CHINA'S MACROECONOMIC DEVELOPMENT: THE ROLE OF GRADUALIST REFORMS

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Abstract. This paper provides analytic guides to recent literature on China's macroeconomic development, emphasizing the critical role of the gradualist reform approach. Our analysis suggests that from 1978 to 1997, the gradualist approach contributed to China's aggregate total factor productivity and economic growth primarily through policies that facilitated the reallocation of surplus labor from agriculture to non-agricultural sectors. Since 1998, the government's focus shifted, with various reforms encouraging large enterprises, whether state-owned or privately-owned, to enter capital-intensive sectors, making capital deepening the main driver of economic growth. While this strategy sustained China's GDP growth, it also increased trade tensions with global partners, created barriers to transitioning to a consumption-led economy, and threatened China's long-term financial stability, casting long shadows over the Chinese economy.

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I. Introduction

Over the past four decades, China has experienced remarkable economic growth, with real gross domestic product (GDP) expanding at an average annual rate of 10% from 1978 until the Covid-19 crisis (Figure 1). This success reflects gradualist economic reforms, often described by the aphorism "crossing the river by touching the stones." By contrast, the former Soviet Union adopted "shock therapy" in the late 1980s, which aimed to eliminate all market frictions at once (Klein, 2008). China's gradualist reforms followed a nationwide dual-track approach that shifted the balance between market mechanisms and state interventions over time.[1] These shifts were uneven, sometimes accelerating and at other times reversing to cushion economic shocks and preserve stability. The Chinese government incrementally removed market imperfections while retaining a central role in resource allocation through credit and other government policies. A prominent example of this approach is the extension of market incentives to publicly-owned firms without large-scale privatizations until 1998.

Understanding this gradualist approach is key to addressing critical questions: How did it sustain China's growth since 1978? What side effects has it produced, and how do they explain the challenges China faces today? A rich body of research examines these issues, evolving from descriptive accounts to models that use micro-level data and modern macroeconomic tools. These models capture market frictions and policy distortions to quantify the impacts of specific reforms. We review the extensive literature on China's macroeconomic development to highlight how its gradualist strategy has shaped both economic growth and its side effects.

We begin with a discussion of the macroeconomic barriers prior to 1978 and present timelines for these barriers to be gradually removed. From these timelines, we select topics that have been extensively studied to shed light on the role of gradualist reforms in China's economic development, providing analytic guides to the literature. This review highlights China's gradual reform approach in various dimensions, such as sectoral shifts, changes in ownership structure, trade openness, foreign direct investment, privatization of the housing market and liberalization of the financial market. We also examine how these reforms at different stages have contributed to economic growth.

We then discuss the long-term implications and challenges these policy shifts pose to both China and the global economy. Our analysis highlights three areas where the gradualist reform approach has introduced challenges to the Chinese macroeconomy in recent years: the global imbalance and the resulting trade war, barriers to transitioning to a consumption-led economy, and looming debt challenges and increasing financial risks stemming from the

[1]This aspect of China's gradualist approach is consistent with the discussion in Naughton (2018). Naughton (2018) also examines another aspect of gradualist reforms that focuses on local experiments, such as regional decentralization, as emphasized by Xu (2011).

credit reversal to state-owned enterprises (SOEs) after the 2008-2009 economic stimulus. All these challenges have cast long shadows over the Chinese economy.

Our analysis concludes that China's gradualist approach has facilitated sustained economic growth over four decades through two distinct phases. From 1978-1997, reforms such as the household responsibility system significantly improved agricultural productivity and created a labor surplus. Instead of privatizing labor-intensive firms early on, local governments played an active role in their growth by securing bank credit. Government interventions, coupled with export-processing and openness to foreign direct investment (FDI), facilitated the reallocation of surplus labor from agriculture to labor-intensive industries, boosting total factor productivity (TFP) and GDP growth. As surplus labor was exhausted and labor costs for these firms rose, reducing their profitability, TFP ceased to be the primary growth driver. Since 1998, the government has shifted support toward an investment-driven economy, relying heavily on capital deepening for growth. Our analysis reveals that preferential credit policies toward capital intensive firms, a pro-growth monetary policy, and China's accession to the World Trade Organization (WTO) and integration into the global production network were instrumental in this transition.

What are the side effects of China's gradualist approach in addressing pre-1978 barriers? Our review indicates that this approach contributed to the growing current account surplus and "China shock" (Autor et al., 2016) to its trade partners, leading to the 2018 trade war between the United States and China. In addition, the widening inequality among households and high saving rates have created barriers to transitioning to a consumption-led economy. Government interventions in response to large economic shocks, such as the global financial crisis and Covid-19, have also made the reform path fragile and potentially reversible. The 2009 economic stimulus triggered a credit reversal from private firms to SOEs, increasing leverage through shadow banking in the corporate and local government sectors after the global financial crisis.

An essential question is why the Chinese government adopted this gradualist strategy, instead of the laissez-faire (big bang) approach taken by the former Soviet Union. The literature on China's gradualist approach to economic reforms highlights significant political-economic concerns related to institutional changes and their effects on the paths and strategies of reforms. For example, Xu (2011) notes that China's policy reforms were initially implemented in a few regions before being launched nationwide as a strategy to mitigate political resistance and uncertainty. Similarly, Lau et al. (2000) develop a theoretical framework showing how the dual-track reforms, which are Pareto-improving in the model, minimize political opposition to reform ex-ante as they create no losers, only winners. The dual-track approach is a notable example of a politically feasible strategy for implementing economic reforms, demonstrating the importance of political factors in China's economic success. This

paper does not seek to justify the gradualist approach to economic reforms against the big-bang approach. Instead, it aims to provide a positive analysis of China's gradualist economic reforms based on a comprehensive review of the existing literature.

Our paper does not provide an exhaustive account of China's macroeconomic development. In particular, we do not cover the significant differences in managerial autonomy, incentives, and workforce management between privately-owned firms and SOEs. These differences were crucial in shaping economic incentives and governance during the initial transition toward a market-oriented economy. A wealth of existing literature extensively examines how China's reforms have reshaped the economic incentives of households, firms, entrepreneurs, and local governments. In his review, Xu (2011) discusses how regional decentralization, a fundamental institutional feature in China, profoundly influences the incentives and behaviors of executives.

In this review article, certain issues that are emphasized as potentially significant in other works receive limited attention. For example, the fiscal reforms that took place during the mid-1990s, which placed fiscal constraints on local governments and consequently incentivized them to leverage land values (Ambrose et al., 2015), are briefly touched upon.[2] Needless to say, our interpretation of the role of government policy in fueling China's economic growth may differ from that of other researchers studying these issues and should not be considered definitive.

The literature on China's macroeconomic development is influenced by key empirical facts, the construction of data, and robust data documentation. Estimates of growth rates and productivity, for example, can exhibit significant variation depending on how data series are constructed for variables such as GDP, capital formation, employment, and deflators for GDP and investment. Similarly, the breakdown of the economy by sectors, ownership, and access to credit heavily relies on data construction. Notable studies by Holz (2014), Wu (2014), Chang et al. (2016), Nakamura et al. (2016), Chen et al. (2019), Fernald et al. (2021), and Chen et al. (2024b) emphasize two main challenges faced by researchers when measuring and interpreting Chinese macroeconomic data. The first concerns the reliability of China's official quarterly GDP data. The National Bureau of Statistics of China (NBS) provides quarterly data on value-added measures of GDP. As Fernald et al. (2021) find, however, the quarterly data on GDP-va was excessively smooth between 2008 and 2016. Moreover, the reliability of the reported *annual* GDP growth data from the NBS has been a topic of debate in the literature (Chen et al., 2019; Clark et al., 2020). A second, and arguably more critical, challenge pertains to the availability of data on various GDP components. The NBS

[2]A substantial body of literature, primarily empirical in nature, investigates the role of "land financing" and housing policy in China's macroeconomy. For a literature review on the impact of housing policy on China's macroeconomy, see Chen (2020).

does not provide basic quarterly macroeconomic data on individual expenditure components, and much of the data it does provide is not necessarily internally consistent (Chen et al., 2024b). Although issues related to China's macroeconomic data are an important part of the literature, due to space constraints, we do not conduct a thorough review of this body of work.

The paper is organized as follows: Section II provides analytic guides to the literature on China's gradualist approach to various economic reforms and its contributions to macroeconomic development. Section III discusses the long-term shadows cast by gradualist economic reforms on the Chinese economy. Section IV presents our concluding remarks.

II. Gradualism in China's Macroeconomic Development

This section presents an overview of the extensive literature on China's macroeconomic development. We examine China's unique gradualist approach to policy reforms, analyzing its profound impact since 1978.

Before 1978, China faced significant barriers to macroeconomic development. To address these barriers, the government adopted a gradualist approach to reforms starting in 1978. In the initial phase (1978-1997), it leveraged the abundant surplus labor in rural areas to bolster the labor-intensive (light) industrial sector. As this surplus labor was depleted, a strategic shift occurred from 1998 to 2016 toward capital-intensive (heavy) sectors such as infrastructure, real estate, and communications, deemed strategically vital. The government not only encouraged commercial banks to extend medium-term and long-term loans to these sectors, often with explicit and implicit guarantees, but also selectively privatized unprofitable non-strategic SOEs while continuing to support strategic SOEs. This gradualist approach aimed to develop a robust investment-driven economy, contributing to China's impressive growth. The subsections below provide a literature survey and analytic guides on these pivotal issues.

Our analysis begins with an outline of the economic barriers that existed prior to 1978 in Section II.1. Then, in Sections II.2 to II.7, we analyze how these barriers were systematically addressed through a sequence of policy reforms. We explore their influence on various macroeconomic sectors and China's impressive growth trajectory. Each subsection offers a focused examination of a specific reform area, accompanied by a clear timeline. This organization provides an essential institutional context for understanding the significance of these reforms.

II.1. **Economic Barriers in Pre-1978 China.**

This subsection provides an overview of the economic barriers to macroeconomic development in pre-1978 China. These barriers distorted economic incentives (e.g., collective farming and exclusive state ownership), prevented

the efficient reallocation of labor (e.g., Hukou system and a closed economy), and discouraged capital accumulation (e.g., housing as in-kind transfers and the absence of financial markets).

II.1.1. *Collective Farming.* From the mid-1950s to the early 1980s, China's agricultural production was characterized by collective farming. Under this system, land was pooled with the ownership of land transferred to the "collective." The collective is the basic accounting and production organizing unit, in charge of the whole production and circulation process, including purchasing agricultural inputs, coordinating farm tasks, selling outputs and distributing income to households.[3] Net incomes were distributed to households on the basis of work points. Individual households earned work points based on days of work. At the end of the year, the collective's total net income was divided by the total number of work points, determining the value of each work point and subsequent household income. Obviously, under the collective farming system, individual household performance and compensation were disjointed, creating a moral hazard problem as it was difficult to monitor effort. There was no economy of scale and as a result, the collective was unable to improve efficiency(Naughton, 2018).

II.1.2. *The Hukou System.* To facilitate the collective farming system, China established the Hukou system, or the household registration system, in 1958. This strict system significantly distorted both China's labor mobility and the allocation of land.

Specifically, under the Hukou system, individuals were broadly categorized as rural or urban workers. A worker seeking to move from the countryside to an urban area for non-agricultural work had to apply through the relevant bureaucracies. In practice, it was virtually impossible for a rural household to get an urban residence permit ("Hukou"). Without an urban residence permit, a rural resident could not go to work in the city. Hence, rural-to-urban migration was essentially prohibited. Likewise, an urban resident had to be tied to the area and job. People who worked outside their authorized domain or geographical area did not qualify for grain rations, employer-provided housing, or health care. The Hukou system is widely regarded as a significant impediment to economic development, and removing its restrictions is often viewed as crucial for fostering the labor mobility needed to support industrialization (Garriga et al., 2017).

II.1.3. *Exclusive State Ownership of All Enterprises.* China's industrial economy was predominantly composed of SOEs before 1978. The government planned all economic activities. Traditional SOEs behaved like government bureaucracies, simply fulfilling plan targets. They produced goods that were usually in short supply, sold them at a price determined by the

[3]The size of the collective ranges from 30/40 households, called a "team or small village," to 2000 households, called "commume".

government, and faced no competition. Moreover, state employees enjoyed lifelong employment and administratively set wages. Consequently, both entrepreneurs and workers lacked incentives or freedom to improve efficiency (Bai et al., 2006). SOEs also faced a soft budget problem with little risk management and accountability. All financial activities were carried out by one bank, which served only as the cashier of the central planner.

Under the cradle-to-grave intra-firm welfare system, moreover, SOEs undertook substantial welfare burdens for their employees, providing services such as childcare, housing, and retirement benefits. There was no social security system independent of SOEs. This heavy welfare burden further constrained SOEs' efficiency and flexibility.

II.1.4. *The Economy Closed to the Rest of the World.* Before 1978, the total trade volume was only 5% of GDP in 1970 and 1971. The foreign trade policy aimed to insulate the domestic economy from the world economy. Its purpose was to import goods that Chinese firms could not produce and that would alleviate domestic shortages or bottlenecks, such as food or raw materials. Foreign trade was centrally controlled by twelve national foreign trade companies, which transacted domestic commodities at planned prices. Individual households or companies were not permitted to engage in import and export activities. Additionally, from 1949 to 1978, foreign-invested enterprises (FIEs) were almost entirely absent in the country (Naughton, 2018).

II.1.5. *Housing Allocation as In-Kind Benefits for SOE Employees.* From 1949 to 1978, all land was publicly owned, and the Chinese constitution forbade any organization or individual from buying, selling, leasing, or transferring land. Housing was allocated through a work-unit-employee linkage as a form of in-kind compensation. The size and location of the housing were determined by factors such as the employee's length of service and household size (Fang et al., 2016).

II.1.6. *The Absence of Financial Markets.* Before 1978, the People's Bank of China (PBC) served both as the central bank and the only commercial bank, operating under the Ministry of Finance. The PBC was responsible for regulating the money supply, setting interest rates, and managing foreign exchange. Additionally, through its extensive network of over 15,000 branches, subbranches, and offices, it controlled approximately 80% of all deposits and provided more than 90% of all loans from financial institutions (Branstetter, 2007).

In reality, the pre-1978 banking system engaged in limited lending. Household savings were very low in relation to GDP. Although national savings were high, they originated mainly from the operating surplus of the state-owned industrial sector. This surplus was reinvested primarily through state budget allocations rather than through lending. Similarly, while there was a network of rural credit cooperatives, their main function was to allocate rural savings rather than to extend loans.

II.2. **Sectoral Shifts.** China's structural transformation has encompassed both sectoral shifts and changes in ownership structures. This process began with sectoral shifts in the early 1980s and was followed by significant changes in ownership in the late 1990s. Sectoral shifts, characterized by labor reallocation from agriculture to non-agricultural sectors, were prevalent during the first phase of China's macroeconomic progression in the 1980s and early 1990s. This section focuses on policy reforms related to rural areas, including labor mobility from these areas to cities, and examines their contribution to productivity and economic growth. We present a timeline of rural and migration policy reforms (Table 1) and review the literature on key reforms related to these policies.

The Chinese growth miracle began in the early 1980s with reforms in the rural sector, known as the "rural household responsibility system." This system replaced collective farming, where all output was sold to a national procurement plant at government-planned prices, which were substantially below potential market value. Under the new system, farmers were granted land use rights and allowed to sell produce exceeding the official quota at market prices. These changes led to dramatic increases in agricultural production and rural income (Lin, 1992).

The resulting surge in agricultural productivity freed hundreds of millions of agricultural workers, providing an abundant labor supply for the nonfarm sector. The Hukou system, however, persisted and was not fully reformed until 2014. Prior to 2003, workers without local Hukou had to apply for a temporary residence permit. A nation-wide administrative reform in 2003 greatly streamlined the process of obtaining temporary residence permits in other provinces. However, migrant workers without local Hukou had limited access to local public services and faced higher costs for health care and their children's education. Since the late 1990s, therefore, a few locales had begun experimenting with eliminating the distinction between local agricultural and non-agricultural populations, providing all local residents with a resident Hukou and equal access to local public services. This reform was formalized and implemented nationwide in 2014 (Hao et al., 2020).

As a result, the Hukou system impeded the mobility of rural populations to industrial urban areas and compelled many rural households to remain in rural areas and work for township and village enterprises (TVEs). The rise of TVEs in rural areas absorbed the surplus labor released from the agricultural sector into relatively high productivity manufacturing activities (Wei et al., 2017a). TVE employment grew rapidly, rising from 28 million in 1978 to a peak of 135 million in 1997, reflecting an annual growth rate of 9%. TVE value added, which accounted for less than 6% of GDP in 1978, increased to 26% of GDP by 1996. The growth of TVEs not only absorbed surplus labor but also significantly raised rural incomes through non-agricultural income generation (Naughton, 2018).

Early studies utilized multi-sector growth accounting with exogenous wedges to address the role of sectoral shifts in economic growth during the initial phase of the reforms. Consistent with our perspective, these studies found the importance of labor reallocation from agriculture to non-agricultural sectors to be high in the early stages of reform, gradually diminishing after 1997. Young (2003) discovers that for the first two decades of China's economic reforms (1978-1997), sectoral labor reallocation was a primary force behind substantial improvements in per capita living standards. Extending the analysis to 1978-2010, Brandt and Zhu (2010) ascertain that the majority of gains from labor reallocation were realized during the first decade of reforms, accounting for one-fourth of aggregate TFP growth (1.04% out of 3.95%).

What are the main drivers of labor reallocation from agriculture to non-agricultural sectors? The increase in labor reallocation resulted from both a higher supply of surplus labor released from the agricultural sector and an increased demand from the non-agricultural sector. On the supply side, several studies highlight the importance of agricultural productivity growth due to the introduction of the household responsibility system and a reduction in labor mobility frictions. Empirically, both Brandt et al. (2008) and Dekle and Vandenbroucke (2012) find that agricultural productivity growth was the most significant driver of Chinese structural transformation between 1978 and 2003. Despite agricultural productivity's role in labor reallocation, Brandt et al. (2008) note that it contributed only about 20% to the growth of aggregate labor productivity during 1978-2004. Similar findings by both Brandt and Zhu (2010) and Cheremukhin et al. (2015) suggest that other factors driving the increase in non-agricultural labor, such as rising TFP in the non-state non-agricultural sector, may have significantly contributed to aggregate productivity growth during this period.

A complementary perspective on the main driver of labor reallocation is the role of local governments in increasing the demand for non-agricultural labor. During the 1980s and early 1990s in China, agency problems between non-state firms and banks were common. Local governments, however, played a pivotal role in supporting TVEs with investment and credit access. Given that a TVE's property often provided insufficient collateral for loans, banks typically required a guarantor. The local community collectively owned TVEs, with the township government representing the community's interests and acting as the de facto executive owner (Xu and Zhang, 2009). This arrangement motivated local governments to support TVEs, often with township economic commissions acting as guarantors for the enterprises (Oi, 1992). Such support from local governments significantly boosted the demand for industrial labor in rural areas.

Such a government intervention was instrumental in raising aggregate TFP during the initial phase of macroeconomic development. Brandt and Zhu (2007) provide evidence that China's non-state sector, with TVEs as a major component, exhibited considerably higher

TFP compared to the state sector. The level of investment in the non-state sector was central to its growth, contributing significantly to the advancement of the Chinese economy. A strong correlation was found between the rate of investment growth in the non-state sector, the credit directed toward this sector, and the GDP growth rate.

With a gradualist approach to economic reforms, it took time for the frictions in labor mobility under the Hukou system to be relaxed through various policy reforms, as stated in Table 1. More recent studies have focused on policies that hinder labor mobility and distort labor reallocation from rural to urban areas, as well as on the regional variation of these policies. For instance, Ngai et al. (2019) examine two barriers to labor mobility associated with the Hukou system. The first barrier is land policy, under which agricultural workers received land to cultivate but were unable to freely trade it. The second is social transfers, such as education and healthcare, that were contingent upon one's Hukou status. Their model of migration demonstrates that land policy led to over-employment in agriculture, posing a significant barrier to industrialization, whereas social transfers primarily generated employment in the non-agricultural sector within rural areas, thereby decelerating urbanization. Adamopoulo et al. (2022) explore the distortional effects of China's land institutions on agricultural productivity and overall economic output. Their analysis highlights how resource allocation and misallocation among farmers of varying productivity, as well as labor selection between agricultural and non-agricultural sectors, influence these effects. They find that land reforms, which eliminated distortions in agricultural productivity, not only tripled the productivity of agricultural labor but also increased real GDP per worker by 18%.

In addition to such land policies, research highlights the pivotal role of migration policy in facilitating China's structural shifts. Tombe and Zhu (2019) utilize a two-sector multi-regional model to assess the impact of reduced migration costs on labor across regions. They observe a significant increase in migration—15% within provinces and 82% between provinces—from 2000 to 2005, leading to a 4.8% increase in aggregate labor productivity. Further extending their study to 2000-2015, Hao et al. (2020) discover that China's internal migration costs for moving from agricultural to urban areas decreased by 45% during this period. This reduction greatly contributed to economic growth and was instrumental in the substantial labor reallocation from agriculture, resulting in significant productivity gains. The authors conclude that migration policy has been a central element in China's structural shifts.

In summary, the literature on China's structural transformation highlights the significant role that sectoral shifts, especially the reallocation of labor from agriculture to non-agricultural sectors, have played since the onset of economic reforms. Given the rural-urban labor mobility frictions under the Hukou system, local governments were instrumental in this reallocation by facilitating credit support for TVEs during the 1980s and the early 1990s.

Since the 2000s, reforms enhancing labor mobility, particularly those targeting land policies and the Hukou system, have been an important driver of China's structural transformation.

II.3. **Ownership Structure Changes.** China's economic reforms, initiated in 1978, followed a gradualist approach rather than an immediate shift to a fully market-driven capitalist system. Initially (1978-1997), the government supported a diversified ownership structure through active entry of new non-state firms, particularly TVEs. This allowed for growth in light industries like consumer goods and textiles. While retaining ownership, the government transferred operational control of TVEs to individuals and actively supported them with favorable credit access. As the surplus rural labor pool depleted, TVEs and small SOEs lost their competitive edge, prompting the government to allow their bankruptcy or privatization.

In 1998, China began privatizing small and medium-sized SOEs, collectively owned enterprises, and TVEs. The policy of "Grasp the large and let go of the small" aimed to retain strategic control over large SOEs in capital-intensive sectors like infrastructure, real estate, and communications. This led to massive resource reallocation from state to non-state sectors. Non-state employment rose steadily from less than 5% in 1997 to over 60% in 2020. The remaining SOEs, mostly central SOEs, underwent corporatization with the State-Owned Assets Supervision and Administration Commission established in 2003 as their legal owner. Table 2 summarizes the timeline of major reforms.

There is a strand of extensive literature with a variety of perspectives on how the transition from SOEs to privately-owned enterprises (POEs) has bolstered China's productivity growth. Initial studies adopted a growth accounting framework to quantify the impact of reallocating labor and capital from the state sector to the non-state sector on overall economic growth via aggregate TFP growth, yet they did not pinpoint the underlying causes of this resource reallocation. Dollar and Wei (2007) are pioneers in utilizing firm-level survey data to demonstrate that, between 2002 and 2004, SOEs had lower returns on capital than both domestic non-state and foreign firms, indicating substantial potential for productivity gains from capital reallocation. Building on this approach, Brandt et al. (2008) discover that diminishing barriers to labor reallocation between state and non-state sectors contributed to approximately one quarter of aggregate output growth from 1978 to 2004. Hsieh and Klenow (2009) are the first to employ a structural model incorporating wedges to estimate the extent of resource misallocation, finding a 15% improvement in allocative efficiency from 1998 to 2005, or an annual rate of 2.0%. Of this enhancement, 39% was attributable to the reduction of misallocation between SOEs and other entities.

While Hsieh and Klenow (2009) focus on allocative efficiency alterations within the manufacturing sector, Brandt et al. (2013) broaden the scope of research to encompass allocative

efficiency across regions. In contrast to Hsieh and Klenow (2009), they determine that the misallocation of capital between state and non-state sectors surged markedly after 1997. Their findings indicate that, although resource misallocation might have lessened within narrowly defined manufacturing industries, significant impediments to factor mobility persisted across regions and ownership types in China's non-agricultural economy, spanning manufacturing and services, on a more macroscopic scale.

Beyond the reallocation of resources among existing firms, several studies have explored the influence of the entry and exit of SOEs and non-SOEs on the enhancement of aggregate allocative efficiency. For instance, Brandt et al. (2012) ascertain that net entry of firms accounted for about half of the productivity growth in the manufacturing sector over 1998-2007, with the emergence and natural selection of new entities in the non-state sector playing a significant role. Through an equilibrium model of heterogeneous firms, Hsieh and Song (2015) conclude that transformations within the state sector and the inception of new state-controlled entities collectively drove 21% of China's growth from 1998 to 2007, while exit and privatization of SOEs had a negligible impact on overall growth. Li et al. (2016) illustrate that the retreat of SOEs from competitive downstream sectors and their concentration in monopolistic upstream industries represent an equilibrium outcome arising from the full control and effective ownership by an elite group.

What are the primary drivers of resource reallocation between SOEs and private firms? Song et al. (2011) pioneered the development of an equilibrium model that posits a combination of productivity heterogeneity and asymmetric credit frictions between SOEs and POEs as key drivers of resource reallocation between the mid-1990s and 2007. According to their model, despite being less productive, SOEs faced fewer financial constraints, resulting in a dispersion of the marginal product of capital between the two sectors. As POEs accumulated capital through self-financing, labor and capital were progressively reallocated from SOEs to POEs, driving sustained TFP growth due to improved capital allocation. This model successfully replicates the high economic growth, sustained capital returns, and large current account surplus observed in China during this period.

While aggregate TFP growth was crucial for China's GDP growth between 1998 and 2016, Chen and Zha (2020) find that capital deepening—driven by preferential credit policy favoring the heavy sector—was the predominant driver of economic growth during this period, accounting for more than 60% of the increase in GDP per capita. As SOEs are more capital-intensive than POEs, a reallocation of capital from SOEs to POEs implies a decreasing investment rate. To account for capital deepening, Song et al. (2011) introduced exogenous time-varying iceberg intermediation costs, calibrated to match the increasing investment rate during this period. Reconciling these findings requires future research to connect the

exogenous process of iceberg intermediation costs in Song et al. (2011) with the preferential credit policy identified by Chen and Zha (2020).

Recent studies using plant-level data have questioned the quantitative importance of financial frictions on capital allocation in explaining aggregate TFP losses and have explored alternative channels influencing aggregate productivity growth. Midrigan and Xu (2014) parameterize a financial frictions model to match the salient features of plant-level data and show that such frictions do not predict large aggregate TFP losses. Using a heterogeneous-firm model with two distinct financial frictions—default risks and fixed costs of issuing loans, Bai et al. (2018) find that while these frictions accounted for 60% of the dispersion in the marginal product of capital within the manufacturing sector, they only translated into an aggregate TFP loss of 12%. Similarly, Wu (2018) estimates that financial frictions caused an 8.3% reduction in aggregate TFP at the intensive margin, representing 30% of China's capital misallocation from 1998 to 2007.

Instead, policy distortions—such as investment-promoting programs that favor firms engaged in exports, operating in upstream industries, or maintaining political connections with the Communist Party—emerge as critical channels for capital misallocation. These distortions grant SOEs, state-favored POEs, and firms in strategically important sectors considerable advantages in the form of implicit subsidies or tax incentives, contributing to the majority of aggregate TFP losses.

If policy distortions led to significant efficiency losses, why did the government persist in influencing capital and labor allocation to certain sectors by maintaining certain policy distortions throughout different phases of economic development? One explanation is that government intervention can improve efficiency in a second-best environment where market distortions cannot be easily removed. These distortions, such as financial frictions caused by information asymmetry between banks and small firms, are difficult to offset or eliminate. Consequently, the presence of downstream distortions creates an incentive for the government to subsidize upstream sectors to mitigate these inefficiencies (Liu, 2019). An alternative explanation lies in political economy considerations. Wang (2020) develops a political economy framework to show that the government balances extracting tax revenues from the private sector with maintaining political support from state sector workers. Initially, government credit policies spur rapid growth by reallocating resources to the private sector. As the private sector reaches a critical mass, however, the government increasingly its investment in the state sector to sustain its share of employment.

In summary, the literature on changes in China's ownership structure highlights the critical role of resource misallocation and reallocation in driving the country's aggregate TFP and economic growth since 1998. While the reallocation associated with changes in ownership structure is pivotal in understanding China's aggregate TFP and economic growth,

future research should consider how the interplay between ownership structure changes and sectoral shifts has influenced post-1998 GDP growth. In particular, alongside SOE privatization, China has transitioned toward a phase of heavy industrialization, providing preferential credit to firms in capital-intensive sectors. This government policy of preferential credit to capital-intensive sectors represents an effective "helping hand" approach, aimed at stimulating economic growth through strategic investment.[4]

II.4. **Trade Liberalization.** In addition to policy reforms influencing sectoral shifts and ownership structures, China's gradualist approach is also reflected in its opening-up policy. Commencing in 1978, China adopted an export-led development strategy, progressively liberalizing trade and deregulating FDI. The initial step in this opening came in 1978 when FIEs were allowed to engage in export processing. For example, Hong Kong firms shipped fabric to Chinese rural firms, particularly TVEs, for garment production. By 1980-1981, four special economic zones were established specifically for export processing activities, where exporters, predominantly FIEs, could circumvent import controls and regulatory monopolies. By 1986, export processing activities were expanded to all firms in coastal provinces, leading to a significant shift in export composition from 1985 to 1995. This export-led strategy during this period aligns with China's overall development strategy of supporting light industries with its abundant labor released from the agricultural sector.

The liberalization of export processing paved the way for China's accession to the WTO in 2001, which required that trade rights be extended to all domestic and foreign private firms, not just those engaged in export processing. This requirement was formalized in a foreign-trade law that took effect on July 1, 2004. A critical aspect of WTO accession was the attainment of Permanent Most Favored Nation (MFN) status. Before 2002, the MFN status required annual renewal, exposing Chinese exporters to the risk of sudden tariff spikes. From 2002 onward, China's permanent MFN status eliminated this threat, creating a stable trade environment. As Handley and Limão (2017) highlight, this stability significantly catalyzed China's export boom, particularly to the U.S. market. Over the past two decades, WTO membership and permanent MFN status have facilitated a structural transformation in China's export composition. The country has steadily shifted from labor-intensive to capital-intensive products, with electronics becoming the largest single contributor to Chinese manufactured exports. Today, China is the world's largest exporter of high-technology goods, accounting for nearly all the increase in global high-tech exports since the turn of the century.

[4]Bai et al. (2020a) reveal that local governments offer a "helping hand" to favored private firms, typically the largest local employers. Special deals, exclusive to selected firms, provide these entities with land and bank credit at sub-market rates while obstructing the entry of competitors.

To facilitate its role in the global production chain, China adopted a gradualist approach in its import policy as well. From 1994 to 2002, tariffs were unilaterally reduced from an average of 40% to 16%. Predominantly, China's imports consist of resource and capital-intensive inputs; for instance, in 2003, 23.9% of imports were capital-intensive products such as steel, chemicals, and plastic raw materials (Naughton, 2018). The next major category is skill-intensive commodities like machinery, transport equipment, and electronics, illustrating China's focus predominantly on the final assembly stage of production. Table 3 provides a list of trade policy reforms gradually implemented over time.

The literature studies the positive impact of trade liberalization, using China's 2001 WTO accession as a policy experiment, on output growth via various channels. For instance, using firm-level data from Chinese customs, Khandelwal et al. (2013) find that 71% of the overall gain in productivity from removing quotas was attributable to the elimination of quota misallocation, while 29% was due to removing the quota itself. Moreover, China's WTO membership, by granting it permanent Normal Trade Relations status and reducing tariff uncertainty in its trade partners, stimulated sectoral reallocation, leading to productivity improvements (Erten and Leigh, 2021). Other studies focus on the role of China's tariff reduction as commitment for WTO accession on firms' productivity improvement. Brandt et al. (2017), for example, find that reductions in input tariffs and input costs, made possible by trade liberalization, enabled entrants to produce with higher productivity, leading to growth of within-firm productivity. Brandt and Morrow (2017) further show that a reduction in import tariffs resulted in increased access to imported inputs, especially capital-intensive intermediate goods.

II.5. **Foreign Direct Investment.** Policy reforms on FDI were closely linked to trade policy reforms. China began to open up to foreign investment in 1978 by establishing special economic zones in 1979 and 1980. Initially, investments primarily came from Hong Kong and Taiwan, and the inflow of FDI during the 1980s brought significant changes to the regional economies of Guangdong and Fujian. Until 1992-1993, FDI was largely confined to export processing activities. Since the late 1990s, however, FDI has increasingly targeted capital-intensive sectors, in line with China's transition to an investment-driven economy. Manufacturing accounted for more than half of all Chinese FDI inflows until 2010, with real estate becoming the second most significant sector for foreign investment, representing over 20% of incoming investment since 2008. Since the early 2000s, a second wave of export restructuring through FDI introduced advanced production technology and expertise in high-tech production networks to China (Naughton, 2018). Table 4 provides a timeline of various FDI reforms.

The literature on the contributions of FDI to China's growth focuses on two primary channels. The first is the promotion of manufacturing exports, with a consensus that inward FDI significantly contributed to China's capital deepening before its WTO accession. Early studies, such as those by Zhang and Song (2000) and Yao (2006), highlight the positive impact of FDI on economic growth through manufacturing exports prior to the WTO accession. In addition to capital accumulation, another critical channel through which FDI contributed to China's growth during the 1980s and 1990s was TFP growth via technology transfer. Hong and Wang (2011) develop a spatial dynamic model to assess the TFP externalities generated by FDI over 1980-2005, finding significantly positive impacts both within and across regions. Further, Jiang et al. (2019) find that joint ventures significantly facilitated technology transfer, under the so-called the "market for technology" strategy, which required foreign investors to partner with Chinese firms to form joint ventures, typically expecting the transfer of advanced technology and management know-how to Chinese partner firms.

Several other studies focus on the effect of inward FDI since China's WTO accession and its relaxation of FDI regulations. A recurring theme in this literature is that while inward FDI may harm domestic rivals through competition, it also encourages technology transfer (Aitken and Harrison, 1999). Fu (2011) finds that within technology-intensive industries, while processing-trade FDI generated positive "information spillover" effects (such as market intelligence and marketing techniques), "technological spillovers" negatively affected the export performance of domestic firms due to increased export competition. Lu et al. (2017) investigate the cross-industry spillover effects of FDI and conclude that inward FDI had positive implications for industries not in direct competition with FDI firms, but negative implications for those that were.

Since the U.S. sanction on Chinese telecommunication giant Huawei in 2019, China has increasingly emphasized the development of domestic innovation capabilities and reduced its reliance on foreign technology. This shift in policy poses interesting questions about the future role of FDI in China's growth, marking an important area for further research.

II.6. **The Housing Market Privatization.** The transition of housing allocation to a market-based system in China was a key component of the government's strategy to prioritize heavy industrialization in the late 1990s, with real estate becoming a critical capital-intensive sector. This section explores various housing policy reforms (Table 5) and examines their impacts on the Chinese macroeconomy as part of the broader shift toward the development of an investment-driven economy.

China's housing reforms began in the 1980s by encouraging the sale of existing public housing units and increasing the rents charged for public housing. It was not until the mid-1990s, however, that massive housing market privatization was launched. In 1994, the

government allowed SOE employees to purchase state-owned houses at a discount, known as "reformed housing." By 1998, in-kind housing benefits were formally terminated, and banks began offering residential mortgage loans at subsidized interest rates. These reforms, among others, led to a steady increase in the demand for commodity housing—houses sold at market prices—over the next two decades.

The surging demand for commodity housing resulted in an unprecedented boom from 2003 to 2016. During this period, real house prices in the four first-tier cities grew at an average annual rate of 13.1%, and at 10.5% in second-tier cities, outpacing the aggregate income growth rate of 10% over the same time frame (Fang et al., 2016). Although house prices experienced a temporary slowdown between late 2013 and 2014, they sharply rebounded during 2015-2016 and stabilized in 2017 (Liu and Xiong, 2020).

A key question in the literature is the extent to which housing market privatization and other policies beginning in the 1990s contributed to the rapid increase in housing demand in China. Hiroshi et al. (2013), using data from the Chinese Household Income Project, report that the fraction of households owning privatized public housing rose from 27% in 1995 to 61% in 2002. During the same period, the fraction of households owning commodity housing increased modestly from 1.3% to 7.4%. Privatization led to increased average consumption of housing services. Wang (2011) finds that households living in state-owned housing units prior to the reform consumed approximately 15% less housing services than they would have in a private market.

The literature also explores how various gradualist reforms in other sectors of Chinese economy contributed to China's housing boom, which coincided with its structural transformation and massive labor reallocation from the state sector to the non-state sector. Chen and Wen (2017) argue that, along with SOEs privatization, the high annual rate of growth in house prices during the transition to a market-based economy is justified by the high returns to capital enjoyed by entrepreneurs in the private sector, who treated housing as a store of value for their rapidly growing wealth. The rural-to-urban migrations have also been argued to play a significant role in the housing boom, with migration flows to cities generating an average 6.4% annual rate of growth in national house prices between 1998 and 2012 (Garriga et al., 2017). In addition, studies point to the rapid growth of disposable household income during China's economic transition as an important factor contributing to the housing boom. Fang et al. (2016) argue that strong housing demand and fast growth of house prices can be rationalized by expectations of persistently high future income growth, despite low-income home buyers often facing a heavy financial burden, purchasing homes worth eight to ten times their annual incomes. Another explanation for high house prices is China's unbalanced sex ratio. Wei et al. (2017b) find that cities with a more unbalanced sex ratio experienced higher house prices between 2003 and 2009, suggesting that increases in

the male-to-female sex ratio accounted for 30% to 48% of the rise in real house prices across 35 major cities during this period.

The relaxation of China's mortgage policies has also fueled the housing boom. Since 2005, the government has aimed to balance boosting GDP growth with controlling house price growth by regulating or deregulating the housing market. This includes policies such as mortgage interest rate policy and credit policy (e.g., loan-to-value limits). Chen et al. (2020a) explore the impact of such policies on the housing market by exploiting a policy experiment in 2014 that relaxed the loan-to-value (LTV) ratio limit for secondary houses using administrative data on more than 3 million mortgage originations. They show that the policy change fueled a housing boom by not only encouraging direct investments in secondary houses but also increasing demand for primary homes, especially among middle-aged, highly educated households, who trade up housing for speculative purposes.

What are the impacts of housing booms on other sectors of the Chinese economy and its long-run growth? The literature highlights two effects. One effect, as argued by Chen and Wen (2017), is the crowding-out effect: housing booms crowd out productive physical capital and slow down economic growth. Using firm-level data, they find that between 2007 and 2013, about 45% of Chinese firms in the non-housing sector invested in real estate with the investment share in such property averaging about 15% of these firms' total physical assets. Similarly, Chen et al. (2017) report that between 2000 and 2015, land investment accounted for 27% of the total investments made by publicly listed firms in China, excluding those in the financial, real estate, and construction sectors. Moreover, they find that following the implementation of the housing purchase restriction policy, non-land-holding firms increased their investments and their R&D expenditures and patent applications, suggesting a crowding-out effect of housing booms on R&D activities. The other effect of housing booms is the crowd-in effect. Jiang et al. (2021) show empirically that growth in housing prices encourages infrastructure investment growth, which, in turn, enhances the productivity of the non-housing good production. This generates the crowd-in effects of housing on GDP growth via encouraging capital investment of the non-housing sector.

While both effects of housing market expansion are evident in reality, it is undeniable that housing booms have long been a major driver of the Chinese macroeconomy, impacting not only real estate but also its upstream and downstream sectors. As discussed in Section III, however, when infrastructure investment reaches a point of over-capacity and the debt burden in the real estate sector begins to threaten China's financial stability, the collapse of housing bubbles may have persistent negative impacts on the Chinese economy, akin to the challenges Japan faced in the 1990s.

II.7. **Financial Liberalization.** Financial policies, such as monetary and credit policies, have been crucial in shaping the reforms during China's investment-driven era. This section explores how changes in these policies have gradually liberalized China's financial markets, presenting a timeline of these reforms (Table 6) and reviewing the relevant literature in this context.

Similar to other policy reforms, China's financial reforms have followed a gradualist approach, broadly divided into two stages: the first from 1979 to the late 1990s, and the second since the late 1990s on. During the initial stage, the government employed a "dual-track" strategy: continuous support was provided to SOEs via favorable credit policy, while the non-state sector was allowed to expand rapidly. The "Big Four" state banks, carved out of the PBC, were given more discretion in lending, enabling them to divert resources intended for the state sector to more profitable projects in the non-state sector (Brandt and Zhu, 2007). This continuous support for the state sector, however, exacerbated the soft-budget problem of SOEs and created a large volume of non-performing loans by the late 1990s, triggering the next round of reforms (Huang, 2020).

Since the mid-1990s, a new wave of financial reforms began. In 1995, laws were passed providing a legal framework for commercial banks and establishing the PBC as the central bank. From 1998 to 2018, M2 growth was used as an intermediate target of monetary policy. Concurrently, China underwent interest rate liberalization, starting with its interbank rate in 1996-1997 and followed by a gradual removal of the statutory floor and ceiling on lending rates, as well as those on deposit rates, since the early 2000s. This period also saw the gradual establishment of a regulatory framework, with the China Banking Regulatory Commission established in 2003. By 2013, China had adopted Basel III capital regulations, and in 2016, the macro-prudential assessment system was established.

The gradualist approach to financial reforms is also evident in China's stock market and capital account liberalization. Both the Shanghai and Shenzhen Stock Exchanges were established in the early 1990s, with A-shares for domestic Chinese residents, B-shares for foreign investors listed in Shanghai or Shenzhen, and H-shares for foreign investors listed in Hong Kong (Fernald and Rogers, 2002). Since then, policies for owning and trading equities have been gradually liberalized. In 2011, the government launched the RMB Qualified Foreign Institutional Investor program, which allowed foreign institutional investors to invest in A-shares via offshore RMB accounts. Further liberalization came with the Shanghai-Hong Kong Stock Connect, launched on November 17, 2014, and the Shenzhen-Hong Kong Stock Connect, introduced on December 5, 2016. These programs enable both institutional and individual investors in mainland China and Hong Kong to trade designated stocks listed on the other market through their local exchanges (Zhao et al., 2021).

The gradual financial reforms have significantly influenced China's growth dynamics in both stages. At the first stage (1978-1995), Brandt and Zhu (2000) find that the high average growth rate was accompanied by boom-bust cycles, with economic growth and inflation rates moving in tandem. They argue that while resource allocation to the more productive non-state sector was key for growth acceleration, it left state-owned banks underfunded for the commitments outlined in the credit plan for the state sector. This forced the PBC to provide additional lending to state-owned banks, resulting in both an increase in the money supply and inflation. To control credit diversion outside the plan, the central government periodically eliminated all discretionary lending by state banks, restricting funds flow to the non-state sector. Huang and Wang (2011) show that the effects of financial repression, such as interest rate regulations and capital controls, on economic growth were positive initially but turned negative later.

As the Chinese economy shifted to an investment-driven model in the late 1990s (the second stage), the mechanisms for monetary and credit policies impacting economic growth also evolved. Chen et al. (2018) show that during this period, China's pro-growth monetary policy could be well approximated by an endogenous regime-switching, quantity-based policy rule. Under this rule, monetary policy endogenously switches between regimes depending on whether actual GDP growth is above or below the target set by the central government. In normal situations where GDP growth exceeded the target, M2 growth responded positively to support the growth. Conversely, in a shortfall state, the PBC pursued aggressively expansionary monetary policy to meet the GDP growth target. In both cases, M2 growth rises with GDP growth, but the increase is significantly larger in the shortfall scenario than in the normal scenario. By contrast, M2 growth responds negatively to rising inflation. For credit policy, Chang et al. (2016) highlight that preferential credit policy toward capital-intensive sectors during the investment-driven era was crucial in driving both an increase in the investment rate and a decline in the labor income share in GDP. They develop a two-sector economy model showing how credit rationing makes firms in capital-intensive sectors profitable, increasing their capital demand over time, and reallocating capital from labor-intensive to capital-intensive sectors.

Several studies examine the merits of a gradualist approach to interest rate liberalization in an economy like China's. Liu et al. (2020b) argue that an abrupt interest rate liberalization might reduce aggregate productivity by exacerbating cross-sector misallocation and advocate for reforms to improve private firms' access to credit and to reduce distorted incentives for SOEs. Similarly, Liu et al. (2020a) demonstrate that while capital account liberalization under financial repression could reduce distortions in intertemporal trade, it would also raise funding costs and domestic lending rates, reallocating resources to less productive SOEs and exacerbating cross-sector misallocation.

To summarize, China's gradualist approach to economic reforms has significantly contributed to its sustained growth over the past four decades through two distinct stages. Initially, reforms were aimed at reallocating resources to the labor-intensive industrial sector, significantly enhancing aggregate productivity and GDP growth. As surplus labor in rural areas was depleted and the profitability of labor-intensive TVEs and SOEs declined, the government shifted its focus, encouraging large SOEs and POEs to enter capital-intensive sectors such as real estate, while supporting these firms with preferential credit policies. In addition, the government implemented a pro-growth, quantity-based monetary policy framework and pursued favorable mortgage policies, both designed to stimulate capital investment through bank credit to firms and households. During the investment-driven era, China's accession to the WTO further facilitated a strategic shift in its export composition from labor-intensive to capital-intensive (and even technology-intensive) goods, effectively integrating into the global production network.

III. The Long Shadows of Gradualist Reforms

Despite China's remarkable economic growth over the past four decades, its gradualist approach to economic reforms carries inherent limitations. This section evaluates how delaying certain reforms and preserving market imperfections, due to political prioritization of SOEs and deep-rooted institutional barriers, have cast long shadows on the future of the Chinese economy. It discusses three specific challenges inherited from the gradualist approach: Section III.1 examines the causes of China's growing current account surplus and the resulting trade war; Section III.2 explores the barriers to transitioning toward a consumption-led growth model; and Section III.3 analyzes the looming debt challenges and financial risks facing the Chinese economy. Each of these issues highlights the need to reconsider the gradualist approach to address these limitations and ensure the long-term health of China's economic landscape.

III.1. **Global Imbalance and Trade War.** China's current account surplus has increased significantly since the 2000s, rising from around 2% of GDP before 2001 to over 9% in 2008. Prior literature suggests that preferential credit policies under gradualist reforms have contributed to this growing net capital outflow. For instance, several studies attribute the outflow to preferential credit policies favoring the state sector, where financial frictions limit non-state firms' ability to expand investment. This constraint results in an investment slowdown as capital is reallocated from state to non-state sectors (Song et al., 2011; Imrohoroglu and Zhao, 2020; Wang et al., 2017). By contrast, Chang et al. (2016) argue that preferential credit policies directed toward the heavy sector explain the growing net capital outflows. These policies increase the income share of heavy-sector state firms, which the government

uses to purchase foreign assets as part of government savings.[5] While these studies focus on the role of preferential credit policies under gradualist reforms, Ju et al. (2021) examine the impact of trade liberalization following China's WTO accession, during which tariffs and non-tariff were substantially reduced. Since these barriers are disproportionately placed on capital-intensive goods, reducing these barriers lowers returns to capital, driving domestic interest rates below international levels and leading to a current account surplus via capital outflow.

China's escalating exports and growing current account surplus following its WTO accession have not only impacted its own economy but also had profound global effects. The existing literature debates whether China shock is a boon or bane to the rest of the World economy. Studies like Autor et al. (2013) show how increased U.S. imports from China led to job losses and lower wages in American manufacturing sectors. Conversely, Wang et al. (2018) argue that U.S. imports of intermediate goods from China boosted local employment and wages outside manufacturing. Similarly, Bloom et al. (2016) find that competition from Chinese imports spurred innovation within European firms most affected by these imports.

An inevitable consequence of China shock is the tension between China and its trade partners, such as the U.S., which triggered the 2018 trade war between these two countries. The three rounds of tariffs that were enacted increased tariff rates by 25% on $50 billion worth of commodities and by 10% on $200 billion worth of commodities imported from China. In retaliation, the Chinese government responded by increasing tariffs on U.S. exports from 8.0% in January 2018, to 18.3% in September 2018, and to about 22% in September 2019.

This trade war, a direct result of China's current account surplus due to gradualist economic reforms, has been found to significantly affect both the Chinese and U.S. economies. One the one hand, it has prompted Chinese firms to divert exports away from the U.S.(Jiao et al., Forthcoming). On the other, regions in the U.S. heavily affected by China's retaliatory tariffs have experienced substantial declines in consumption and employment (Waugh, 2019). More important for future research, increases in non-tariff barriers and FDI restrictions are likely to exert significant long-term impacts on global economic relations and on China's transition to an innovation-driven economy.

III.2. **Barriers in Transitioning to a Consumption-Led Growth Model.** As the rate of returns on investment declined following massive investment after the global financial

[5]Other studies offer alternative explanations, linking the growing current account surplus to rising household saving rates (Du and Wei, 2016; Coeurdacier et al., 2015).

crisis, China decided to transition from an investment-driven to a consumption-led economy.[6] Despite its previously growth-enhancing role, however, China's gradualist approach to economic reforms complicates this transition for two main reasons.

First, under the gradualist approach, state interventions—such as credit subsidies to heavy industry during the investment-driven era—caused the labor share of income to decline even as GDP grew. Since the late 1990s, household labor incomes have been channeled into subsidizing the production of goods and services, leading to a steady decline in their share of GDP (Chang et al., 2016). As a result, growth in household incomes has lagged behind productivity growth, leaving Chinese households unable to consume much of what they produce. Historically, the Chinese government circumvented domestic demand deficiencies and maintained economic growth by stimulating investment and exports rather than redistributing income from the corporate sector to households. With returns on investment declining and trade tensions intensifying in recent years, however, barriers to transitioning to a consumption-led growth model now pose a significant threat to China's long-term economic prospects.

Second, during the investment-driven economy, households often curtailed consumption to finance real estate investments. The growing burden of mortgage debt relative to income further suppressed household spending. While the mortgage boom created wealth for a specific segment of the population, it ultimately contributed to a decline in overall household consumption (Chen et al., 2020a). These barriers have left China vulnerable to significant economic shocks. For instance, the bursting of speculative housing bubbles—fueled by tightened financial regulations on real estate developers in 2022—triggered widespread negative effects on investment in both the corporate and household sectors (Chen et al., 2024a). Moreover, unlike previous major shocks such as the global financial crisis, the Covid-19 lockdowns have permanently dampened household consumption and GDP growth (Chen et al., 2024b).

III.2.1. *High Saving Rate.* China's gradualist economic reforms have driven consistently high saving rates, which have been above 35% of GDP since the 1980s, peaking at over 50% around 2010 (Yang, 2012). Household saving rates also surged, increasing from 6%-7% of GDP in the late 1970s to over 25% by 2009 (Curtus et al., 2015), challenging the permanent income hypothesis and creating the "high saving rate" puzzle.

This phenomenon has been extensively studied in the context of China's structural transformation, during which the lack of adequate social insurance compelled households to increase savings as self-insurance against various uncertainties.[7] Reduced public provision of

[6]At the 19th National Congress of the Communist Party of China, the central government emphasized that consumption should play a fundamental role in economic development.

[7]Other studies attribute China's high saving rate to its one-child policy from 1979-2016, including Wei and Zhang (2011), Curtus et al. (2015), Choukhmane et al. (2017), and Imrohoroglu and Zhao (2018).

education, health, and housing amid large-scale market-driven reforms in the late 1990s compelled households to save for education and healthcare expenses and to afford housing down payments (Chamon and Prasad, 2010). Further studies explore how income risks, intensified by SOE restructuring and insufficient social safety nets, influence savings. Wen (2010), for example, attributes the high saving rate puzzle to borrowing constraints and uninsured risks faced by households, which cause the marginal propensity to consume to negatively depend on changes in permanent income. Chamon et al. (2013) observe that increasing household saving rates correlate with rising idiosyncratic income risks, which were exacerbated from 1998 to 2009 due to SOE restructuring and pension reforms. Santaeulàlia-Llopis and Zheng (2018) observe that as economic growth accelerated, income risks, especially permanent ones, increased significantly, worsening consumption insurance. He et al. (2018) find that SOE layoffs in the late 1990s heightened unemployment fears, contributing significantly to precautionary savings among SOE workers.

III.2.2. *Growing Inequalities.* Various reforms, particularly in the housing sector, have widened inequality among households, thereby hindering the effectiveness of expansionary policies on the growth of aggregate consumption. In 1985, the Chinese government initiated policies to allow some households (and regions) to become wealthy first, setting the stage for extraordinary economic growth over the last four decades that has been accompanied by increasing income and wealth inequality across households.[8] The top 10% of income earners' share increased from 27% to 41% from 1978 to 2015, while the top 10% of wealth share soared to 67% by 2015, similar to levels in the United States (Piketty et al., 2019).

Between 1992 and 2007, wage inequality rose alongside an average real wage increase. Ge and Yang (2014) attribute these trends to capital accumulation, shifts in skill-biased technology, and rural-to-urban migration. Piketty et al. (2019) note that the urban-rural income gap widened, but most increases in inequality occurred within both rural and urban areas themselves. Their paper, however, may overstate China's actual income inequality. Piketty et al. (2019) proceed with income inequality estimates largely based the fact that 95% of housing is private, but the remaining 5% of non-private housing is likely skewed towards SOE employees, particularly those in rural areas and lower income brackets. Since the value of these in-kind benefits may not be fully reflected in income data, it could have

[8]This statement was initially made by Deng Xiaoping on October 23, 1985, during his meeting with a delegation of senior U.S. entrepreneurs.

a non-trivial impact on inequality measures. Further research into these effects would be valuable.[9]

Surges in house prices since the 2000s have been an important driver of wealth inequality, mainly because Chinese household wealth is concentrated in housing assets. Using the China Household Finance Survey data for urban China, Chen et al. (2020a) calculate that housing stock comprised 80.4% of households' wealth in 2013, compared to about 40% for U.S. households. They also find that significant house value increases for educated, middle-aged households during the 2015-2016 housing boom contributed to wealth disparities. Similarly, Knight et al. (2020) estimate that 45.3% of wealth inequality growth between 2002 and 2013 stemmed from rising house prices.

A high level of income and wealth inequality poses a significant barrier to transitioning China into a consumption-led growth model. Research indicates that the marginal propensity to consume decreases as permanent income or wealth increases (Straub, 2019; Fisher et al., 2019). Policies targeting households with low incomes are essential, as their marginal propensity to consume is relatively high.

III.3. **Credit Reversal and Looming Debt Challenges.** China's gradualist approach to market-oriented reforms, including active policy interventions to avert economic slowdowns, has led to significant economic and financial challenges. Specifically, the reliance on SOEs and local governments during crises such as the global financial crisis has resulted in a reversal of credit allocation away from private firms and a subsequent surge in corporate and local government debt.

III.3.1. *The 2009 Economic Stimulus.* The 2009 economic stimulus is a salient example of the massive government intervention, reflecting China's approach to periodically adjusting the balance between market forces and state interventions to address evolving economic challenges. In response to the 2008 global financial crisis and a sharp decline in GDP growth, China implemented an expansive monetary policy alongside a four-trillion RMB fiscal plan targeting capital-intensive industries (Bai et al., 2016). These measures included a significant increase in the M2 money supply in 2009 and large-scale infrastructure investments funded through local government financing vehicles (LGFVs). While these policies boosted short-term growth, they also substantially increased LGFVs' borrowing and led to long-term resource misallocation by crowding out credit to the private sector (Huang et al., 2020).

[9]With the secular slowdown in economic growth, income and wealth inequality in China have begun to decline since 2009. The Gini coefficient for income fell by 2.3 percentage points between 2008 and 2014 (Li, 2016). Recent data from the China Household Finance Survey indicate that top shares in earnings, incomes, and wealth are also declining. This trend has been partly attributed to post-2008 credit policies that favored unskilled labor-intensive firms (Bai et al., 2020b). While these policies may have reduced inequality, their interplay with subsidies provided to state employees warrants further exploration.

Further studies examine the adverse effects of these policies on credit allocation. Cong et al. (2019) find that the post-2008 monetary stimulus reversed previous trends of allocating credit toward more productive private firms and instead favored less productive SOEs during 2009-2010. Cun et al. (2020) find that such expansionary policies, although aimed at boosting liquidity, failed to effectively support broader industrial sectors during the downturn due to insufficient trade credit. Chen et al. (2023) study the joint effects of fiscal and monetary expansions, finding that while infrastructure investments initially increased bank credit to both SOEs and non-SOEs in the infrastructure sector, they ultimately increased funding costs for firms, particularly non-SOEs, in other sectors, thus exacerbating the crowding out of private firms.

In conclusion, while temporarily boosting GDP growth, China's 2009 economic stimulus and subsequent policies have redirected credit from productive private enterprises toward less efficient SOEs and capital-intensive projects. This shift exacerbated capital misallocation and laid the groundwork for a soaring debt-to-GDP ratio and increased financial risks. Indeed, as found by Wei et al. (2017a), the contribution of TFP to GDP growth has turned persistently negative, while the ratio of long-term loans to GDP has risen since 2009.[10] China's gradualist approach to balancing market mechanisms with state interventions has left a lasting imprint on its macroeconomic development and financial system. The enduring effects of the 2009 stimulus raise serious concerns about the sustainability of future growth.

III.3.2. *Looming Debt Challenges and Financial Risks.* Since the early 2000s, the ratio of total bank loans to GDP has climbed from around 100% to over 160% by 2020, with total social financing increased to exceed 280%. In particular, the 2009 economic stimulus led to a notable expansion in both traditional and shadow banking loans, with the latter's share in total bank credit rising to 20% during 2013-2015 (Chen et al., 2018). These policies resulted in an inefficient allocation of resources, favoring less productive SOEs over more dynamic private firms and contributing to long-term misallocations (Cong et al., 2019; Chen et al., 2020b).

The fiscal and monetary stimulus also played an important role in exacerbating the financial positions of local governments. During China's RMB 4 trillion ($580 billion) economic stimulus following the 2008 global financial crisis, local governments used LGFVs to borrow extensively. By 2013, it was estimated that local governments had accumulated RMB 17.9

[10]There are many unanswered questions regarding the decline in TFP since 2009. For instance, is this decline due to a reassertion of the state sector at the expense of the private sector, or does it reflect a shift in priorities, with less emphasis placed on economic growth in the performance evaluation of local government officials? Addressing these and related questions would be valuable for future research.

trillion ($2.6 trillion) in debt through LGFVs and other channels.[11] In 2015, the central government attempted to curtail off-balance sheet borrowing by LGFVs by establishing a swap program to convert LGFV debt into longer-term government bonds with lower interest rates (Lam and Wang, 2018). Consequently, the local government bond market expanded rapidly. Within less than a decade, local governments and LGFVs issued nearly $5 trillion in debt—an amount surpassing the size of the U.S. municipal bond market (SIFMA, 2022). Recent analysis by the International Monetary Fund (IMF) highlights that LGFVs remain financially dependent on new borrowing and financial support from local governments, which underpin their borrowing capacity (IMF, 2022).

One key risk associated with rising debt levels is corporate default. Chang et al. (2019) analyze the trade-offs of monetary tightening, finding that while it improves efficiency by allocating resources to private firms, it also increases SOE bankruptcy rates and potential bailout costs. This study highlights a policy dilemma between efficiency gains and macroeconomic stability.[12] According to the IMF, the stock of LGFV debt-at-risk—defined as debt not backed by earnings sufficient to cover interest payments—was equivalent to about 37 percent of GDP by 2021 and remains a primary contributor to China's elevated debt vulnerabilities.[13]

Several studies highlight the limitations of China's tightening monetary policy in the context of rising shadow banking. Chen et al. (2018) demonstrate that increasing shadow loans offsets the intended effects of monetary tightening on overall credit. Chen et al. (2020b) attribute the rise of shadow banking around 2012 to the need of local governments to roll over debts incurred during the 2009 stimulus. They document that soon after mid-2010, indebted local government financing vehicles (LGFVs) were squeezed by tightening credit standards from traditional banks. However, LGFVs needed to refinance their maturing bank loans and fund their ongoing infrastructure projects three to five years after the stimulus plan. As a result, these LGFVs started to issue municipal corporate bonds in the interbank markets. The majority of these municipal corporate bonds were bought by Wealth Management Products, which were sold and implicitly guaranteed by commercial banks.

With various institutional frictions in place, tightening of banking regulations has also been found to generate unintended adverse consequences. Hachem and Song (2021), for example,

[11] See "National Government Debt Audit Results," National Audit Office of the People's Republic of China, December 30, 2013, https://www.audit.gov.cn/n5/n25/c63642/part/27403.pdf.

[12] During this period, China's quantity-based monetary policy faced a trade-off between domestic price stability and costly sterilization in the foreign exchange market under restricted capital accounts (Chang et al., 2015).

[13] "People's Republic of China: Selected Issues," International Monetary Fund, February 4, 2022. Accessed January 31, 2023. Available at: https://www.imf.org/en/Publications/CR/Issues/2022/01/26/Peoples-Republic-of-China-Selected-Issues-512253.

find that tightened liquidity rules in 2008 spurred shadow banking activities: smaller banks issued more wealth management products to circumvent regulations, prompting larger banks to tighten the interbank market and increase traditional lending. Li et al. (2020) find that the adoption of Basel III capital regulations in 2013 reduced banks' risk taking but exacerbated resource misallocation between SOEs and POEs.

China's gradualist reform approach, characterized by frequent interventions and preferential loans, has contributed to rising leverage ratios, as recently exemplified by the debt crises of real estate developers such as Evergrande and the financial strain on local governments. These mounting debt burdens also increase systemic financial risks. Chen et al. (2022) demonstrate that the use of negotiable certificates of deposit to circumvent deposit rate ceilings during 2013-2017 fueled non-state bank lending. Lax regulation on negotiable certificates of deposit, however, increased these banks' leverage and vulnerability, making them susceptible to shocks such as the trade war and the outburst of Covid-19.

Recent bankruptcies of medium-sized banks, such as Baoshang, a city-level commercial bank, and Bank of Jinzhou, support this analysis. By the third quarter of 2017, Baoshang Bank's outstanding interbank liabilities accounted for 48.04% of its total liabilities, compared with an average of 19.49% for the whole banking sector and 10.47% for large state banks (Fu, 2020). On May 24, 2019, China's regulators took over Baoshang Bank, announcing that only interbank liabilities below 50 million RMB would receive full coverage, while those exceeding that amount would face potential losses. Shortly after Baoshang Bank's default, several other small banks, including Bank of Jinzhou, Hengfeng Bank, Chengdu Rural Commercial Bank, Bank of Jilin, Harbin Bank, and Bank of Gansu, experienced severe liquidity distress. In the interbank market, for example, between May 25 and June 9, 15 days after Baoshang Bank's takeover, Bank of Jinzhou issued only two negotiable certificates of deposit, raising just 0.2 billion RMB in total. In contrast, before the change in bailout policies, the bank successfully issued 18 negotiable certificates of deposit in 15 days, raising 5.8 billion RMB.

III.3.3. *Closing Thoughts.* While China's active policy interventions have achieved short-term goals, they may cast a long shadow on its macroeconomy. Failing to address short-term shocks, such as the global financial crisis and the Covid pandemic, could have caused long-term social and political instability. Frequent interventions, however, may also impose costs by distorting economic behavior and worsening resource misallocation.

Future research could explore the potential impacts of alternative policy choices China did not pursue. For example, what would the short-run and long-run macroeconomic impacts have been if China had adopted shock therapy instead of gradualist reforms? What if China had avoided expansionary monetary and fiscal policies during the global financial crisis or had

not implemented lockdowns during the Covid pandemic? Evaluating these counterfactual scenarios requires structural models for quantitative experiments.

Despite its past success, China's gradualist reforms now pose significant macroeconomic challenges. Global imbalances and trade wars have weakened future export growth, particularly in capital- and technology-intensive sectors China has relied on since WTO accession. Barriers to a consumption-led model continue to suppress household spending as a growth driver, while mounting debt and financial risks limit the government's ability to use expansionary policies to spur investment. With consumption, investment, and exports all losing momentum, China faces a crossroads, requiring a reconsideration of its gradualist approach.

IV. Concluding Remarks

We conclude by revisiting the question posed in the introduction: How has the gradualist approach in China's economic reforms influenced its macroeconomic development since 1978? Our review suggests that from 1978 to 1997, various reforms accelerated the transition of surplus labor from agriculture to light industries, thereby raising both the supply of and demand for industrial labor. These reforms included the household responsibility system that bolstered agricultural productivity, the establishment of township and village enterprises, the implementation of policies that enabled local governments to actively secure bank credit for township and village enterprises, and openness to trade that allowed for export processing by foreign investment enterprises and township and village enterprises. These measures spurred the growth of aggregate total factor productivity, which was the principal catalyst for GDP growth during this initial phase.

Since 1998, various reforms such as privatization of state-owned enterprises, trade liberalization, and the relaxation of the Hukou registration system have reduced frictions in labor mobility. The increase in labor mobility enabled a more efficient reallocation of labor and capital within the labor-intensive sector and continued to augment aggregate total factor productivity and its contribution to GDP growth. During this phase, the government's heavy industrialization strategy led to capital deepening, significantly boosting GDP growth. This heavy industrialization process was facilitated by China's pro-growth, quantity-based monetary policy framework and favorable mortgage policies, which fueled the country's housing boom. China's World Trade Organization accession further helped integrate it into the global production network and shifted its export composition from labor-intensive to capital-intensive (and even technology-intensive) goods.

While successful in sustaining China's economic growth over the past four decades, the gradualist reform approach has its limitations and has contributed to many challenges faced by the Chinese economy in recent years. The trade surplus generated under the gradualist reforms has led to trade tensions that threaten the sustainability of China's GDP growth.

Extremely high household and national saving rates, along with widening income and wealth inequality across households, have become barriers to transitioning to a consumption-led economy and have made growth prospects fragile. Moreover, the 2009 economic stimulus and subsequent lax regulatory policy on shadow banking have caused both the corporate and government sectors to become overleveraged in recent years, endangering financial stability.

China's growth has slowed since the global financial crisis, and this slowdown has accelerated since 2018. The pace of domestic economic reforms has also slowed, while resource reallocation to SOEs has resurged ("State Marches, Private Retreats"). More ambitious industrial policies have been implemented by the government to direct investment decisions (Lardy, 2019). At the same time, more regulations have been imposed on private firms in various industries (e.g., fintech, real estate, and e-commerce). In recent years, China's trade and technology war with the U.S. has posed challenges for firm innovations. With the help of micro and macro data from the past decade, further research is essential to understand recent challenges to China's macroeconomy.

TABLE 1. Rural and migration policy reforms

Year	Key steps
1978-1979	Local experiments of household responsibility system in Sichuan and Anhui
1980	Household responsibility system (HRS) established nationwide
1982	Rural land contracted to households under HRS
1984	Settlement of rural migrants in urban areas
1997	Temporary residence permit for big cities
1998	Legal framework for land tenure rights established
2003	Transfer of land permitted between households
2003-2005	Temporary residence permits eliminated by many provinces
2014	Official distinction between rural and urban Hukou eliminated

TABLE 2. Reforms on ownership structure

Year	Key steps
1979	TVEs allowed to conduct business for profits
1994	Legal framework for privatization of SOEs established
1995	Small-sized SOEs and TVEs allowed to either go bankrupt or be privatized
1995	National restrictions on private ownership lifted
1997	Program "Grasp the large and let go the small" initiated
2003	SASAC established as the legal owner of central SOEs
2013	Mixed ownership system established

Note: SASAC is the acronym for the State-Owned Assets Supervision and Administration Commission.

TABLE 3. Trade policy reforms

Year	Key steps
1978	Export-processing (EP) activities allowed for FIEs
1980-1981	Four special economic zones established for EP activities
Early 1980s	Tariff system established
1986	EP activities granted to all firms in coastal provinces
1994-2001	Tariffs reduced unilaterally from an average of 40% to 16%
2004	Trade rights broadened to all domestic and foreign private firms
2005	Eliminated all quotas, licenses, and other non-tariff barriers for manufacturing imports

Note: FIEs is the acronym for foreign-invested enterprises.

TABLE 4. Policy reforms on FDI

Year	Key steps
1980	FIEs allowed to invest in special economic zones
1995	Sector restrictions and joint venture requirements established
2001	Joint venture requirements removed
2002	Government's FDI Catalogue substantially revised
2012	Unified national code of profit taxes for domestic and foreign firms

TABLE 5. Housing policy reforms

Year	Key steps
1978-1988	Pilot tests on public housing sales
1988	Land transactions allowed
1988	Public house sales initiated with rent increased to match real housing cost
1994	SOE employees allowed to purchase "reformed houses"
1998	Termination of government-distributed housing in China
1998	Residential mortgage loans allowed at subsidized interest rates
2004	All urban land leasehold rights required to be sold at public auction

TABLE 6. Financial policy reforms

Year	Key steps
1978-1997	Aggregate credit volume as the intermediate target of monetary policy
1984	PBC as the central bank and four state-owned banks established
1995	PBC Law and Commercial Bank Law enacted
1996-1997	Liberalization of interbank interest rates
1998-2015	M2 growth as the intermediate target of monetary policy
2004	Lending rate ceiling removed
2013	Lending rate floor removed
2013	Basel III capital regulation adopted
2015	Deposit rate ceiling removed
2016	The Macro-prudential Assessment system established
2017	Off-balance-sheet WMPs included in Macro-prudential Assessment
2018	NCD developed as interbank liability
2018	M2 growth target removed from government work report

Note: "NCD" represents a negotiable certificate of deposit, and "WMPs" represents wealth management products.

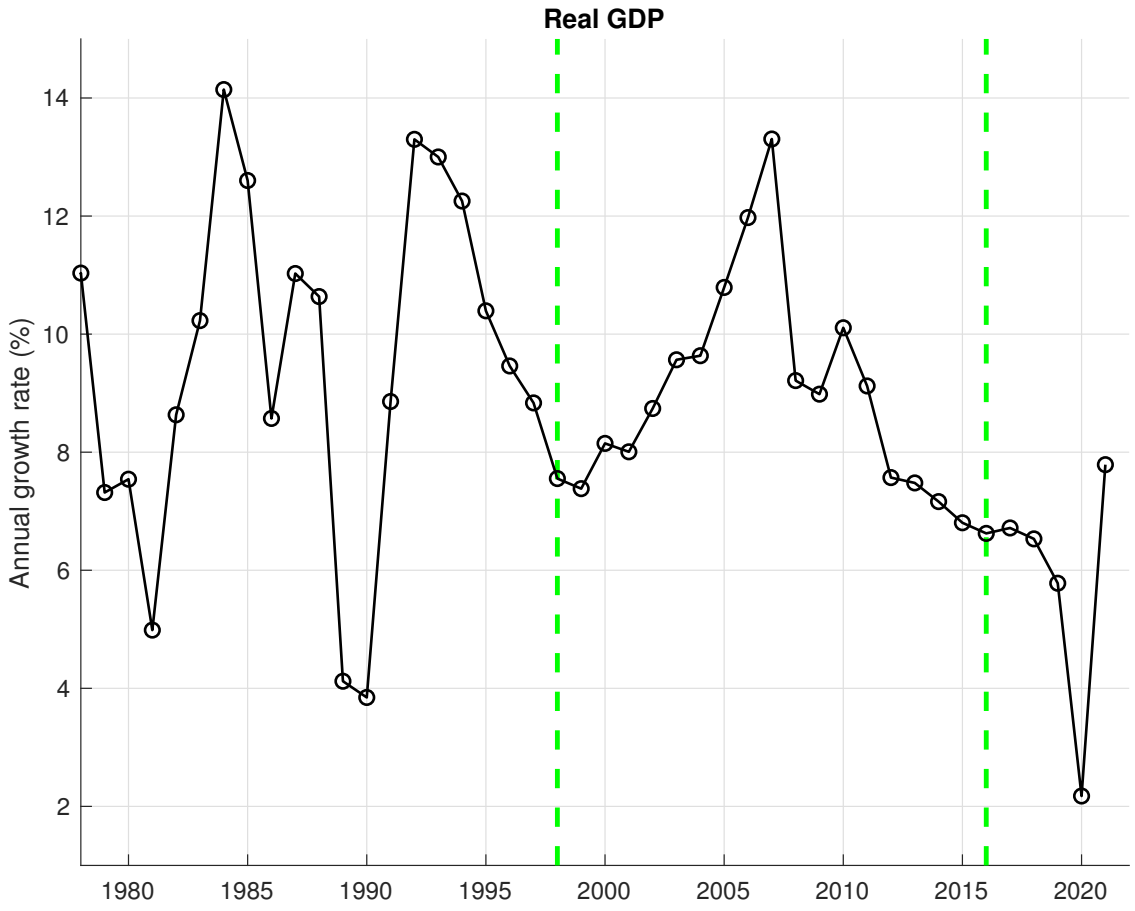

FIGURE 1. GDP growth (annual data). The first vertical green line marks the beginning of the investment driven economy and the second marks the beginning of the new normal economy. Data source: Chen et al. (2024b).

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