

CHINA'S HIGH SAVING RATE: MYTH AND REALITY

Guonan Ma and Wang Yi¹

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ABSTRACT. China's saving rate is high from many perspectives – historical experience, international standards and model predictions. Furthermore, the average saving rate has been rising over time, with much of the increase taking place in the 2000s. What sets China apart from the rest of the world is that its rising aggregate saving has reflected high savings rates in all three sectors – corporate, household and government. Our evidence casts doubt on the proposition that distortions and subsidies account for China's high saving rate. Instead, we argue that tough corporate restructuring (including pension and home ownership reforms), a marked Lewis-model transformation process (where the average wage exceeds the marginal product of labour in the subsistence sector) and rapid ageing process have all played more important roles. Such structural factors suggest that the Chinese saving rate may peak in the medium term.

JEL classification: E20; E21; O11; O16; O53.

Keywords: Saving; Corporate, Household and Government Saving; Chinese Economy.

RÉSUMÉ. Le taux d'épargne en Chine est élevé, tant d'un point de vue historique que par référence aux standards internationaux et aux prédictions des modèles. Il a connu une tendance croissante, surtout au cours des années 2000. La particularité de la Chine est que cette croissance de l'épargne agrégée reflète des taux d'épargne élevés dans les trois secteurs (entreprises, ménages et gouvernement). Notre analyse montre que les facteurs structurels comme la restructuration des entreprises, un processus de transformation reposant sur le modèle de Lewis ainsi qu'un vieillissement rapide de la population ont joué un rôle important. Ces facteurs structurels suggèrent que le taux d'épargne chinois devrait atteindre un pic à moyen terme.

Classification *JEL* : E20; E21; O11; O16; O53.

Mots-clefs : épargne; économie chinoise.

1. Corresponding author: GUONAN Ma, Senior Economist at the Bank for International Settlements (BIS) (Guonan.ma@bis.org). WANG Yi, Division Chief at the People's Bank of China (PBC). The views expressed here are those of the authors only and do not necessarily reflect those of the BIS or the PBC. We wish to thank many people, including Claudio Borio, Vincent Chan, Ben Cohen, Andrew Filardo, Robert McCauley, Madhusudan Mohanty, Ramon Moreno, Thomas Rawski, Philip Turner, the two unanimous referrers of this journal, for their suggestions and comments as well as Lillie Lam for her able assistance.

1. INTRODUCTION

The extraordinarily high saving rate of China has attracted much attention. The nation saves half of its GDP and its marginal propensity to save approached 60 % during the 2000s (Zhou, 2009; ADB, 2009; IMF, 2009). Such a saving rate has important implications both for China's own internal balance and for the external balance.

Saving is fundamentally the outcome of intertemporal optimisation. Yet there are many different schools of thought about the role of saving in economics. Some stress saving as a core driver of economic development (Lewis, 1954). Others focus on links with cycles of aggregate demand. Others see excess saving as a key source of global imbalances and even a major cause for the international financial crisis (Bernanke, 2005 and Wolf, 2008). Nor is the statistical measurement of saving very precise. Saving is a residual concept defined as the difference between income and consumption. Small errors in the measurement of either large aggregate can lead to significant mismeasurement of savings. The causality between saving and other economic variables can run in both directions. And possible determinants of saving can be cyclical or structural.

This paper has three aims: to highlight the stylised facts of Chinese saving; to review the debate over factors shaping the saving dynamics, both across sectors and over time; and to explore its medium-term outlook and policy implications. Our review combines an international comparison of gross national saving and a breakdown of this aggregate by the components of household, corporate and government saving. Building on a growing body of work on this subject, we hope to take stock of the progress in understanding Chinese saving behaviour, put the debate in perspective and shed new light on the trends in, and forces behind, high Chinese saving.

The main findings of the paper are as follows:

- First, China's saving rate is high by historical experience, international standards and model predictions and also has been rising over time (especially in the 2000s).
- Second, saving by each of the three sectors is also high but not exceptional. What really sets China apart from the rest of the world is that it ranks near the top globally across all three components.
- Third, adjusting for the effect of inflation and leverage alters the time paths for sectoral saving rates. Our inflation-adjusted numbers suggest that most of the smaller increase in corporate saving took place in the 2000s – and not in the 1990s as appears from the raw data.
- Fourth, we question some of the more recent wisdom about the principal drivers of high Chinese saving. In particular, the evidence does not support the proposition that distortions and subsidies have been the principal causes of China's rising corporate profits or high saving rate.
- Fifth, we argue that three major microeconomic factors have been key: (a) major institutional reforms including very tough corporate restructuring, pension reform and the spread of private home ownership; (b) a marked Lewis-model transformation process as labour left

the subsistence sector where its marginal product was less than its average wage; and (c) a rapid ageing process.

While structural factors point to a peak in the Chinese saving rate in the medium term, policy measures promoting job creation, a stronger social safety net and enhanced financing and incentives for provision of social services may contribute to the transition to more balanced domestic demand. Nevertheless, any sensible prediction of Chinese saving awaits further exploration about the puzzle of high Chinese saving.

The paper is organised as follows. The next section highlights the stylised facts about China's gross national saving in an international perspective and provides a broader backdrop to the Chinese saving trend to highlight some of the broader forces influencing the nation's saving trends. Section 3 examines saving of the corporate, household and government sectors and reviews the explanations advanced in the literature. Section 4 briefly outlines some of the structural and policy factors shaping the medium-term outlook for the Chinese saving rate and suggests some promising areas for future research, before Section 5 concludes.

2. STYLISTED FACTS OF AND A BACKDROP TO CHINESE SAVING

Before we get into the detailed breakdowns of gross national saving, it is useful to first highlight the most salient stylised facts of the Chinese saving trends and provide a broad backdrop to its evolution. The purpose is to draw attention to some of the underappreciated structural and institutional factors shaping the high Chinese saving.

2.1. Stylised facts

First, notwithstanding considerable measurement problems (see Box 1), there is little doubt that the Chinese aggregate saving rate is high by international standards. It exceeded 53% of GDP in 2008, far above all the OECD economies and overtaking Singapore which has traditionally been among the highest savers globally (TABLE 1).

Second, the reported Chinese saving rate is high relative to predictions by structural models based on macroeconomic fundamentals such as income level and growth, demographics, fiscal policy, terms of trade, financial development, and uncertainties. Cross-country empirical panel regression studies have often identified China as a clear outlier with a saving rate one quarter higher than what might have been predicted (Kuijs, 2006; Ferrucci, 2007; and Park and Shin, 2009). In other words, China's saving/GDP ratio of 53% in 2008 could be 10-13 percentage points above what might be inferred from the empirical studies.

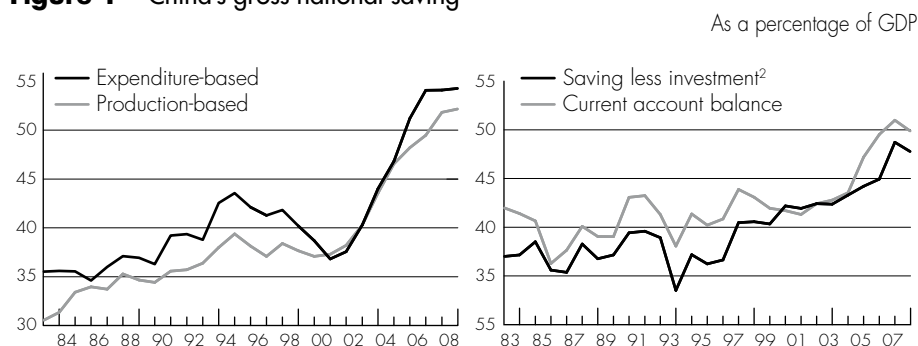
Third, the Chinese saving is not only high but has also been rising over time. Starting from an already high level of more than 30% of GDP in the early 1980s, China's gross national saving rate rose to above 50% of GDP lately (FIGURE 1). Therefore, the marginal propensity to save reached 54% over the period of 1982-2008.

Table 1 – Gross national saving: an international perspective

	As a percentage of GDP							
	1990	1992	1995	2000	2005	2006	2007	2008
China	39.2	38.8	42.1	36.8	51.2	54.1	54.1	54.3
China	35.6	36.4	38.1	37.3	48.2	49.5	51.8	53.2
India	23.0	21.4	24.5	23.8	34.3	35.8	37.6	33.6
Japan	33.2	33.2	29.3	27.5	26.8	26.9	27.0	...
Korea	37.7	36.9	36.2	33.6	32.7	31.2	30.6	31.9
Mexico	23.6	18.6	21.1	23.8	23.3	25.5
Singapore	43.6	45.8	49.3	46.9	48.7	49.9	51.7	48.3
Australia	18.6	18.0	18.7	19.7	21.6	21.8	22.5	...
Canada	17.3	13.4	18.3	23.6	23.8	24.4	23.7	...
France	20.8	19.6	19.1	21.6	18.5	19.3	19.9	18.9
Germany	25.3	22.3	21.0	20.2	22.2	23.9	25.9	26.0
Italy	20.8	19.1	22.0	20.6	19.5	19.6	20.0	18.2
Switzerland	33.1	28.6	29.6	34.7	36.9	35.5	31.2	...
United Kingdom	16.4	14.3	15.9	15.0	14.6	14.2	15.6	...
United States	15.3	14.2	15.5	17.7	14.6	15.8	14.0	12.1

Note: For China, the first row is gross national saving estimated using expenditure-based GDP while the second row shows estimate using production-based GDP. The latter one is consistent with the flow-of-funds statistics to be employed hereafter unless otherwise specified.

Sources: Asian Development Bank (ADB); National Bureau of Statistics of China (NBS); OECD; authors' own estimates.

Figure 1 – China's gross national saving

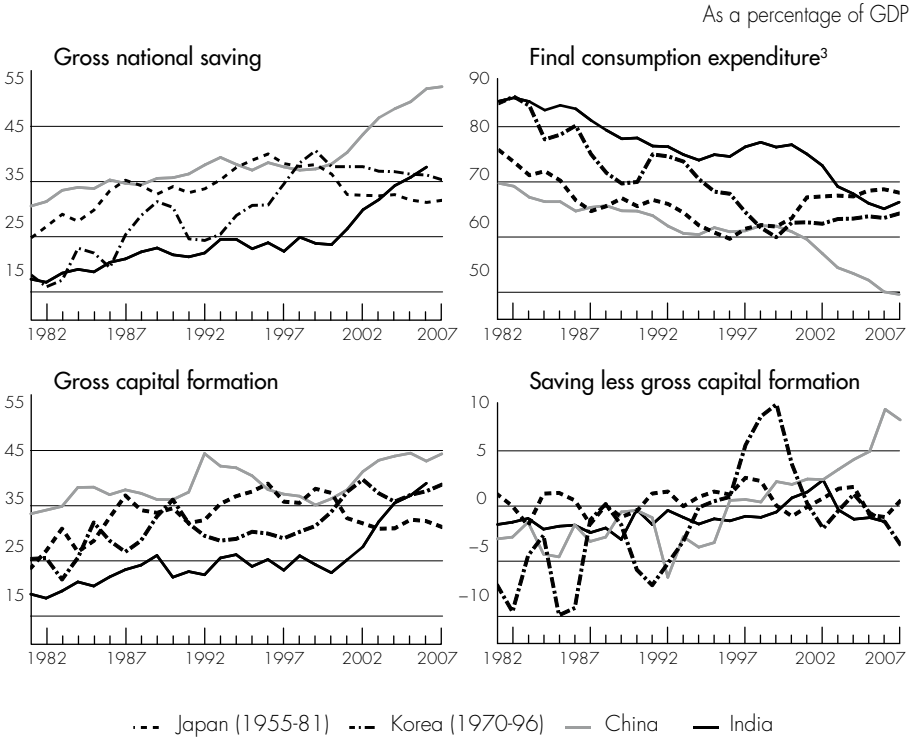
Sources: National Bureau of Statistics of China (NBS); authors' own estimates.

2. Gross national saving is estimated using either expenditure-based GDP or production-based GDP. Saving less investment here is calculated using national gross saving estimated by production-based GDP, which is consistent with the flow-of-funds statistics and will be employed for the rest of this paper unless otherwise specified.

Fourth, China has seen three distinct phases in its evolving gross national saving rate – a steady increase from 30 %-35 % of GDP to 40 % - 45 % between 1982 and 1994 followed by a decline to around 37 % by 2000 and a resurgence thereafter to reach over 50 % (FIGURE 1). During this last phase, China’s saving rate on average went up two percentage points of GDP per year, implying a marginal propensity to save of 60 %.

Fifth, such a rapid rise in the national saving rate is rare but by no means unique to China. Fast-growing Asian economies in their transition phases also experienced large and sustained rises in their saving rates (FIGURE 2). Japan’s aggregate saving/GDP ratio rose by 15 percentage points during 1955-70, and Korea’s saving rate increased from 16 % to 40 % between 1983 and 2000. Within one decade, India’s saving rate registered a rise of 10 percentage points of GDP, reaching 38 % by 2008.

Figure 2 – Saving and investment – international comparison



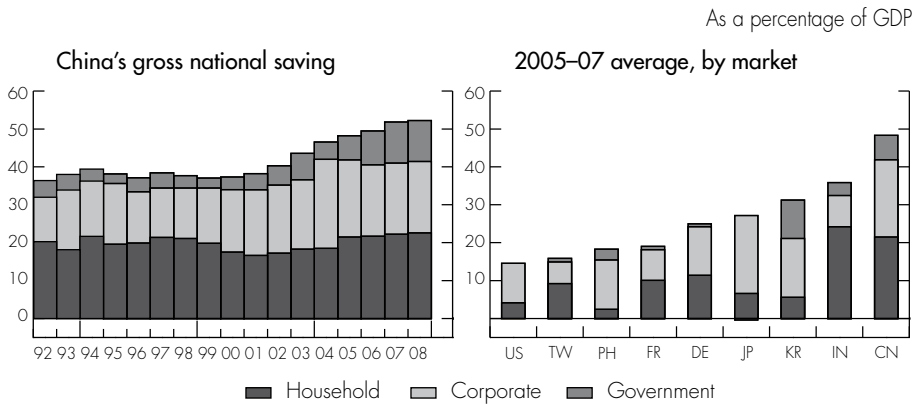
Sources: National data; authors’ own estimates.

Sixth, a central feature of the Chinese saving behaviour is that the household, corporate and government sectors each have contributed to the rise in gross national saving. In terms of each component, China’s saving is high but not exceptional. As a share of GDP,

3. Including both private and government final consumption expenditure.

China's corporate saving at best rivals Japan's, its household saving is below India's, and its government saving is less than Korea's (FIGURE 3). However, what really distinguishes China from other countries is that its three saving components have all ranked near their global tops, resulting in an exceptionally high aggregate saving rate. This, in turn, suggests the need to better understand each sector's saving dynamics. Attempts to identify any one single explanation for China's exceptionally high aggregate saving rate will almost surely be less than convincing.

Figure 3 – Gross national saving, by institutional sector



CN = China; DE = Germany; FR = France; IN = India, JP = Japan; KR = Korea; PH = Philippines; TW = Chinese Taipei; US = United States.

Sources: Asian Development Bank (ADB); NBS; OECD; authors' own estimates.

Seventh, the rising saving rate has interacted with a high investment rate. During 1998-2008, China's investment surged from 37 % of GDP to 45 %, while that of India went up from 24 % to 40 %. Thus saving and investment in China may have reinforced each other during this decade. What sets China apart from the experiences of Japan, Korea and India, though, is its large current account surplus during this transition, as the Chinese saving far outpaced its already high investment. This has been a principal factor behind China's swing from a net debtor position of 10 % of GDP to a net creditor position of 37 % within one decade (Ma and Zhou, 2009).

Such a high and rising saving rate will inevitably have implications for China's growth model and its profile of internal and external balances. First, a high saving has financed strong economic growth, with low inflation and manageable exposures to adverse external shocks. Over the past decade, China's GDP growth registered 10 % plus per annum, while its CPI inflation averaged less than 2 %. Second, it helped shape China's internal and external balances to an important extent. In particular, a rising saving rate implies a falling consumption share in GDP and hence a highly investment-intensive internal demand structure.

Estimating China's gross national saving

We follow the SNA93 definition of gross national saving (GNS) as gross national disposable income (GNDI) less final consumption expenditure. There are two principal approaches to calculating China's GNDI. The first approach uses expenditure-based GDP and produces an estimated GNS series that is equivalent to the sum of gross capital formation and current account balance. The second takes production-based GDP and yields a GNS series consistent with the measure based on the flow-of-funds statistics, which allows for breakdowns of both disposable income and saving by sector.

Both estimates of the Chinese gross national saving at the aggregate level start with 1982, but the official flow-of-funds statistics begins only from 1992. The discrepancy between these two estimates of GNS mainly lies in that between the Chinese expenditure-based and production-based GDP statistics. Although the two saving estimates broadly track each other over time, for most years, the series based on expenditure-side GDP is higher than the measure based on production-side GDP, and their difference in some years can be as large as 5 % of GDP (FIGURE 1). To be consistent with the flow-of-funds statistics, we employ the estimate using production-based GDP to examine the composition of GNS in this study unless specified otherwise. We also believe that this estimate is more reliable in China's case. Nevertheless, estimates based on the two approaches could be inflated by at least three measurement problems.

First, Heston and Sicular (2008) observe a pattern of positive inventory accumulation of at least 1-2 % of GDP every year. This may suggest possible overestimation of the Chinese saving rate. As in a mature economy, stocking and destocking would rotate over the business cycles. Yet, as discussed in Section 3, China's industrial sales expanded much faster than GDP over time, thus justifying persistently positive inventory changes.

The second upward bias of the Chinese saving rate is a potential understatement of imputed housing rent. The Chinese rural household surveys suggest that imputed rent is implausibly low, at merely five US dollars a person per annum (see the note of this box). Since the imputed rent is both income and consumption for households, it does not affect the amount of their saving but the proportion they save from their income. As a result, China's gross national saving could be overstated, but probably by no more than 1 %-2 % of GDP.

The third potential bias is the understatement of retained earnings at foreign firms operating in China, which may lead foreign saving to be reported as part of gross national saving, thus overstating both the current account surplus and national saving. According to Zhang (2009), the under-recorded profits at foreign firms in China may be as large as 2 % of GDP. In sum, China's gross national saving rate could be overstated by a likely range of 2 %-4 % of GDP.

Note: By definition, imputed rentals are non-cash consumption expenditure. The Chinese rural household surveys report both total and cash housing expenditure, which include rentals, gas and electricity. The difference between the two is a reasonable proxy of imputed rental, amounting to RMB36 or USD5 per capita in 2008. This appears low, given that China's rural home ownership averages something like 90 %.

Over the past 10 years, China's private consumption declined from 47 % of GDP to 36 %, the lowest among the world's major economies.⁴

2.2. A backdrop to the Chinese saving behaviour

Before we get into the detailed breakdowns of gross national saving, it is useful to first sketch some of the major forces influencing the whole Chinese economy. Two sets of major forces of the high Chinese saving rate may have been important but often neglected in the literature: (1) major structural and demographic trends; and (2) key institutional changes. These factors could broadly influence the saving behaviour of all three sectors in China but the magnitude of their influence could vary from one sector to another.

(1) Structural forces

At least three structural forces could have important bearing on China's high saving rate. First, China has experienced rapid structural changes, as its agriculture share in GDP fell from 30 % to 10 % during 1980-2008 (TABLE 2). Second, underpinning this transformation has been the large-scale rural-urban labour migration and urbanisation – the agriculture share of the total employment shrank from 70 % to 40 % (to 25 %, according to Brandt *et al.* (2008)), while the urban population share rose from 20 % to 45 %. Third, China's demographic transition has been very compressed, in part owing to the one-child policy. China's dependence dropped from 68 % to 38 % within a generation, resulting in a surge of the working-age share of the population from 60 % to 74 %. As a consequence, China's labour supply growth has been strong but is expected to slow sharply in 10 years from now.

Table 2 – A backdrop: changes in the Chinese economies

	Primary sector	Manufacturing	Construction	Services	Agricultural employment	Urban population	Working-age population
	As a percentage of						
	GDP				total employment	total population	
1980	30.2	43.9	4.3	21.6	68.7	19.4	59.7
1990	27.1	36.7	4.6	31.5	60.1	26.4	66.7
2000	15.1	40.4	5.6	39.0	50.0	36.2	68.4
2008	10.7	41.1	5.4	41.8	39.6	45.7	74.3

Sources: NBS; authors' own estimates.

These three structural forces interacted to generate a sustained and large-scale labour migration from farm to factory. This dynamics can be best summarised as a dualism transformation process described by the Lewis model (Lewis, 1954). In this model, the modern sector with

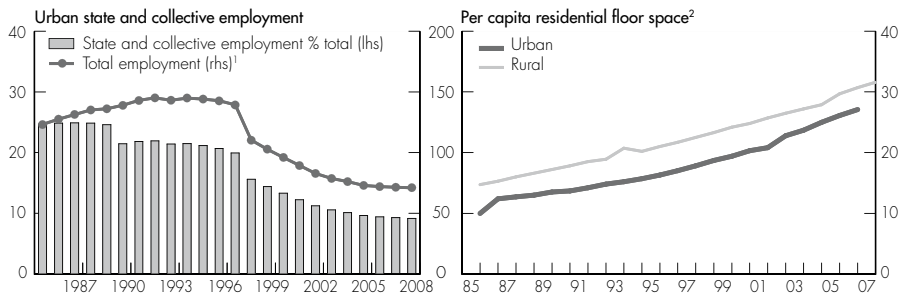
4. As a comparison, India's consumption share fell from 64 % to 55 % in the same period. But a falling consumption share should not be confused with anaemic consumer demand growth – China's private consumption has been growing at near double-digit paces in recent years.

rising productivity draws surplus labour from the traditional sector at a relatively low wage rate. The Lewis model predicts a rising profit share in income, accelerated capital accumulation and faster economic growth during the transformation process, therefore implying a higher saving rate. This process, while not unique, could have been more accentuated in China's case because of its compressed demographic transition and a larger pool of surplus rural labour cumulated under the People's Commune system over the three decades prior to the early 1980s, thus in part helping to explain its recent high saving rate.

(2) Institutional factors

A number of major institutional reforms since the 1990s could also have significantly influenced the Chinese saving trends. In this paper, we discuss three such examples. First, between 1995 and 2005, China went through its toughest corporate restructuring, leading to large-scale labour retrenchment. The employment at state companies was halved (FIGURE 4). Downsized employees received modest social welfare benefits, while many smaller money-losing state companies were shut down altogether. As a result, the enterprise-based cradle-to-grave social safety net shrank rapidly (Cai *et al.*, 2008). Such corporate restructuring tends to directly boost corporate efficiency and reduce job security, lifting both corporate and household saving.

Figure 4 – State employment and residential floor space



¹ In millions of persons. ² In square meters.

Sources: NBS; authors' own estimates.

Second, the 1997 pension reform transformed the previous pay-as-you-go system to a partially funded three-pillar scheme. The new scheme reduced pension benefits, increased contributions and introduced pre-funded individual pension accounts. Moreover, it has covered more firms over time.⁵ This institutional change has interacted with the diminished role for family and increased concerns over rising pressure on public retirement schemes in anticipation of rapid population ageing and thus may have induced additional accumulation of capital through increased saving and investment, the so-called "second demographic

5. For more details of China's pension system, see Feldstein, 1998; Salditt, *et al.* (2007); Song and Yang (2010); Herd *et al.* (2010); and Li and Wu (2010). Also see Moreno and Santos (2008) for a review of international evidence of the possible effects of pension regimes on saving and the current account balance.

dividend" (Wang and Mason, 2008). Therefore, reduced pension wealth and anticipated acceleration of population ageing could both help lift the current saving rate in China.

The third institutional reform relates to private home ownership. As part of the corporate restructuring, state firms no longer provide housing for their employees and in exchange have increased contributions to housing provident funds (Shen and Yan, 2009). The concomitant introduction of private home ownership and property market interacted with the "second demographic dividend" effect to provide additional incentives to build up pension assets, ushering in a housing boom. China's home ownership may exceed 85% today (Gao, 2010). Even if one ignores the substantial quality improvement, China's physical assets of residential housing per capita have at least more than doubled during 1985-2008 (FIGURE 4). The implied housing investment has been enormous. Indeed, the fastest-growing sectors in the Chinese economy over the past three decades have been the construction and services, not the manufacturing sector (TABLE 2). Thus sharply increased demand for housing assets has been a key driver for both high economic growth and high saving in China.

3. COMPOSITION OF GROSS NATIONAL SAVING

To better understand the sources of and factors behind the high Chinese saving, it is useful to examine the breakdown of China's gross national saving by its components: corporate, household and government saving (Kuijs, 2006; Li and Yin, 2007; Wiemer, 2008; Jha *et al.*, 2009). This approach allows us to trace the changing contributions to the Chinese aggregate saving by different sectors, taking advantage of the following simple framework.

$$\frac{S}{Y} = \frac{\sum S_i}{\sum Y_i} = \sum \frac{S_i}{Y_i} \cdot \frac{Y_i}{Y}, \quad S = \sum S_i \text{ and } Y = \sum Y_i, \quad i = e, h \text{ or } g \quad (1)$$

where Y and S are gross national disposable income and gross national saving, respectively; and subscripts e , h and g denote the corporate (enterprise), household or government sector, respectively. Simply, the equation says that an economy's aggregate saving rate is an income-weighted average of all sectors' average propensities to save. In other words, the sector i 's contribution to the aggregate saving rate (S_i/Y) depends on two factors: its income share in the economy (Y_i/Y) and its average propensity to save from its own income (S_i/Y_i). In discussing the saving dynamics of each sector, we should highlight the roles of the broader structural forces and institutional changes discussed earlier, while reviewing other factors specific to the individual sector in question. Our discussion will mostly base on China's flow-of-funds statistics, which provides the breakdowns of gross national income and saving by sector but starts only from 1992.

Three observations of China's saving composition are worth highlighting (TABLE 3). First, according to the official flow-of-funds statistics, the household sector is the largest saver today, to be followed by the corporate sector. Second, the corporate and government sectors have been the principal drivers behind the rise in the aggregate saving rate during 1992-2008,

contributing more than four fifths of the 17-percentage point rise in China's saving/GDP ratio. Third, the year 2000 appears to be a turning point when the aggregate Chinese saving rate started its relentless climb of 16 percentage points, as a share of GDP. Half of this hike so far in the 2000s has come from the government sector.

Table 3 – Contributions to China's national gross saving, by sector

	As a percentage of GDP					
	National gross saving				Adjusted saving	
	Corporate (1)	Household (2)	Government (3)	Total (1)+(2)+(3)	Corporate	Household
1992	11.7	20.3	4.4	36.4	15.6	16.4
1993	15.7	18.2	4.1	38.0	21.4	12.5
1994	14.5	21.7	3.2	39.4	21.1	15.1
1995	16.0	19.6	2.5	38.1	21.0	14.6
1996	13.5	19.9	3.7	37.1	16.9	16.5
1997	13.0	21.4	4.0	38.4	14.8	19.6
1998	13.3	21.1	3.3	37.7	13.4	20.9
1999	14.6	19.9	2.6	37.1	14.1	20.4
2000	16.5	17.5	3.3	37.3	16.6	17.4
2001	17.4	16.6	4.2	38.2	18.1	15.9
2002	18.0	17.2	5.1	40.3	18.5	16.8
2003	18.3	18.3	7.0	43.6	18.9	17.7
2004	23.5	18.5	4.6	46.6	24.9	17.0
2005	20.4	21.5	6.4	48.2	21.7	20.2
2006	18.8	21.7	8.9	49.5	19.8	20.8
2007	18.8	22.2	10.8	51.8	20.0	21.0
2008	18.8	23.4	11.0	53.2	21.0	20.4
Memo: changes						
1992-2008	7.1	3.1	6.6	16.8	5.9	4.3
1992-1999	4.7	-2.7	-1.1	0.9	1.1	1.0
2000-2008	2.3	5.9	7.7	15.9	4.4	3.0
MPS: 92-08	1.00	0.41	0.46	0.54	1.00	0.40

Note: The adjusted corporate saving is corporate saving allowing for the erosion in real corporate debt arising from inflation, which is approximated as a product of expected inflation and net corporate debt. Expected inflation is measured by the two-year moving average of the GDP deflator. Net corporate debt is estimated as corporate loans less the sum of corporate deposits and half of the currency in circulation. Corporate loans are taken as the sum of short-, medium- and long-term loans minus loans to the households. The household loans before 2000 are computed backward by the 2000 outstanding level and the flow-of-funds statistics. The adjusted household saving is calculated on the assumption that adjustments in corporate saving are fully accommodated by household saving.

Note: MPS stands for marginal propensity to save.

Sources: NBS; authors' own estimates.

3.1. Corporate saving

China's corporate saving doubled from 12 % of GDP in 1992 to a peak of 24 % in 2004, but has since trended down to 19 % in 2008 when China's current account surplus surged (TABLE 3). Over the 15-year period of 1992-2008, it contributed some 40 % of the increase in the Chinese aggregate saving but its role has diminished somewhat since the mid 2000s.⁶

By definition, the corporate sector's average propensity to save is 100 % (i.e., $S_e = Y_e$), as final consumption does not take place in the corporate sector so that corporate income and saving are the same. Following standard national income accounting, gross corporate saving = depreciation + retained earnings = depreciation + net earnings – dividend payouts. Our plan is to sequentially review the three components in the order of depreciation, dividend payout and corporate profits.

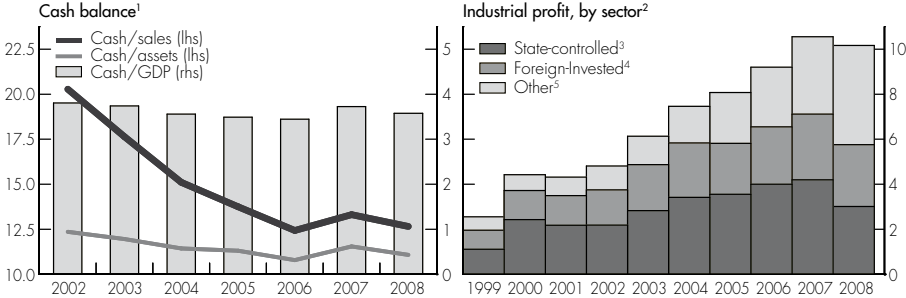
Depreciation as a share of GDP has probably risen during the 1990s and 2000s. Unfortunately, the official statistics do not provide estimates of consumption of fixed assets. Given that depreciation is positively linked to the higher capital stock and newer vintages of capital, there is good reason to expect that depreciation rose during the period under study. Given the rapid paces of industrialisation and capital accumulation discussed in Section 2, the capital stock per worker in the industrial sector at least doubled during 2000-2008. According to Bai *et al.* (2006), China's capital stock as a ratio to GDP rose from 130 % to 170 % between the early 1990s and the mid-2000s.

More controversial have been the various theories about the other element of corporate saving – retained earnings (net earnings minus dividend payout). Low dividend payments by Chinese firms could in part help explain the high net earnings retained at firms, at any given level of corporate profits. Two reasons have been suggested as to why most of the net earnings could have been retained by firms in China: financial underdevelopment and poor corporate governance (Jha *et al.*, 2009; ADB, 2009; and IMF, 2009).

First, it has been argued that limited access to external finance forces firms to hoard cash to hedge uncertainties or to use internal funds to finance expansion. While China's financial system remains underdeveloped, it may have advanced in recent years (Ma, 2007). Moreover, Chinese companies seem to have hoarded less, not more, cash at firm level, qualifying the importance of "precautionary corporate saving" (FIGURE 5). Even private firms seem to have improved their access to external finance somewhat, formally or informally (Hale and Long, 2010). At least, this factor does not explain well the markedly higher corporate saving between 1992 and 2008.

6. High and rising corporate saving has been a global and Asian phenomenon in the 2000s (IMF, 2006 and 2009; OECD, 2007). However, interpreting the detailed dynamics of the Chinese corporate saving warrants special caution, since the measured 2004 peak of corporate saving could in part be a result of one-off data adjustments owing to the economic census in the same year.

Figure 5 – Cash balance of China’s corporate sector and China’s industrial profit



¹ Based on a sample of 1333 Chinese companies listed in China and Hong Kong SAR; in per cent. ² As a percentage of GDP. ³ State-controlled enterprises. ⁴ Foreign, Chinese Taipei or Hong Kong SAR invested and controlled enterprises operating in China. ⁵ All the rest, including non-state controlled joint shareholding companies, collectives, private companies and other joint ventures.

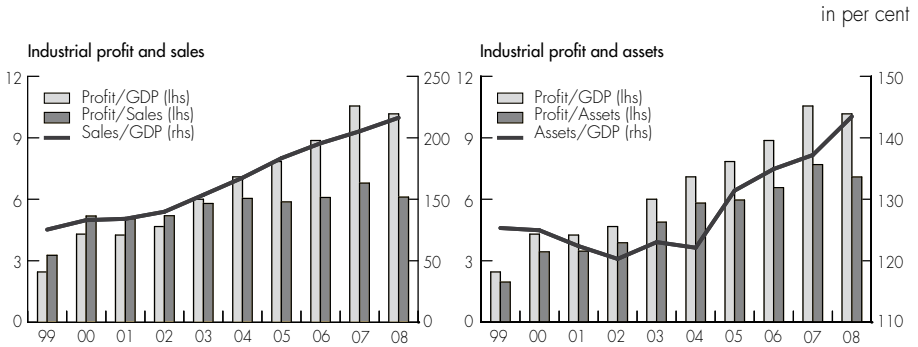
Sources: Credit Suisse; NBS; authors’ own estimates.

Second, it has been suggested that poor corporate governance results in low dividend payments. However, there is little evidence suggesting that the dividend behaviour of listed Chinese firms differs systematically from those in the rest of the world (Zhang, 2008; and Bayoumi *et al.*, 2009). Based on a sample of 1,557 Chinese listed firms and 29,330 firms from other 51 countries during the period of 2002-07, Bayoumi *et al.* (2009) find that the dividend payout ratio (common dividend over EBIT) averages 16 % for Chinese listed firms compared to less than 13 % for those from the rest of the world.

In our view, blaming poor corporate governance could risk barking up the wrong tree, since it was an official policy that state companies were not required to pay dividends to the government, which was part of the large-scale corporate restructuring highlighted in Section 2.⁷ This policy may well add to retained earnings, though, since the bulk of the dividend payouts by listed Chinese state companies might have gone to their non-listed parent holding companies (direct majority shareholders) instead of the government (the ultimate owner) and thus is still retained within the corporate sector (Zhou, 2005).

An even more controversial question is about the possible sources of apparently higher corporate profits (FIGURE 6). Many explanations have been advanced (Dollar and Wei, 2006; Bai, *et al.* 2006; and Hofman and Kuijs, 2008). For exposition purpose, we first group some of these arguments under two broad hypotheses, then review their pros and cons, and finally examine in particular the roles of exchange rate and interest rate.

7. Two considerations were behind the policy of no dividend payments, which was introduced in 1994. First, the government aimed to provide incentives for state companies to arrest the large-scale financial losses at the time. Second, the government also encouraged the restructured state firms to provide displaced workers with some transitory social welfare supports and alternative employment opportunities before a functioning social safety net is in place. This no dividend policy has been partially unwound in phases since 2007.

Figure 6 – Profits, sales and assets of the Chinese industrial sector¹

¹ Industrial enterprises with annual sales of above RMB5 million from the principal business.

Sources: NBS; authors' own estimates.

One hypothesis argues that high Chinese corporate saving, and indeed fast economic growth, is mostly the consequence of government distortions designed to subsidise the corporate sector in order to promote growth and exports. Two particular arguments have been advanced under this hypothesis (Tyers and Lu, 2008; Jha *et al.*, 2009; ADB, 2009). First, monopolies boost corporate profits of most state firms, owing to a lack of competition policy or its weak enforcement. Second, subsidies and factor price distortions (such as financial repression, restrictions on rural labour migration, subsidies for energy inputs and below-market prices of land) inflate corporate earnings, again mostly benefiting state firms. In short, China's rapid economic growth and high saving rate are principally a function of government distortions and subsidies.

An alternative hypothesis emphasises the broader structural forces and institutional reforms examined in Section 2 as the more important factors leading to higher corporate saving. First, efficiency gains from corporate restructuring and an expanding indigenous private sector have intensified competition, raised productivity, and helped drive fast economic growth, deliver cost saving and lift corporate profits. Second, as was elaborated in Section 2, accentuated by a very compressed demographic transition and a large pool of surplus rural labour previously cumulated, the prolonged Chinese rural-urban labour migration has capped wage growth, thus boosting corporate profits in the transition process.⁸

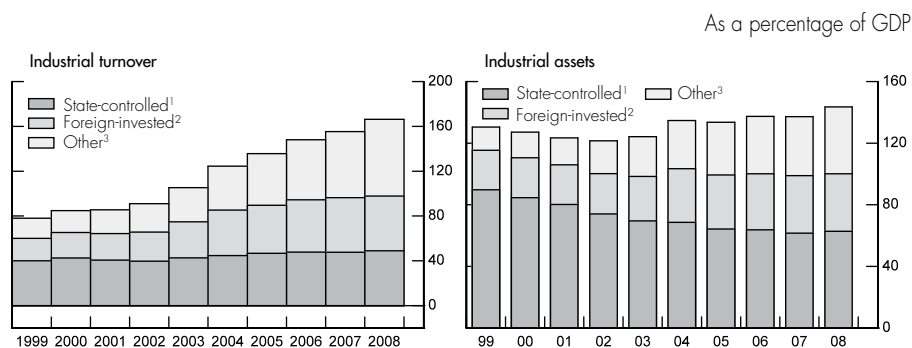
These two hypotheses are not mutually exclusive and may well co-exist. While the truth likely lies somewhere in between, an interesting question is which set of forces matters more in shaping Chinese corporate saving. In particular, it would be useful to find out whether the identified distortions have become more significant over time so as to help explain the

8. Since 2006, there has been a lively debate over whether China has reached a so-called "Lewis turning point", whereby the pool of surplus labour starts drying up, as parts of its economy for the first time witnessed accelerated real wage growth and reported "labour shortage". For more details, see Garnaut (2006); Cai (2007); Meng and Bai (2007); Islam and Yokota (2008); and Athukorala *et al.* (2009).

higher corporate saving rate and whether the available evidence broadly confirms the main predictions of these two hypotheses.

A central prediction of the distortion-and-subsidy hypothesis is that as the principal beneficiary, state companies should be the major driver of the observed higher Chinese corporate profits, because they are more likely to enjoy greater market power, receive more government subsidies and gain from easier access to cheaper credit. Yet, it has been China's less advantaged and more efficient local non-state firms that have been gaining shares in market, capacity and profit (FIGURE 5, 6 and 7). The share of local private firms in China's industrial profits more than doubled from 20 % to 43 % during the 2000s, despite facing more restricted access to external finance and higher funding cost. Similarly, their shares in both industrial sales and assets doubled in the 2000s. This questions the distortion and subsidy hypothesis and favours the hypothesis of efficiency gains and cost saving owing to structural and institutional factors.⁹

Figure 7 – China's industrial market share and capital deepening



¹ State-controlled enterprises. ² Foreign, Chinese Taipei or Hong Kong SAR invested and controlled enterprises operating in China. ³ All the rest, including non-state controlled joint shareholding companies, collectives, private companies and other joint ventures.

Sources: NBS; authors' estimates.

Of course, the rising shares of market, turnover, asset and profit for the local private industrial firms may simply reflect the privatisation process itself rather than the dynamism or higher productivity of the new private firms. Thus the rejection of a key prediction from the distortion-and-subsidy hypothesis may not lend direct support for the arguments under the hypothesis of structural forces and institutional changes. But this does not alter our basic argument for three reasons. First, most state firms privatised in China during this episode involve those with loss-making. Second, most available evidence points to some efficiency gains after a state firm has been privatised. Third, privatisation itself should in general intensify market

9. Using an asymmetric credit friction model, Song *et al.* (2009) suggest that the high-productivity and credit-constrained firms finance investment by internal saving and thus tend to generate high corporate saving while maintaining high return to capital by attracting more resources to themselves. This interesting insight differs importantly from the proposition that high corporate profit and saving come mostly from state-sponsored subsidies and distortions.

competition, limit rents and allow less efficient state companies to outsource some of their business operations from a bigger and more efficient private sector. All these should help enhance average corporate efficiency in China.

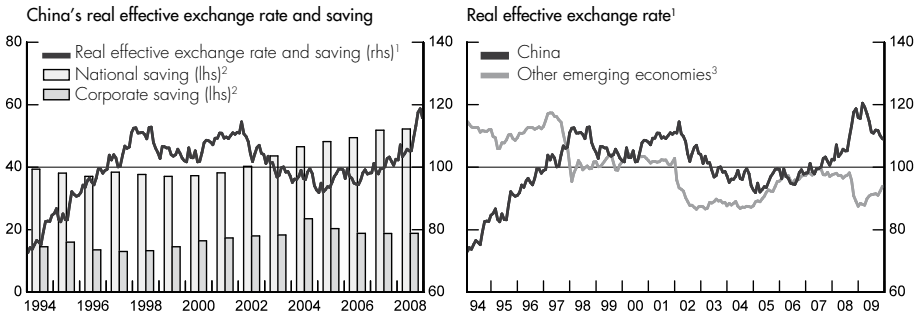
The pros and cons of the other evidence on the distortion and subsidy hypothesis in interpreting China's higher corporate saving are also mixed and indicate varying magnitudes of their likely influence on both corporate and national saving.

- The effect of any residual energy subsidies and resource taxes on China's overall corporate profitability is ambiguous. Indeed, given China as a growing net energy importer, energy subsidies may weaken the country's current account balance. Similarly, low government royalties may under-price natural resources at home, inflating profits of such industries and mostly benefiting big state resources companies. Yet, little is known about the likely net effect of higher natural resources taxes on both overall corporate saving and national saving.
- Market power tends to boost the profit share in an economy. An interesting question is the role of any such market power in lifting China's corporate saving. Although a case can be made for the presence of monopoly power in the Chinese banking industry, for instance, the market share of the big state-controlled banks has fallen over time. With the 2001 WTO accession, China could become more deeply involved in global competition. Thus, any remaining oligopolistic rents may have waned relative to the size of the Chinese economy. Indeed, profit margins of the Chinese manufacturing sector could come under pressure, in part because of the highly oligopolistic arrangement in the overseas markets for some key natural resources (such as iron ore and oil).
- Limited access to credit by small enterprises may weaken demand for labour, giving rise to additional downward pressure on wages and thus boosting the profit share in income (Aziz and Cui, 2007). But this factor too should not be overstated, as financing problems facing small firms in China may be no better or worse relative to other economies with high or low corporate saving.
- Entry barriers and higher tax burdens could indeed disadvantage the labour-intensive service sector, resulting in excessive expansion of more capital-intensive industries in the manufacturing sector and hence a higher profit share of income at the expense of labour (Guo and N'Diaye, 2010).

Finally, we review the controversy surrounding the roles of both the exchange rate and interest rate in shaping corporate saving. Regarding the exchange rate, one view is that an undervalued exchange rate boosts relative competitiveness and thus corporate profits in the manufacturing sector, which often results in current account surpluses (Turner, 1988; Eichengreen, 2006; and Goldstein and Lardy, 2009). Similar opinions also hold that a weak renminbi may depress the real purchasing power of Chinese household income, resulting in excess or even forced saving. Another view suggests a minor and uncertain role of the exchange rate in the Chinese saving and current account balance (Chinn and Wei, 2009; Cheung et al 2009; and Ma and Zhou, 2009), as China's real effective exchange

rate fluctuated considerably over time and strengthened vis-à-vis most major emerging market currencies during the period under study (FIGURE 8).

Figure 8 – Real effective exchange rate and saving



¹ 1994-2008 = 100. ² As a percentage of GDP. ³ Simple average of the real effective exchange rates of ten major emerging economies (Argentina, Brazil, Chile, India, Indonesia, Korea, Malaysia, Mexico, Thailand and Turkey).

Sources: NBS; BIS; authors' own estimates.

Next, interest rates could play a big role lifting corporate profits. Between 1992 and 2007, net interest payments by the non-financial corporate sector more than halved as a share of GDP, contributing to 30 % of the rise in corporate saving (FIGURE 9). While one may attribute this mostly to financial repression that depresses funding cost of and subsidises to Chinese (state) firms, we think that corporate deleveraging and inflation volatility could be greater forces behind the declining net corporate interest payments.

Figure 9 – Inflation, interest payment and corporate saving



¹ The difference between corporate loans on the one hand and corporate deposit and cash held by the corporate sector on the other. ² Two-year moving average of GDP deflator.

Sources: NBS; People's Bank of China (PBC); authors' own estimates.

First, the net corporate debts – the difference between corporate loans and deposits – as a share of GDP more than halved between 1992 and 2008, reducing net corporate interest

payments at any given interest rate (FIGURE 9). Corporate deleveraging may reflect strong underlying corporate cash flows. Second, as argued by Modigliani and Cohn (1979), in times of high inflation, a big part of the interest payments represents inflation premium compensating creditors for the reduction of their real debt claims and thus should be considered repayments of the loan principal. Hence corporate profits may be understated in high-inflation years, and vice versa in times of deflation. The Chinese economy swung from double-digit inflation in the early 1990s to outright deflation in the late 1990s, potentially giving rise to a meaningful gap between the economic profits and reported accounting profits. We estimate this gap by taking into account the gains to shareholders accruing from the depreciation of the real corporate debt burden.¹⁰

Our preliminary estimation shows that corporate profits are understated in the high-inflation years of 1992-96 and overstated in the deflationary years of 1998-2000 (TABLE 3), with two interesting insights (FIGURE 10). First, the adjusted series of corporate profits has become flatter than that suggested by the flow-of-funds statistics. While the official data indicate much of the rise in corporate saving took place in the 1990s, our adjusted series instead shows that most of the smaller increase occurred in the 2000s. Second, the corporate sector after adjustment has supplanted the household sector as the largest saver in China today but was no longer the biggest contributor to the rise in the national saving rate during 1992-2008. Both point to a need of caution in interpreting the dynamics of corporate saving.

Figure 10 – Corporate and household saving: before and after adjustment¹



¹ See note of TABLE 3.

Sources: NBS; PBC; authors' own estimates.

In sum, it is no easy task to identify the precise roles of the aforementioned factors and their complex interactions in driving high corporate saving during 1992-2008. While distortions and subsidies might inflate earnings at the state companies and in some industries, they were unlikely the primary factor lifting China's overall corporate saving during 1992-2008. On

10. See TABLE 3 for more details of estimation. Note that we only attempt to gauge the possible wedge between economic and account corporate profits owing to change in inflation and do not estimate the impact of inflation on corporate profit level *per se*. Indeed, higher inflation may boost profit to the extent of imperfect wage indexation, while at the same time possibly driving the reported account profit below the underlying economic profit.

balance, we tend to think that corporate restructuring, privatisation, slower wage growth owing to large pool of surplus rural labour and marked swings in inflation are more important factors influencing the evolving corporate saving during this episode.

3.2. Household saving

According to the flow-of-funds data, the household sector is the largest saver in China, but household saving fell from 20 % of GDP in 1992 to a low of 16 % in 2001 before staging a marked comeback to 23 % by 2008, (TABLE 3 and FIGURE 3). During the 1992-2008 period, the household sector contributed only three percentage points of the 17 percentage point rise in the nation's aggregate saving rate.

This modest contribution to the rising Chinese saving rate has been the consequence of two competing influences: a 10 percentage point decline in the household share in gross national disposable income and a 10 percentage point rise in the average propensity to save from the diminished household disposable income (TABLE 4). Both have resulted in the marked decline in China's private consumption share in GDP during 1982-2008 (Aziz and Cui, 2007; Guo and N'Diaye, 2010; Baker and Orsmond, 2010). We discuss these two forces in turn.

Table 4 – Disposable income and saving propensity

As a percentage of GDP

	Disposable income share					Average propensity to save		
	Corporate	Household	Government	<i>Adjusted corporate</i>	<i>Adjusted household</i>	Household	<i>Adjusted household</i>	Government
1992	11.7	68.3	20.0	15.5	64.5	29.5	25.4	22.0
1993	15.7	64.6	19.7	21.4	59.0	28.1	21.2	21.0
1994	14.5	67.0	18.5	21.1	60.4	32.4	25.0	17.1
1995	16.0	67.2	16.5	21.3	62.1	29.6	23.8	15.5
1996	13.5	68.4	17.9	17.1	65.0	29.4	25.7	20.7
1997	13.0	68.6	18.3	14.9	66.8	31.4	29.6	21.9
1998	13.3	68.4	18.1	13.6	68.3	31.2	31.1	18.3
1999	14.6	67.2	18.1	14.2	67.7	29.8	30.3	14.7
2000	16.5	64.2	19.2	16.7	64.1	27.5	27.3	17.2
2001	17.4	62.0	20.5	18.3	61.2	27.0	26.1	20.8
2002	18.0	61.0	21.0	18.5	60.5	28.3	27.7	24.2
2003	18.3	59.8	22.0	18.8	59.2	30.4	29.8	31.4
2004	23.5	57.8	18.9	24.7	56.4	31.6	29.9	24.0
2005	20.4	59.4	20.5	21.3	58.1	35.6	34.2	30.4
2006	18.8	58.7	22.8	19.5	57.8	36.4	35.4	38.6
2007	18.8	57.5	24.1	19.7	56.3	37.9	36.6	44.2
2008	18.8	57.6	23.9	20.6	55.5	39.9	36.1	45.3

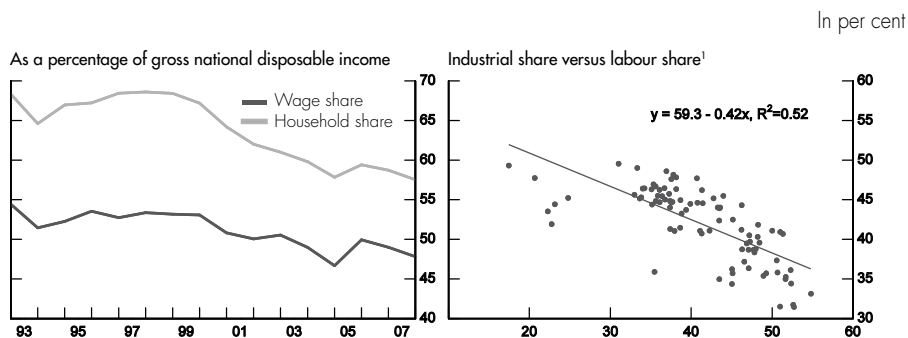
Note: See note of TABLE 3.

Sources: NBS; authors' own estimates.

The big drop in the household share in gross national disposal income over the 1992-2008 period can be attributable to a fall in the labour share in national income and a decline in both investment income and net income transfers for the household sector.

It is first and foremost the consequence of a declining labour share in the economy, given that wages constitute 80 % of the Chinese household disposal income. The decline in the labour share accounts for some 60 % of the observed decline in the household income share between 1992 and 2007. The relatively sluggish Chinese wage growth until the late 2000s may have been the combined consequence of the aforementioned structural and institutional forces (such as tough corporate restructuring, a compressed demographic transition and a prolonged process of absorbing surplus rural labour, as highlighted in Section 2) as well as other factors such as a lagging service sector and difficult financing conditions for small firms (Aziz and Cui, 2007; Bai and Qian, 2009; and Guo and N'Diaye, 2010). For instance, China's provincial data indicate a negative relationship between the labour share and the share of the capital-intensive industry in GDP (FIGURE 11).

Figure 11 – Labour and household income share in China



¹ Horizontal axis: industrial share as a percentage GDP; vertical axis: labour share as a percentage of GDP. The data sample is a panel of 30 provinces and a three-year period of 2005-2007.

Source: NBS.

The household income share has also been dragged down by its shrinking net interest income.¹¹ As a share of GDP, the net interest income halved during 1992-2007, accounting for a quarter of the decline in the household income share. As the household sector is a net creditor in the economy, this is not surprising, for the same reasons discussed in Modigliani and Cohn (1979) in the corporate case. Much of the high net interest income in the mid-90s is simply the inflation premium required to compensate the household depositors for the real depreciation of their bank deposits. Indeed, during 1993-96 when inflation reached double-digits, the Chinese government implemented a policy of fiscal subsidy to ensure a

11. More generally, the household income from other investment income sources has fallen as well. At least three causes can be suggested. First, the ownership of stock shares in China is not sufficiently broad-based. Second, imputed rent and income from owner-occupied homes could have been under-recorded, as discussed in Box 1. Third, non-wage (mostly property) incomes from informal channels may have been understated (Wang, 2010).

non-negative real interest rate on household deposits. Another reason for the falling net interest income is the rising household debt in the past decade, to be discussed below.

A third factor behind a falling household income share is reduced net transfers. Income redistribution through taxes, contributions and transfers has so far been ineffective in stabilising the household share of income. This is mostly because of the increased contributions required to fund the large future pension benefits and other welfare obligations related to the expected population ageing. Social welfare contributions made by the household sector tripled between 1992 and 2007, from 1.4 % of GDP to 4.2 %. As discussed earlier, the 1997 pension reform introduced individual pension accounts funded by mandatory employee contributions, which are deductions to household disposable income.

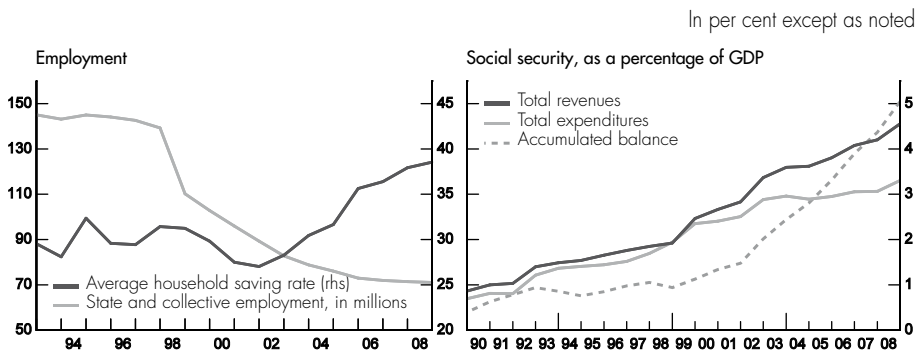
Despite this drop in household income share, household saving still managed to rise as a share of GDP, owing to the markedly higher personal saving propensity. The household average propensity to save from income rose by 10 percentage points, mostly during the 2000s (TABLE 4). The high and rising household saving propensity has been a subject of intense research by academics, market analysts and policymakers alike. Four sets of interpretations have been advanced in the literature.

First, as life-cycle, permanent-income and habit-formation hypotheses suggest, interactions among economic growth, income level and demographic changes may influence the personal saving rate. As mentioned in Section 2, a sharp decline in the Chinese youth dependency rate and the expected rapid ageing of population might have interacted with high economic growth and saving/consumption habit persistence, contributing to a higher personal saving propensity.¹² A related factor is the much flatter earning profile over the life cycle in recent years, which in part helps explain a high average household saving rate that displays a U-shaped pattern across cohorts (Song and Yang, 2010). Nevertheless, these forces by themselves can only explain part of the high household saving rate in the 2000s.

Second, precautionary saving motives also help explain the higher personal saving rate. As discussed in Section 2, the large-scale corporate restructuring and downsizing between 1995 and 2005 increased both income and expenditure uncertainties and weakened the enterprise-based social safety net, thus reinforcing the precautionary motives to save (Meng, 2003; Blanchard and Giavazzi, 2005; and Chamon and Prasad, 2008). The new social welfare system has been taking shape but did not expand fast enough to offset the holes created by a shrinking enterprise-based social safety net (FIGURE 12). The coverage of the new social safety net also remains limited and fragmented.

12. While Kraay (2000) report no conclusive evidence on the role of growth and demographics, Modigliani and Cao (2004) confirm their effects. Horioka and Wan (2008) find mixed supports for these hypotheses but highlight the important role of habit persistence. Chamon and Prasad (2008) also cast doubt about the life cycle predictions. Wei and Zhang (2009) argue that China's rising sex ratios led to increased competition in the marriage market and thus drove wealth accumulation. Ma and Zhou (2009) suggest that a sharp fall in the youth dependence could raise saving across the household, corporate and government sectors.

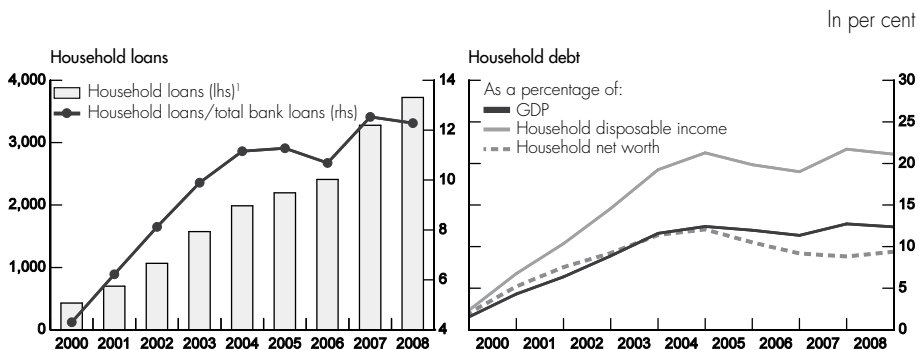
Figure 12 – Labour downsizing and social security in China



Sources: NBS; World Bank; authors' own estimates.

Third, liquidity or borrowing constraint is another often cited factor accounting for the high personal saving (Wen, 2010). But bank loans to the Chinese household sector have expanded substantially, reaching 15 % of the total outstanding bank loans lately from less than 1 % in the late 1990s (FIGURE 13). Moreover, the balance sheet of the household sector seems quite liquid, possibly suggesting, at least in aggregate, relative ease of consumption smoothing in China. In other words, the availability of consumer credit does not appear to be a major binding constraint to consumption smoothing for the period under study and is unlikely an important cause behind the rising personal saving propensity in the 2000s.

Figure 13 – Household loans in China



¹ In billions of renminbi.

Sources: Credit Suisse; NBS; PBC; authors' own estimates.

Finally, motives to achieve desired asset levels may have strengthened on the back of major institutional changes, significantly influencing personal saving behaviour. Section 2 has discussed two such examples. One is the 1997 pension reform that led to reduced pension wealth. This helped trim the large implicit pension debts but might have lifted the current

household saving rate (Feng *et al.*, 2009). Another institutional change is the introduction of private home ownership that has triggered significant demand for housing assets, thus boosting household saving.¹³

3.3. Government saving

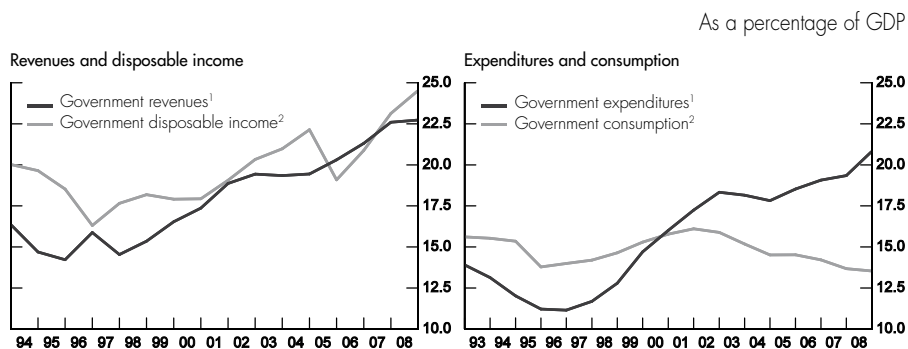
The government has been the smallest saver in China but an outsized contributor to the rise in gross national saving. As a share of GDP, its saving more than doubled, from less than 5 % in 1992 to 11 % in 2008 (TABLE 3). Indeed, between 2000 and 2008, it singlehandedly contributed half of the 16-percentage point rise in China's saving/GDP ratio.

The marked increase in government saving reflects a combination of higher government disposable income and steady government consumption over the period under study. The government share in gross national disposable income first declined from 20 % to 16 % in the first half of the 1990s, before recovering steadily to 24 % by 2008 (TABLE 4). Meanwhile, the government consumption has averaged about 15% of GDP since the early 1990s. Thus rising government disposable income and steady government consumption together resulted in higher government saving and more government investment, especially in the 2000s. The Chinese government's marginal propensity to save exceeded 50 % during the 2000s, compared to less than 20 % in the 1990s.

The government disposable income has risen briskly since the mid 1990s. This has been the combined consequence of high economic growth, the 1994 tax reform (Wong and Bird, 2008), increased land sales and greater social welfare contributions from both the corporate and household sectors. Over the years, government disposable income tends to closely track government revenues (FIGURE 14).¹⁴ China's government revenues fluctuated around 40 % of GDP in the late 1970s but dropped throughout the 1980s and early 1990s to only 15 %. This decline was mainly due to a diminished government role in the economy, a reform strategy of decentralisation, and the need to cushion the economic transition. The 1994 tax reform under Premier Zhu Rongji aimed to lift both the share of government revenues in GDP and share of the central government in the overall fiscal revenues. Both goals have apparently been met (TABLE 5).

13. State firms have stopped providing housing but in return increased itemised cash contributions to housing provident funds. This effectively translates into an observed higher household saving rate because of required mortgage down payments. Nevertheless, such a shift in saving activity from the corporate to the household sector, on its own, should not be interpreted as an increase in national aggregate saving rate.

14. Government revenue and expenditure, based on the fiscal and budgetary statistics, are conceptually distinct from government disposable income and consumption based on the flow-of-funds statistics. For instance, contributions by the corporate and household sectors to various pension funds administered by the government are part of the government disposable income but not its revenues. Similarly, current transfers from the government are part of its expenditure but not its consumption. Finally, a government can run a fiscal/budget deficit while yielding a positive saving, owing to its investment spending.

Figure 14 – Government revenue/income and expenditure/consumption in China

¹ Based on the fiscal and budgetary statistics, including both budgetary and extra-budgetary revenues and expenditure. ² Based on the flow-of-funds statistics.

Sources: NBS; authors' own estimates.

Table 5 – Revenues and expenditures, by central and local government

As a percentage of GDP

	Revenues			Expenditures			Balance		
	Total	Central	Local	Total	Central	Local	Total	Central	Local
5-year averages									
1982 – 1986	38.6	14.4	24.3	37.7	16.4	21.3	0.9	-2.0	2.9
1987 – 1991	31.5	11.4	20.1	31.4	11.4	20.0	0.1	-0.0	0.1
1992 – 1996	17.7	6.5	11.2	18.3	5.4	12.9	-0.6	1.1	-1.7
1997 – 2001	16.5	6.7	9.8	18.0	4.7	13.3	-1.4	2.1	-3.5
Annual data									
2002	19.4	9.0	10.4	21.5	5.8	15.7	-2.1	3.2	-5.2
2003	19.4	9.0	10.3	21.2	5.7	15.5	-1.9	3.3	-5.2
2004	19.4	9.3	10.2	20.5	5.2	15.4	-1.1	4.1	-5.2
2005	20.3	9.3	11.0	21.4	5.0	16.3	-1.1	4.2	-5.3
2006	21.3	9.9	11.4	21.8	4.9	16.9	-0.5	5.0	-5.5
2007	22.6	11.0	11.6	21.7	4.6	17.1	0.9	6.4	-5.5
2008	20.8	11.1	9.7	23.0	4.6	18.4	-2.2	6.4	-8.6

Note: Government revenues and expenditures include both budgetary and extra-budgetary revenues and expenditures.

Sources: NBS; authors' own estimates.

The government consumption and expenditure, however, diverged noticeably from each other, especially in the 2000s. The government consumption has been more stable over time, at some 15 % of GDP; but total expenditure swung from 11 %-12 % of GDP in the 1990s to 18 %-20 % lately (FIGURE 14). One main difference between these two government

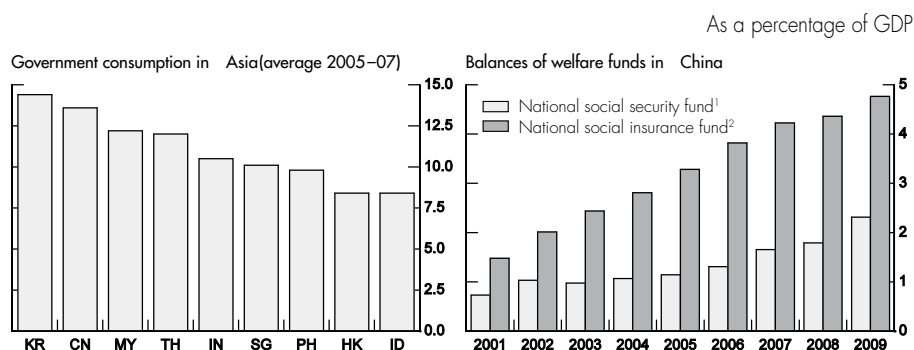
outlay variables is investment spending undertaken by the government, which is part of government expenditure but not part of government consumption. Therefore, more of the government expenditure is investment rather than consumption. In other words, much of the government income gain has been invested and saved rather than consumed.

Questions arise as to whether government consumption is too low. By international standard, China's government consumption of 15 % of GDP is not excessively low: it is above the historical average of the emerging market economies of 13 % but below the mean of 20 % for the advanced economies. It indeed ranks among the highest in emerging Asia (FIGURE 15). Nevertheless, China seems to have further room to provide more public services such as education, healthcare and environmental protection.

Why does the Chinese government save and invest but not consume most of its incremental income? At least three different but related explanations can be advanced. It appears that all of these forces have been at work at the same time in China, contributing to higher government saving in the 2000s.

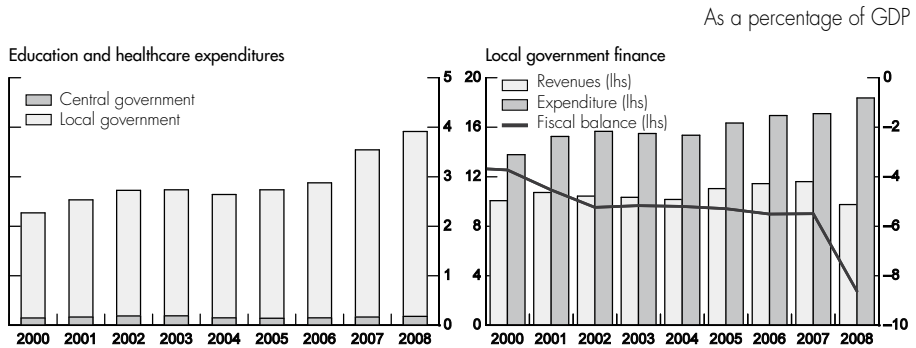
First, the anticipation of rapid population ageing and the 1997 pension reform prompted increased pension contributions by the corporate and household sectors. As discussed in Section 2, these contributions are intended to partially pre-fund future pension benefits and treated as a source to the government disposable income, as they are parked under various pension funds administered by the government. These funds have been invested, directly or indirectly, in financial and physical assets at home or abroad. As a ratio to GDP, the net asset balance of China's centrally managed National Social Security Fund tripled between 2001 and 2009 (FIGURE 15). Meanwhile, the accumulated balance of the country's various social welfare funds also tripled. Both suggest that the rise in government saving could in part relate to the build-up of pension assets.

Figure 15 – Government consumption and social welfare funds



¹ It covers only the net assets directly managed by the central government. ² They are balances pooled and managed at both the national and provincial levels in China.

Sources: IMF; NBS; the National Social Welfare Fund of China.

Figure 16 – Social expenditures, central and local governments

Sources: NBS; authors' estimates.

Second, local Chinese government officials have incentives to start new investment projects, as promotions have been mainly determined by performance indicators such as economic growth in their jurisdictions. Hence there is an innate tendency to invest more rather than to provide additional public services for a given rise of government revenues, thus boosting government saving. Nevertheless, once the fixed capital stock has built up sufficiently in the public facilities and infrastructure, this will generate a greater stream of future government consumption and potentially encourage the government to eventually expand provision of social services.

Third, there is a so-called federal fiscal imbalance issue in China: while a rising share of fiscal revenues is appropriated by the central government, the lion's share of the social expenditure burden remains on the shoulder of the less well-funded local governments (FIGURE 15 and 16). Transfers through the central government are considered far from adequate in addressing the financing pressures facing local governments. This tends to put the local governments under funding pressure, which in turn constrains social spending and government consumption.

In sum, higher government saving has largely been attributable to both rising government income and steady government consumption. The resultant higher government saving propensity in the 2000s may relate to a combination of three factors: the need to accumulate pension assets in anticipation of rapid population ageing, the incentives for local governments to invest rather than providing public services, and a large burden of social spending on the local governments that have come under increased funding pressures.

4. MEDIUM-TERM OUTLOOK AND FUTURE RESEARCH

4.1. Medium-term outlook

The medium-term outlook for China's saving rate matters not only for its future economic growth path but possibly also for rebalancing of the global economy. Although private consumption expenditure has been growing 8%-10% per annum in recent years, China's

saving rate remains considerably higher than its high investment rate, resulting in a substantial current account surplus around the mid 2000s (FIGURE 1).

Going forward, given the outlook of a relatively weak global recovery and an already high rate of domestic capital formation, private consumption is likely to play a critical role in sustaining a high rate of Chinese growth. One key challenge for Chinese policymakers is thus to maintain robust internal demand while rebalancing the economy more towards consumption in the coming decades. Both domestic structural factors and policy measures could influence such a transition.

Of the structural factors discussed in both Sections 2 and 3, three can be highlighted in view of their implications for the evolution of the Chinese saving rate. First, it is reasonable to assume that the large-scale labour retrenchment observed during 1995-2008 has by and large been behind us. In this period, 73 million jobs in the urban state sector were shed, against a concomitant net urban job creation of 110 million (FIGURE 4). Going forward, such one-off efficiency gains and cost saving for the corporate sector would likely be more limited, and the associated income and expenditure uncertainties of the Chinese households should become less pronounced. That in turn will dampen private saving by both the household and corporate sectors.

Second, China is projected to enter a phase of accelerated population ageing within a decade, which may suggest two things. On the one hand, growth of labour force will slow down, possibly along with a declining household saving rate and a slower pace of corporate investment spending, likely resulting in lower potential output growth if productivity growth does not pick up sufficiently. China's working-age population would stop growing by 2015 and start shrinking afterwards (Golley and Tyers, 2006). On the other hand, we may continue witnessing strong infrastructure investment for some years to come, to build up the physical capital stock and pension assets in preparation for the ageing of the population as well as to accommodate the ongoing urbanisation process.

Third, the rural-urban labour migration away from agriculture is likely to continue in the years ahead, as the urban share of the population is projected to rise from the current 45 % to 60 % in a decade. By contrast, as fast economic growth and strong labour-intensive exports have been absorbing more rural surplus labour for twenty five years, there may be some early and tentative signs that China could get closer to the "Lewis turning point". This may harbingers a rise in the labour share of income, lower corporate saving and a greater role of personal consumption in China's internal demand profile in future.

Taken together, a key implication from these medium-term forces is that China's aggregate saving rate is likely to remain high but should plateau before long and may ease off noticeably from the current 53 % over the next 10 years. The marked U-shaped experience of China's saving rate between 1982 and 2008 also suggests that the prospective Chinese saving rate can fall meaningfully in the years ahead.

During this process, policy can play a useful role in assisting the transition to a more balanced growth model, though there would unlikely be a single magic bullet. While a

detailed discussion of policy implications is beyond the scope of this paper, at least three complementary sets of policy options can be mentioned. First, deregulations that facilitate rural-urban migration, support small firms and reduce entry barriers to the labour-intensive services sector may help job creation, ease downward pressure on wages and stabilise the labour income share. They would also support resource reallocation to non-tradable sectors while supporting domestic consumer demand.

A strengthened social safety net is another option, since the current public welfare system remains fragmented and its coverage is limited. The recent moves to enhance benefit portability and broaden the coverage of social welfare and insurance programmes are helpful.¹⁵ But as a state-welfare solution, a poorly designed social safety net could backfire. These risks include the questionable sustainability of any social welfare scheme in the context of the expected rapid population ageing and its unintended side-effects on current employment, saving and consumption decisions.

A third group of policy measures may aim to improve the financing and incentives for the provision of higher levels of social and public services. These may include the transfers of some listed state company shares to the national pension fund, higher dividend payout by state firms to the government amid improved corporate profitability, an enhanced role by the central government in funding social spending, and "rebalancing" the promotion standards for government officials in order to encourage provision of public services.

4.2. Future research

The actual outturn of China's gross national saving rate over the next decade may thus be shaped to an important extent by these aforementioned structural forces, institutional changes and policy measures. Our paper has not answered all the puzzles related to the higher and rising Chinese saving rate but may point to several important and promising questions for future research.

The first question concerns the main forces contributing to not only household saving but also corporate and government saving. Much of the literature has so far focused on the personal saving behaviour in China, while research on corporate and government saving lags. Yet, the Chinese household sector contributed no more than one fifth of the rise in gross national saving from 36% of GDP to 53% during 1992-2008.

Even for household saving, many questions remain to be explored. Our paper, for instance, sidesteps the roles of income distribution and interregional consumption risk sharing (Jin *et al.*, 2010; Wang, 2010; Xu, 2008; Du *et al.*, 2010). Rising income inequality may give rise to an under- or over-statement of the Chinese saving rate. On the other hand, many economies with higher income inequality have saved less than in China (Schmidt-Hebbel and Serven, 1996). Nevertheless, the borrowing constraint facing low-income segments

15. An enhanced social safety net should first and foremost serve the purposes of social equity and risk pooling under long-term fiscal sustainability and should not be taken as a makeshift tool to lift personal consumption growth beyond the recent 8 %-10 % pace.

of the population could be more binding. Also, a low degree of consumption risk sharing across regions in China also raises the question about the underlying mechanisms: is it fiscal transfers, factor mobility or financial development, or all of them?

Another question relates to the channels of interactions among the corporate, household and government sectors. The most defining feature for China is that its three savers all rank near their global tops, together making China's aggregate saving rate exceptionally high. Yet little is known about how the three savers interact in China. Various neutrality hypotheses would predict high substitution between household and corporate saving ("piercing through the corporate veil"), between public and private saving ("the Ricardian equivalence"), and between mandatory and voluntary saving. The apparent lack of substitution could arise from a host of factors, such as confidence, the design of social welfare programmes, financing availability, distribution of corporate ownership, corporate dividend behaviour, taxes, and the role of families in supporting the aged.¹⁶

Finally, the three distinct phases of China's saving rate between 1982 and 2008 need better explanations. In particular, after declining during the second half of the 1990s, the nation's saving witnesses a relentless rise from 36 % of GDP in 2000 to 53 % in 2008, begging some interesting questions. During this episode, private consumption as a share of GDP of course dropped sharply, yet private consumption spending still grew at robust paces of 8 %-10 %. Was the marked rise in gross national saving in the 2000s mostly induced by worsening distortions in the Chinese economy, as some would allege? Or was it more a response to the large positive income shock to the Chinese economy at the time, triggered by a combination of the accentuated domestic rural-urban labour migration, China's 2001 WTO accession, globalisation, and a big American consumption boom?

5. SUMMARY

This paper critically surveys the stylised facts and explanations about the Chinese corporate, household and government saving. All the three sectors have added substantially to China's high and rising saving rate, especially during the 2000s. What really distinguishes China from the rest of the world is that the saving of each of these three sectors as a share of GDP has ranked near the top worldwide, making China's aggregate saving rate exceptionally high. Moreover, China's gross national saving rate witnessed marked rises in the 2000s but was by no means monotone over a longer time horizon.

No single theory or model will likely provide a simple explanation to these patterns of the high Chinese saving. While the evidence appears mixed to the proposition that China's high saving rate are principally a function of subsidies and distortions, some of the structural forces

16. Recent reported scandals associated with the management of some local pension funds might have weakened public confidence, for example, thus limiting any substitution between mandatory and voluntary personal saving and between private and public saving. Also, curiously, parts of China's current social medical insurance schemes are more akin to individual saving accounts that play no role of risk pooling at all.

may not have received sufficient attention. Such forces include rapid economic growth, structural transformation, a compressed demographic transition, large-scale corporate restructuring, and the household and government responses to major institutional changes as well as to the expected acceleration of population ageing in one decade from now. There is still a long way to go towards more enhanced understanding about the puzzle of a high and rising Chinese saving rate in the 2000s.

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