold for consumption. To make this threshold economically meaningful, I assume the executive seeks to ensure that all households consume at least D. While the executive does not provide full insurance, this limited intervention can be justified by various political or institutional constraints – for example, safe-asset households may resist a bailout they perceive as overly generous. This assumption can be interpreted as the executive maximizing a weighted social welfare function and is consistent with the standard approach in the bailout literature.

A.1 No Bailouts ($\theta = 1$)

Under full constraints, the executive provides no bailout, and households invest accordingly. Final consumption at time $t = 1$ follows equation 4, and given market prices p, households choose portfolios to maximize expected utility (see equation 5).

Because payoffs are continuous in w_i, and households are identical with smooth concave preferences, the equilibrium features a symmetric portfolio choice: all households hold identical portfolios, w_k^*.

Market clearing requires that $\int_0^1 w_k \frac{(1+p)}{p} di = 1$, which implies:

$$w_k^* = \frac{p_k^*}{1 + p_k^*} \tag{29}$$

The equilibrium price p_k^* is then determined by the household's first-order condition.

Substituting w_k into the aggregate welfare function (equation 2) yields the equilibrium

level of expected welfare under full constraints:

$$U_k = qu(1+R) + (1-q)u(1). \tag{30}$$

A.2 Bailouts ($\theta = 0$)

Under full discretion, the executive provides bailouts to any household whose consumption falls below the destitution level D, funded by taxing the safe asset. Let $\bar{w}_d$ denote the portfolio threshold above which a household becomes destitute if the risky asset fails. Final period consumption is then given by equations 12 and 13.

If households are sufficiently risk-averse, then all will choose $w_i < \bar{w}_d$, and no bailout will occur. The more interesting case occurs when households are sufficiently risk-tolerant. In this case, they have an incentive to take on excess risk by choosing $w_i > \bar{w}_d$. As discussed in Section 3.2.2, such households will optimally set $w_i^* = 1$, since the bad-state payoff is independent of w_i and the good-state return dominates the safe asset. Let A denote the measure of such risky investors; the resulting bailout size is $B^* = DA^*$.

To sustain equilibrium, the remaining $1 - A^*$ households invest $w_i^* = 0$, avoiding paying the bailout premium without receiving any benefit. Thus, the population again separates into a fraction A^* that holds only the risky asset and $1 - A^*$ that holds only the safe asset. Market clearing then implies:

$$A^* = \frac{p_d^*}{1 + p_d^*}. \tag{31}$$

Substituting the bailout condition $B^* = DA^*$ and market clearing into the aggregate welfare expression (equation 2) yields U_d^* and leads to the following result:

Proposition 5. ***Welfare:*** *Implicit government guarantees strictly reduce welfare.*

Proof. To see this note that,

$$\begin{aligned}
U_d^* &= q\left[A^* u\left(\frac{R}{A^*}\right) + (1-A^*)u\left(\frac{1}{1-A^*}\right)\right] + (1-q)\left[A^* u(D) + (1-A^*)u\left(\frac{1-A^*D}{1-A^*}\right)\right] \\
&< qu\left[A^*\frac{R}{A^*} + (1-A^*)\frac{1}{1-A^*}\right] + (1-q)u\left[A^*D + (1-A^*)\frac{1-A^*D}{1-A^*}\right] \\
&= qu(1+R) + (1-q)u(1) \\
&= U_k^*
\end{aligned}$$

where the inequality arises from the strict concavity of the utility function:
$u((1-\alpha)x + \alpha y) > (1-\alpha)u(x) + \alpha u(y)$. □

Proposition 5 is similar to the main result in Chari and Kehoe (2016). In that paper the authors build a model of bailouts that does not require contracting frictions (but still requires bankruptcy costs), and they demonstrate that bailouts reduce welfare. In the current framework, the welfare loss arises because the executive only transfers enough to reach the destitution threshold D. Full redistribution could replicate the optimal allocation, but political or institutional norms may prohibit such transfers.

Indeed, the assumption that the executive cannot redistribute arbitrarily is central. The threshold D can be interpreted as a socially acceptable minimum, and while households may tolerate bailouts up to this level, they may resist transfers that are perceived as rewarding excess risk-taking.

Appendix B Proofs

B.1 Proof of I_d^*

Let $\bar{w}_d$ denote the portfolio threshold above which a household becomes destitute in the event the risky project fails, triggering a bailout. If $w_i > \bar{w}_d$, the household receives a guaranteed bailout and final period consumption is:

$$c_d(w_i | w_i > \bar{w}_d) = \begin{cases} w_i R(I) + (1 - w_i) & \text{, w.p. } q \\ D & \text{, w.p. } 1 - q \end{cases} \tag{32}$$

Given that utility is linear above the destitution threshold D, households will invest all wealth in the risky project ($w_i = 1$) since $R(I) > 1$.

If $w_i \leq \bar{w}_d$, the household does not receive a bailout. In this case, final consumption is:

$$c_d(w_i | w_i \leq \bar{w}_d) = \begin{cases} w_i R(I) + (1 - w_i) & \text{, w.p. } q \\ (1 - \tau)(1 - w_i) & \text{, w.p. } 1 - q \end{cases} \tag{33}$$

Here, τ is the endogenous tax rate imposed in the bad state to fund bailouts, applied to all

safe-storage households.

Let $I \in [0,1]$ denote the aggregate share of households investing in the risky project. In the bad state, each of the I risky investors requires a transfer of D, so the total bailout amount is ID. This is financed by taxing the remaining $1 - I$ safe investors, implying an individual tax rate of:

$$\tau(1 - I) = ID \tag{34}$$

Households choose between the risky project and safe storage based on expected utility. If $qR(I) > 1 - \tau(1 - q)$, then all will prefer the risky project. However, this cannot be an equilibrium since no one would be left to fund the bailout. Thus, in equilibrium, some households must choose storage, and the marginal household must be indifferent. This implies:

$$qR(I) + (1 - q)D = q + (1 - q)\left(1 - \frac{ID}{1 - I}\right) \tag{35}$$

Simplifying yields the expression for the equilibrium investment level I_d^* presented in equation 27.