

Topic 4: “China’s Economy”

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China's Growth Performance

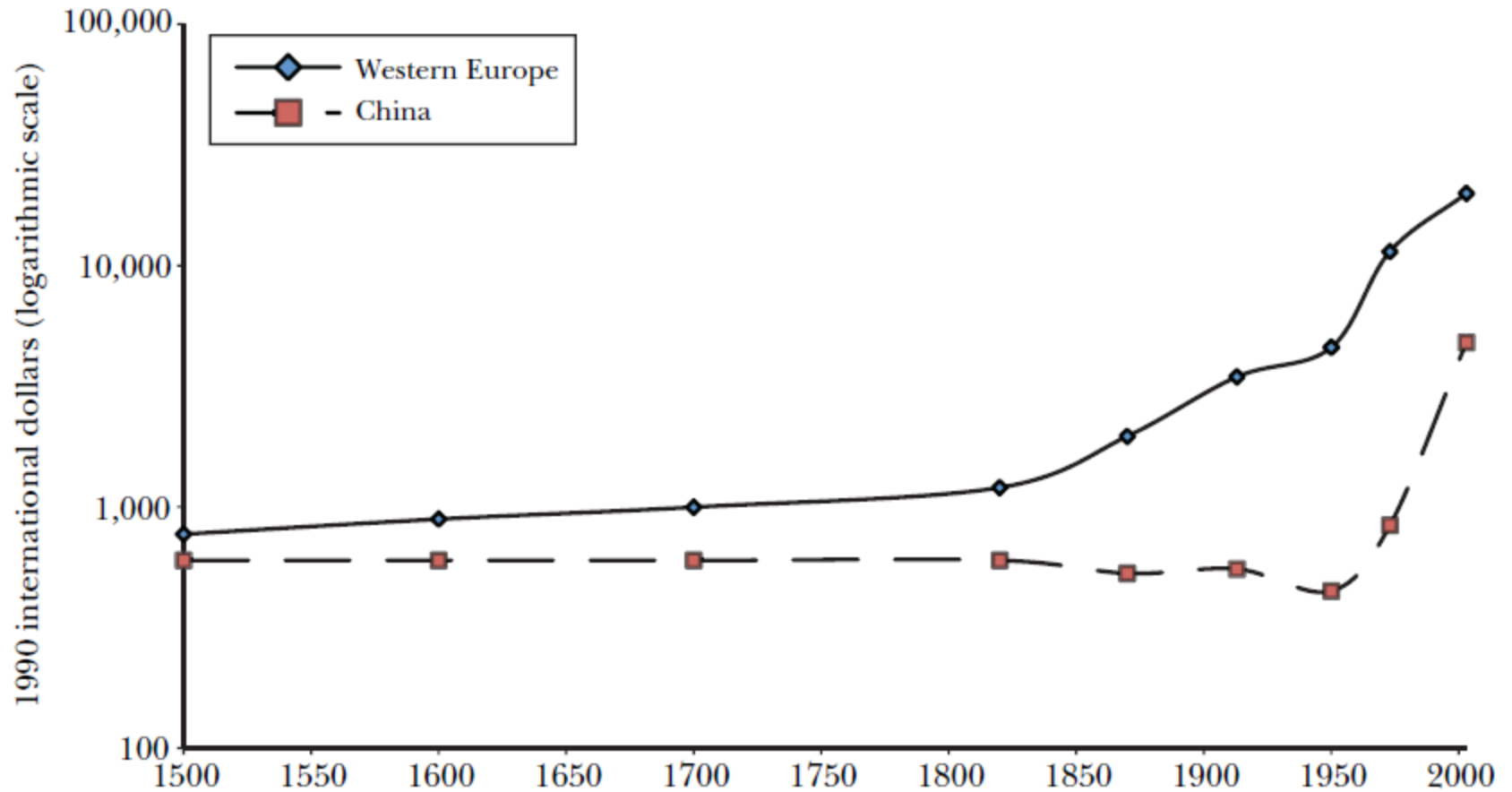
- Pace and scale of China's economic transformation have no historical precedent
- 1978, China was one of poorest countries in the world: real per capita GDP 1/40th of US and 1/10th of Brazil
- Since 1978, real per capita GDP has grown at average rate of 8%/year, and is now 1/5th of US level and same level as Brazil
- Rapid and sustained growth in average living standard has occurred in country with more than 20% of world's population, so that China is now second-largest economy in world
- So what has driven growth since 1978? Essentially it is a productivity story, given institutional change and policy reforms that have reduced distortions and improved economic incentives
- However, China's productivity still only 13% of US level, suggesting further reforms would generate more productivity growth

China's Growth Performance

- China was actually a world economic and technological leader in the “pre-modern” era: economic performance reached peak in Song Dynasty (c.1200), China having advanced technologies, high iron output, high urbanization, and largest national economy in world
- Sometime between 1500 and 1800, China lost leadership position, its per capita GDP stagnating, while that in Western Europe grew steadily (see Figure 1)
- China was falling behind by end of 15th century, long before Industrial Revolution in England in 18th century
- Some historians and economists attribute this falling behind to more centralized and inward-looking political systems of Ming (1368) and Qing (1644-1911) dynasties that stifled innovation and commerce

China's Growth Performance

Figure 1: Per Capita GDP of China and Western Europe



Source: Madison (2007)

China's Growth Performance

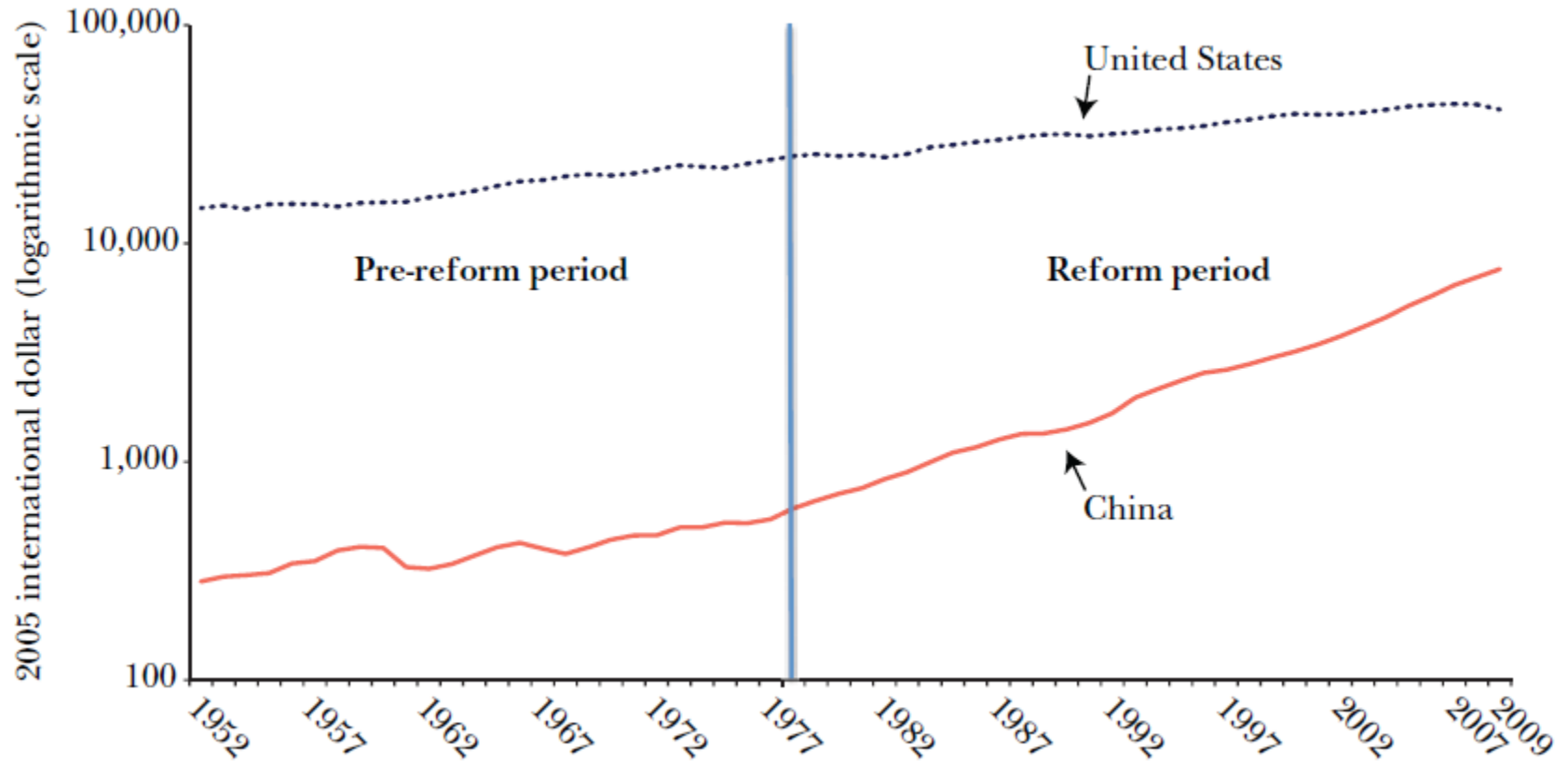
- Others argue China really only fell behind Western Europe after Industrial Revolution in England – based on two pieces of luck: access to coal and colonies
- No doubt about divergence in economic performance in 19th century and first half of 20th century
- Brandt, Ma and Rawski (2012) argue economic failure due to imperial political-institutional system protecting vested interests of elites (imperial households, bureaucracies and gentry), who in turn resisted adoption of new technologies
- Imperial system collapsed after Opium Wars between China and Britain in 1840/1850s, and Sino-Japanese War of 1894-9: forced opening, territories and ports conceded to West and Japan
- Despite bringing technologies and factories, civil war and WWII prevented industrialization in China until 1950s

China's Growth Decomposition

- After establishment of People's Republic of China (PRC) in 1949, China began its industrialization process, but performance differs significantly before and after 1978
- Pre-1978, average annual growth rate in real per capita GDP was 3%, not much different to the US, albeit starting from lower base
- Since 1978, annual real growth rate in real per capita GDP has accelerated to a rate in excess of 8%, and is closing gap on US (Figure 2)
- Why the difference? Using standard growth accounting methods, Zhu (2012) shows that capital accumulation was main source of growth for period 1952-78, while productivity growth is main source since 1978
- Capital-investment growth under Mao was actually unsustainable, and came at high cost to China

China's Growth Performance

Figure 1: Per Capita GDP of China and US, 1952-2009



Source: Zhu (2012)

China's Growth Decomposition

- Suppose relationship between inputs (capital, human capital, and labor) is standard Cobb-Douglas production function:

$$Y = AK^\alpha (hL)^{1-\alpha}$$

where Y =GDP, K =capital stock, L =labor (number of workers), h =average level of human capital, A =total factor productivity (TFP), and α =output elasticity of capital, usually measured by capital's share in national income

- Kehoe and Prescott (2002) note that growth rate of per capita GDP can be decomposed as:

Growth rate of GDP/capita = growth rate of labor participation rate
+ $\alpha/(1-\alpha)$ growth rate of capital/output
+ growth rate of average human capital
+ $\alpha/(1-\alpha)$ growth rate of TFP

China's Growth Decomposition

- Contribution of TFP is weighted by $\alpha/(1-\alpha)$, taking into account both direct effect of TFP on GDP growth, as well as its indirect contribution through impact on capital accumulation
- Setting $\alpha=0.5$ in order to match China's average capital income share in its national accounts, decomposition of China's growth is shown in Table 1
- Decomposition reveals very different patterns of growth:
- Pre-1978: growth came from increases in physical and human capital, rather than productive efficiency; TFP actually declined by 1.07%/year, offset by increase of 1.55%/year in average human capital (increase in average schooling years)

Most important source of growth was capital/output ratio, with average growth of 3.45%/year, accounting for 116% of per capita GDP growth

China's Growth Performance

Table 1: Decomposing China's Growth, 1952-2007

<i>Average annual growth rates (%)</i>					
<i>Period</i>	<i>GDP per capita</i>	<i>Labor participation rate</i>	<i>Capital/output ratio</i>	<i>Average human capital</i>	<i>TFP</i>
1952–1978	2.97	0.11	3.45	1.55	-1.07
1978–2007	8.12	0.57	0.04	1.18	3.16
<i>Contributions to per capita GDP growth</i>					
<i>Period</i>	<i>GDP per capita</i>	<i>Labor participation rate</i>	<i>Capital/output ratio</i>	<i>Average human capital</i>	<i>TFP</i>
1952–1978	100	3.63	116.15	52.25	-72.03
1978–2007	100	7.05	0.51	14.55	77.89

Source: Zhu (2012)

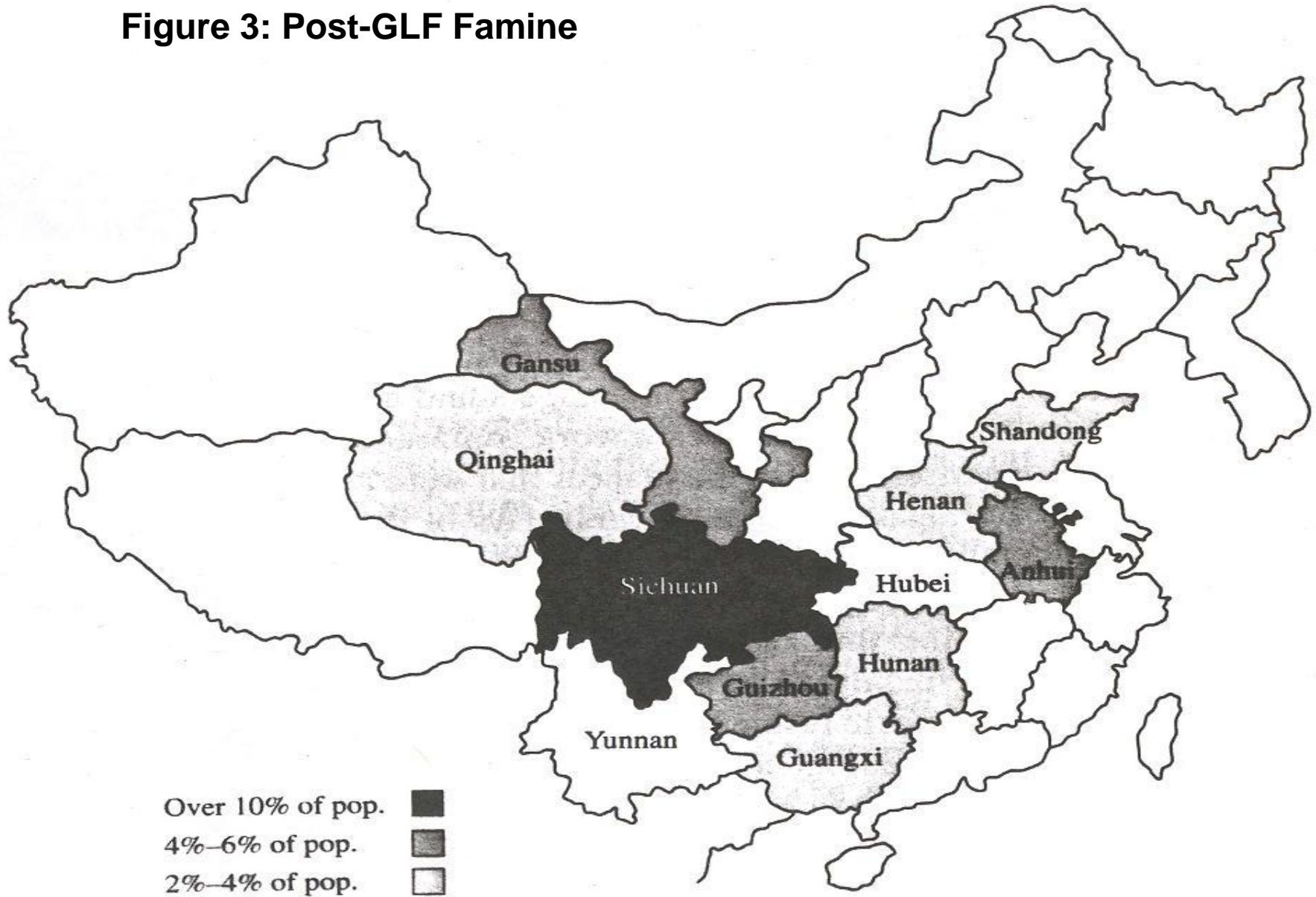
China's Growth Decomposition

- **Post-1978: capital accumulation and TFP reversed roles; capital/output and average human capital contributed about 15% of growth in per capita GDP, labor participation rate accounted for 7% of growth, while TFP grew rapidly at 3.16%/year, accounting for 78% of growth in per capita GDP**
- **Result goes against popular view that China has followed an investment-driven growth model, based on capital-deepening**
- **Although share of GDP going to real fixed capital investment increased from 33 to 39% between 1978 and 2007, China's capital/output ratio has barely changed, i.e., capital investment has not led growth**
- **As Solow (1956) pointed out: persistent economic growth can only come from growth in total factor productivity, which is what has happened in China over three decades**

Government-Led Industrialization, 1952-78

- **After PRC was established in 1949, Communist Party thought most effective way to speed up industrialization was through investment in heavy industries – steel, concrete, and heavy machinery**
- **Government mobilized resources for investment by limiting household consumption and setting low prices for agricultural goods, forced savings and surpluses extracted from agriculture used for investment**
- **Strategy of growth based on capital accumulation was not sustainable and had terrible welfare consequences: Great Leap Forward (1958-60) not only failed to raise GDP growth rate, but also had disruptive effects on agriculture, culminating in severe famine after weather shocks in 1959**
- **Great Famine of 1959-61 resulted in 15 million deaths according to official Chinese statistics, and probably over 30 million deaths in reality**

Figure 3: Post-GLF Famine



Source: Naughton (2007), Lin and Yang (2000)

Government-Led Industrialization, 1952-78

- Despite disastrous effects, Chinese government continued with unbalanced growth strategy with only minor adjustments after famine
- Unfavorable terms of trade set on farm products, which was effectively a tax on farmers
- *Hukou* (household registration) system implemented to prevent heavily-taxed farmers leaving rural areas, and farmers were prohibited from engaging in non-farm activities
- Initially allowed government to extract surplus from agricultural sector to support capital accumulation, but also created incentive problems that significantly reduced agricultural productivity
- In late-1970s, agricultural sector accounted for 70% of workforce, but could not provide population with 2,300 calories/day (UN minimum), grain imports needed to meet deficits

Government-Led Industrialization, 1952-78

- **Non-agricultural sector not much better: dominated by state-owned enterprises (SOEs) where resource allocation and production carried out according to central plan rather than market signals**
- **SOEs were mostly inefficient, overflowing with redundant workers, and often producing output for which there was no demand; at same time few firms in light industries producing home appliances, furniture, and clothing – constant shortages of consumer products**
- **How did China manage to grow at all? Mostly result of large increases in physical and human capital, both of which were at very low levels in 1952 – capital/output ratio rose by 140%, and average years of education rose from 0.74 to 3.75**
- **Lin, Cai and Li (1996) describe the socialist economy as the “trinity of the traditional economic system”: distorted factor and product prices, centrally-planned resource allocation and micro-management (see Figure 3)**

Figure 3: Socialist Economic System

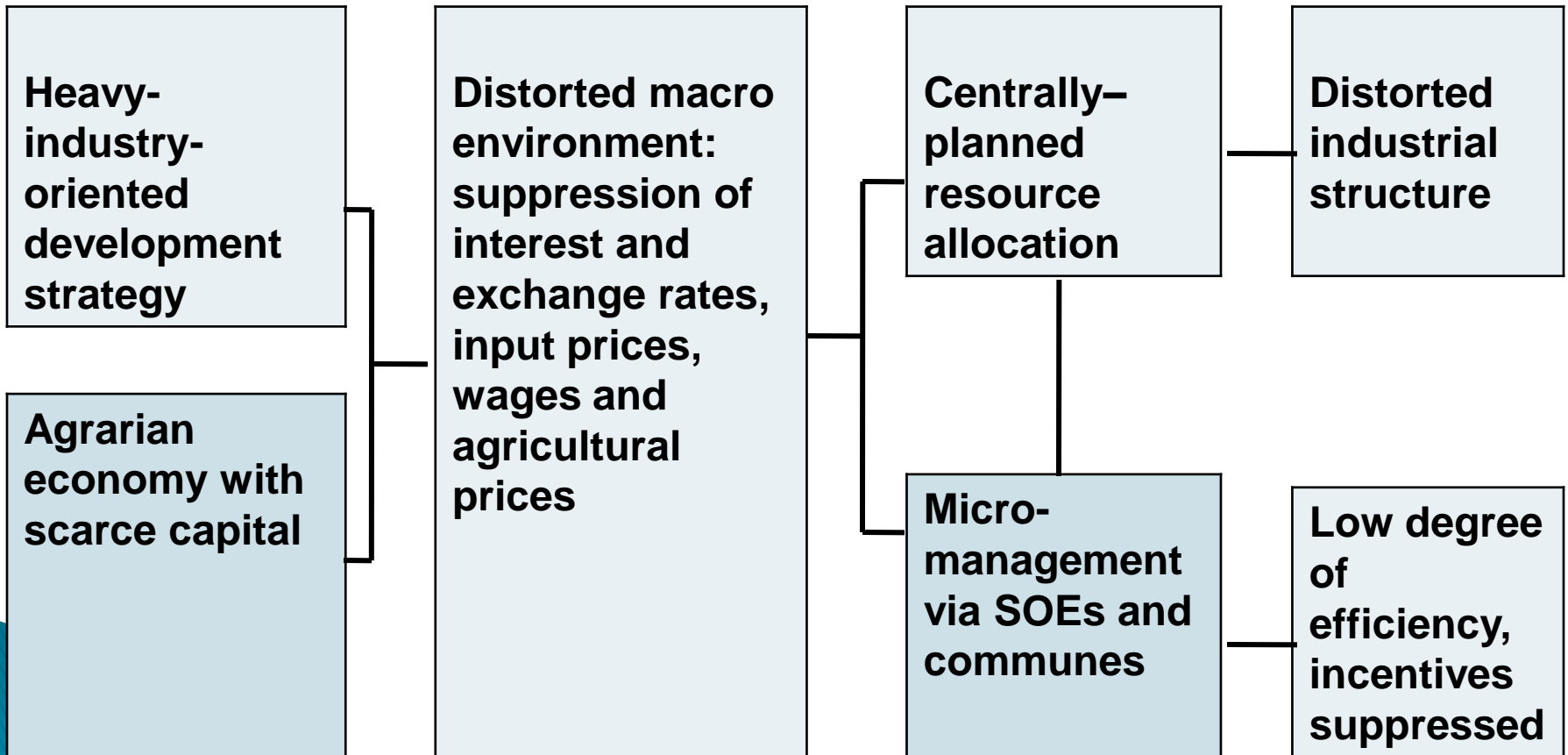
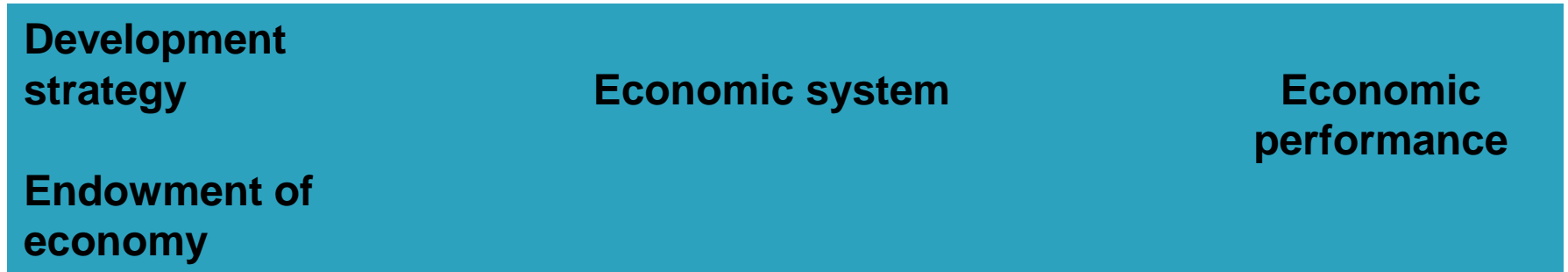
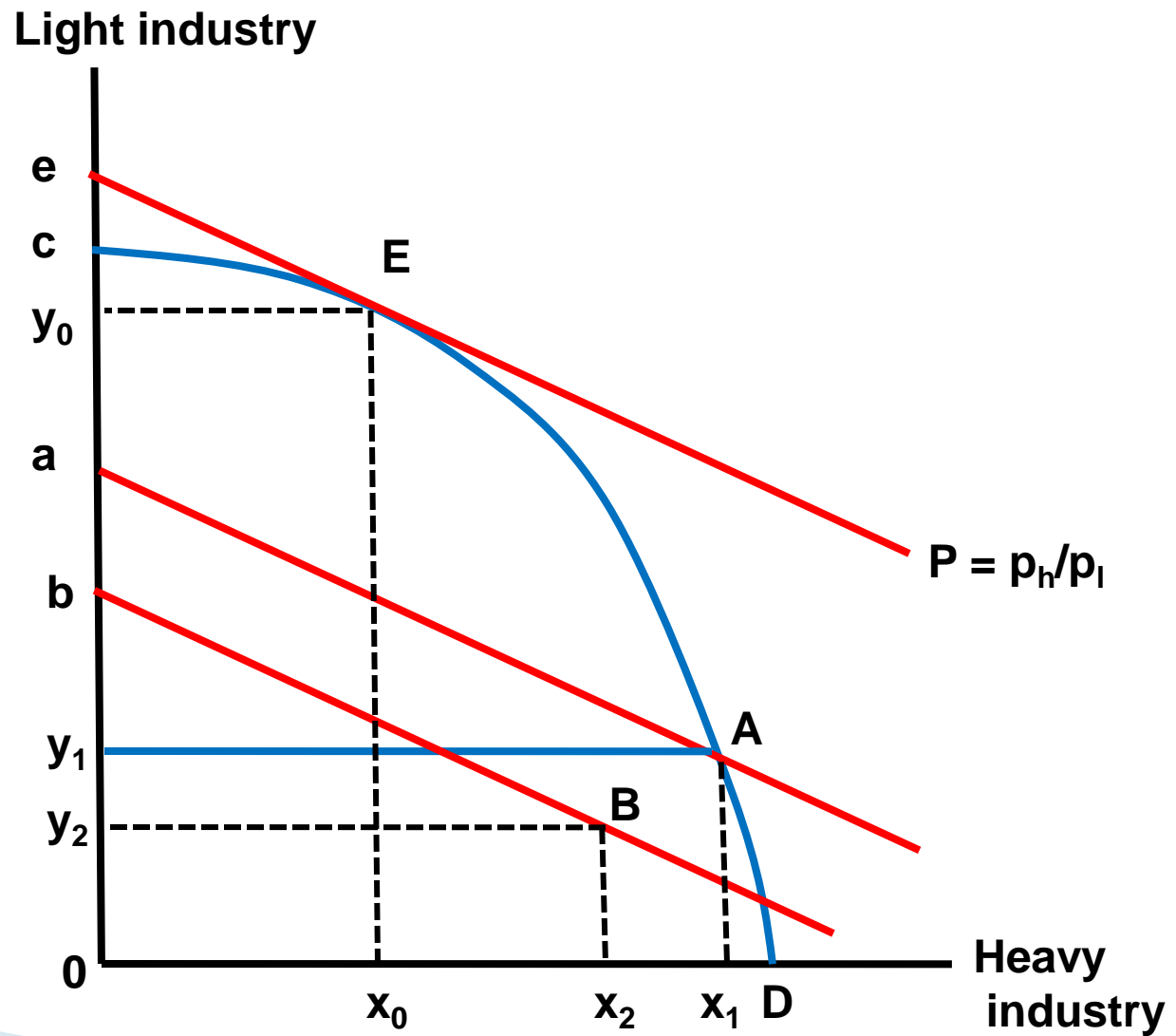


Figure 4: Socialist Strategy and Production Inefficiency



Government-Led Industrialization, 1952-78

- Economic distortion in PRC can be evaluated through traditional static production frontier analysis
- Undistorted relative prices, $P=p_h/p_l$, results in production mix at E on cEAD, with GDP at e, with $0y_0$ of light industry, and $0x_0$ of heavy industry
- Allocation of capital to heavy industry by planning depressed light industry, i.e., y_1AD , with $0y_1$ of light industry and $0x_1$ of heavy
- Evaluated at non-distorted prices P, static loss of GDP of ea (measured in terms of light industry)
- With reduction in production, if some GDP goes to investment every period, then growth potential of economy reduced, i.e., end up at B, producing $0y_2$ and $0x_2$

Sectoral Shifts/Productivity Growth – Post 1978

- After death of Mao in 1976, and ending of Cultural revolution, Chinese government under Deng Xiaoping sought to increase legitimacy through increasing aggregate economic performance and living standards
- December 1978, decided on policy of *Gaige Kaifang* “reform and opening up”; no grand design of systematic reforms – instead gradual, experimental and decentralized (Xu, 2011)
- How did reforms generate such impressive economic growth, and is it sustainable?
- TFP growth rates can be compared across aggregate economy, agricultural and non-agricultural sectors (Table 2) – non-agricultural sector being split into state (SOEs and shareholding companies) and non-state sectors (private, collective, and foreign-invested firms)

Sectoral Shifts/Productivity Growth – Post 1978

Table 2: Employment Share, GDP Share, and TFP Growth by Sector

<i>Average annual total factor productivity growth (%)</i>				
<i>Period</i>	<i>Agriculture</i>	<i>Nonagricultural sector</i>		<i>Aggregate</i>
		<i>Nonstate</i>	<i>State</i>	
1978–2007	4.01	3.91	1.68	3.61
1978–1988	2.79	5.87	–0.36	3.83
1988–1998	5.10	2.17	0.27	2.45
1998–2007	4.13	3.67	5.50	4.68
<i>Year</i>	<i>Employment share (%)</i>			
1978	69	15	16	100
2007	26	62	12	100
<i>Year</i>	<i>GDP share (%)</i>			
1978	28	27	45	100
2007	10	70	20	100

Source: Brandt and Zhu (2010)

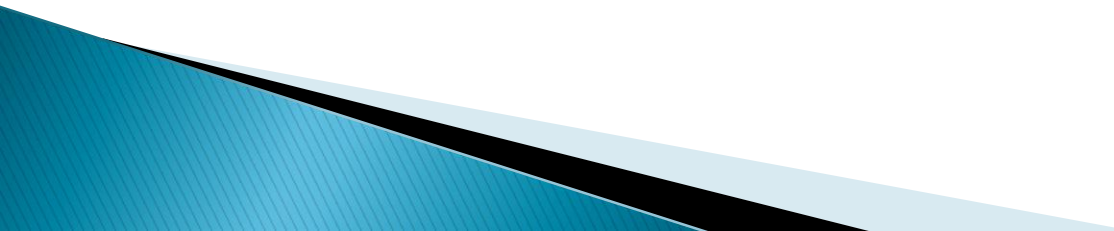
Sectoral Shifts/Productivity Growth – Post 1978

- **Many shareholding firms are former SOEs restructured in mid-1990s, but still controlled by state, getting favorable treatment in form of easy access to credit, and concentrated in protected sectors such as energy and telecommunications**
- **Collective firms receive little state support, are credit constrained and have difficulty entering protected industries**
- **TFP grew rapidly in both agricultural and non-state sectors, although agriculture's share of employment declined significantly, and vice-versa in non-state sector**
- **High rate of productivity in agriculture pushed workers away from sector, while large increase in number of workers in non-state sector was not sufficient to drive down their productivity, i.e., was able to absorb labor**
- **State sector's share of employment has declined since restructuring in 1998, but productivity has also increased**

Productivity Growth in Agriculture and Reform

- Given recurring food crises pre-1978, not surprising reforms began in agricultural sector:
- Government increased agricultural prices
- Collective farming system shifted to “household-responsibility” system – each farm household assigned fixed quota of grains it had to sell to government at official prices, but any extra could be sold at market prices
- Reforms implemented gradually, and completed in 1984 – TFP in agriculture rising by 5.62%/year, most of growth being attributed to impact of reforms on farmer incentives and input choices
- Agricultural output rose by 47% during this period, alleviating subsistence constraint, and allowing reallocation of labor from agriculture to industry – mostly to “township and village enterprises (TVEs) and not urban centers

Productivity Growth in Agriculture and Reform

- **By late-1980s, static efficiency gains exhausted, and agricultural productivity and structural transformation stagnated**
 - **Starting around 1990, markets for agricultural inputs and outputs liberalized, and government interventions reduced, providing farmers with incentives to adopt new technologies**
 - **Annual growth rate of TFP in agriculture reached 5.10% between 1988 and 1998, mostly due to technological progress, share of agriculture in total employment falling to 26% by 2007**
 - **Since Schultz (1953), economists have understood how productivity growth in agriculture can contribute to overall economic growth: food demand can be met with less labor, which is reallocated to non-agricultural sector where average labor productivity is higher, hence contributing to aggregate productivity growth**
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Productivity Growth in Agriculture and Reform

- Young (2003) suggests reforms in agricultural sector were perhaps most important source of growth in first two decades of reform
- In 1978, average labor productivity in non-agricultural sector was six times as high as in agricultural sector, so there should have been significant contribution from labor reallocation
- Brandt and Zhu (2010) find that contribution of TFP growth in agriculture to aggregate productivity growth is 1.5% points/year over 1978-2007, but role has diminished over time:
- As economy grew, agriculture's share of value-added decreased, and so direct contribution decreased
- As agriculture's share of employment and value-added has declined, contribution of productivity growth in agriculture to aggregate productivity growth declined

Growth Outside of Agriculture

- Before reforms, resource allocation determined by central plan rather than market, state sector dominating non-agricultural activity, accounting for 80% of urban employment and 75% of industrial output
- 1978-1988 - Rise of Non-State Sector:
- In early-1980s, encouraged by success of rural reforms, two market reforms in non-agricultural sector:
 - Dual-track system where SOEs were given quotas on inputs and outputs transacted at official prices, but also allowed to trade at market prices beyond quotas
- Non-SOEs, small firms, collective firms and foreign-invested firms in special economic zones (SEZs) allowed to enter previously forbidden sectors

Growth Outside of Agriculture

- **Central government devolved economic decision-making to lower-level governments and provided fiscal incentives**

Starting in 1980, local governments became “residual claimants” of enterprises under their control; as a result, provincial-, city-, and county-level governments controlled most SOEs, while township- and village-level governments controlled rural collective enterprises known as “township and village enterprises” (TVEs)

- **Under these reforms, TVEs flourished and led way to expansion of non-state sector, while SOEs did not – number rose from 1,520,000 in 1978 to 18,880,000 in 1988**
- **Agricultural reforms made many local workers available to TVEs, and dual-track system allowed them to access capital and raw materials from markets**

Growth Outside of Agriculture

- 1978-1998, share of total employment in non-state owned enterprises increased from 15 to 39%, accompanied by average TFP growth of 5.87%/year
- Reforms did less for SOEs, although introduction by local governments of “managerial responsibility system”, linking managers’ and workers’ incomes to enterprise performance did have some modest effects on productivity
- Basic lesson is that productivity growth of non-agricultural sector during this period was due to rise of non-state sector
- 1988-1998-Reform Without Losers to Tradeoffs:
- A key reason for weaker performance of SOEs was they remained under constraints of planning for longer

Growth Outside of Agriculture

- Also, commitment made by central government to support employment in state sector – strategy had political benefit of minimizing social instability and reducing resistance to reform – “reform without losers” (Lau, Qian and Roland, 2000)
- To avoid layoffs or closing factories, government asked state-owned banks to bail out loss-making SOEs, creating a “soft budget constraint”, further reducing incentives of SOEs
- No such commitment to TVEs from central government, and local governments had little influence over banks – many TVEs went bankrupt when credit was tightened in 1989 as they faced tighter budget constraints and market discipline
- Financial conditions of SOEs eventually deteriorated, resources needed to support them increasing steadily between 1986 and 1993

Growth Outside of Agriculture

- Non-performing loans in state banking system increased and creation of money to make loans led to chronic inflation
- By 1994 strategy of “reform without losers” clearly non-sustainable, and in 1995, government reduced commitment to stable employment in state sector - small SOEs allowed to go bankrupt or privatized through management buyouts
- 1995-2001 share of employment of state sector declined from 17 to 12%; more diversified ownership forms introduced and large-scale SOEs converted to shareholding companies with state controlling majority of shares
- 1998-2007 – Privatization and Trade Liberalization:
- 15th Congress of Communist Party in 1997 sanctioned ownership reforms of SOEs and legalized private enterprises

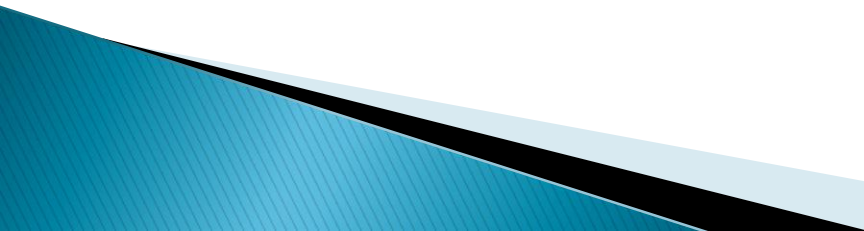
Growth Outside of Agriculture

- Private enterprises grew rapidly, and collective enterprises such as TVEs lost their edge, some being closed and many privatized
- In lead-up to WTO-entry in 2001, China cut tariffs, broadened trade rights and liberalized regime for foreign direct investment (FDI) – share of urban employment in private firms and foreign-invested firms rose to 24%
- Combination of privatization and trade liberalization had strong impact on productivity growth in both state and non-state sectors
- Reduced entry/exit barriers, and increased competition, led to rapid within-firm productivity growth
- Non-tradable sectors faced much less competition - considerable barriers to entry of private and foreign-invested firms into services, and SOEs face barriers to exit

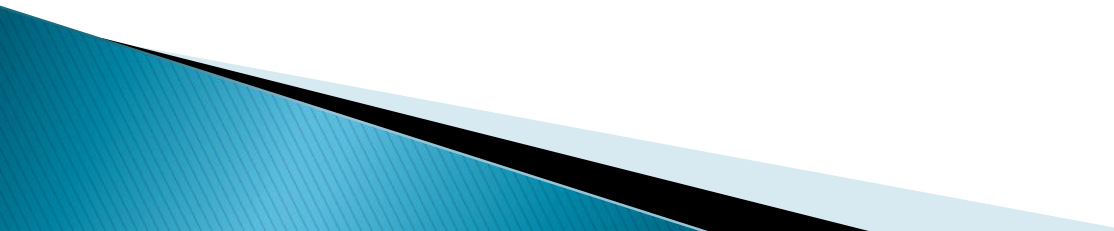
Future of China's Growth

- Will China's growth rate slow down? Figure 5 decomposes China's GDP per capita relative to US into: relative labor participation rate, relative average human capital, relative capital/output ratio, and relative TFP
- Clearly, growth in China's relative GDP per capita is driven by relative TFP – hence, China's future growth will depend on future of its relative productivity growth
- Other countries in Eastern Europe and Latin America have experienced economic reforms, but their growth performance is nowhere near that of China. What is special about China?
- One explanation is China's backwardness in 1978, increasing potential for catch-up growth, i.e., it was so far away from productivity frontier that reforms has very large effect

Future of China's Growth

- Even if China does not replicate its growth performance for another two decades, its productivity level will still be 40% of frontier level of US, and still below level of Japan in late-1950s or South Korea and Taiwan in 1960s
 - China's economy still has opportunities for raising productivity growth through reducing still-existing distortions and inefficiencies through misallocation of capital and labor
 - Obstacles do exist to realizing gains: Chinese banking sector still dominated by state-controlled banks that lend disproportionately to firms in state sector
 - SOEs continue to enjoy monopoly rights and profits in industries ranging from energy, transportation, and telecommunications to banking, education and healthcare
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Future of China's Growth

- Chinese reforms carried out without political reform or establishment of rule of law, focusing instead on piecemeal changes benefiting key interest groups in state sector, e.g., giving monopoly rights to SOEs or politically-connected firms
 - Approach has reduced political resistance to economic reform, but has also resulted in corruption and income inequality as well as creating economic distortions
 - If reducing state sector's monopoly rights in certain industries is important for reducing distortions, and solving socio-political problems of inequality and corruption, will China's leadership be willing to solve these problems?
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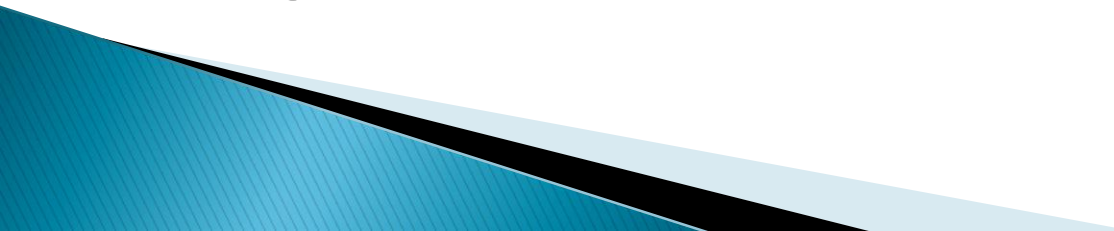
How Did China Really Take Off?

- Focus so far has been on contribution of rate of growth of TFP to China's growth record, but important to dig deeper into impact of key reforms
- Two prevailing explanations for China's rate of growth taking off:
 - Globalization – China's growth really started when Deng Xiaoping liberalized trade and foreign investment by setting up SEZs in coastal provinces
 - Export-oriented manufacturing employed millions of rural migrants, boosted income and reduced poverty
 - Internal reforms, especially in rural, interior regions, of agricultural pricing, land contracting, and entry of TVEs
- However, contributions of rural industry far greater in terms of employment and poverty reduction

How Did China Really Take Off?

- **Between 1978 and 1988, China's poverty headcount declined by 154 million: employment by firms funded by foreign capital was 60,000 in 1985, and 660,000 in 1990 compared to TVE employment of 69.8 million and 92.7 million**
- **China's takeoff in late-1970s and for subsequent two decades was completely a function of rural developments and internal reforms**
- **Some argued TVEs were essentially owned by local governments, and their dynamism and efficiency often treated as paradox**
- **Huang (2012) argues TVEs from their inception were actually private, and that China did in fact undertake meaningful financial liberalization at start of reforms**
- **Rural private entrepreneurship correlates with poverty reduction, GDP growth driven by personal consumption and initial decline of income inequality**

How Did China Really Take Off?

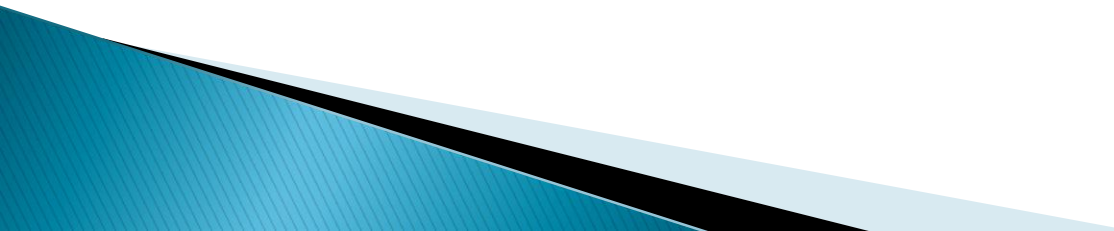
- **China actually reversed much of its financial liberalization in early to mid-1990s, which despite its major impact on welfare of millions of rural Chinese, is virtually unknown in the West**
 - **“Nothing Other than Revolutionary Reforms”**
 - **Initial rural reforms had major effect: rural per capita income doubled between 1978 and 1984, real per capita consumption increased by 51% between 1978 and 1983, and rural poverty sharply declined**
 - **Some describe rural reforms as modest departures from status quo, i.e., dual-track pricing, land was contracted out to farmers on long-term leases, state firms not privatized, although entrepreneurs could start own businesses**
 - **Deng himself considered these changes to be revolutionary**
- 

How Did China Really Take Off?

- **Correct perspective depends on what benchmark is used:**
 - **If “Washington consensus”, which includes privatization, deregulation, financial liberalization, rule of law and democratization – then reforms were modest**
 - **Deng had in mind the Cultural Revolution which was “nasty, brutish and short” for entrepreneurs – from this dynamic perspective, reforms were not modest at all**

Chinese leadership also took several steps to instill confidence in policy credibility and political stability, e.g., returned confiscated assets, people imprisoned for engaging in private commerce released from jail; and village elections introduced
 - **Effect of marginal changes after Cultural Revolution cannot be under-estimated**

How Did China Really Take Off?

- Chinese leadership also committed itself to not ratcheting up planned targets in dual-track system – by contrast system had failed in Soviet Union
 - Cultural Revolution was also primarily an urban political shock that cleansed urban China of any vestiges of capitalism, but there were still some free market activities in rural China
 - For rural reforms to work, required economic agents to have some knowledge of residual claims – still extant in rural areas but not urban areas, i.e., there was rural readiness for capitalism that had multiplier effect on reforms
 - Many of the reforms that elicited such a huge response in China and later Vietnam, completely failed in Soviet Union which was much more industrialized
- 

How Did China Really Take Off?

- **Private Entrepreneurship in Rural China**
- **China's economy took off not just because peasants produced more grain, but because they switched to higher value-added activities such as industrial production**
- **TVEs were vital in this process: raised rural income, absorbed surplus labor, and contributed to decline in rural-urban income gap**
- **Also injected competition into economy – in 1980s, often only competition for SOEs, undermining their monopoly in product and factor markets**
- **Standard view of TVEs is that they were collectively owned – is that claim actually true? Western scholars base this argument on TVEs owing their origins to rural “commune and brigade enterprises” created in Great Leap Forward**

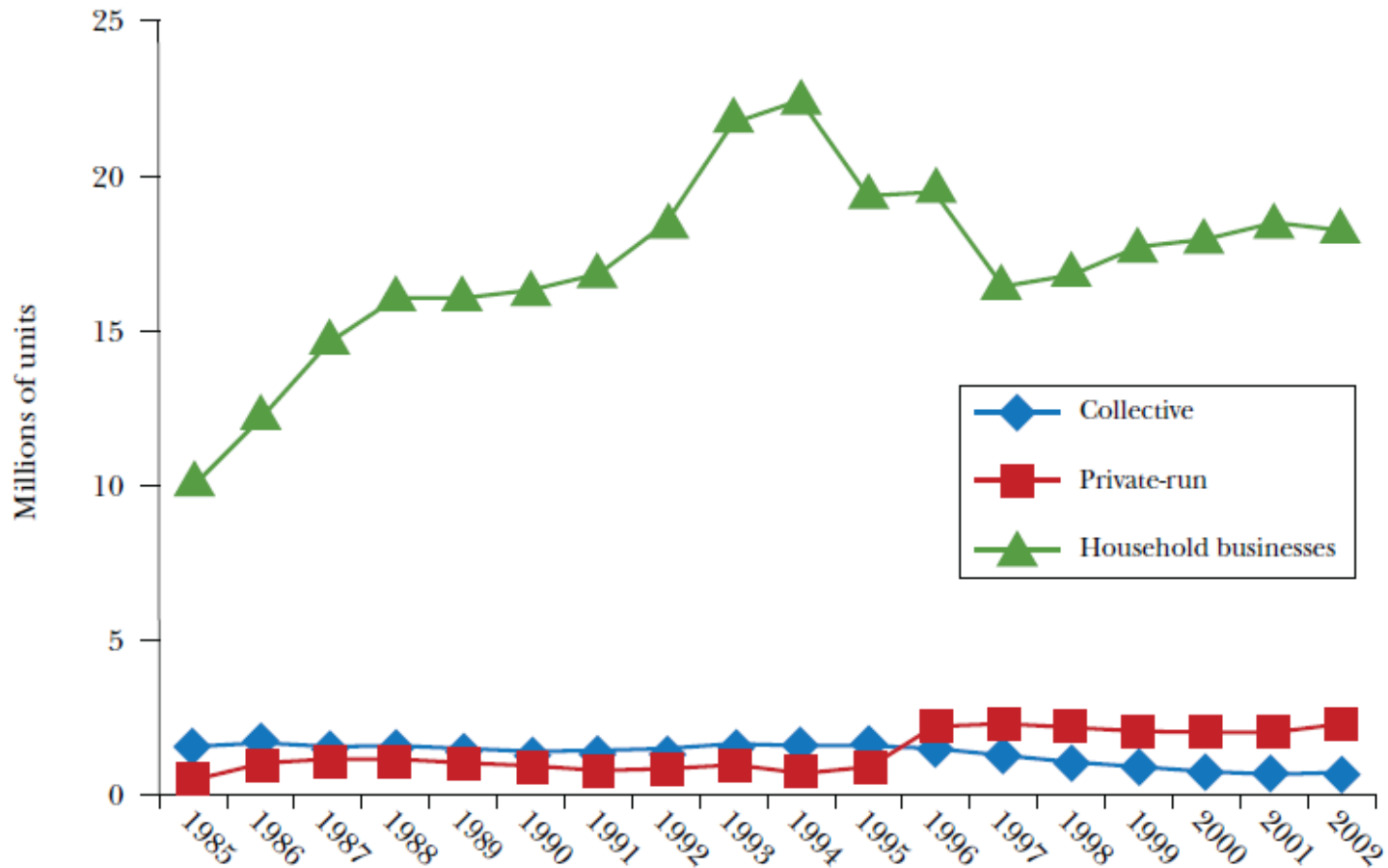
How Did China Really Take Off?

- In 1978, there were 1.5 million commune and brigade enterprises, but by 1985 there were 12 million TVEs – clearly a majority of TVEs had nothing to do with the Great Leap Forward
- A mistake made by Western economists has been to assume that enterprises located in townships and villages must be owned by them – in fact, absolute majority of TVEs were in fact private rather than public
- In 1985, of 12 million TVEs, 10.5 million were private, and there were only 1.5 million collective TVEs - an increase in private TVEs from zero in 1978, making them one of history's private sector success stories
- Growth of TVEs occurred almost entirely on private spectrum (Figure 5), and collective TVEs declined sharply in 1990s

How Did China Really Take Off?


Figure 5: TVEs by Ownership Category, 1985-2002

(millions of units)



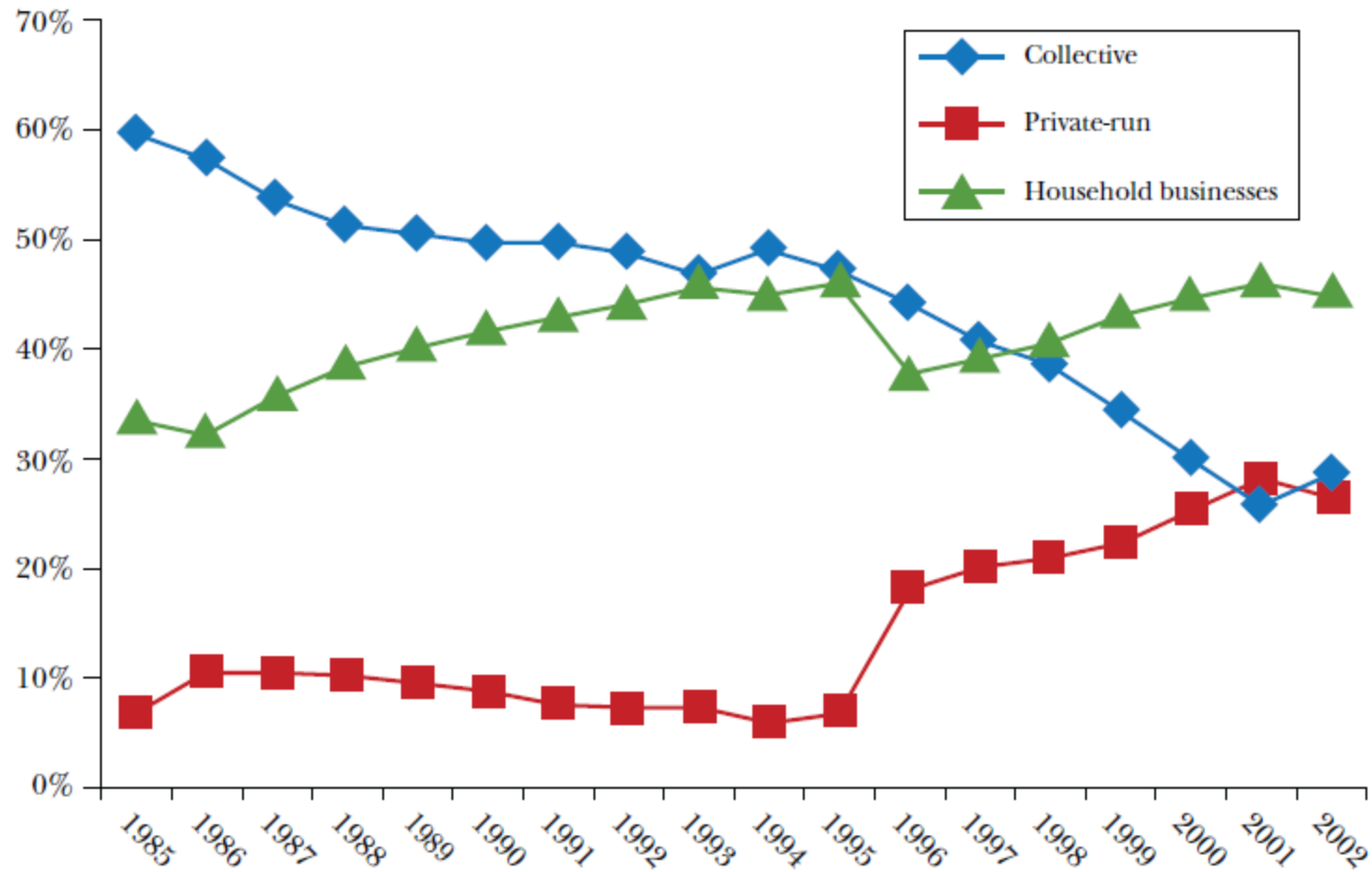
Source: Ministry of Agriculture (2003)

How Did China Really Take Off?

- Official figures likely overstated public ownership of TVEs as they had no legal framework in place for entrepreneurs to register businesses as private
 - Change in 1994 when Chinese Company Law went into effect, so that many firms previously registered as private were converted to private firms, which shows up in number and employment of privately owned TVEs, i.e., change of titles not privatization (Figures 5 and 6)
 - Growth due to TVEs took place almost entirely in private sector – prospering mostly in poor provinces, while collective TVEs prevailed in richer and less-industrialized provinces
 - This can be seen in Figures 7 and 8, which are based on dividing China's 29 provinces into three groups based on per capita GDP and shares of rural population
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How Did China Really Take Off?

Figure 6: TVE Employment by Ownership Category, 1987-2002

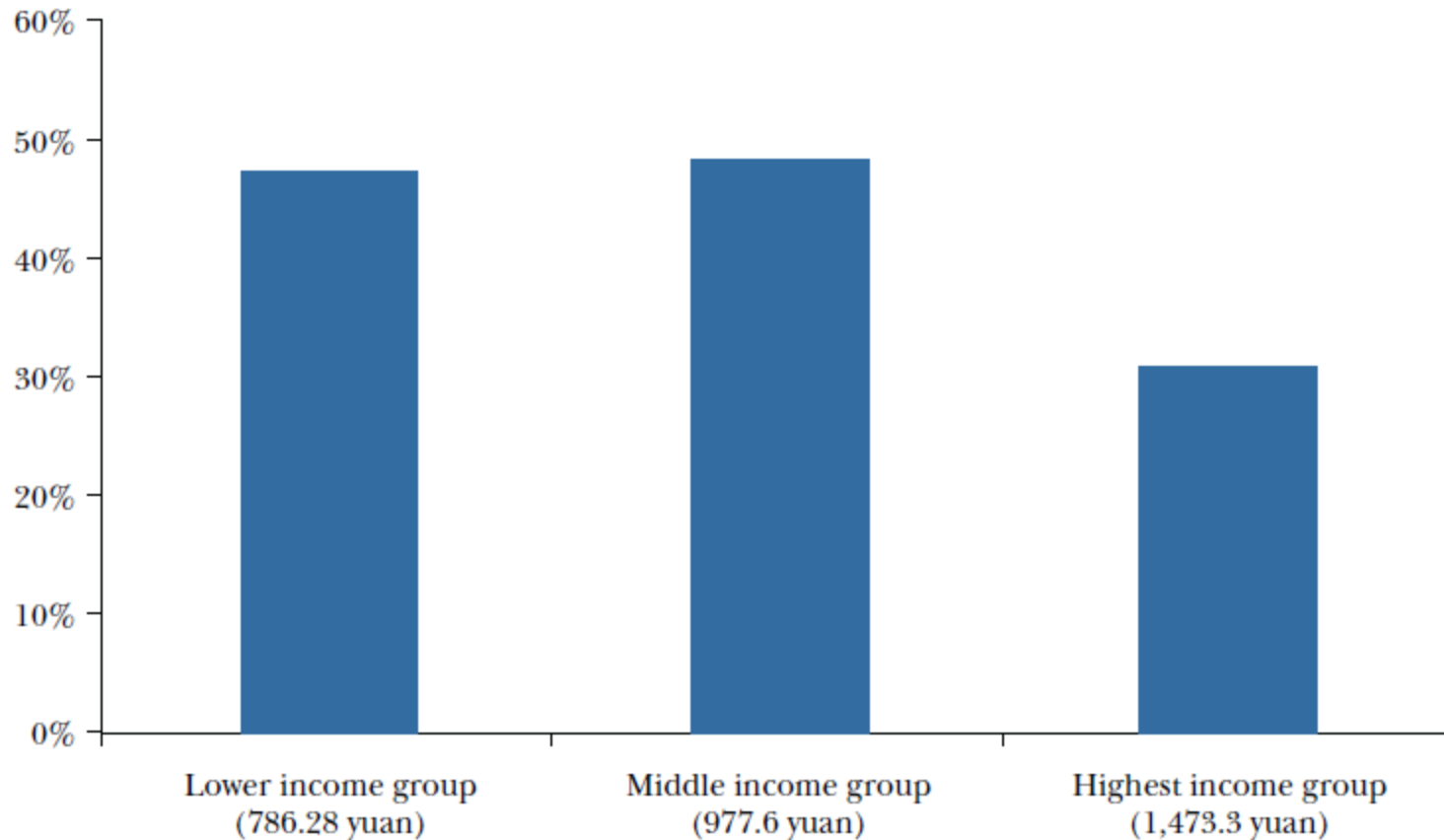


Source: Ministry of Agriculture (2003)

How Did China Really Take Off?

Figure 7: Private Shares of Gross Output Value of TVEs by 3 Province Groups Based on Per Capita GDP, 1987

(provincial averages)

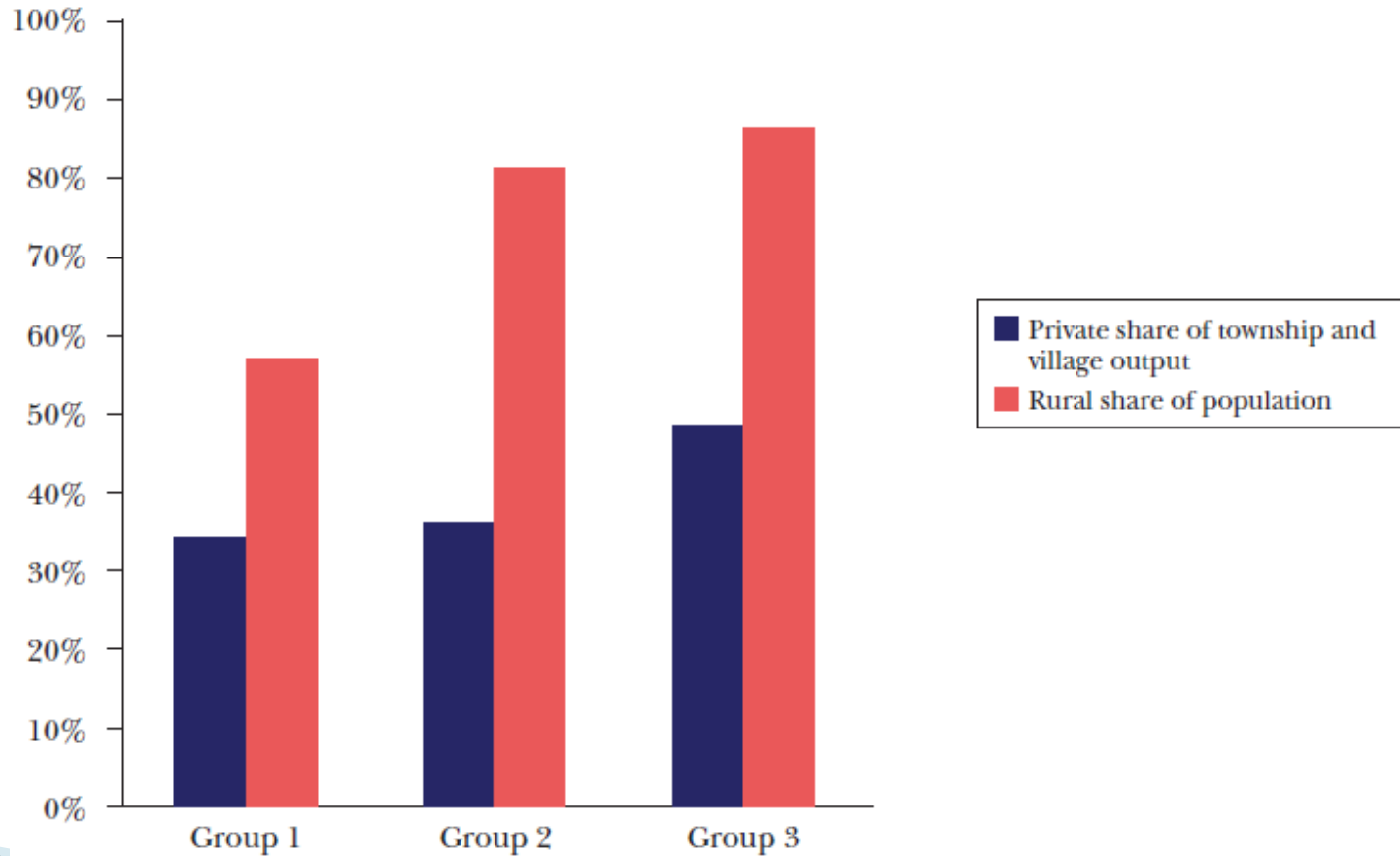


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How Did China Really Take Off?

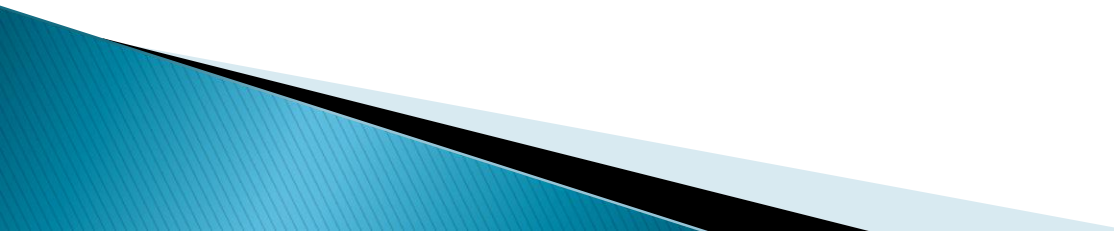
Figure 7: Private Shares of Gross Output Value of TVEs
by 3 Province Groups Based on Rural Population Shares, 1987

(provincial averages)



Source: Ministry of Agriculture (2003)

How Did China Really Take Off?

- In poor provinces, it was private entrepreneurship that contributed to bulk of production, and also affected large proportion of population
 - As of 1987, private TVEs contributed 50% of output in 8 provinces – home to 260 million rural Chinese (30% of China's population)
 - In another 15 provinces, rural private sector produced 30-50% of TVE output – home to 427.8 rural Chinese (50% of rural population)
 - Within decade of reforms, private TVEs went from non-existence to contributing to a substantial share of non-agricultural output in provinces with close to 80% of rural Chinese population
 - Not an over-statement to say rural private entrepreneurship played key role in China's poverty reduction
- 

How Did China Really Take Off?

- **Financial Reforms and Reversals**
- **The view that China challenges standard view of economics by growing without financial liberalization is due to observation bias – research done during reversal period of early-1990s rather than more liberal period of 1980s**
- **Rural financial reforms in 1980s had three parts:**
 - **Authorities began to delegate control rights of rural credit cooperatives to depositor-members**
 - **Entrepreneurs were permitted into financial intermediation**
 - **Access to credit for rural private entrepreneurs eased**

How Did China Really Take Off?

- Rural credit cooperatives first established in 1951 as genuinely private institutions, but in 1960s and 1970s, under central planning, Agricultural Bank of China and local governments took control
- Reform of rural credit cooperatives was launched by central government in early 1980s; Agricultural Bank of China shifted from micro controls to indirect macro management

Imposed reserve requirements of 30% of deposit base, and rural credit cooperatives could then lend; also implemented governance reforms, branch managers being elected by shareholders
- Informal finance emerged due to deliberate public policy, in form of rural cooperative foundations , who competed directly with rural credit cooperatives and Agricultural Bank of China in both deposit and lending business

How Did China Really Take Off?

- In 1990s, evidence that there were policy reversals on all three fronts:
 - Control rights of rural credit cooperatives were re-centralized, People's Bank of China formally assuming control in 1998
 - Rural cooperative foundations were stripped of deposit-taking business in 1993, and lending restricted in 1994
 - Private sector access to credit severely curtailed, even though clear evidence that urban SOEs not rural entrepreneurs who defaulted on loans
- Health of rural finance deteriorated massively, and within a decade of policy reversals, an institution that had played a key role in China's takeoff became technically insolvent

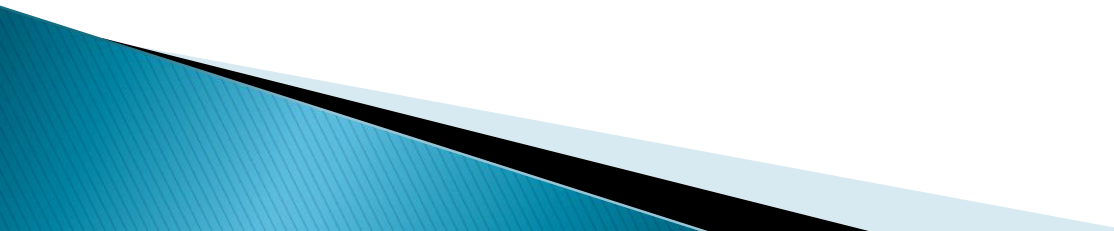
How Did China Really Take Off?

- **Why Policy Reversal?**
- **Coincided with assumption of power by new group of leaders in aftermath of 1989 Tiananmen crackdown – notably, Zhao Ziyang who pioneered rural reforms in Sichuan, fell from power**
- **Between 1989 and 2002, China was led by urban technocrats who launched massive infrastructure projects requiring mobilization of financial resources – resulted in a significant reduction in credit allocation to rural China**
- **Were there Economic Effects?**
- **1989-2002, growth in rural income slowed to 4%/year, and it would be surprising if this did not affect China's growth, given this accounted for 70% of China's population**

How Did China Really Take Off?

- In 1980s, household consumption as proportion of GDP was 50%, and it has now declined to 35% - lowest for any major economy
- In 1990s, Chinese growth became increasingly driven by SOEs, and since 2000 by net exports
- A reasonable hypothesis is that reduced growth of rural household income led to a reduction in household consumption, and this income effects is in addition to changes in household savings behavior
- Has it Affected Transition to Market Economy?
- Chinese capitalism is rural in origin, and rural capitalism is highly entrepreneurial in a Schumpeterian sense; by contrast urban reforms in 1990s have led to rise of politically-connected, rent-seeking private sector, e.g., real-estate

How Did China Really Take Off?

- In 1980s, almost all private fixed asset investments were rural, and net effect of policy reversals was to reduce growth of private sector from larger rural base to smaller urban base
 - Between 1978 and 2012, it has taken China more years to “reform” central planning system than it took to establish and operate that system from 1949 to 1978
 - By 2005, China’s private fixed-asset investment share was around 34%, which is less than the comparable figure for India of 58% in 1983 – long before India’s transition to a market economy began
 - China has moved from central-planning to what might be called a “commanding-heights” economy, but it has not completed its transition to a market economy
- 

China's Macroeconomic Performance

- High savings and investment rates in China have been a driving force behind its growth
- During 1980s and 1990s, high savings rates in range of 35-40% of GDP were not accompanied by external imbalance – its current account balance fluctuated within 2% of GDP most years
- Since 2001, China's savings rate has grown further, and its current account surplus has increased steeply – China's aggregate savings rate reached 53% of GDP in 2008, while its current account surplus exceeded 9% of GDP, although it did moderate during financial crisis
- As a result of cumulative current account surplus, China's foreign exchange reserves reached \$3 trillion by 2011, triple the amount held by Japan

China's Macroeconomic Performance

- High savings rate and current account surpluses primarily attributable to set of policies, institutions and structural distortions embedded in Chinese economy
- When China joined WTO in 2001, increased profitability of firms - but due to institutional rules, windfall gain either saved in corporate sector or collected by government, which did not adjust its social welfare spending
- Result was upsurge in aggregate savings, along with weak domestic consumption and low demand for imports
- Imbalance made worse by rise in household savings due to shifts in labor market, incomplete social welfare reforms and demographic changes due to population control policies, along with pursuit of export promotion

China's Macroeconomic Performance

- **Ill-functioning financial system failed to channel increased savings to high-return production investment or consumption loans, excess savings ending up as foreign exchange reserves invested in low-yielding overseas government bonds**
- **Macroeconomic imbalances pose several risks:**
- **Low consumption/GDP implies growth over past decade due to investment and foreign demand – it will be challenging to maintain growth with declining investment efficiency, and shocks to external demand**
- **With foreign exchange reserves invested in dollar and euro-denominated bonds, potential for large capital losses if dollar and euro depreciate**

China's Macroeconomic Performance

- Theory suggests a fast-growing developing economy should exhibit a net inflow of investment – instead its savings go abroad for low rates of return

In 2007, China held 2/3 of its foreign exchange reserves in US bonds, and 1/5 in euro-denominated bonds, with investments an average 3% annual rate of return

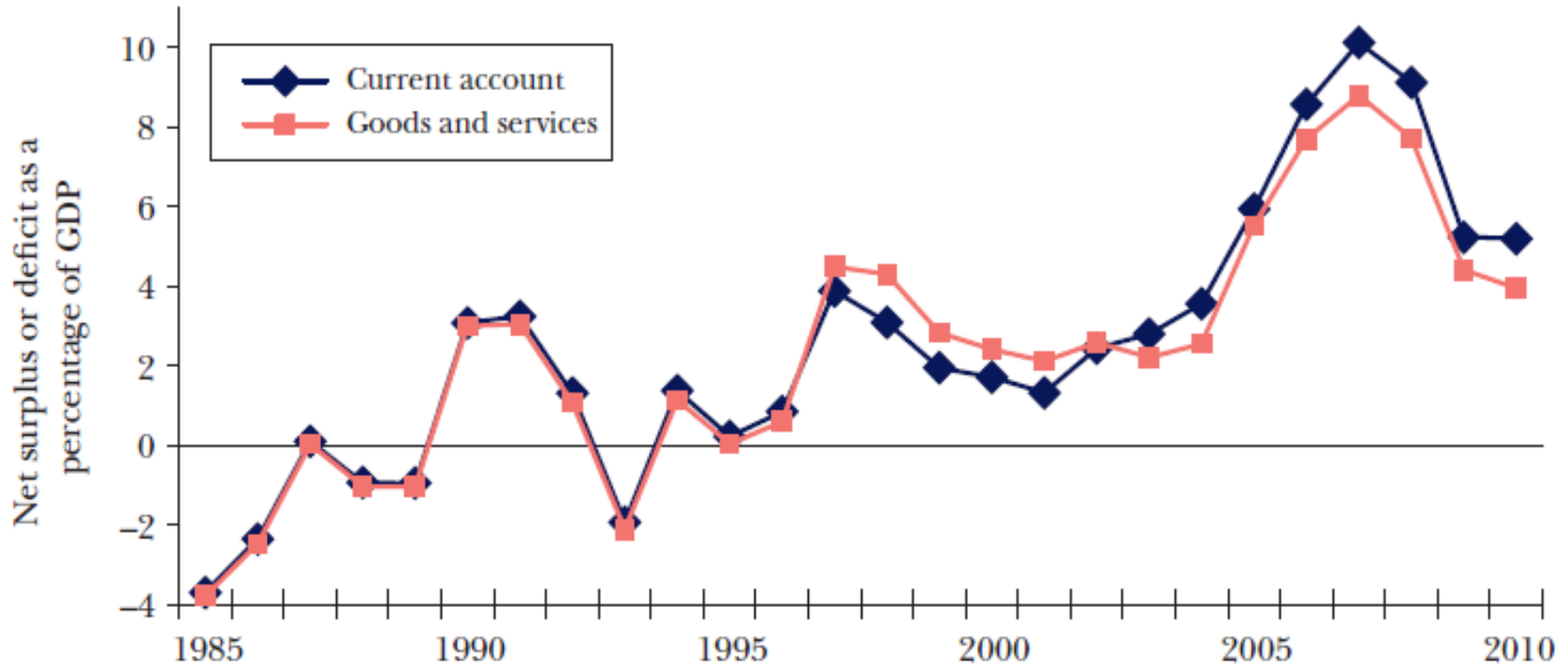
- China's trade surplus gets mirrored in trade deficits elsewhere, with several of China's trading partners, notably the US, blaming China for failure of their domestic firms and job losses
- Global economic imbalances present potential threat to global macroeconomic stability – something that was noted by economist Larry Summers before financial crisis in his phrase “the balance of financial terror”

China's Macroeconomic Performance

- **Trade Accounts and Savings:**
- **To document external imbalances of China, need to focus on its current account, its capital and financial account, plus its foreign reserves and any statistical discrepancies – as an accounting convention, these will add up to zero**
- **Trade imbalance was insignificant through mid-1990s, but current account surplus accelerated after 2005 (Figure 8)**
- **Although there in surplus in mid-1990s, capital and financial account was more or less balanced when China joined WTO in 2001, after that it registered surplus (Figure 9)**
- **Persistent “twin surpluses” in capital and current accounts over past decade have resulted in explosion in foreign exchange reserves (Figure 10)**

China's Macroeconomic Performance

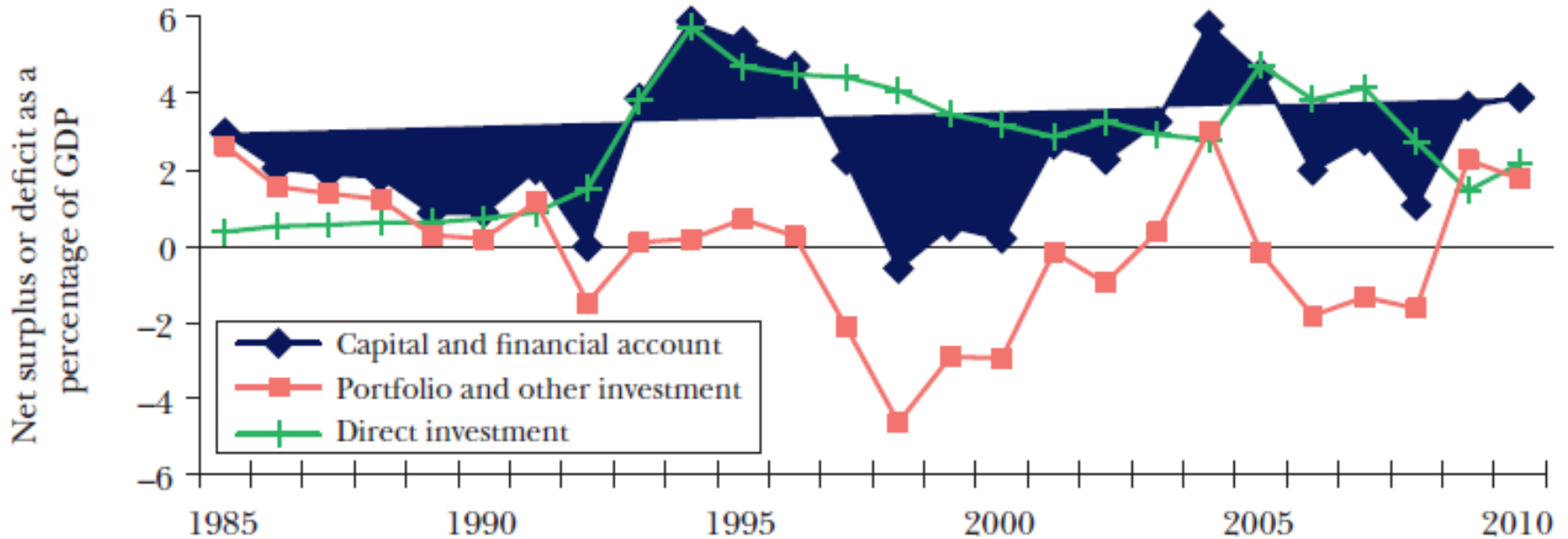
Figure 8: China's Current Account Balance, 1985-2010



Source: SAFE (2011)

China's Macroeconomic Performance

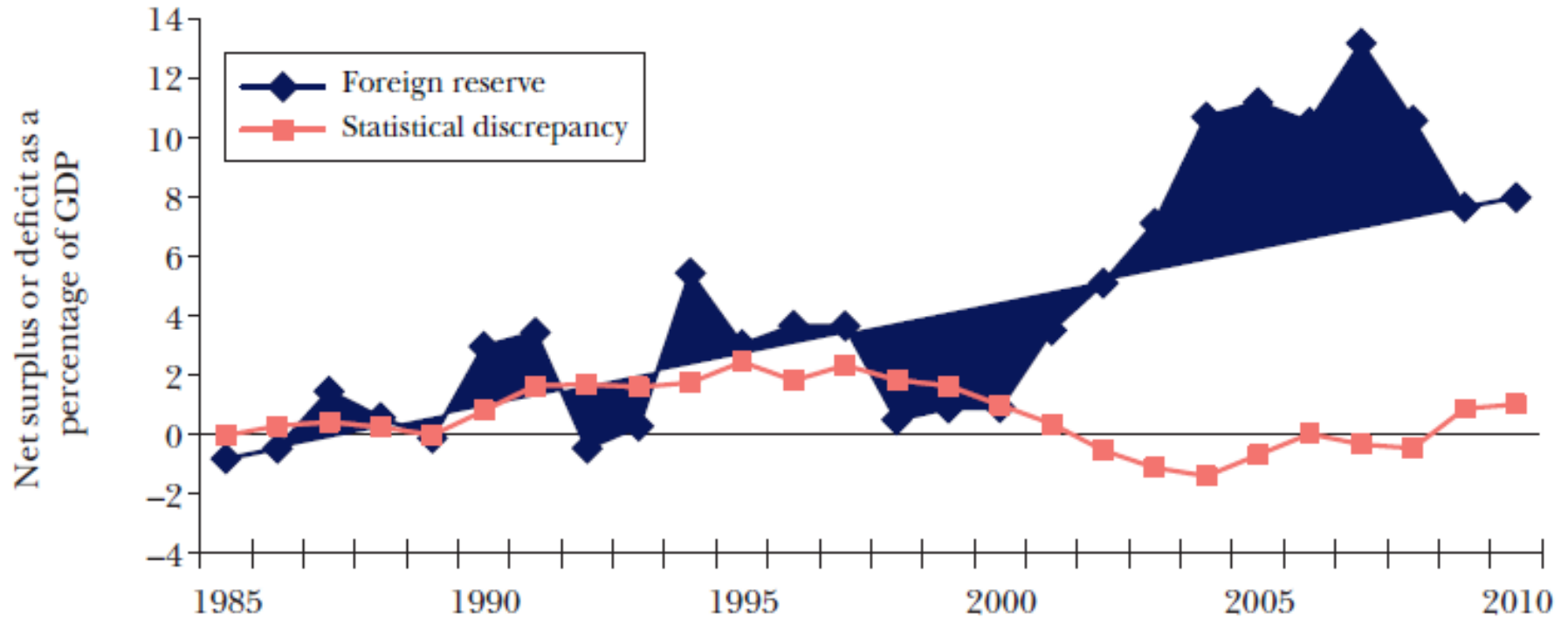
Figure 9: China's Capital and Financial Account, 1985-2010



Source: SAFE (2011)

China's Macroeconomic Performance

Figure 10: China's Foreign Reserves and Balancing Item, 1985-2010



Source: SAFE (2011)

China's Macroeconomic Performance

- Sustained external imbalances can be a prelude to difficult economic adjustments – evolution of imbalances in Table 3 is revealing
- In 1995, advanced economies as a group were running trade surpluses, while emerging and developing economies as a group were running trade deficits
- By 2000, position had reversed, and until financial crisis, current account deficit of advanced countries grew hugely, along with current account surpluses of emerging and developing economies
- By 2008, China was largest net lender, and even after the financial crisis it still had largest current account surplus among all countries in 2010

China's Macroeconomic Performance

Table 3: Global Current Account Balances (US\$ billions)

<i>Country or region</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2008</i>	<i>2010</i>
Advanced economies:	29.8	-270.6	-411.2	-471.8	-95.5
Japan	111.4	119.6	165.7	157.1	194.8
United States	-113.6	-416.4	-747.6	-668.9	-470.2
Euro area	70.5	-39.4	41.1	-86.7	11.6
Germany	-29.6	-32.6	142.8	245.7	176.1
Spain	-1.8	-23.1	-83.3	-156.0	-63.3
Other	-38.5	65.6	129.7	126.7	168.4
Norway	5.3	25.3	49.1	79.9	53.3
Australia	-18.4	-15.3	-41.7	-47.2	-31.7
Emerging and developing economies	-92.2	95.2	443.0	704.2	378.1
Asia	-36.9	41.7	167.5	435.9	308.1
China	1.6	20.5	160.8	436.1	306.2
India	-5.6	-4.6	-10.3	-24.9	-49.0
Middle East and North Africa	-1.2	80.4	212.7	343.1	152.8
Sub-Saharan Africa	-9.9	2.1	-3.4	0.0	-24.9
Latin America and the Caribbean	-37.9	-48.4	36.3	-31.2	-56.9
Central and Eastern Europe	-10.2	-28.9	-57.7	-151.3	-76.0
Former Soviet Union	3.8	48.3	87.6	107.7	75.0
Statistical discrepancy	-62.4	-175.4	31.8	232.4	282.6

Source: IMF (2011)

China's Macroeconomic Performance

- Writing down standard accounting relationship between national public and private savings (S), domestic capital formation (I) and current account balance ($X-M$):

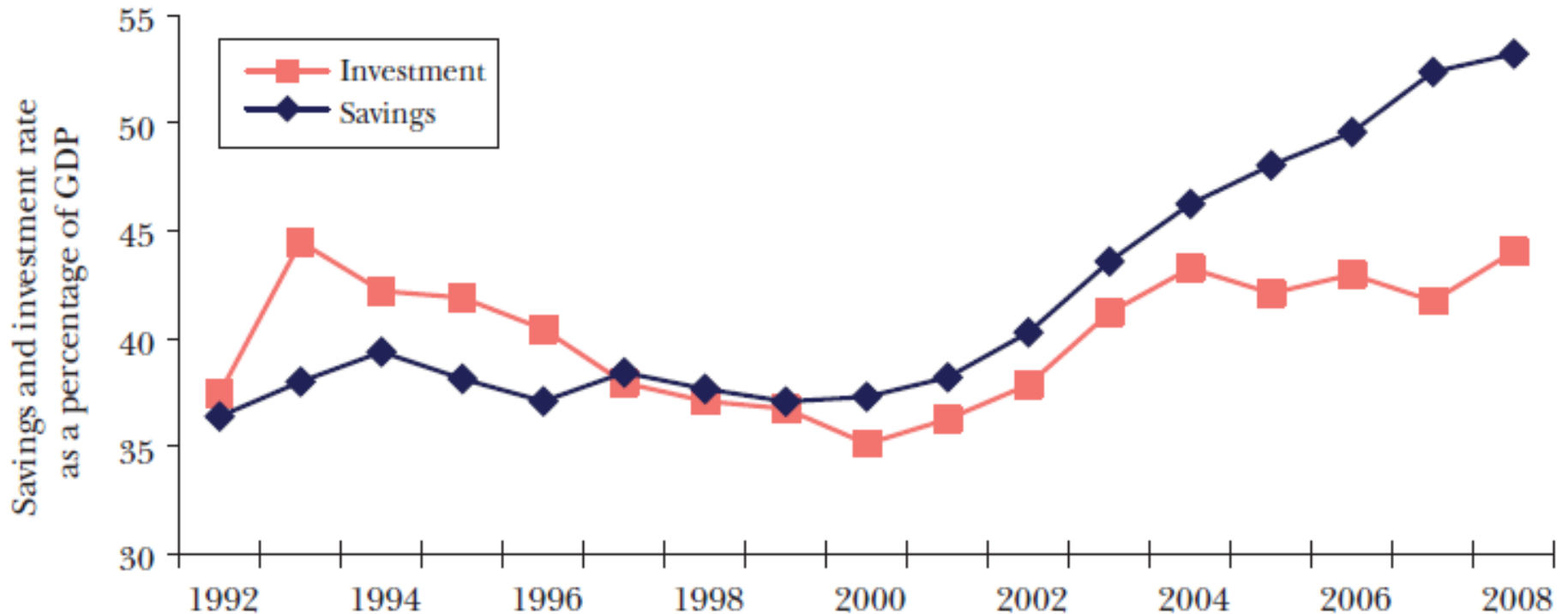
$$S - I = X - M$$

Identity gives straightforward interpretation of situation in China: amount earned by trade surplus, if not consumed or invested, must end up in savings; and if savings not invested at home must be invested abroad

- Aggregate savings and investment moved together in 1990s, but savings then moved ahead of investment in 2000s (Figure 11) – result: increase in current account surplus
- Caught Chinese government off-guard – policy target of 11th 5-Year Plan was a balanced current account from 2006-10

China's Macroeconomic Performance

Figure 11: China's Aggregate Savings and Investment Rate 1992-2008



Source: Statistical Yearbook of China (2009)

China's Macroeconomic Performance

- Many studies have attempted to explain causes of China's large trade surplus:
 - Common view is that exchange rate intervention by Chinese government is main culprit
 - Other explanations include financial market imperfections, migration of processing trade into China due to global division of labor, and pursuit of export-led development strategies
 - Bernanke's (2005) "savings glut" hypothesis emphasizes how savings and investment in a region affects external balance of region and other countries
- While all of these studies recognize relevance of savings to current account balance, do not investigate reason for China's high savings rate

China's Macroeconomic Performance

- In examining whether China's high savings rate is cause or effect of current account surplus, need to focus on upward pressure on its savings rate, limits on investment in productive capacity and trade and exchange rate policies
- Some policies and structural factors are historical legacies inherited from central planning, but others are more recent policies and regulations imposed on China's household and corporate sectors
- Aggregate Savings in China:
- Rising savings rate in China 2000-08 due to three changes:
 - (i) Sharp rise in disposable income of high-saving enterprise sector
 - (ii) Rise in rate of government savings
 - (iii) Increase in rate of household savings

China's Macroeconomic Performance

- **Several factors contributed to increasing profitability of Chinese enterprises in early-2000s:**
 - **In late-1990s, China experienced increase in productivity, but costs of production did not increase due to suppression of wage increases, low-interest loans, and low land rentals – as a result, enterprise incomes rose**
 - **Accession to WTO allowed China, along with continued inbound FDI, resulted in large increase in export demand**
- **Corporate sector retained increase in profits, partly due to private firms having to meet funding needs internally because credit creation is controlled by state banks that have a bias to SOEs**
- **If corporate sector would pay larger share of profits to households through higher wages, aggregate savings would decline**

China's Macroeconomic Performance

- **Government saving rose from 3.3% of GDP in 2000 to 8.4% in 2008**
- despite quadrupling of government revenues over same period, pace of government spending did not keep up
- **Increase in Chinese government revenue due to rise in tax revenues from production, as well increase in collection of income taxes and social insurance relative to benefit payments**
- **In late-1970s Chinese household savings only accounted for 6-7% of GDP, but then grew consistently to 23% in 2008**

Economists have applied several theories to savings in China, including the life-cycle and permanent-income hypotheses and significance of habit formation and cultural arguments

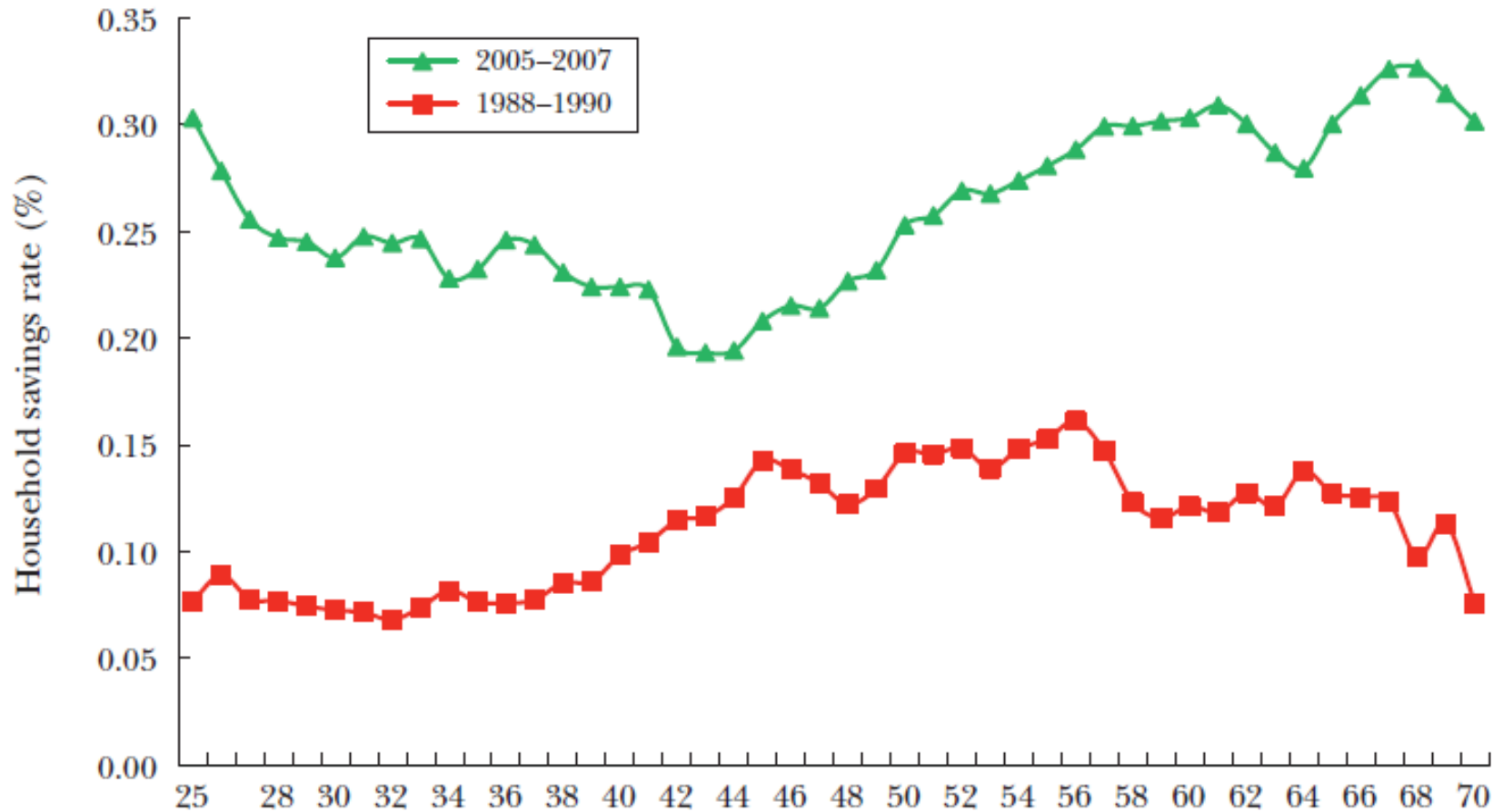
Explanations include: change in earnings profiles of younger workers; underdeveloped pension system; demographics; public to private provision of education, healthcare and housing

China's Macroeconomic Performance

- **Striking feature of household saving behavior is change in age-savings profile: in late-1980s, had flat “hump-shape”, following typical life-cycle (Modigliani, 1970); in mid-200s, large increase in savings for all ages, and life-cycle turns U-shaped (Figure 12)**
- **Explained by two factors:**
 - **Large upward shifts in earnings of successive younger cohorts of workers, and flattening of age-earnings profile – reflects shift away from rewarding seniority to human capital of young**
 - **Ratio of average pension/retiree to average wages/worker fell from 80% in early 1990s to 50% in 2007**
- **With ageing population, and lack of social security system, adult children supplying old-age support – a substitute for life-cycle savings**

China's Macroeconomic Performance

Figure 12: Average Household Savings Rate by Age of Household Head



Source: China's Urban Household Surveys

China's Macroeconomic Performance

- **Incomplete transition from public to private provision of education, health-care, and housing contributes to rising household savings**

Some argue that with backward financial institutions, China fails to pool risks by providing adequate medical and unemployment insurance, and fails to transform savings into loans for education and housing (Chamon and Prasad, 2010)

Argued that Chinese institutions impose dampening effect on wage growth as labor-intensive, small and medium-intensive enterprises cannot get adequate loans from state-owned banks

Ordinary people do not have access to profits of state-monopolized industries and natural resource sectors, such that income disparity and concentration of wealth for rich tend to increase household savings

China's Macroeconomic Performance

- **Limits on Investment Growth:**
- **Why has investment not kept rising in step with savings? Essentially, Chinese government has more effective control over investment than savings through state-dominated banking system**
- **After WTO entry, foreign and domestic investment increased, most of latter made mostly by SOEs and concentrated on heavy industries such as metals, machinery, automobiles and chemicals**
- **In 2005, central government, concerned about economy overheating, imposed controls on investment in these heavy industries, and since then aggregate investment rate has been constant**
- **Also, inefficient financial system failed to funnel excessive savings to profitable investments – Chinese banks are awash with cash, but it mostly ends up in low-yielding US bonds**

China's Macroeconomic Performance

- **Trade Policies:**
- **China has followed vigorous export promotion policies since economic reforms began in 1978; prior to 2001, it used a combination of export-enhancing and import-restricting policies through tariffs, quotas, and import licenses**
- **In early years of reforms, aim was to limit imports in order to avoid balance of payments problems; with WTO entry, while import controls were phased out, several export-promoting strategies stayed in place:**
 - **FDI has to be oriented towards export industries**
 - **SEZs encourage MNCs with export focus**
 - **Refund of tariffs on imported inputs and VAT for exports**
 - **Limits by US on high-tech exports to China**

China's Macroeconomic Performance

- **China's exchange rate policy tends to grab considerable public attention, especially in the US, i.e., pegging of renminbi (RMB) to US\$ at low value is cause of trade surplus**

No robust evidence that exchange rate regimes are actually connected with current account imbalances or that changes in exchange rates have a significant impact on imports and exports (Corden, 2009)

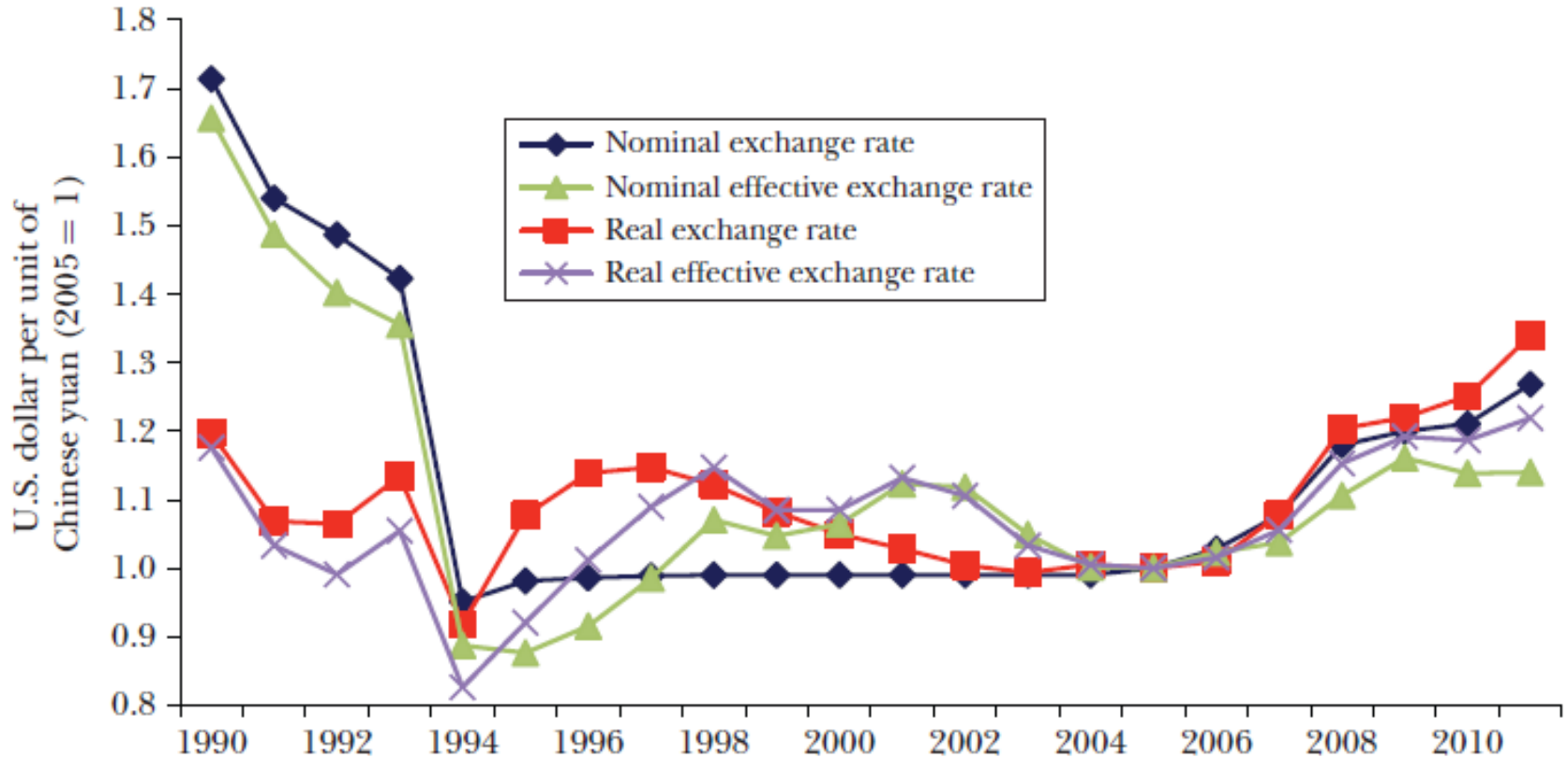
- **Various indices of RMB/\$ rate shown in Figure 13 for period 1990—2011, including nominal, real and effective exchange rates**

Data suggest sharp increase in trade surplus after 2005, not due to deliberate shift in exchange rate policy

- **1994-2005, RMB pegged to \$ at 8.28 yuan/dollar, but China only had a moderate trade surplus in that period – less than 2% of GDP**

China's Macroeconomic Performance

Figure 12: Index of RMB Exchange Rate Against US\$, 1990-2011



Source: IMF (2012)

China's Macroeconomic Performance

- July 2005, China embarked on process of steady RMB appreciation; by January 2012, nominal exchange rate had risen by more than 30%, with similar patterns being followed by real and effective exchange rates
- Yet trade surplus still remains, so institutional and other forces must be have played a more important role than exchange rate, or at least the exchange rate has not been the only factor
- Policy Reform Options
- Mounting pressure exists on China to “rebalance” its economy – i.e., adjust distribution of income away from corporate and government sectors towards households
- Conventional focus is on government spending and exchange rate, i.e., focus on research and education and allow RMB appreciation to continue

China's Macroeconomic Performance

- **Rebalancing though requires fundamental shift in policies and institutions that have favored production over consumption:**
 - **State-dominated financial system needs to channel more domestic savings to high-return investment by private, small and medium-sized firms; consumer-loan system needs to be developed**
 - **Restore land prices to market values; break-up state monopolies; strengthen corporate governance and dividend policies for SOEs and private firms**
 - **Implement effectively Labor Contract Law of 2008**
 - **Moderate export promotion policy and remove preferential policies towards export-oriented FDI**
 - **Encourage outbound FDI by private Chinese firms**
 - **Review population control policies in context of demographics**