

China Trade and Macro

draft – most graphs have no source

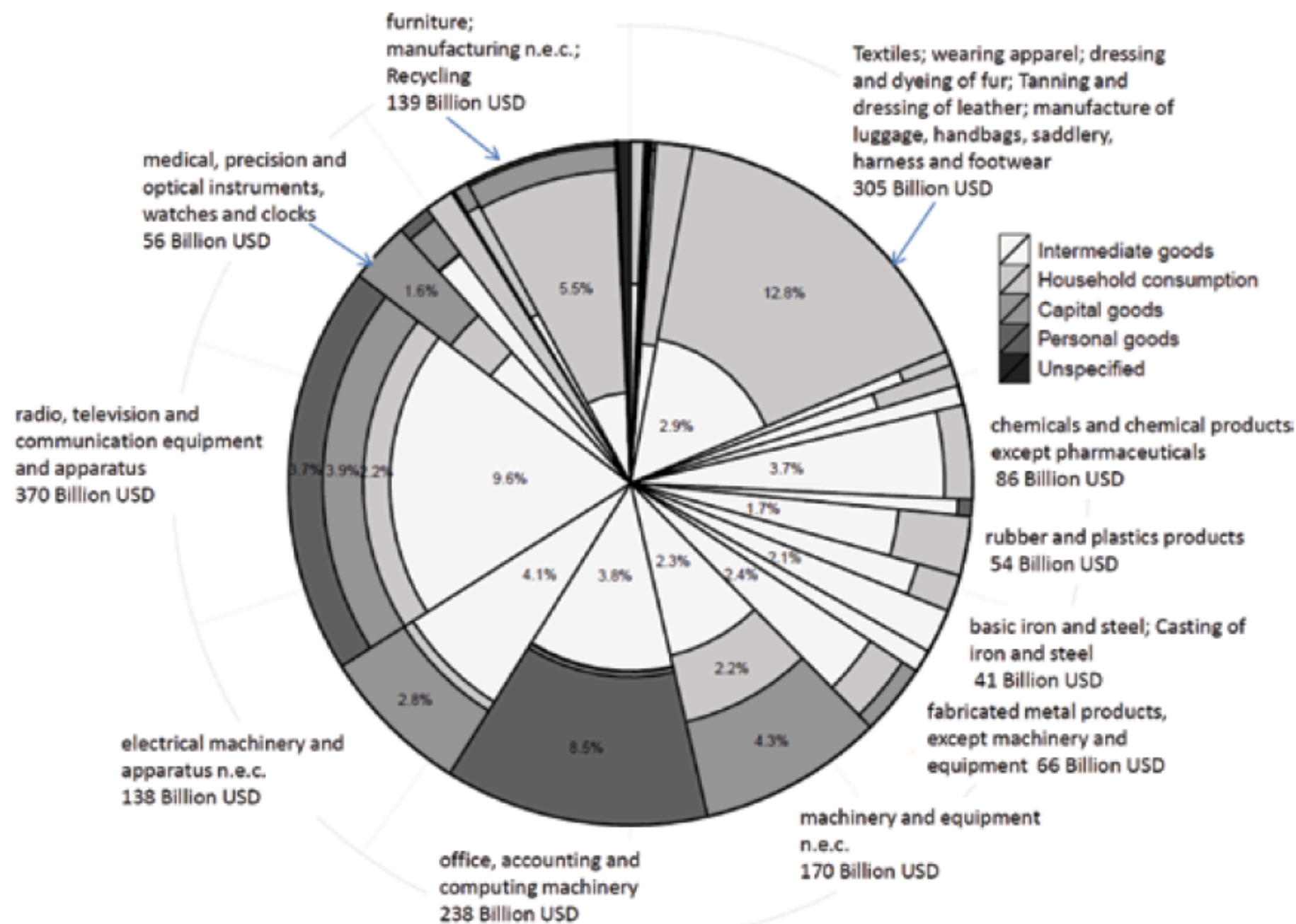
Winter 2013

Economics 274

Washington and Lee University

Prof Smitka

Figure 5.7 The composition of China's manufacturing exports (2010)



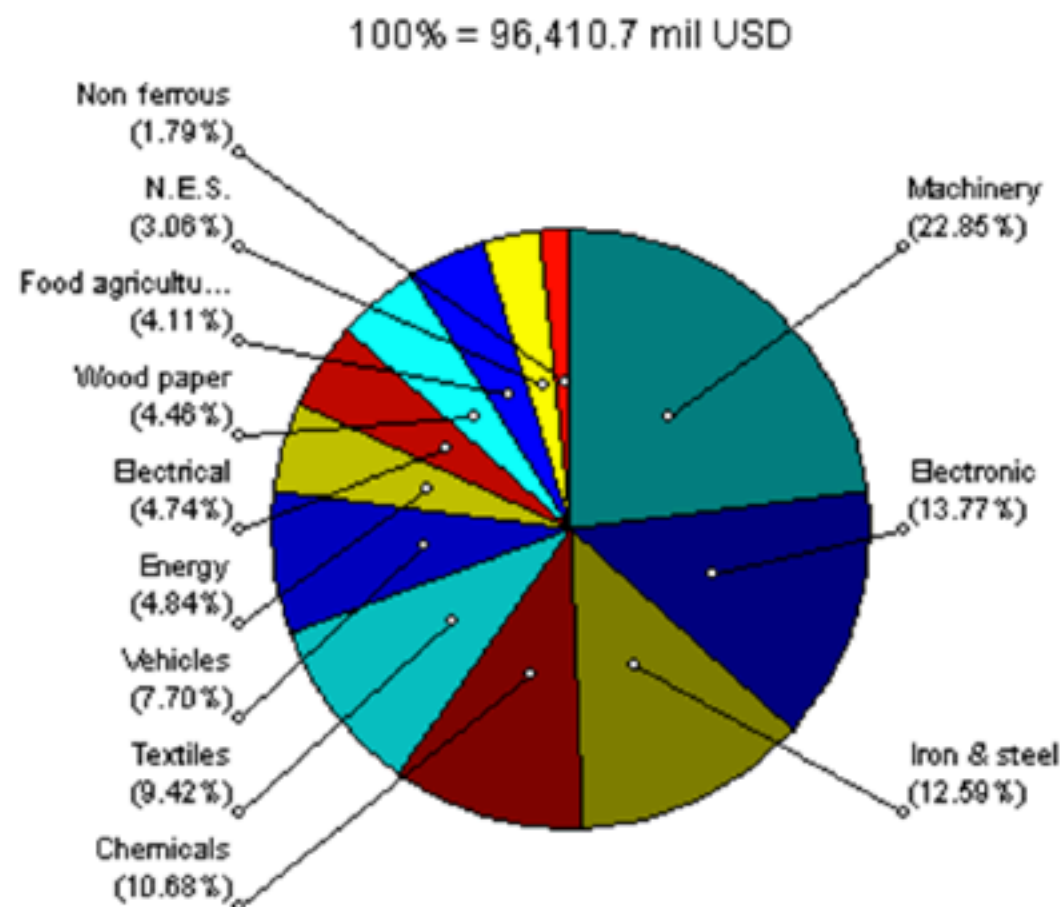
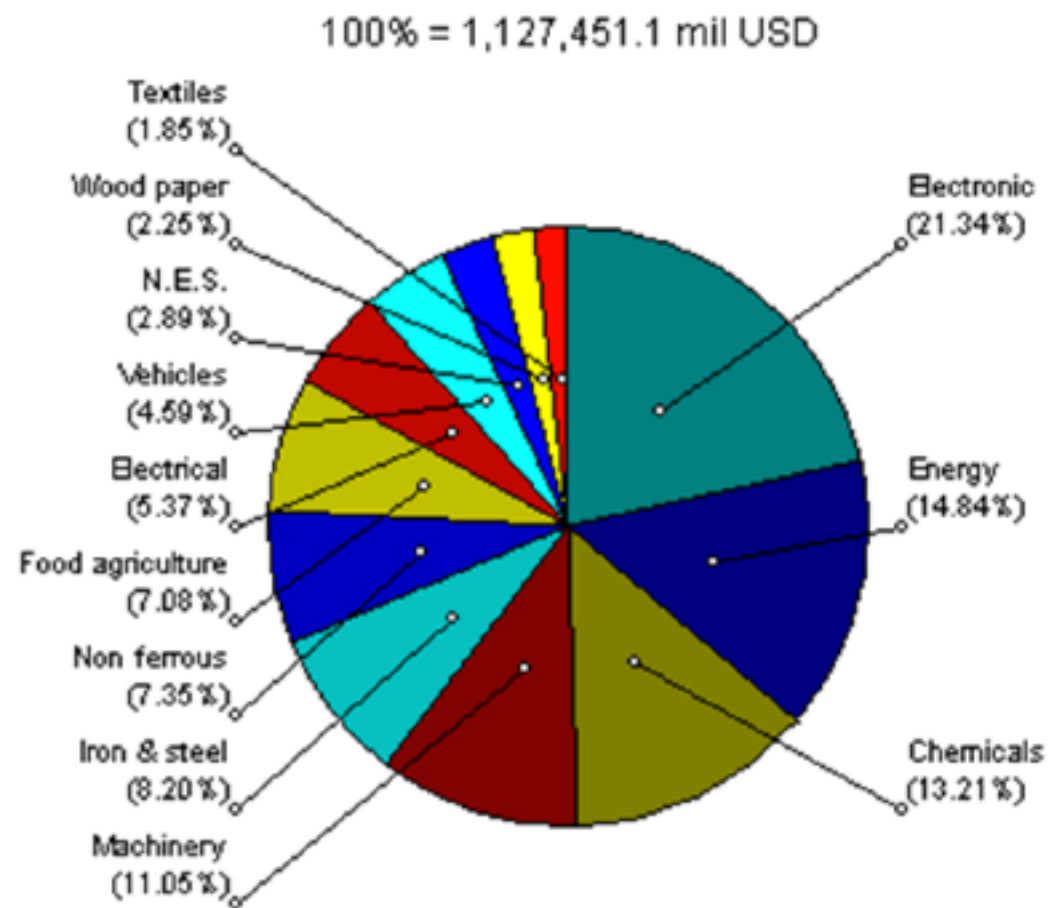
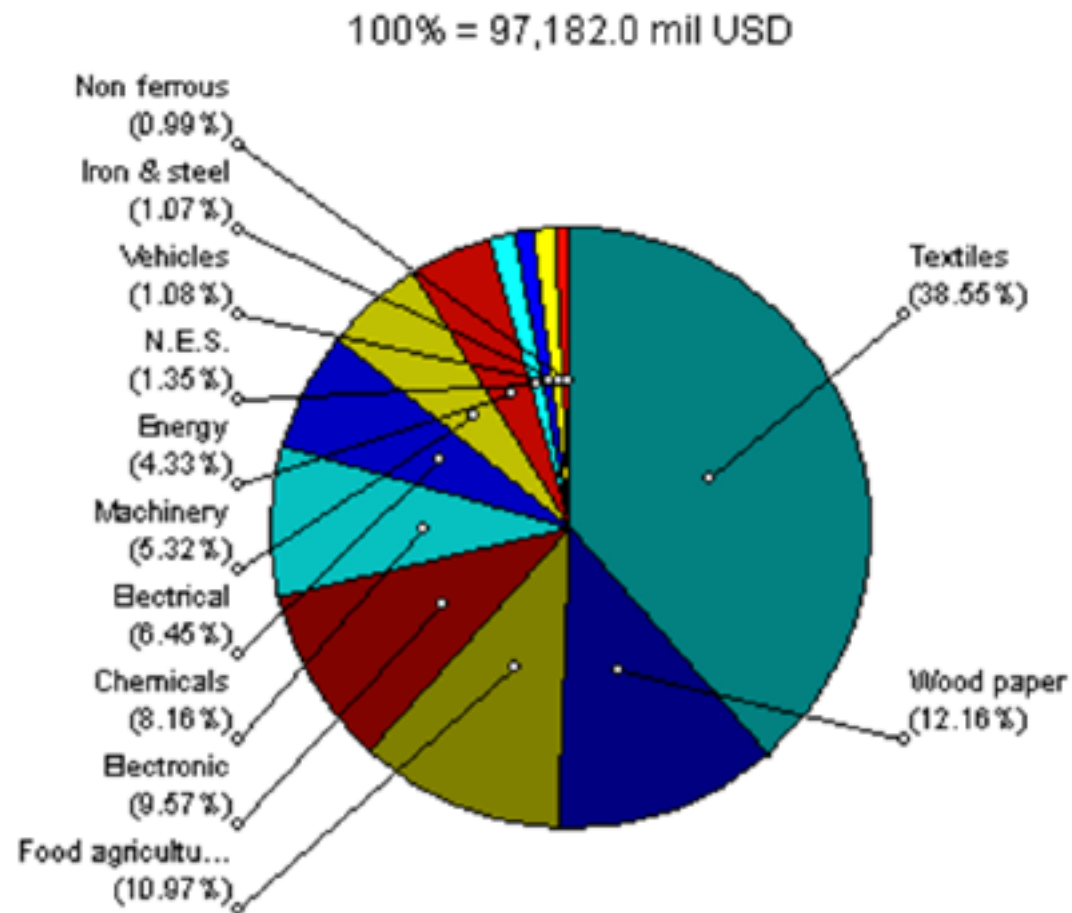


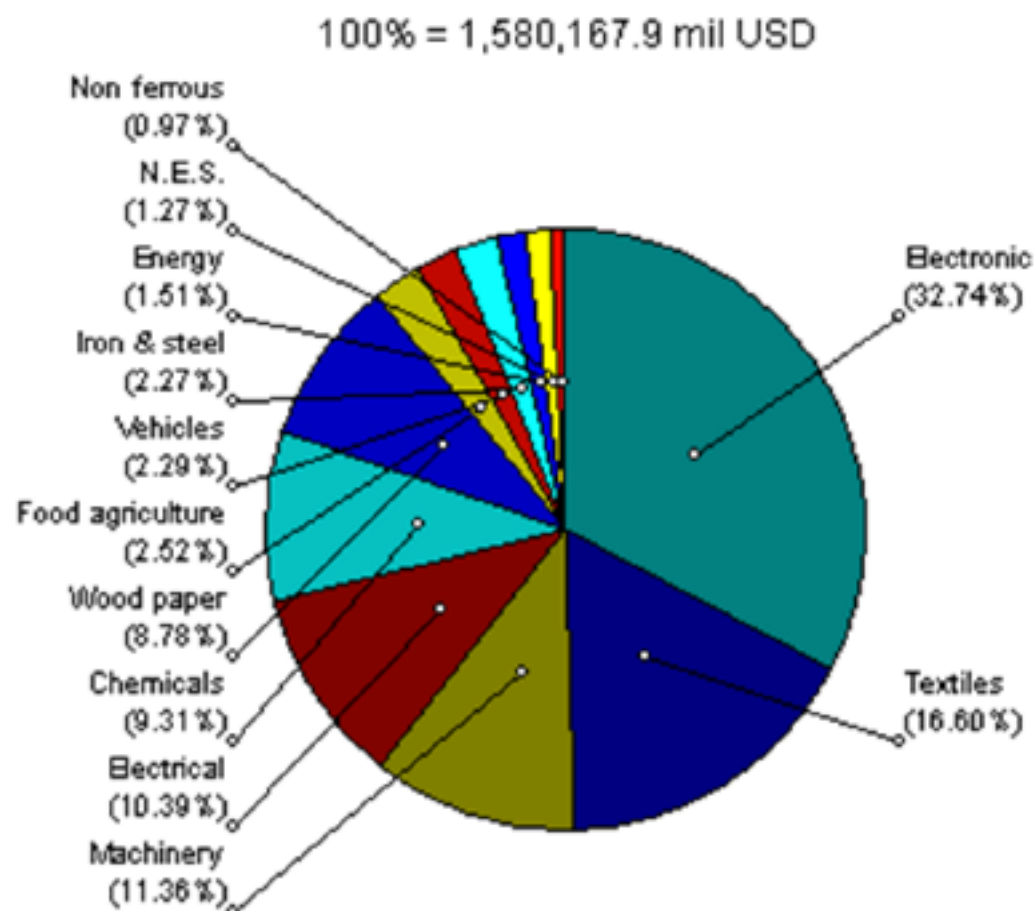
Figure 1b. Composition of China's Imports from the World, 1993.



4. Composition of China's Imports from the World, 2010.



Composition of China's Exports to the World, 1993.



Composition of China's Exports to the World, 2010.

Figure 5.1 China's processing trade and ordinary exports

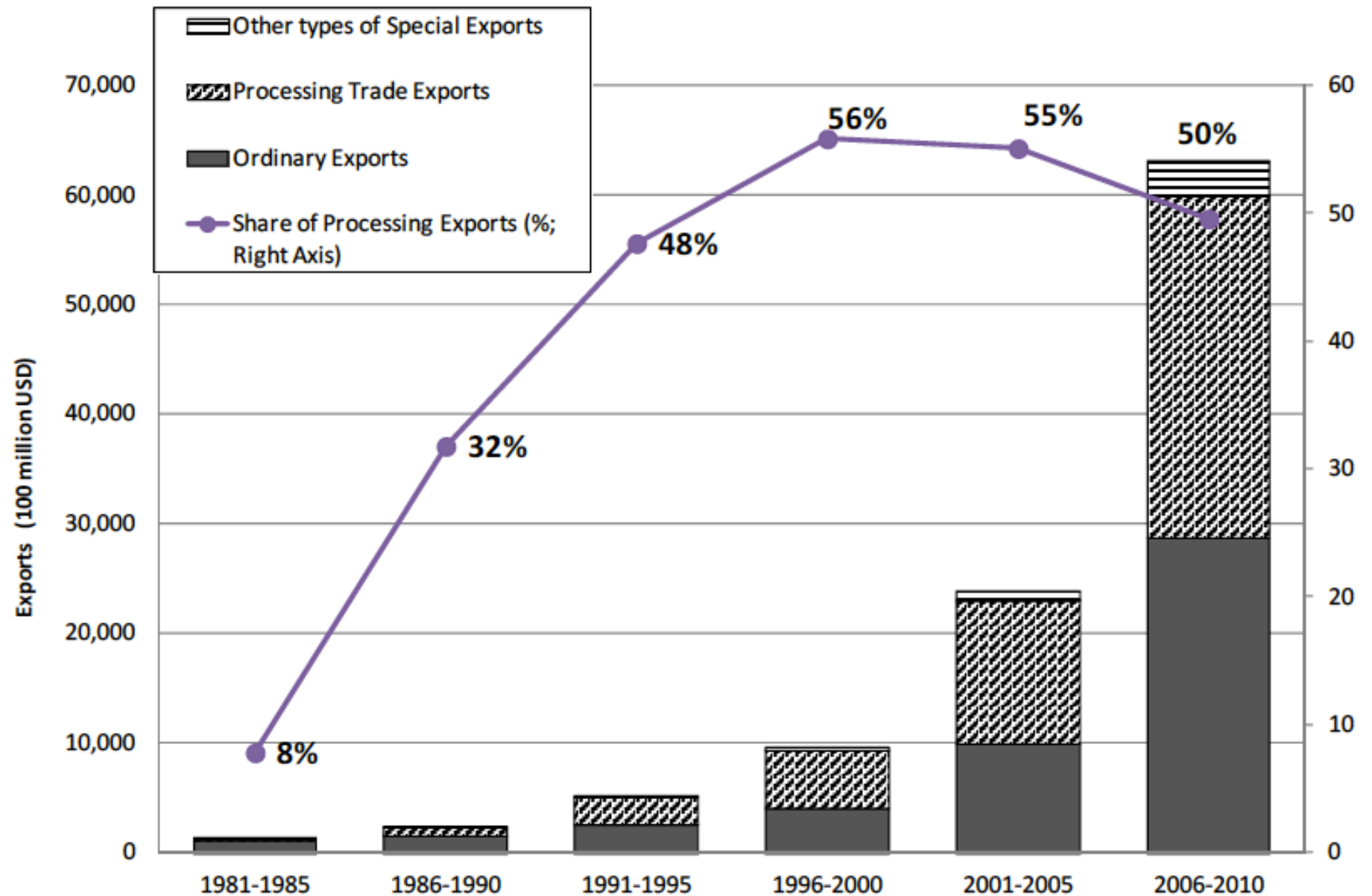


Figure 5.2 The share of FIEs in ordinary exports and exports based on the processing trade regime

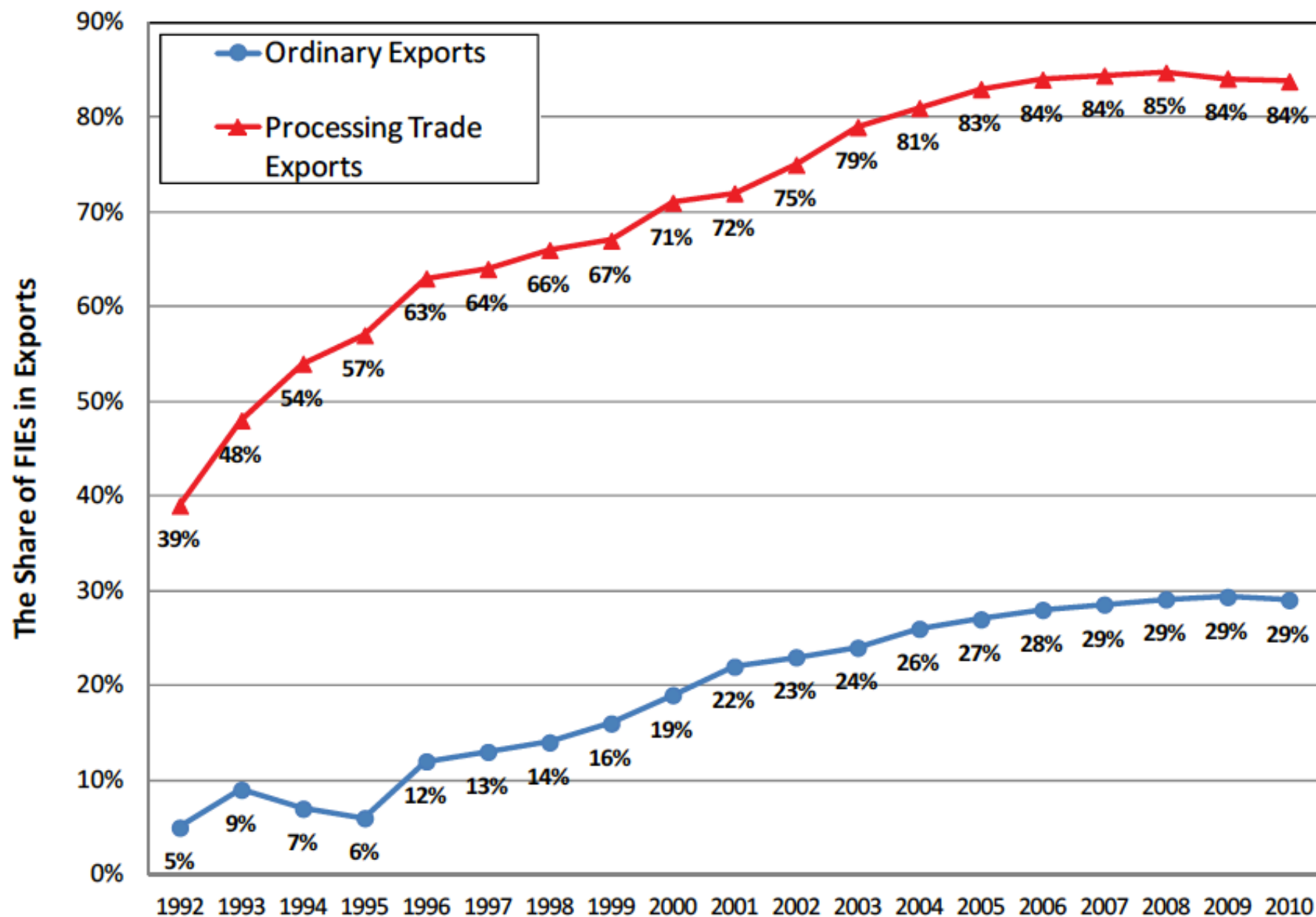


Figure 5.6 The ratio of value added to production for ICT manufacturing (2005)

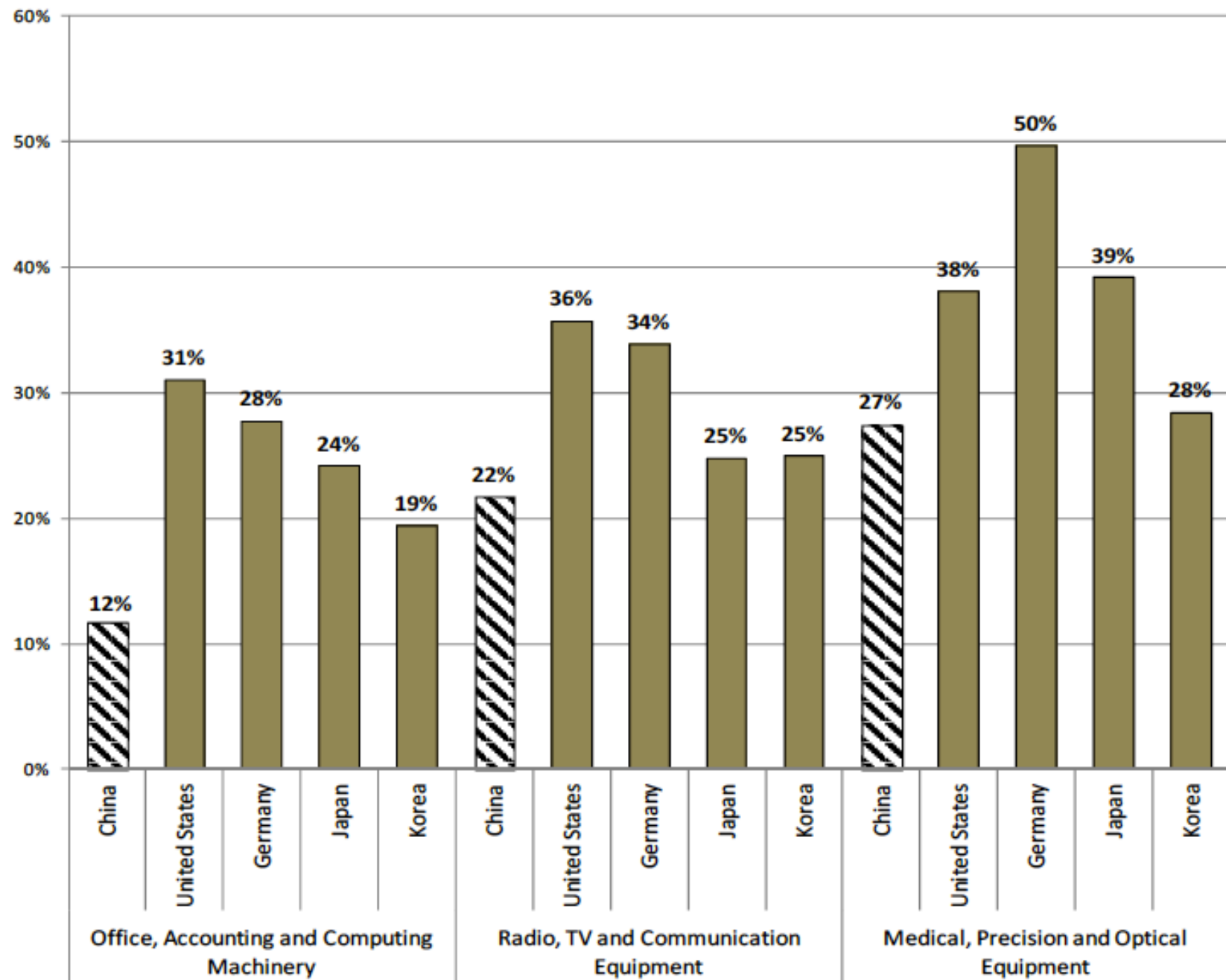


Figure 5.5 **Import contents of exports for China and selected countries (mid 2000)**

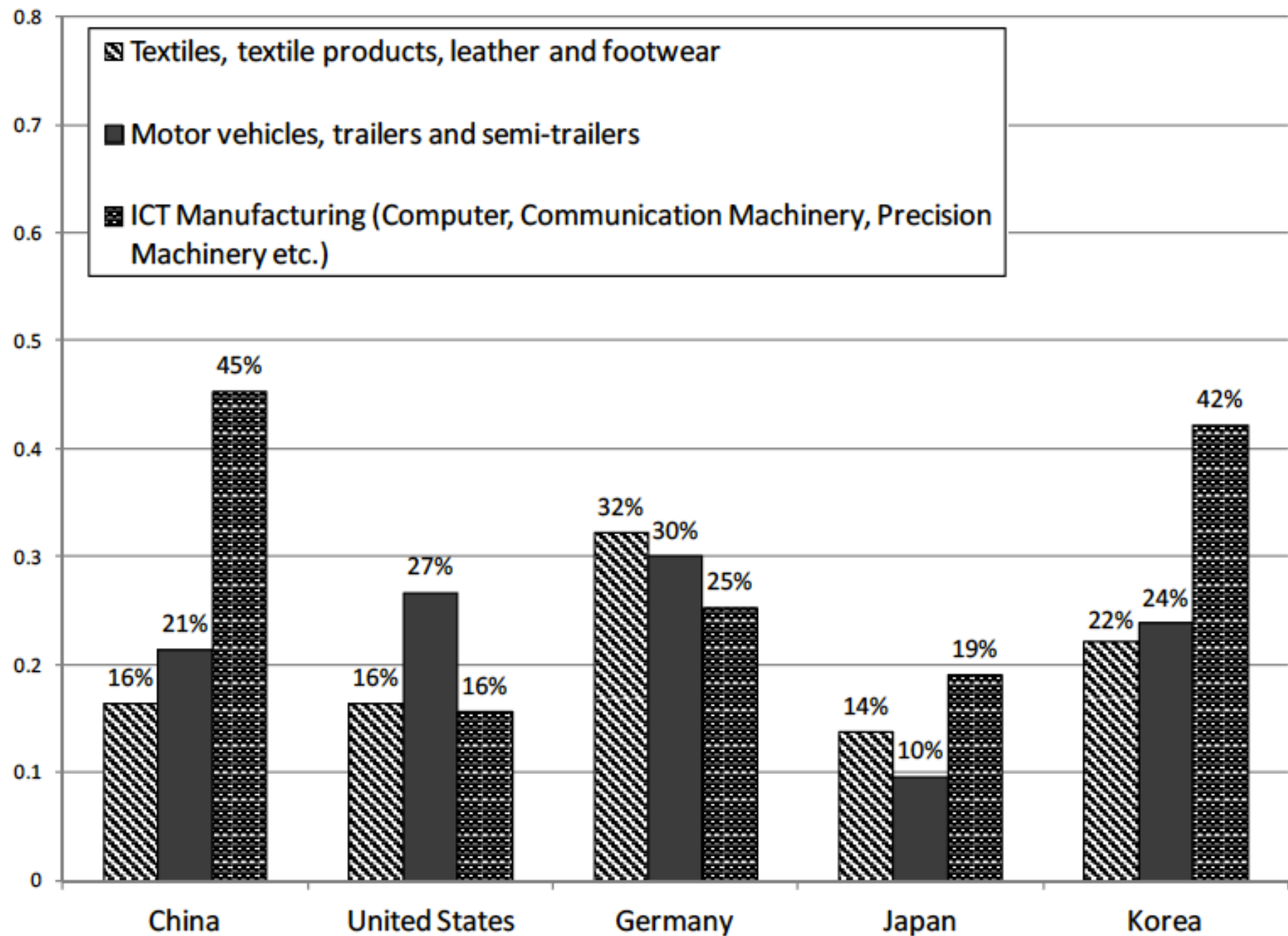
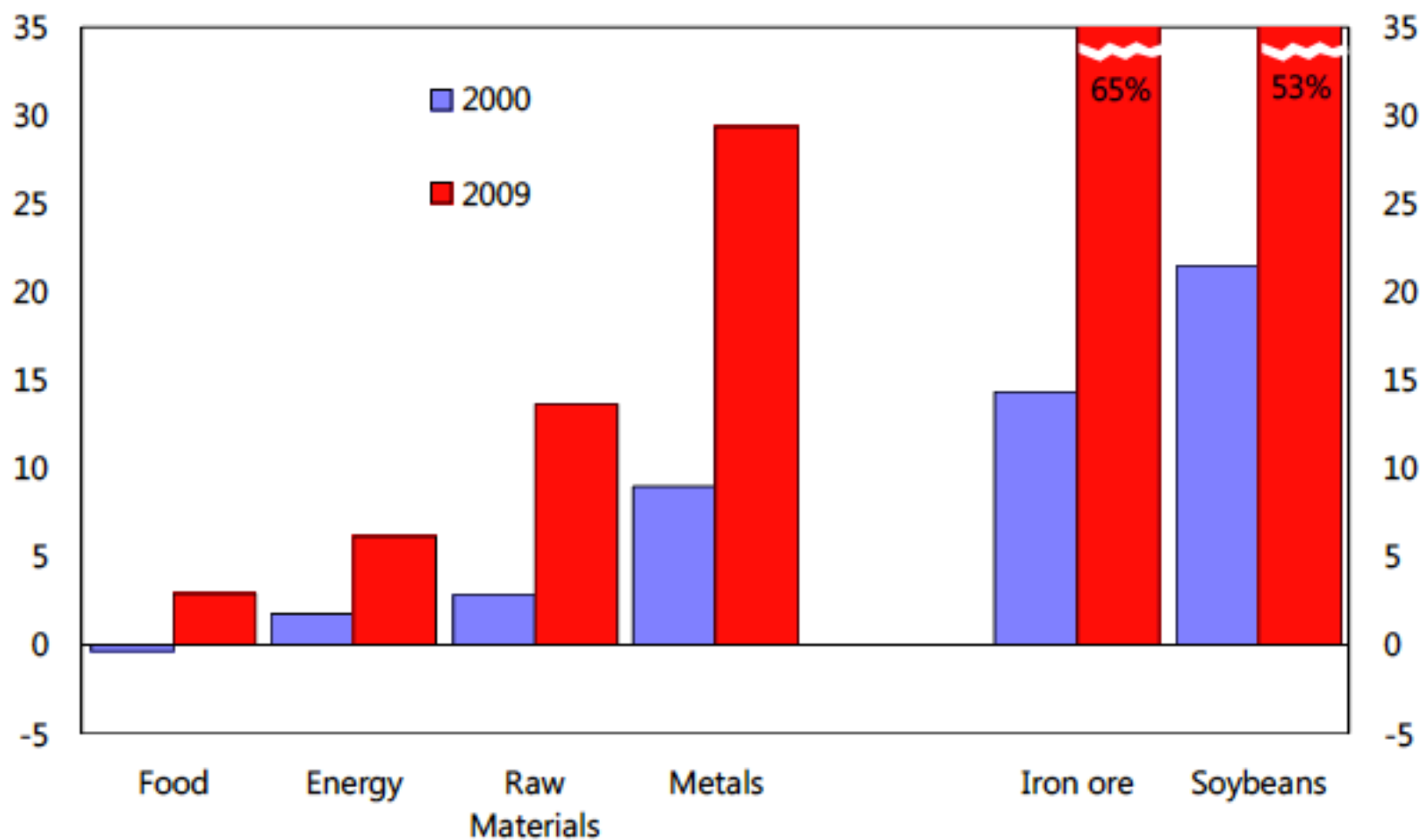


Figure 2. China's Share of Global Commodity Trade

(Net imports, in percent of world imports)



Source: Background paper, "China Spillovers: Global Commodity Markets"

S-I Framework

- $Y \equiv C + I + G + X - M$
- $C \equiv Y - T - S$
 - Where T is taxes, S is savings
- Then
- $(S-I) + (T-G) + (M-X) \equiv 0$
 - Net savings must be zero – resources that are produced, or income that is received, has to go somewhere

S-I continued

- More useful to rewrite:
 - $(S-I) + (T-G) \equiv (X-M)$
 - domestic savings must equal the trade surplus
 - that's the only way ***on net*** to obtain foreign assets
 - We can think of this as **either** the flow of
 - Real goods & services
 - **or** the flow of
 - Financial assets

Foreign exchange

- hold forex for 4 reasons
 - trade (to buy imports)
 - DFI / portfolio (pensions, factories, M&A)
 - short-term earnings $i_{\text{foreign}} - i_{\text{home}}$
 - speculation
- S & D analysis
 - supply = “selling” dollars (to purchase 元RMB)
 - demand = “buying” dollars (w/ Chinese元 RMB)

business cycle / trade

- If we have a recession, then *ceteris paribus*
 - incomes and hence imports fall
 - exports remain unchanged
 - lower sales of US\$ for 元 (RMB) for US imports
 - unchanged purchase of US\$ by China for their imports
 - S shifts in, 元 (RMB) depreciates
 - more 元 (RMB) per \$

interest rates

- if US rates rise, and (ceteris paribus) China's don't
 - supply of US\$ shifts left as we leave money in NY
 - demand for US\$ shifts right as Chinese money managers park more funds in NY
 - *I know, capital controls means they can't, right now.*
- net = higher 元/\$
 - 元 (RMB) depreciates / \$ appreciates
 - US imports rise, exports fall = (X-M) ↓

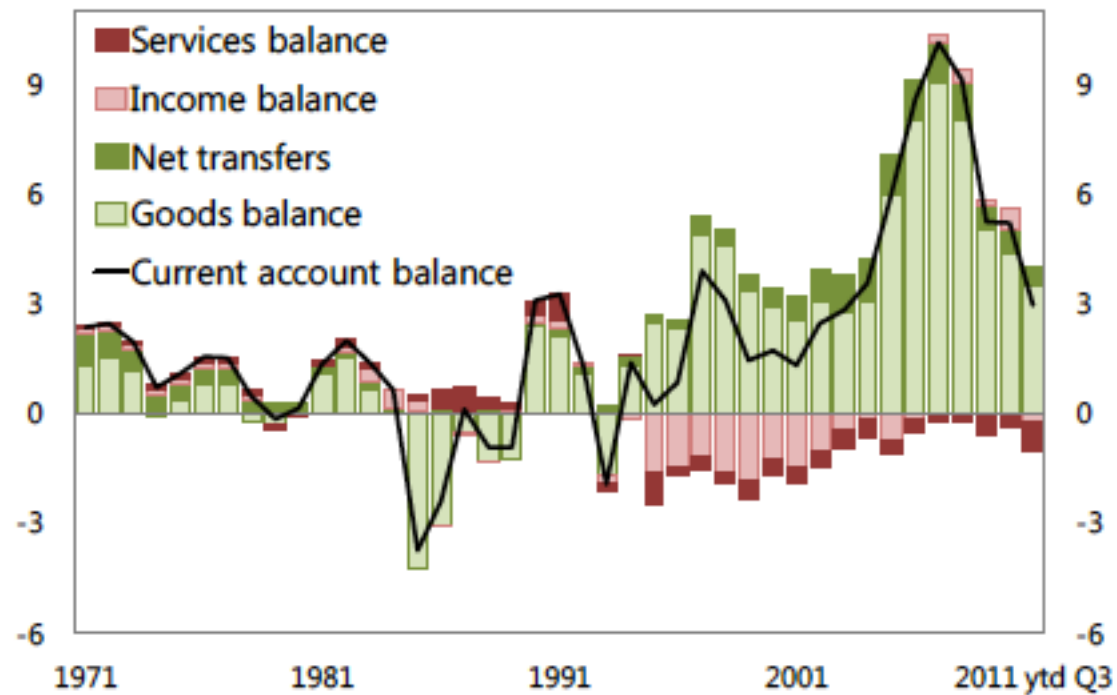
other factors

- if the China has high inflation and the US none
 - the US dollar will appreciate to maintain Purchasing Power Parity
- if productivity in China increases faster than in the US
 - the US dollar will depreciate as it becomes harder for us to export / cheaper to import

...while the trade surplus has continued to fall through the global crisis.

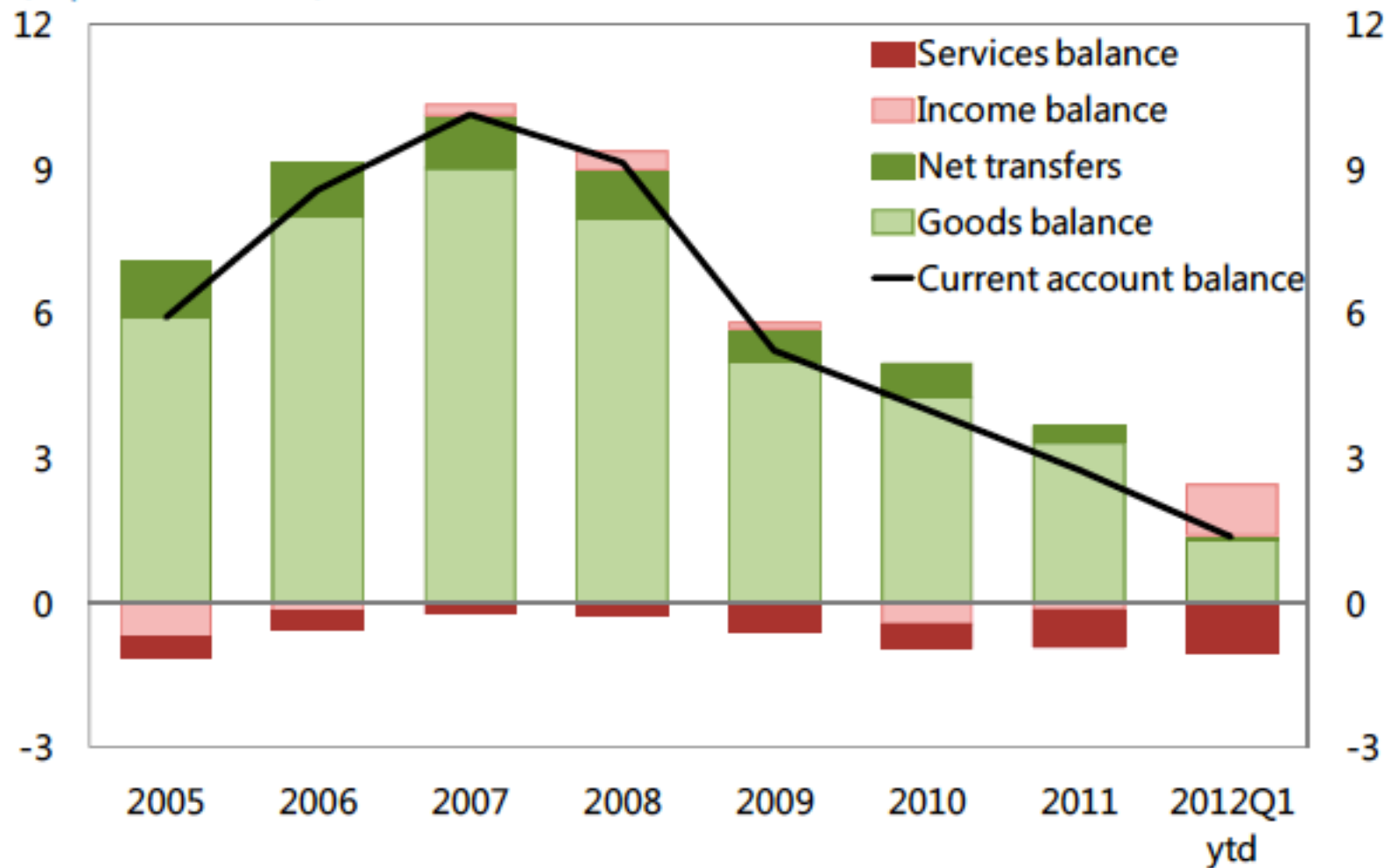
Current Account and Components

(In percent of GDP)



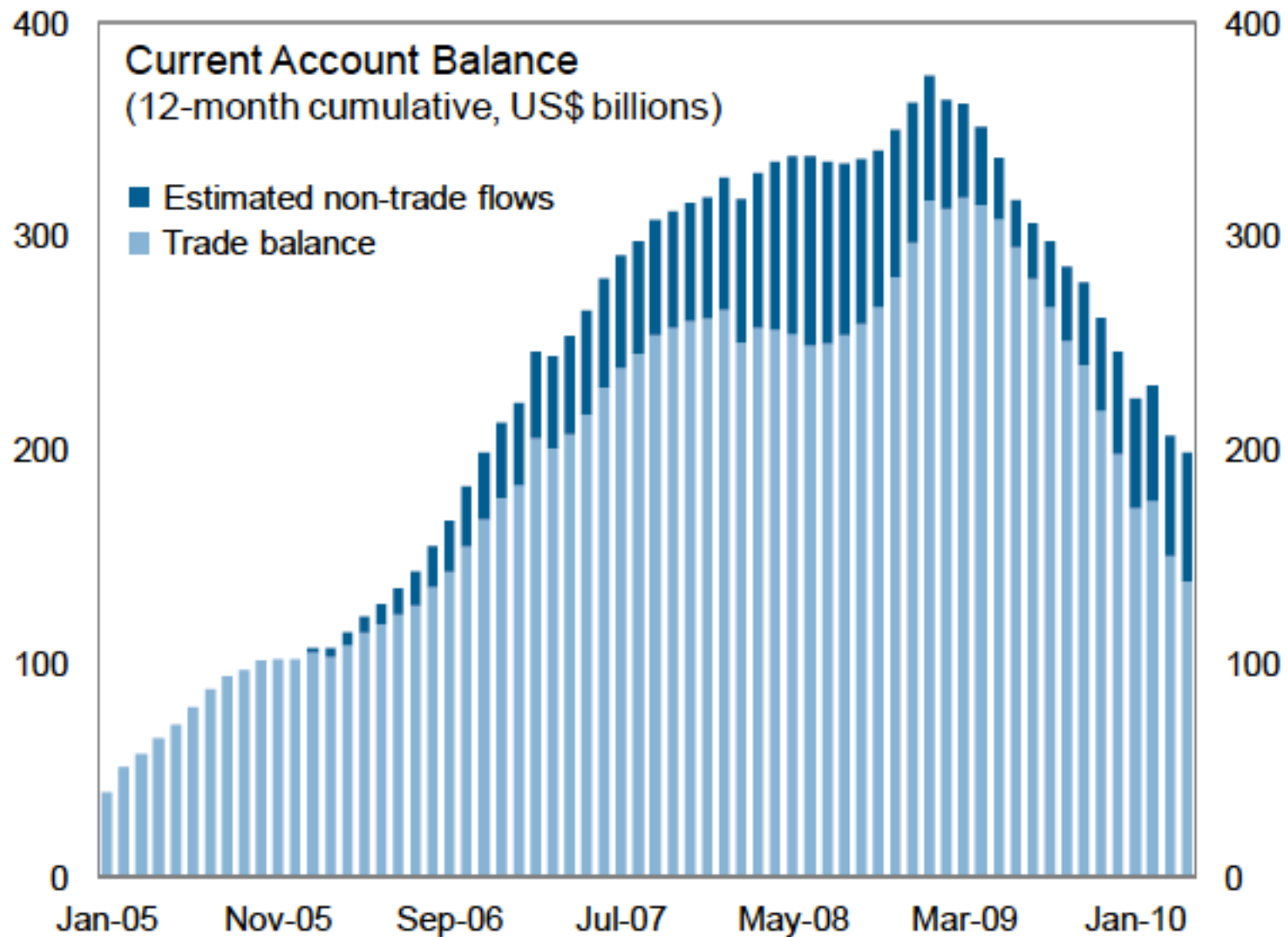
Current Account and Components

(In percent of GDP)



The decline has taken place in the context of cyclically weak external demand...

The current account surplus has been almost cut in half over the past two years...



Trade Balance

(In billion USD; 12MMA)

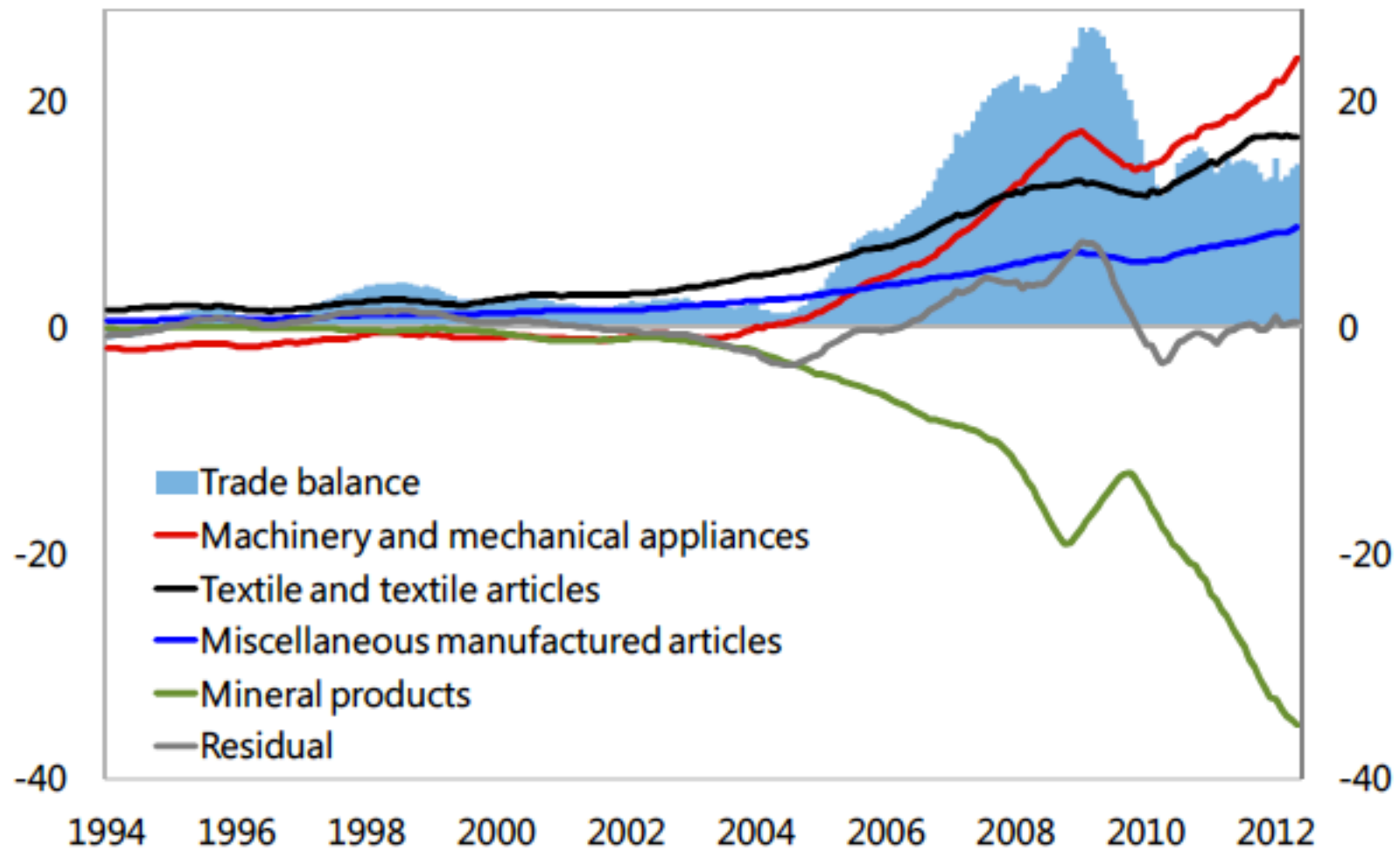
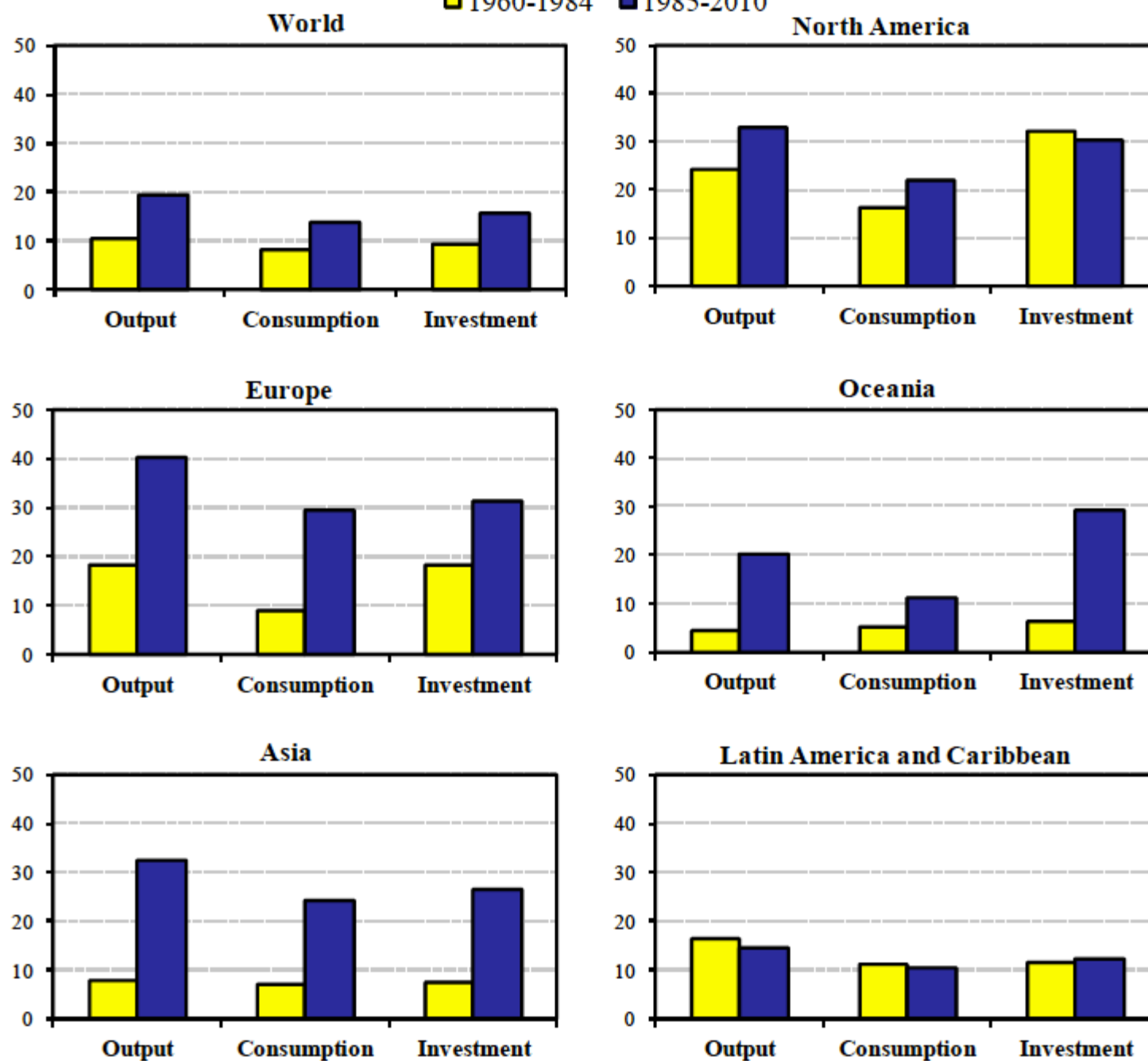


Figure 3. Variance Explained by Regional Factors

■ 1960-1984 ■ 1985-2010



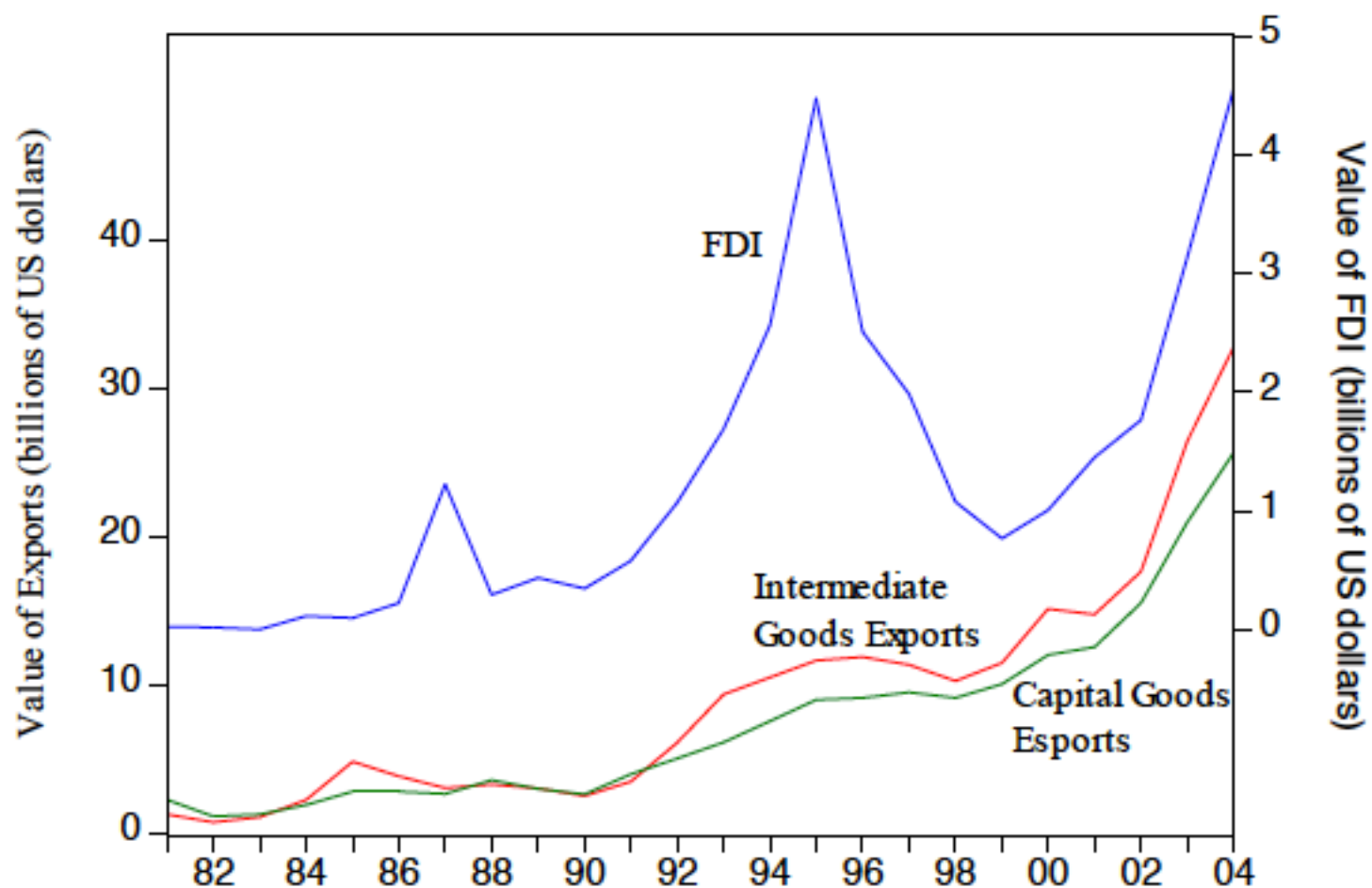
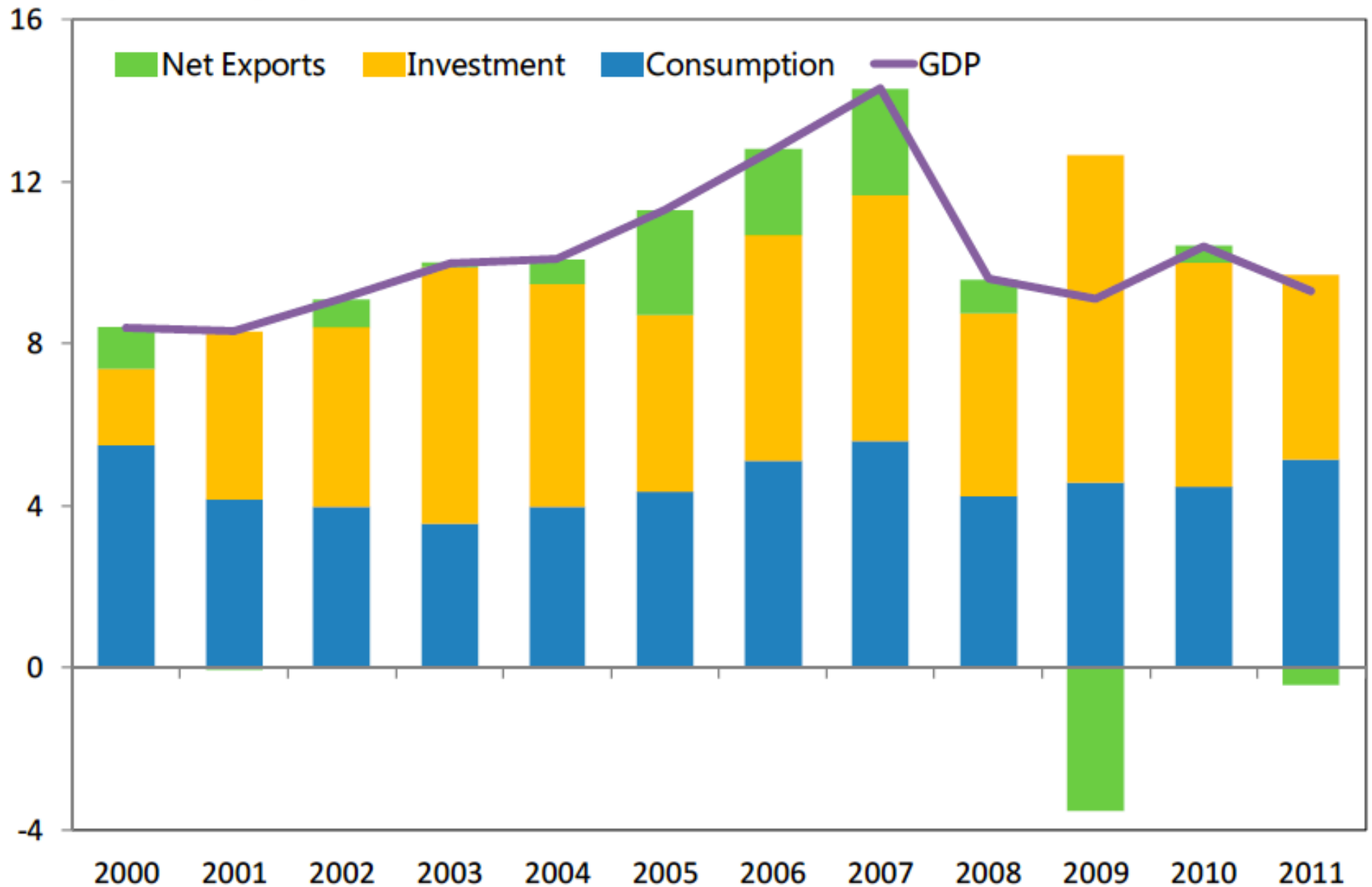


Figure 1c: Japanese Capital and Intermediate Goods Exports and FDI to China.
Source: Japanese Ministry of Finance and CEPII-CHELEM Database.

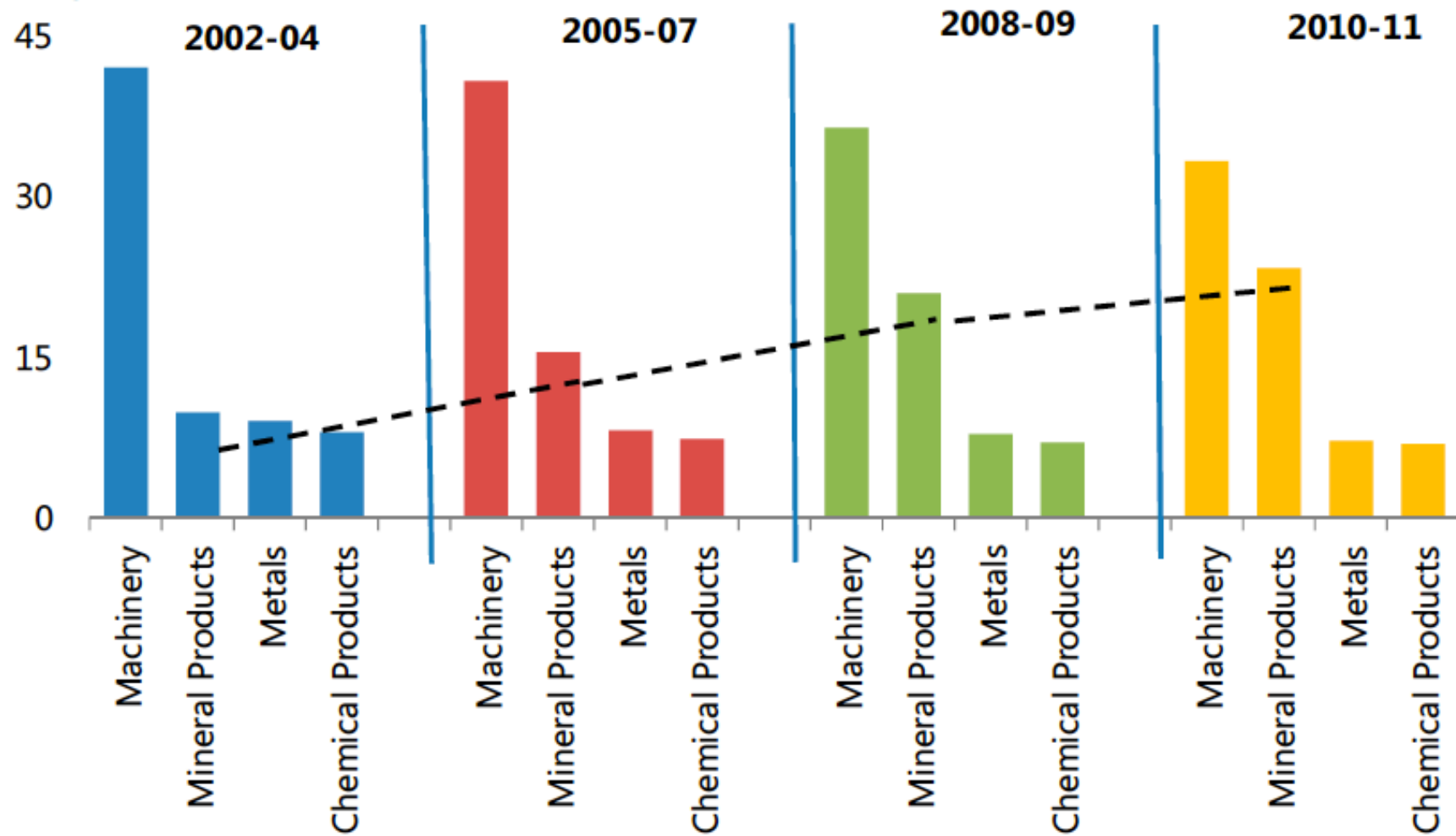
China GDP: Contributions to Growth

(in percentage points)



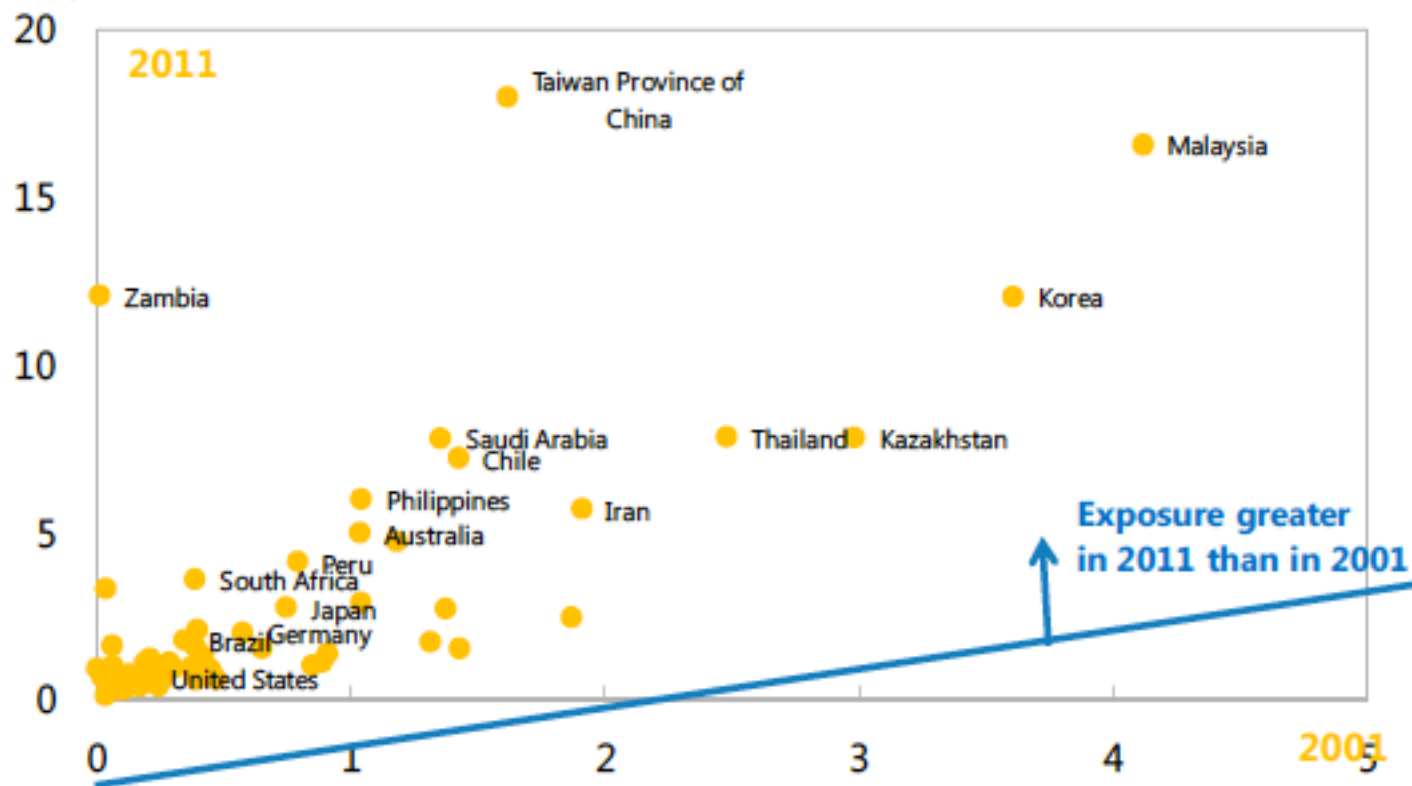
China: Composition of Imports

(percent of total)



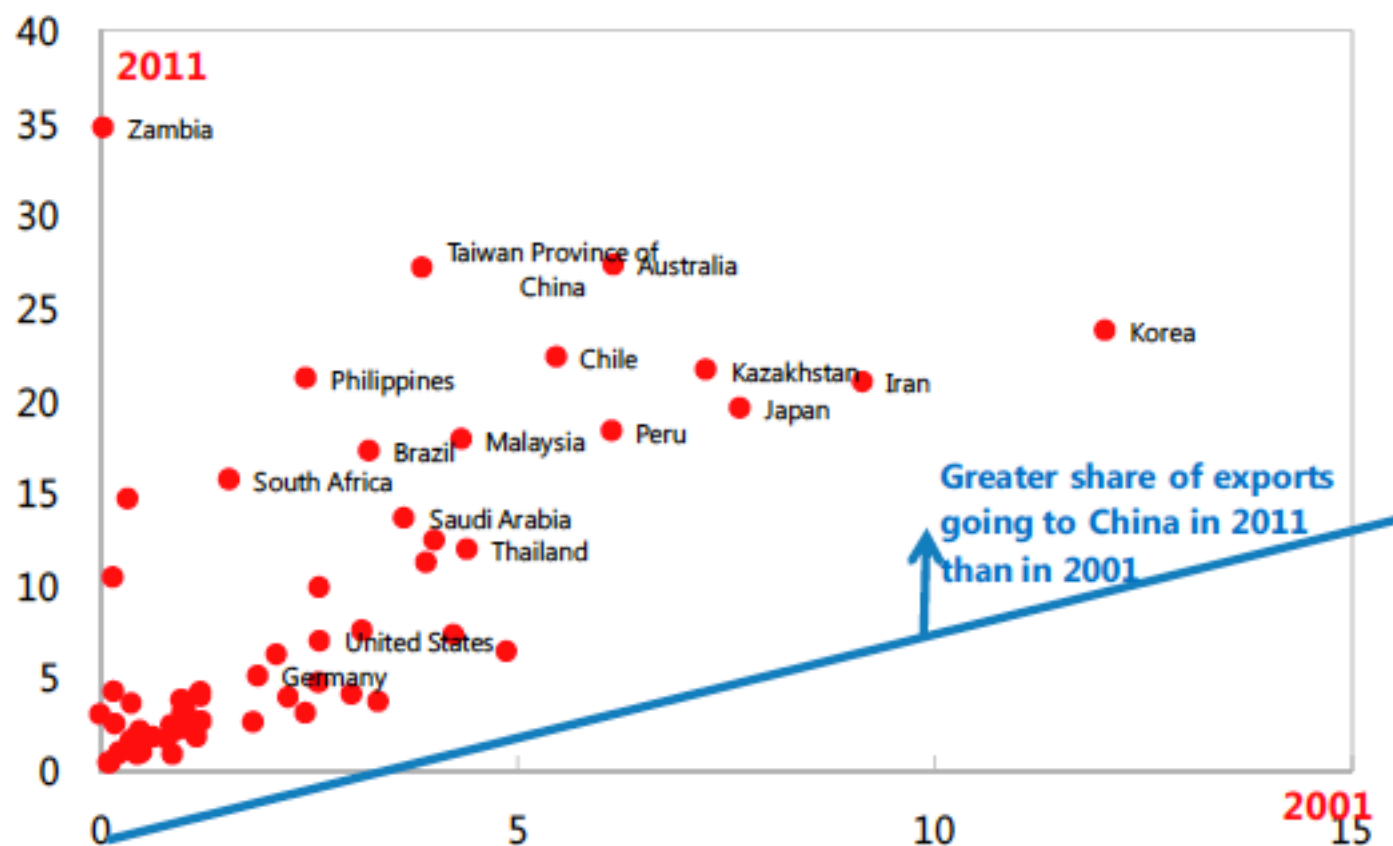
Exports to China, 2001 and 2011

(in percent of national GDP)

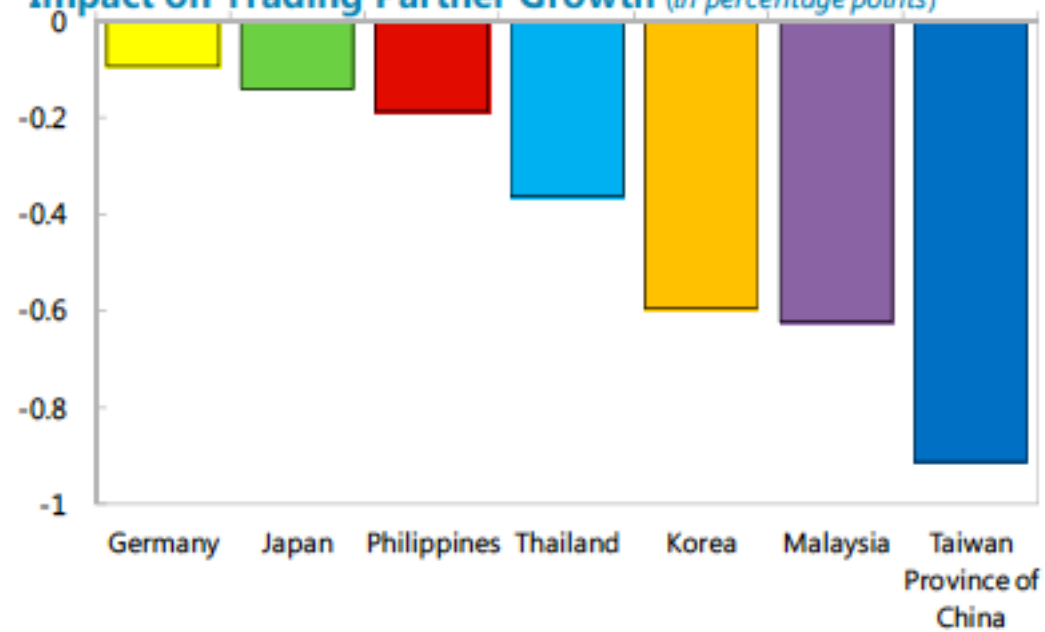


China as a destination for exports, 2001 and 2011

(exports to China as percent of total exports)

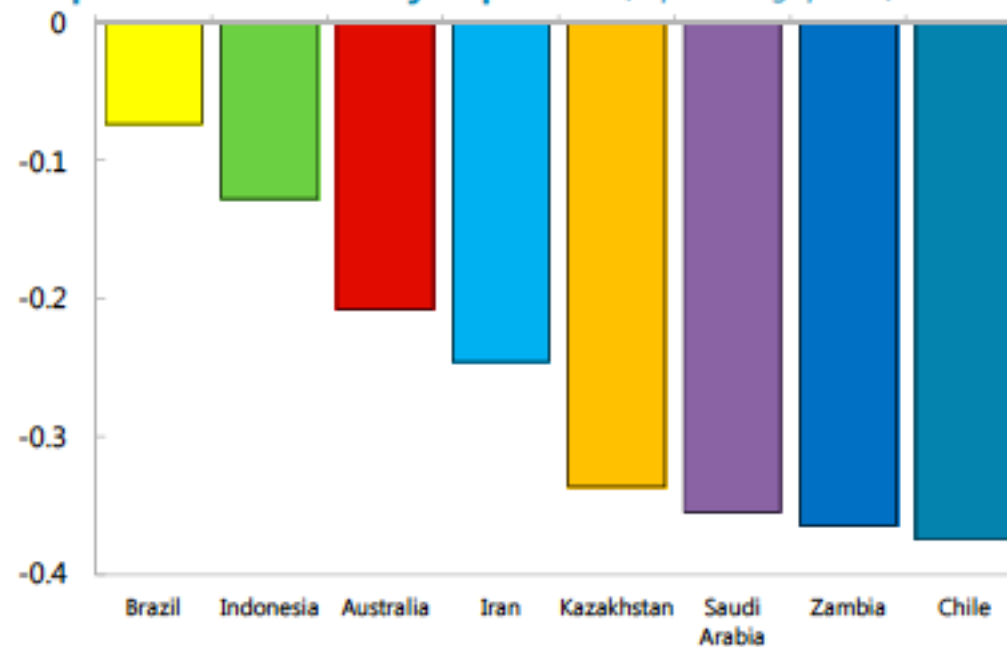


China Investment Slowdown (1 percentage point)
Impact on Trading Partner Growth *(in percentage points)*

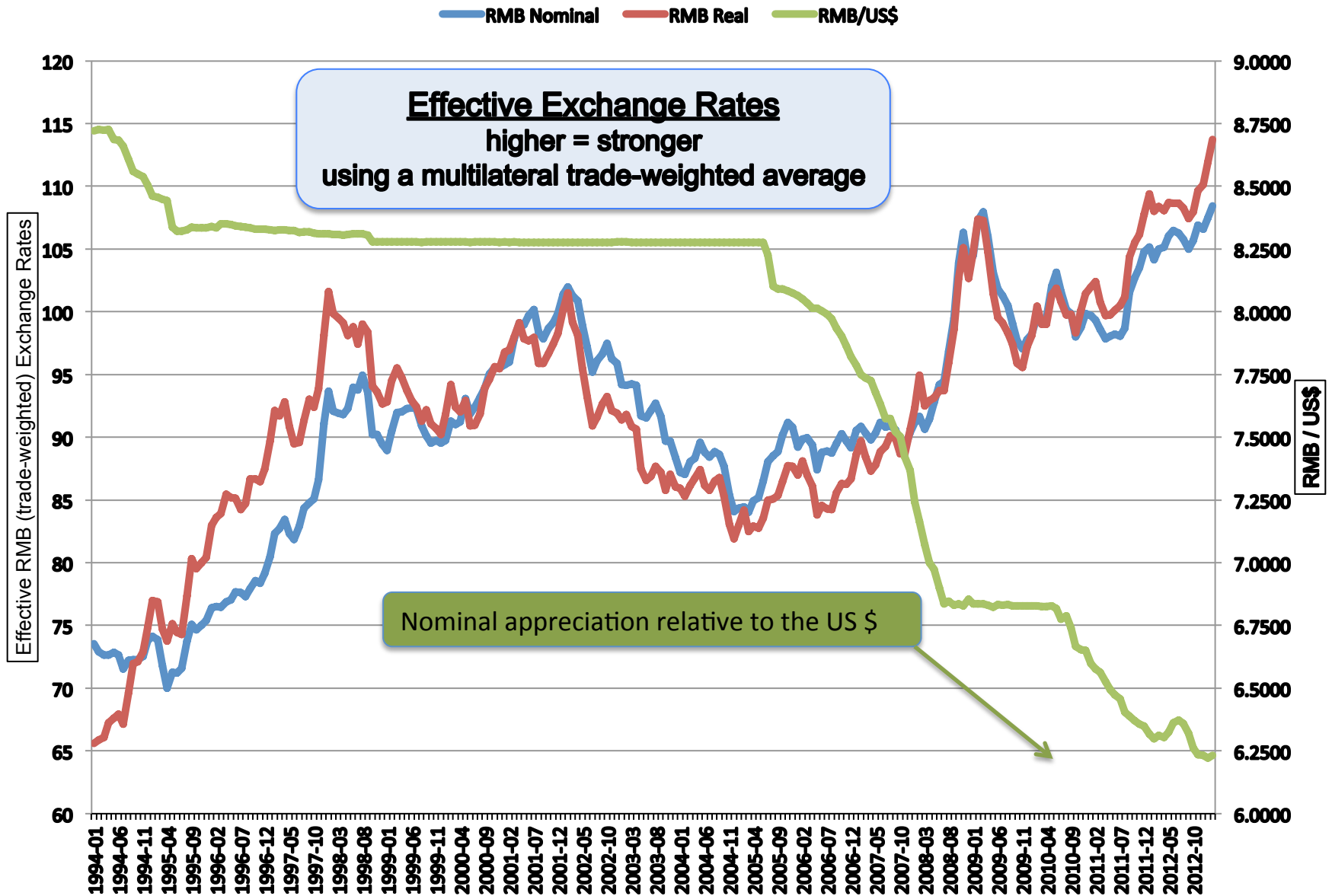


IMF S

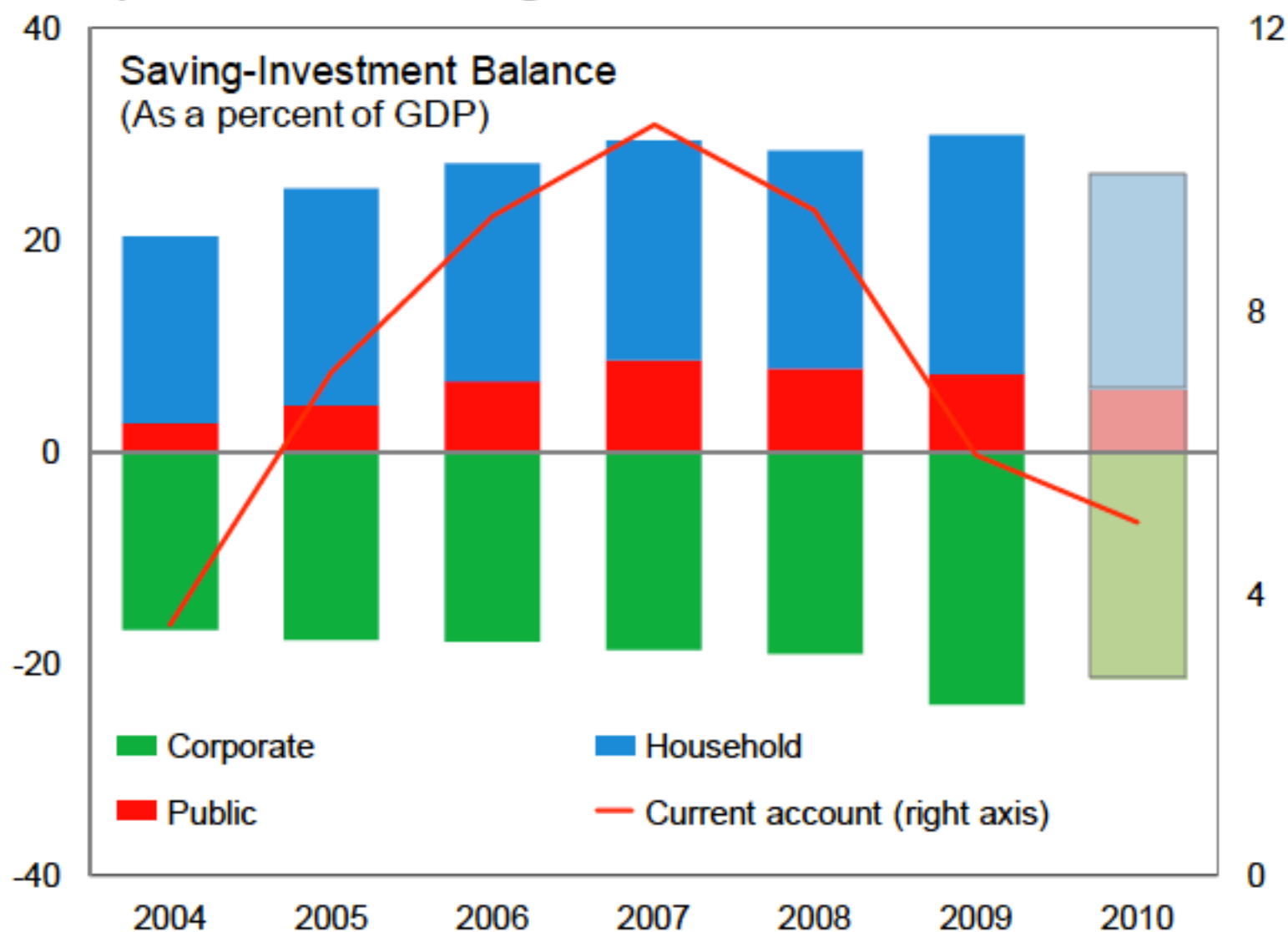
China Investment Slowdown (1 ppt point)
Impact on Commodity Exporters *(in percentage points)*



Source: IMF staff estimates

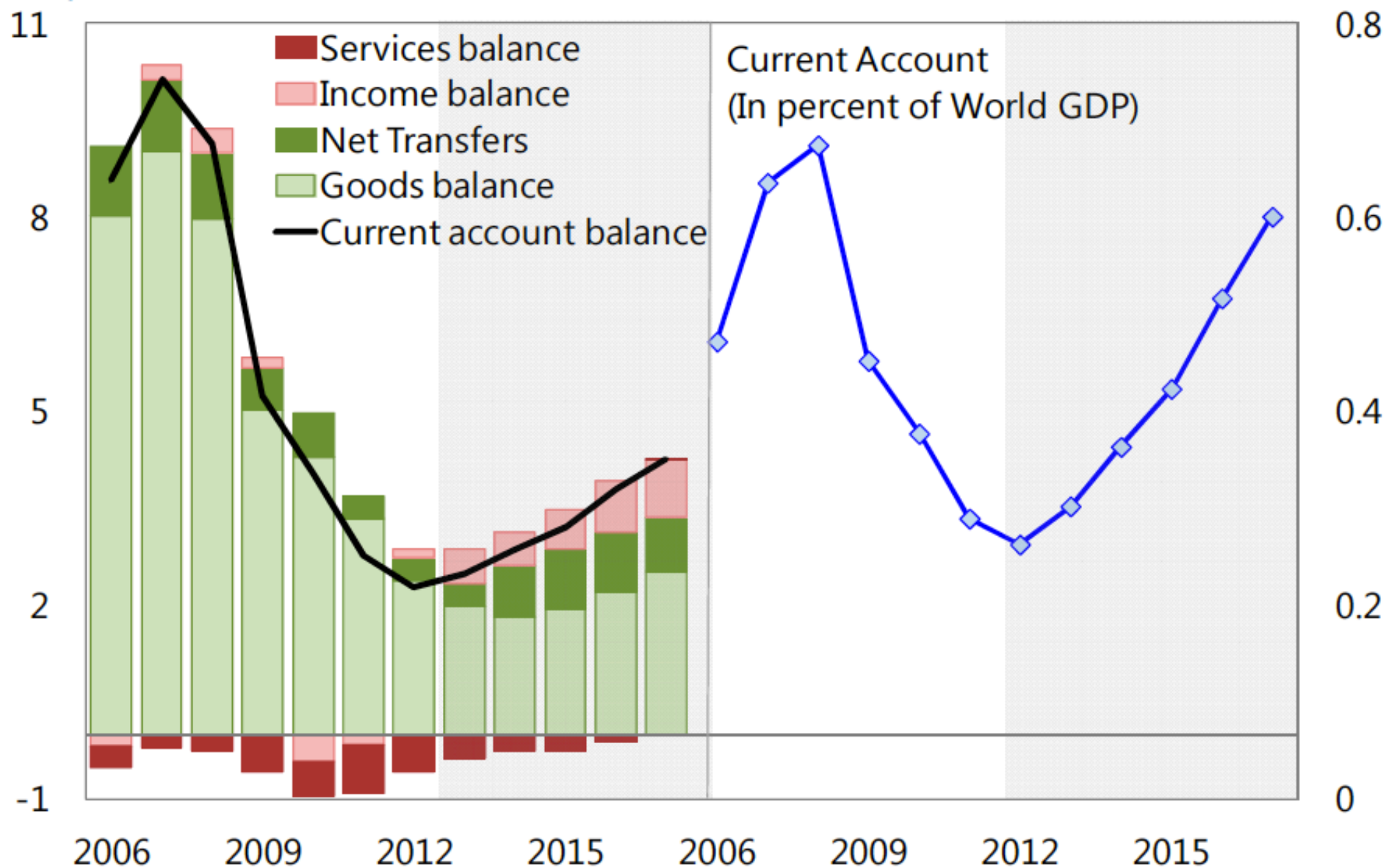


...reflecting a shift to fiscal deficits, stronger household consumption, and a surge in investment.

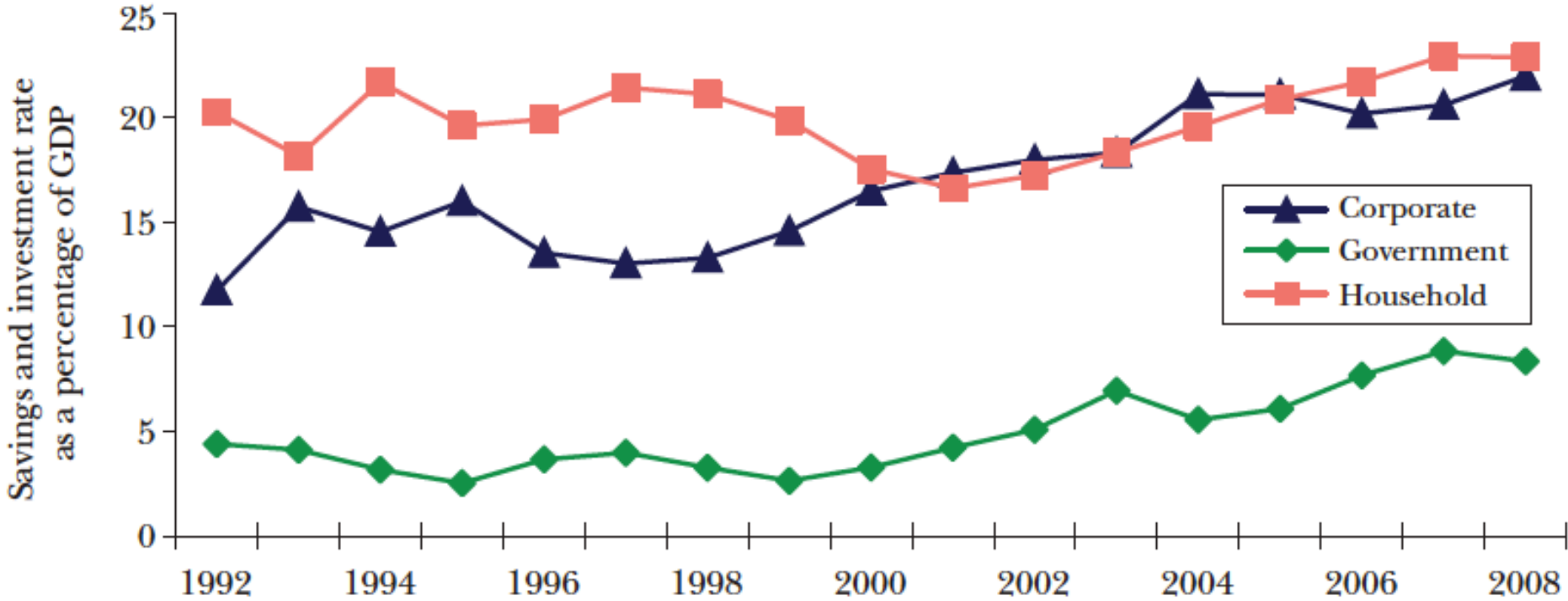


Current Account and Components

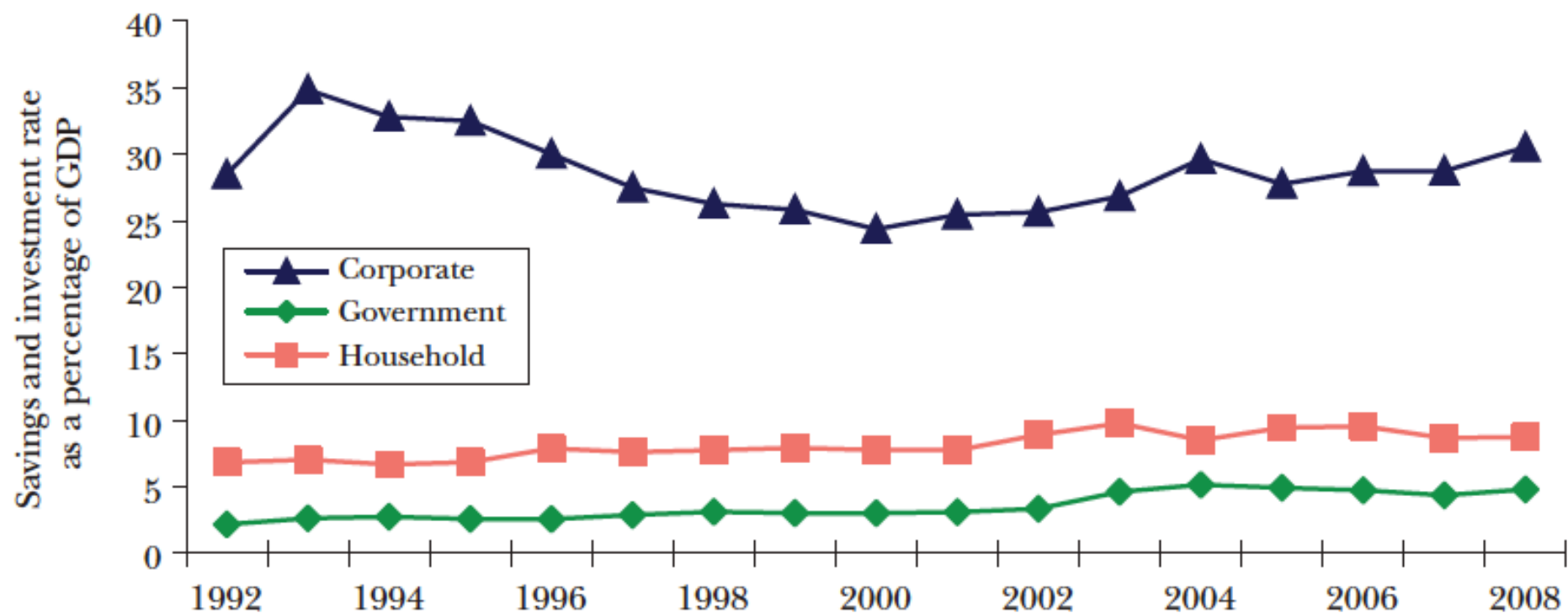
(In percent of GDP)



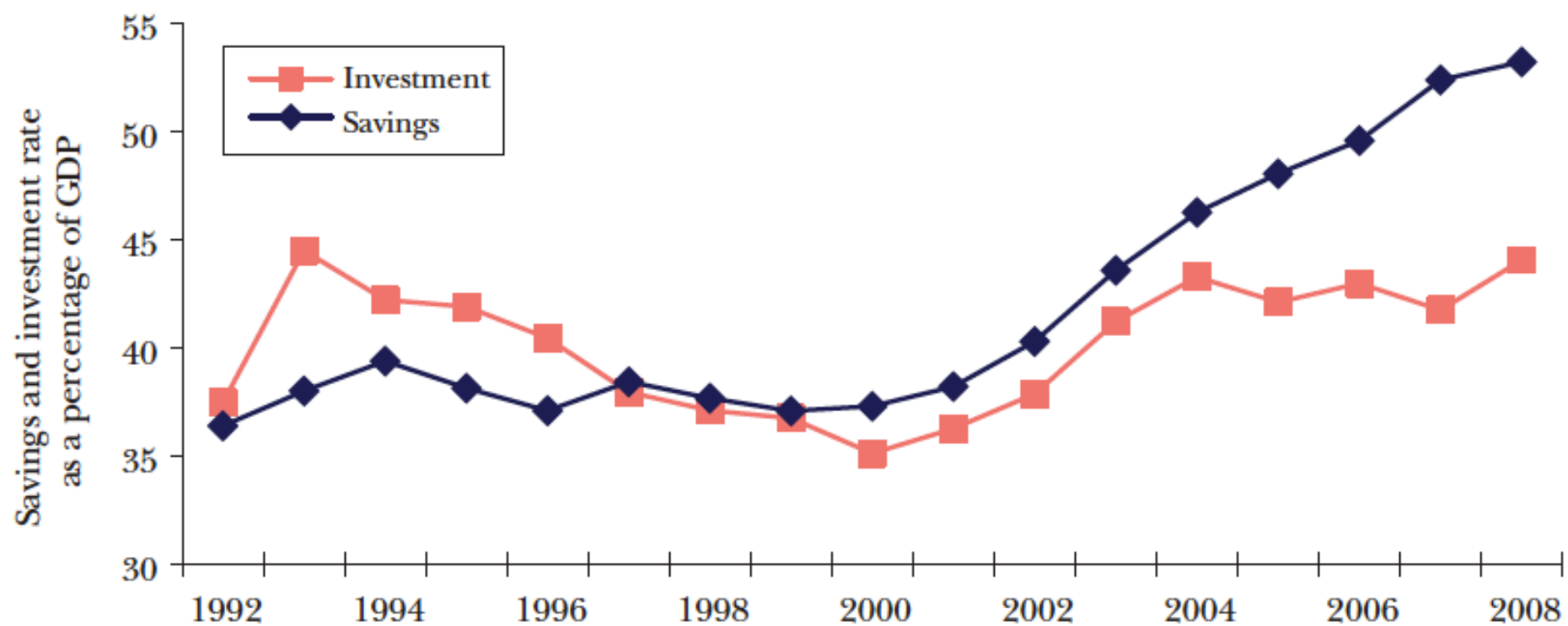
C: Savings rate by sector



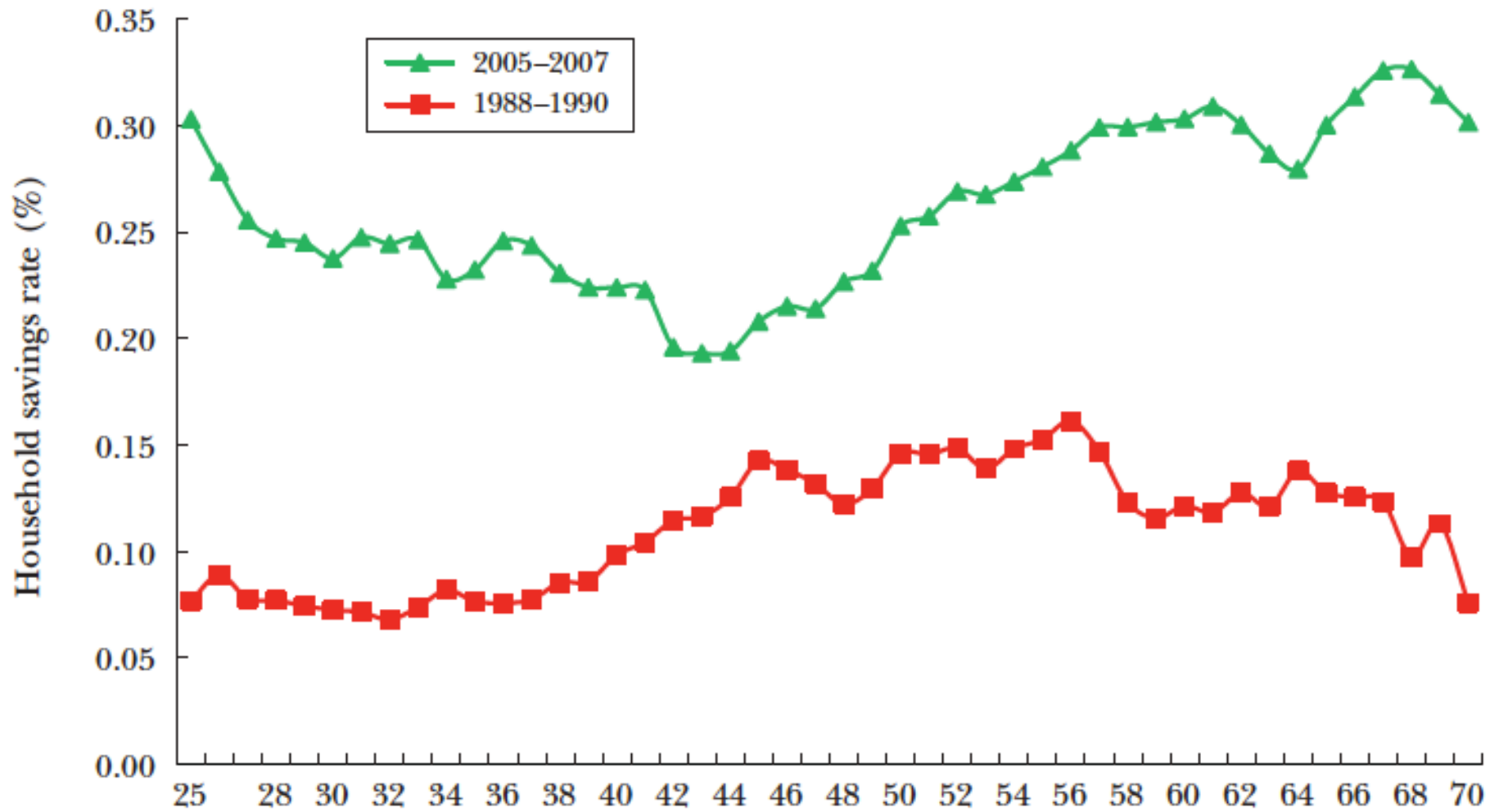
B: Investment rate by sector



A: Aggregate savings and investment rate

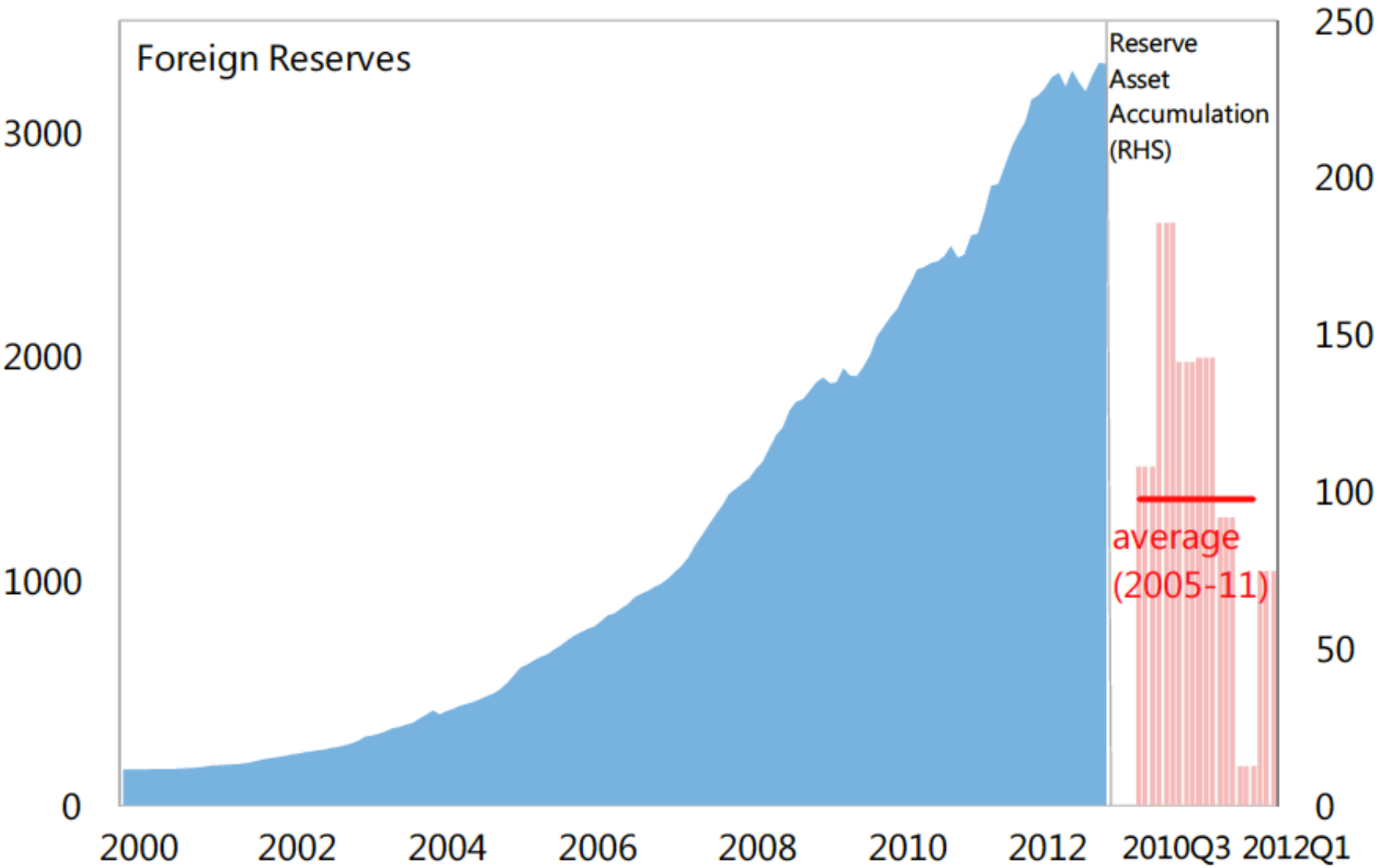


Average Household Savings Rate by Age of Household Head



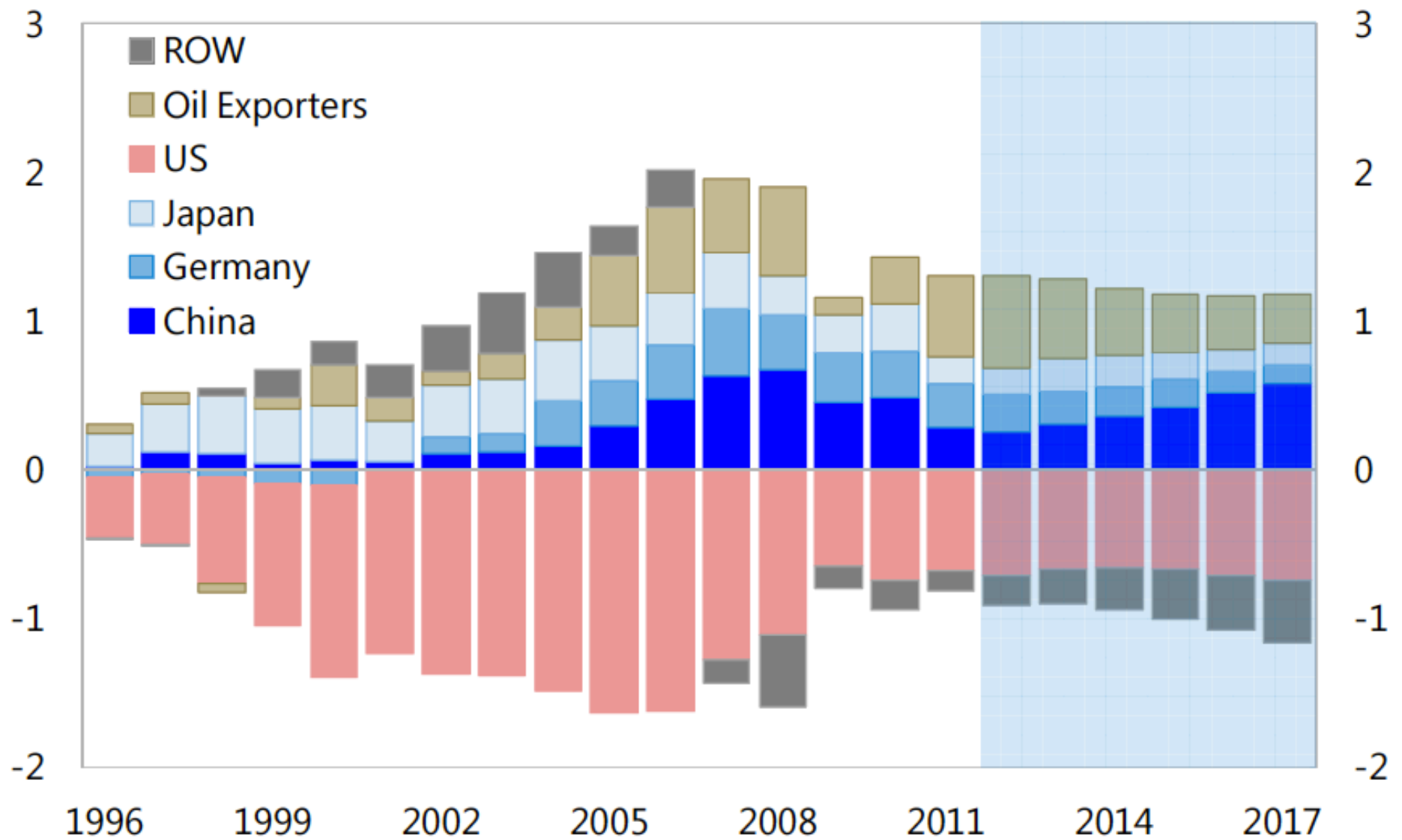
Foreign Reserves

(In USD billion)



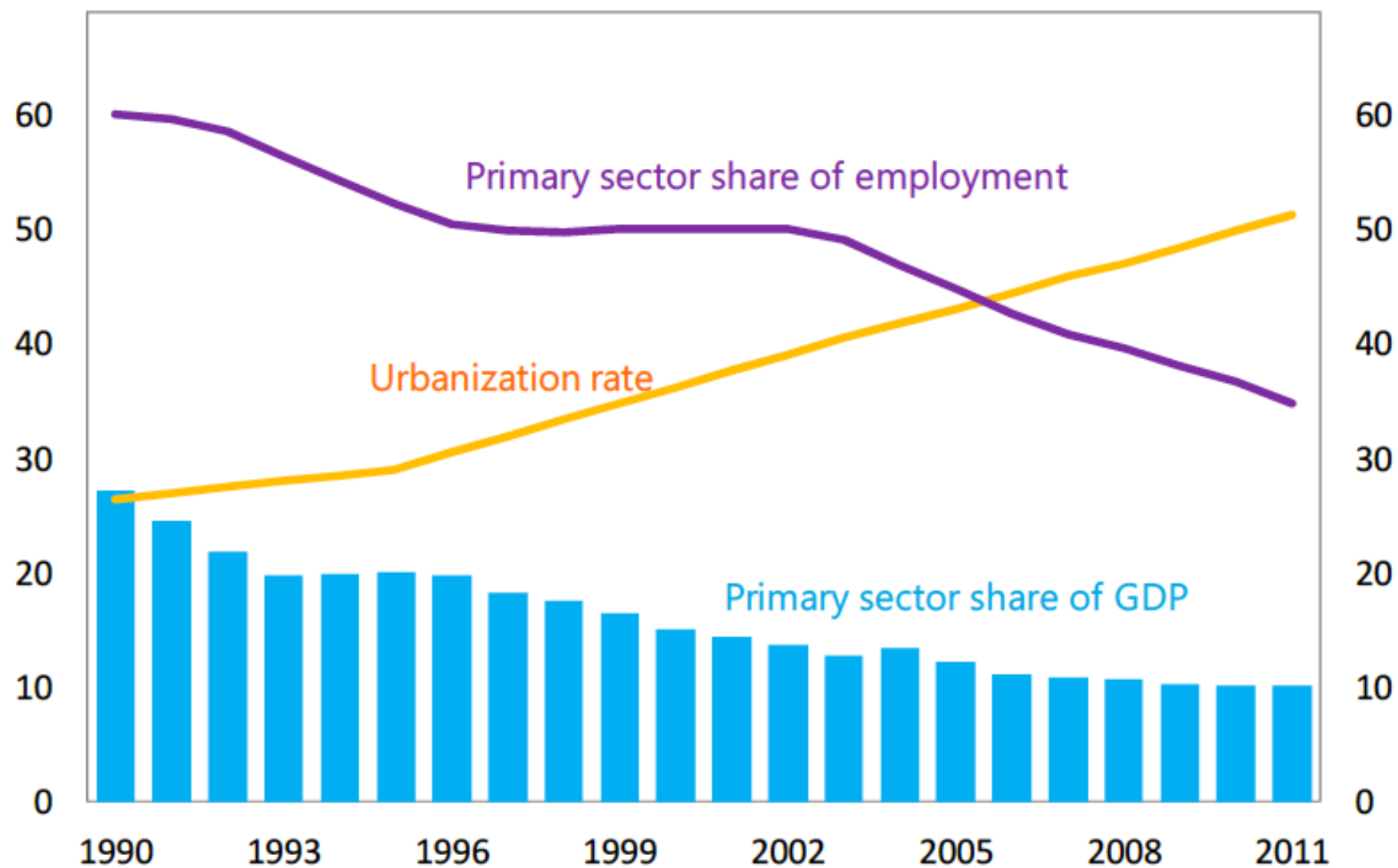
Global Imbalances

(In percent of world GDP)



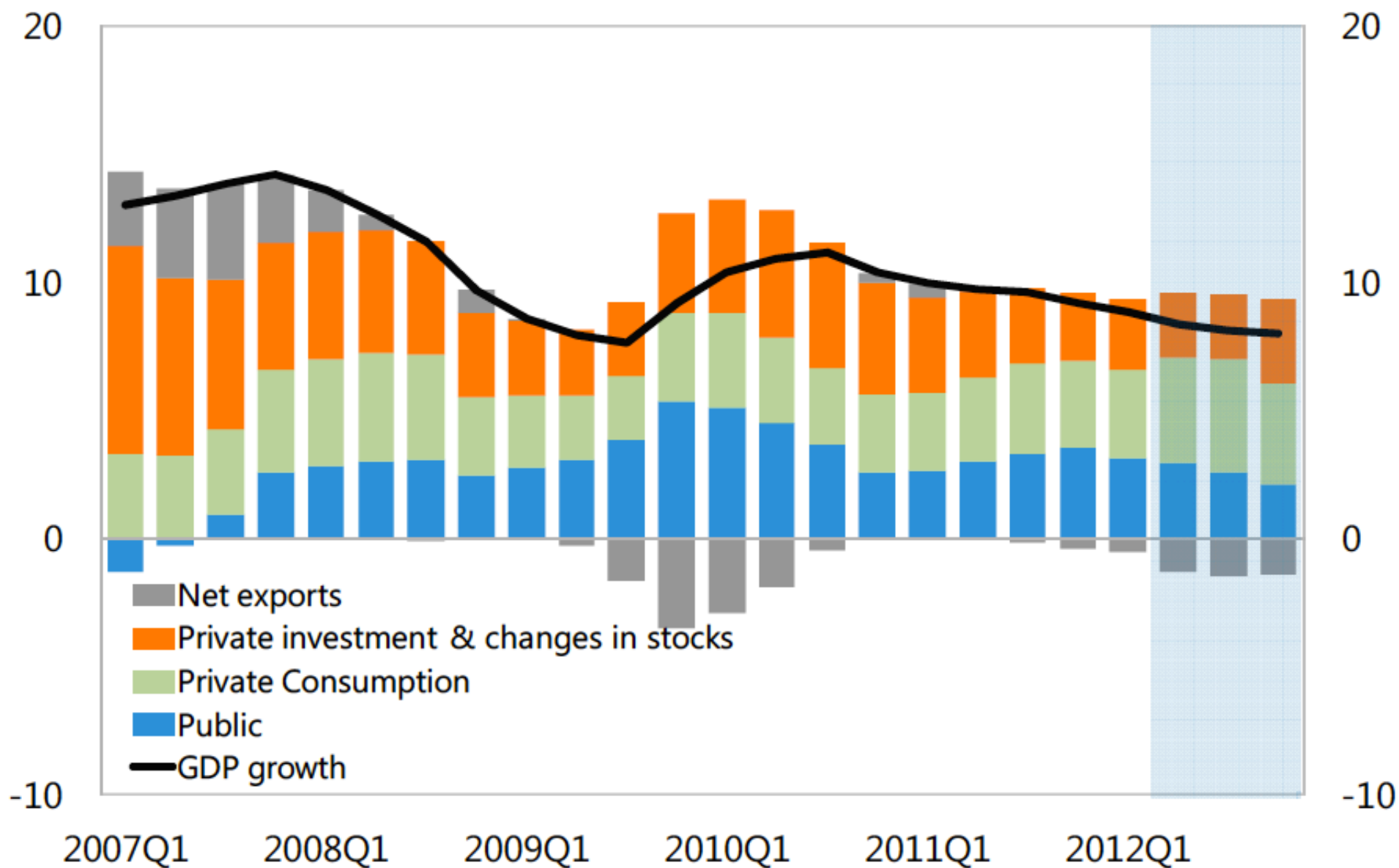
Urbanization Rate, Primary Sector Share of Employment and GDP

(In percent)



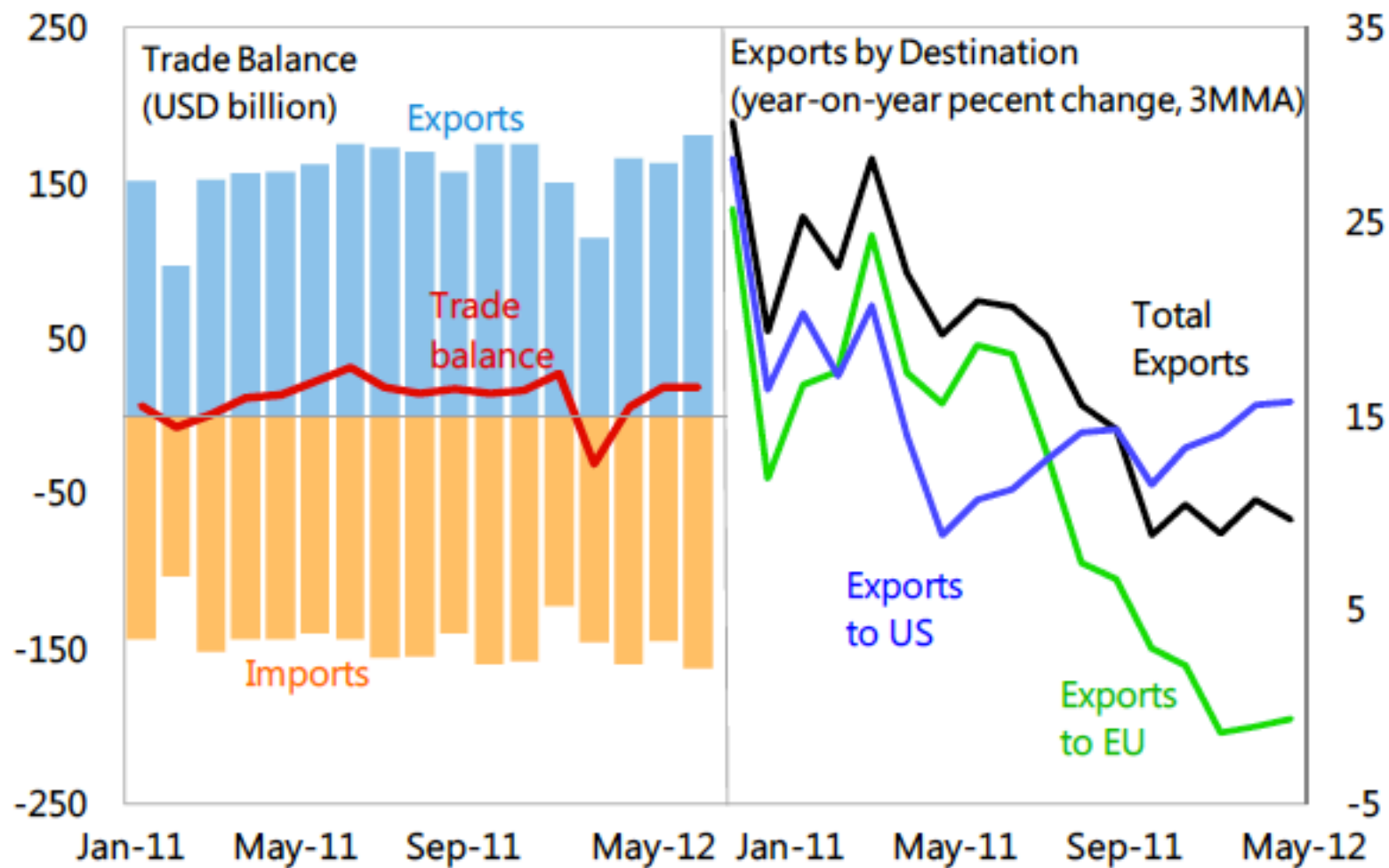
Contribution to GDP Growth

(In percent, annual average)



China: Trade Balance

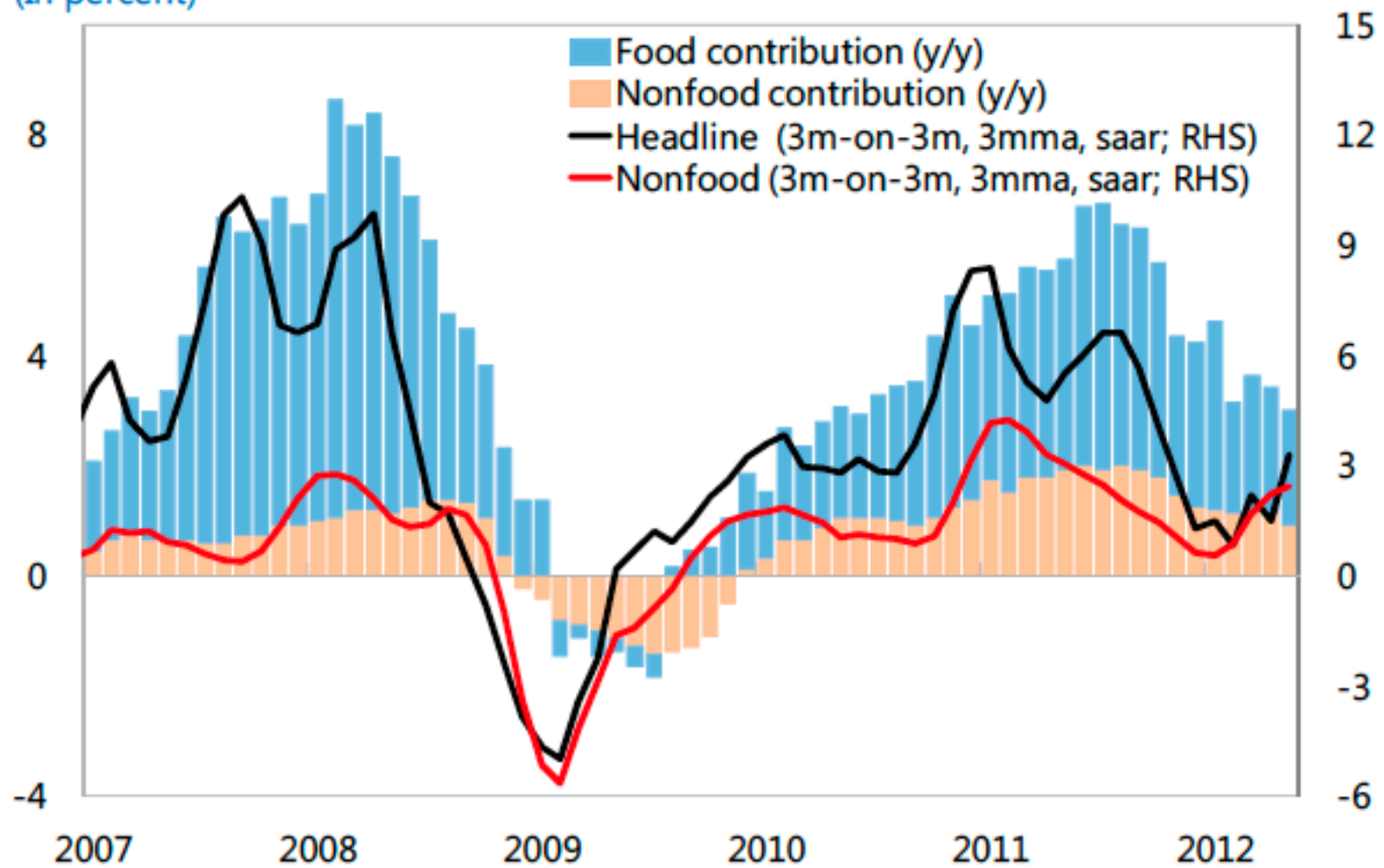
(In USD billion)



..supported by healthy profit ratios across a range of industries.

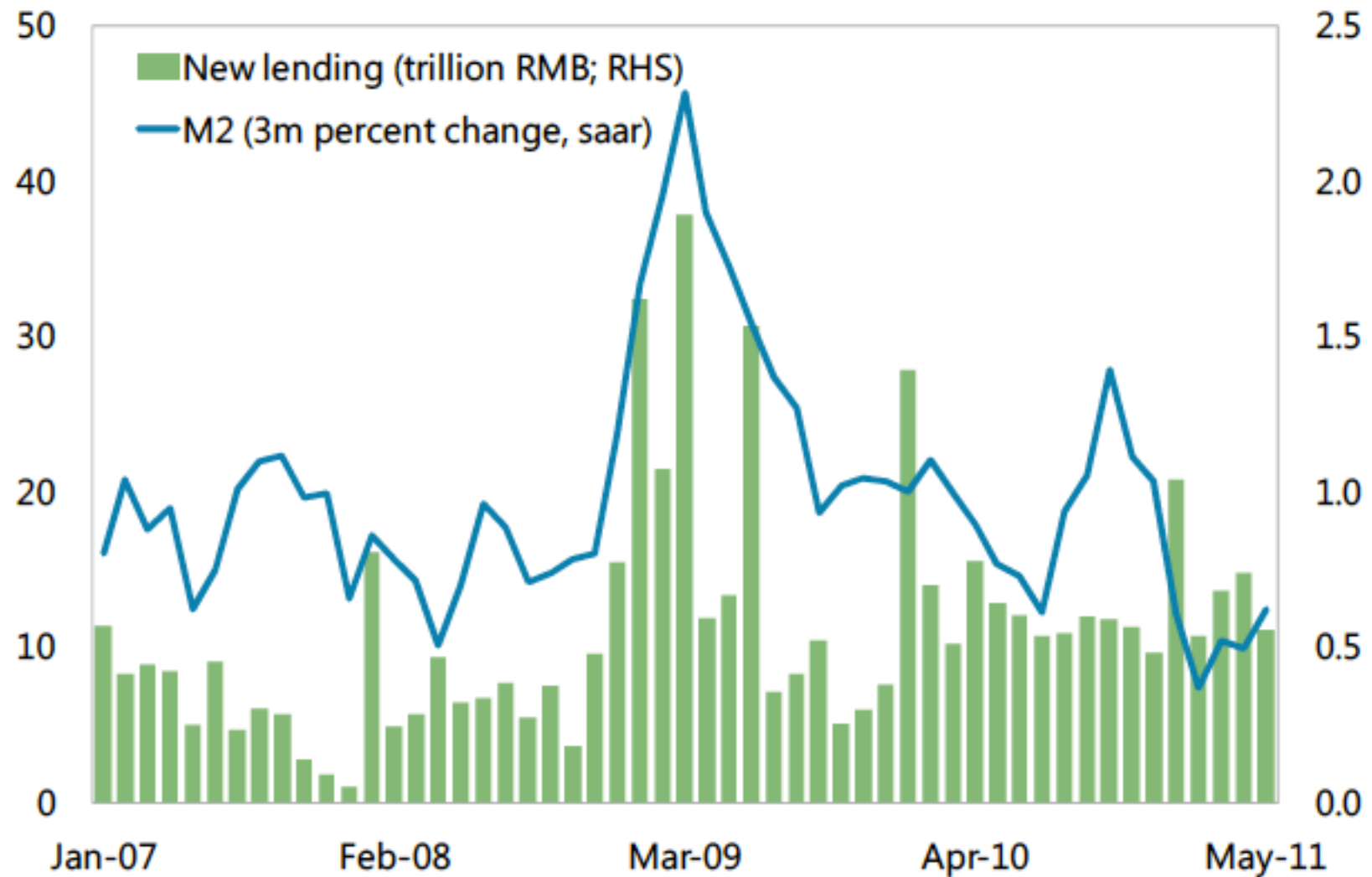
Inflation

(In percent)



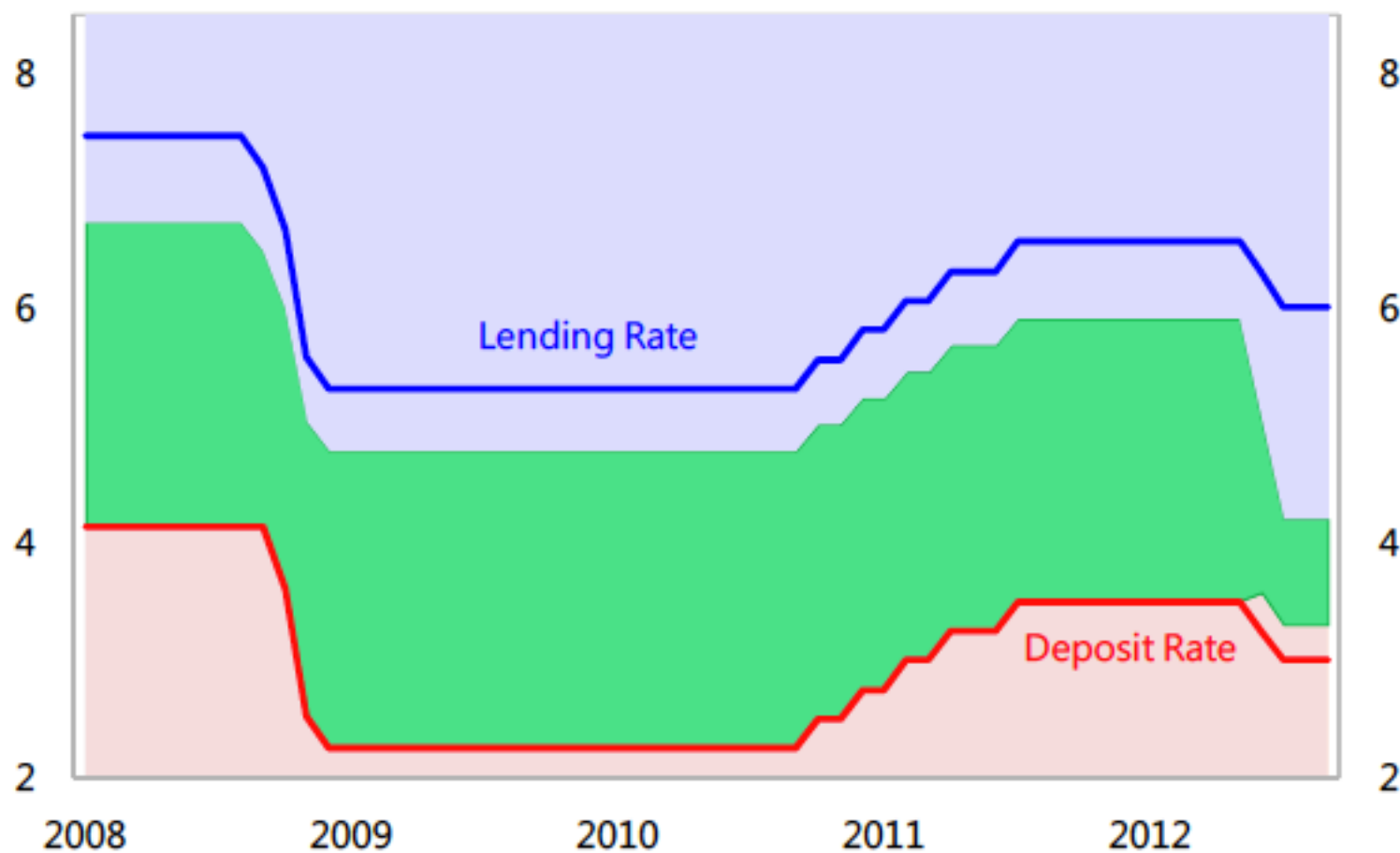
The growth in bank lending has slowed

New Lending



Benchmark Lending and Deposit Rate

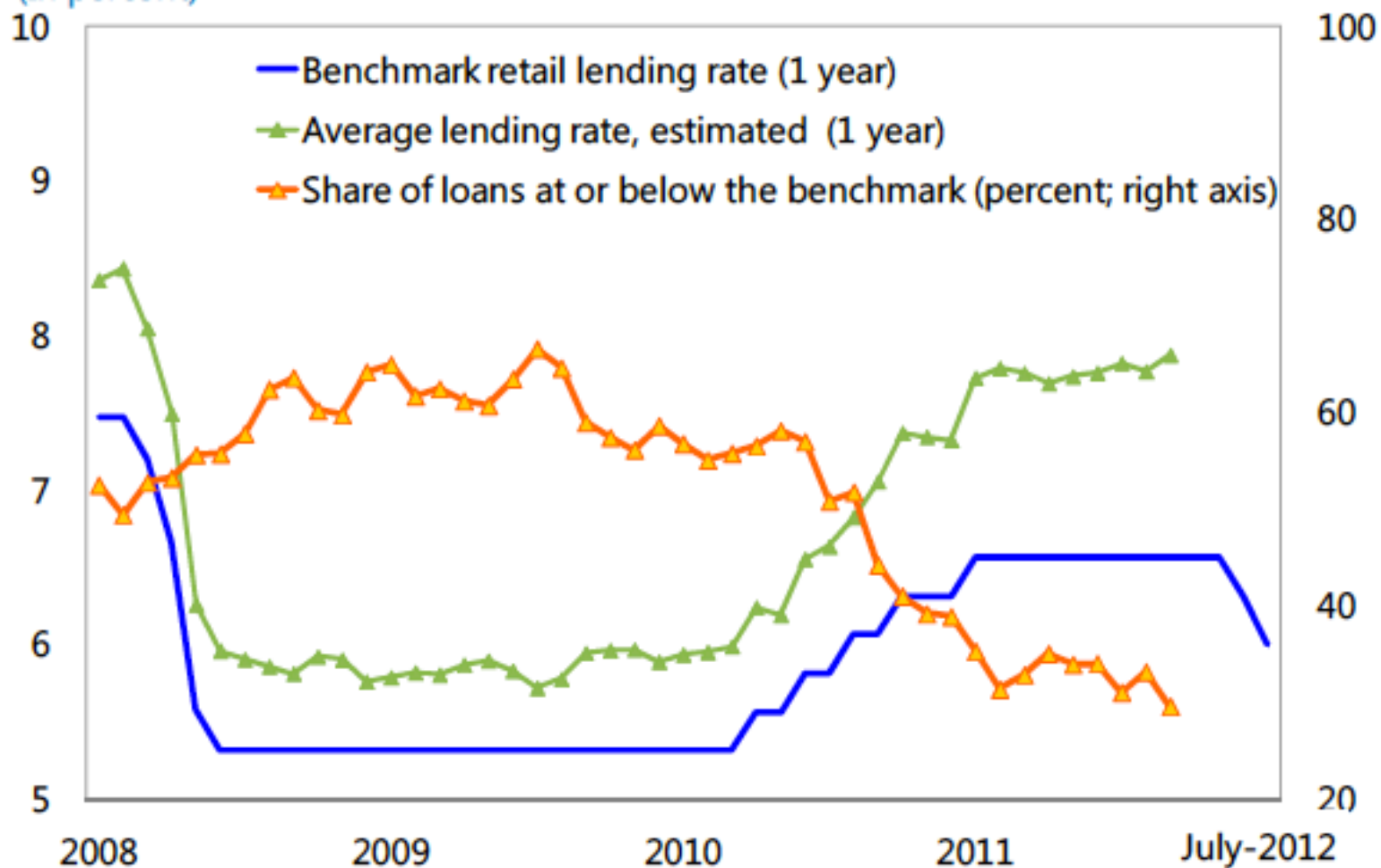
(In percent pa; 1 year)



Sources: CEIC; and IMF staff calculations.

Nominal Lending Rates

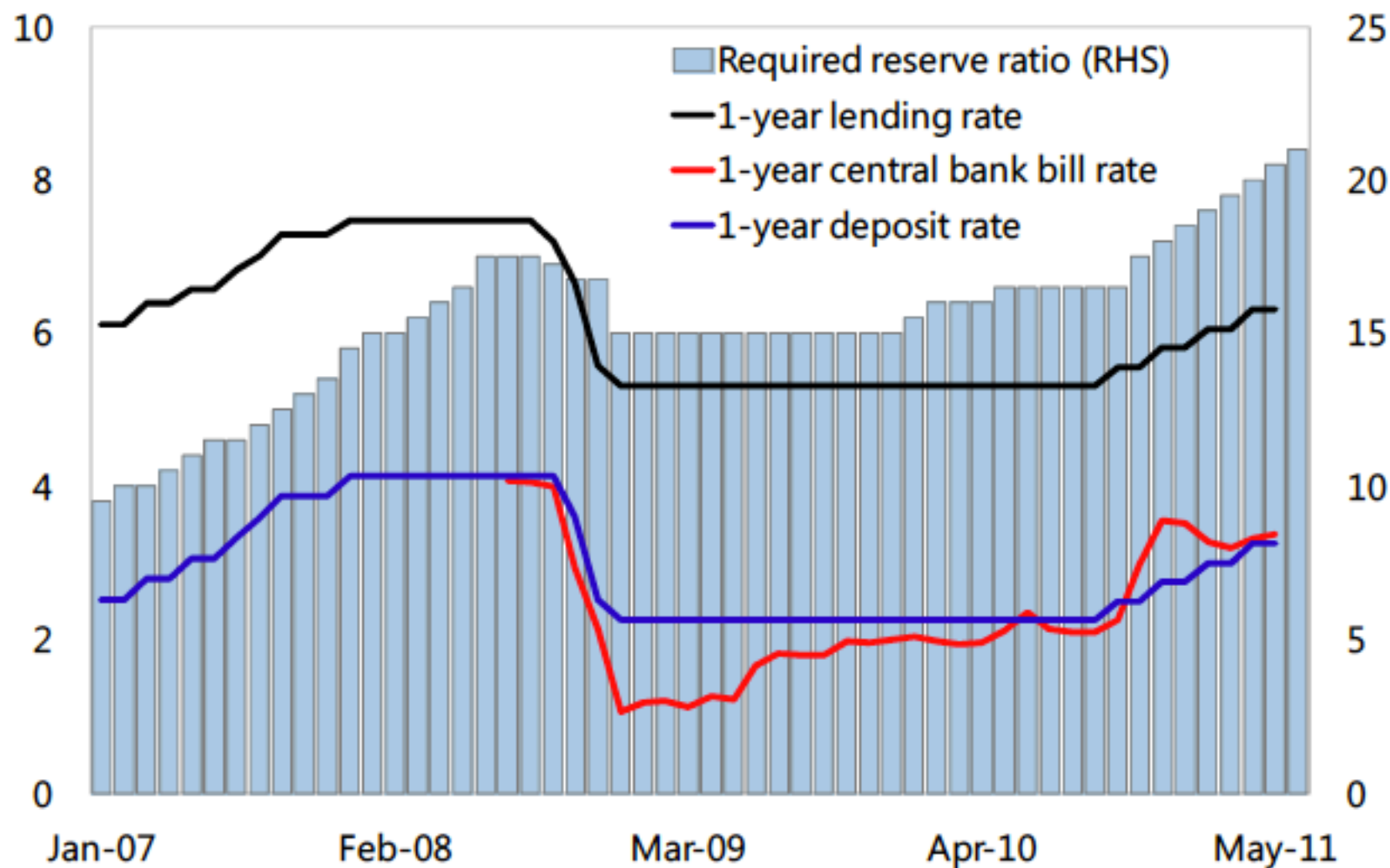
(In percent)



Interest rates and reserve requirements have moved higher

Interest Rates and Reserve Requirements

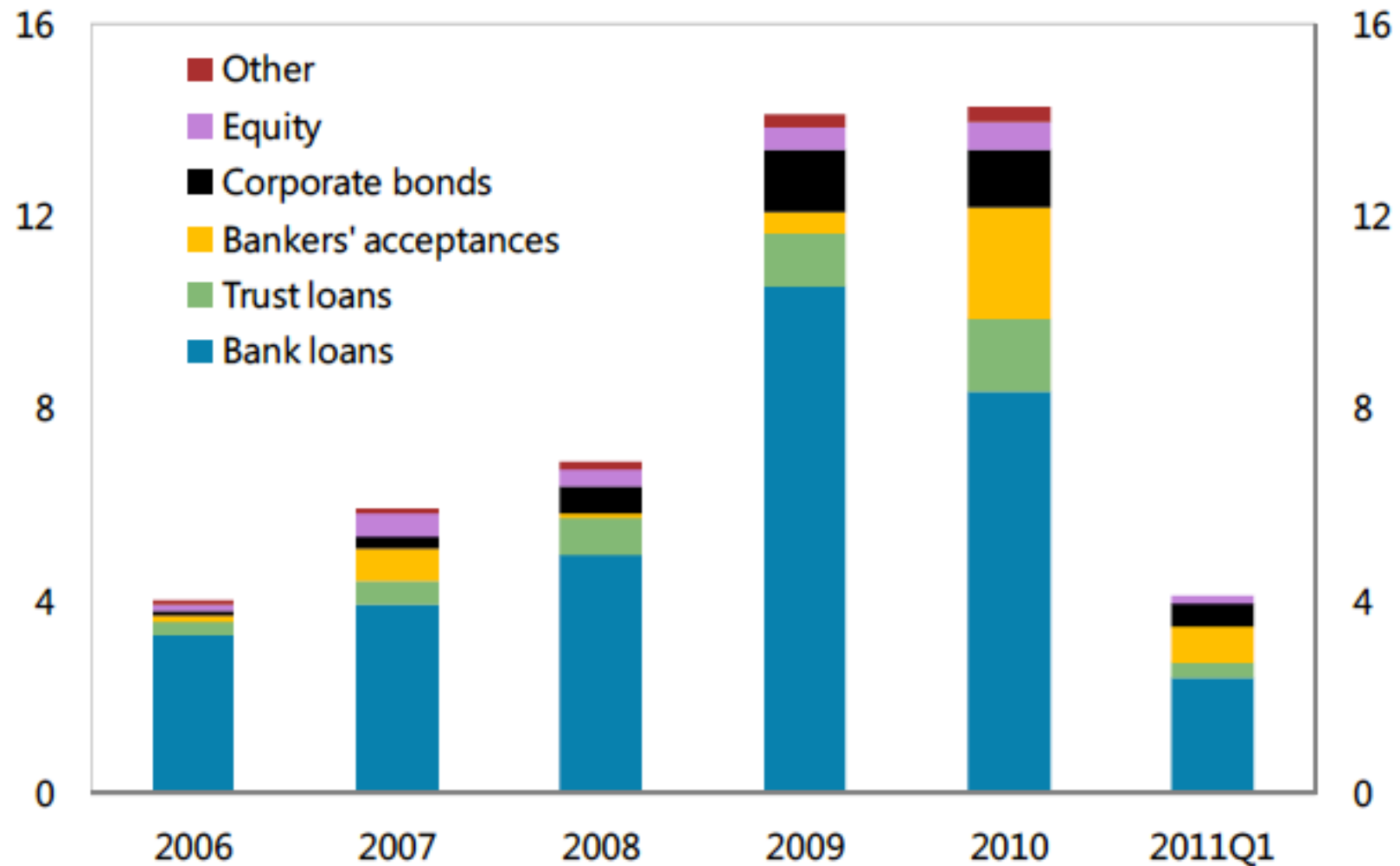
(In percent)



Bank loans have fallen as a share of total financing

Social Financing

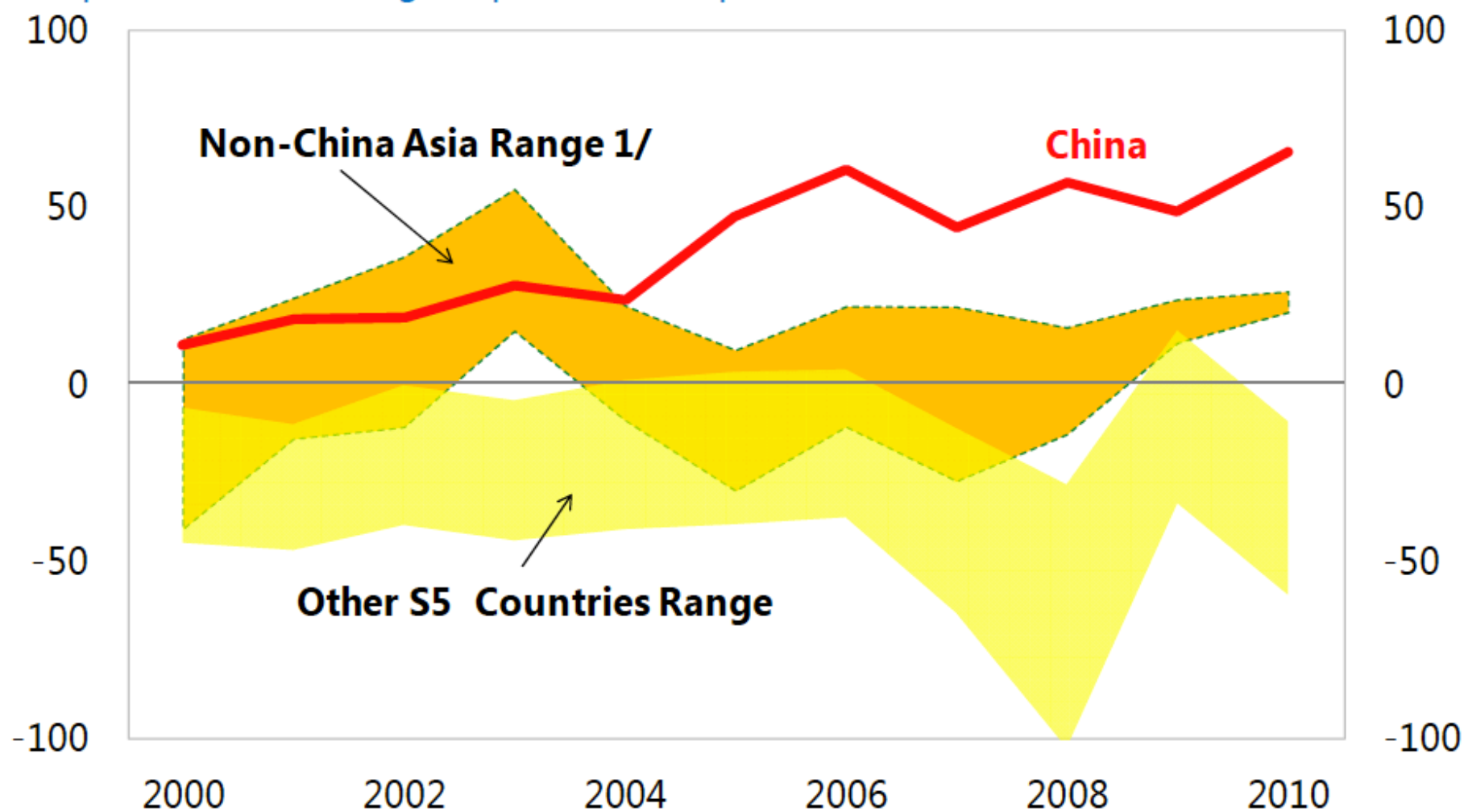
(In trillion RMB)



The cost of capital is well below its marginal product

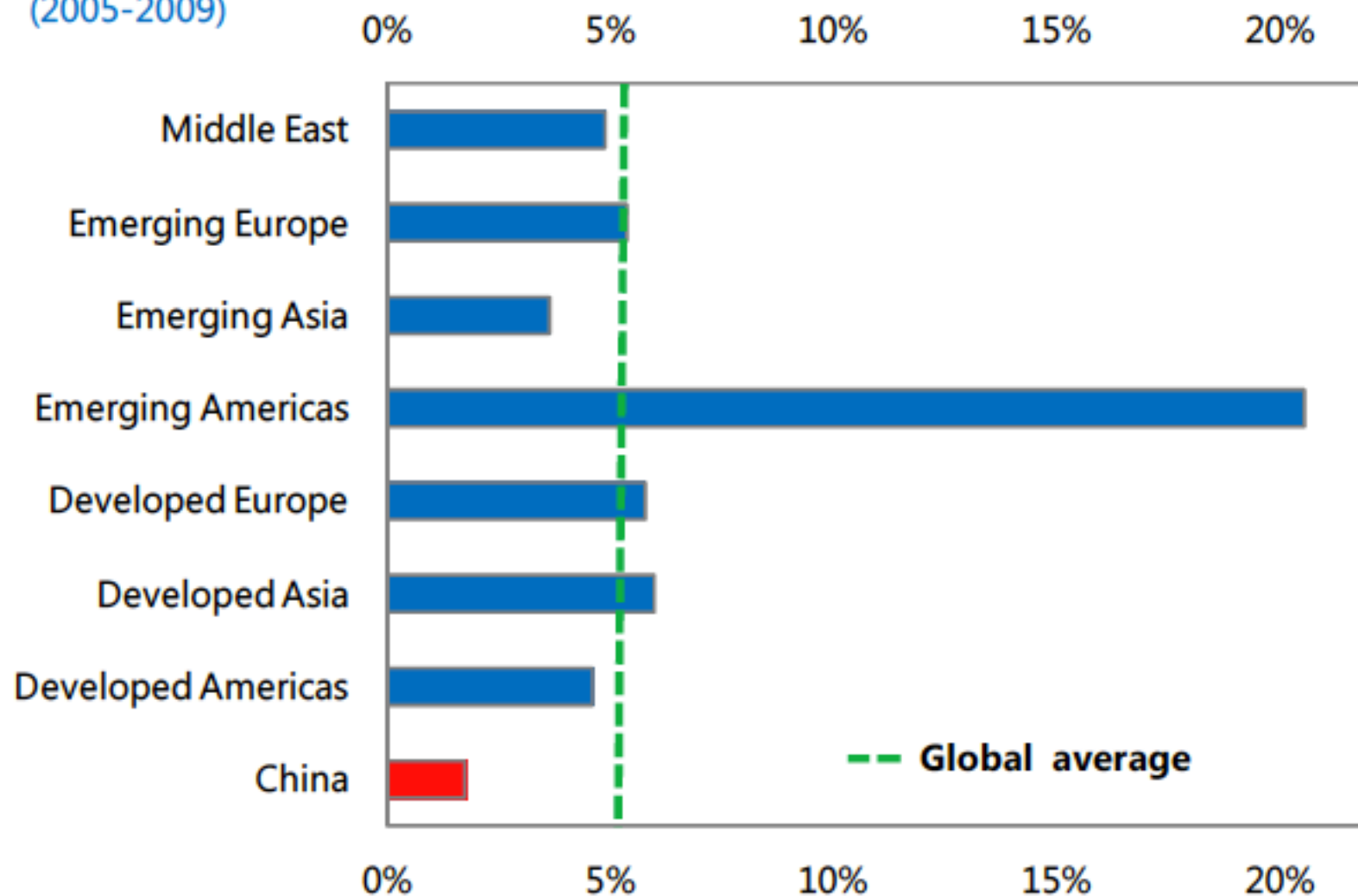
Imputed "Subsidy" to Capital

(In percent of the marginal product of capital)



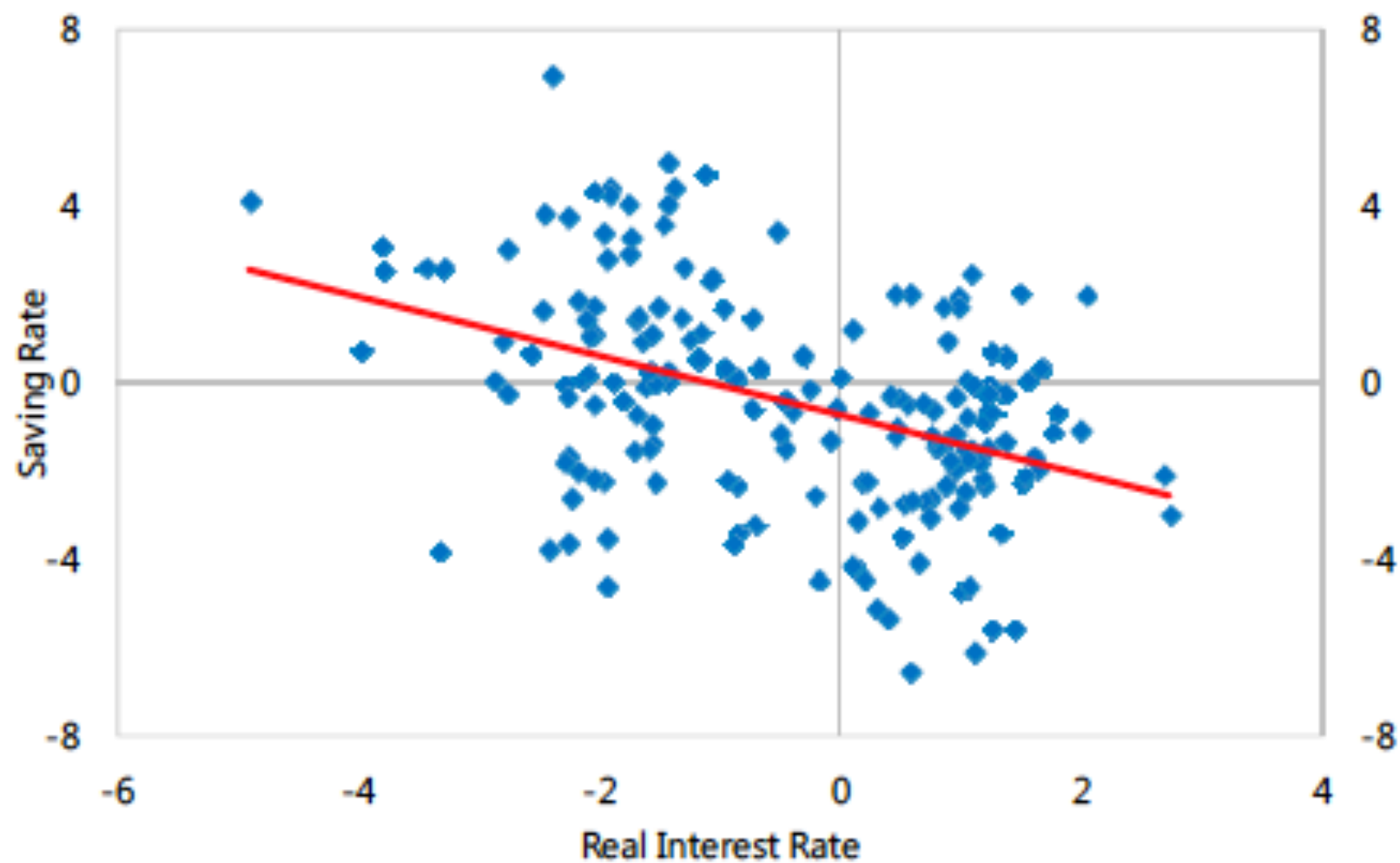
Real Cost of Capital

(2005-2009)



Deviation from Provincial Average

(In percent, 2003-2009)



Linkages in Finance

- no savings choices for households
 - bank deposits are main choice
 - low or negative real interest rates
 - question: implications for household saving?
- banks face excess demand
 - interest rates not effective in shifting bank behavior or borrower behavior
 - pressure for low lending rates, feasible due to low deposit rates
 - banks too small to serve small firms and service sector

linkages

- with inelastic responses to interest rates, monetary policy can't rely upon shifting short-term rates
 - discount rate charged by central bank for direct borrowing of reserves
 - related overnight interest rates
- given that, allowing free flows of capital would
 - lead to huge attempts to arbitrage
 - wild swings in exchange rates
 - potential large swings to domestic Chinese or foreign (= US) capital markets

hence...

- exchange rates need to stay pegged
- capital flows need to remain restricted
- UNTIL
 - domestic capital markets are “deeper” (more liquidity to match volume of international flows)
 - more assets are priced on a market rather than an administrative basis

monetary policy

- UNTIL THEN
 - monetary policy must rely upon direct controls
- window guidance
 - the PBOC can set targets for credit creation
- reserve rates
 - the PBOC can increase reserve requirements to make it harder for banks to lend

challenge of liquidity management

- international imbalances make life hard
 - big trade surpluses mean exports earn lots of dollars and other currencies (net of imports)
- keeping the exchange rate stable requires the PBOC to buy up excess dollars
 - but then domestic markets are awash in cash
 - so bank reserves tend to expand

sterilization

- the PBOC can attempt to “sterilize”
 - sell bonds
 - soaks up excess liquidity
- but there aren’t any bonds to sell !!
 - because the Chinese government hasn’t run big deficits
 - because there is only a small bond market
 - a chicken and egg issue
- so again, direct controls ... and the underlying inflation pressures we’ve discussed means this is a chronic challenge, not a hypothetical

nothing new ... for LDCs

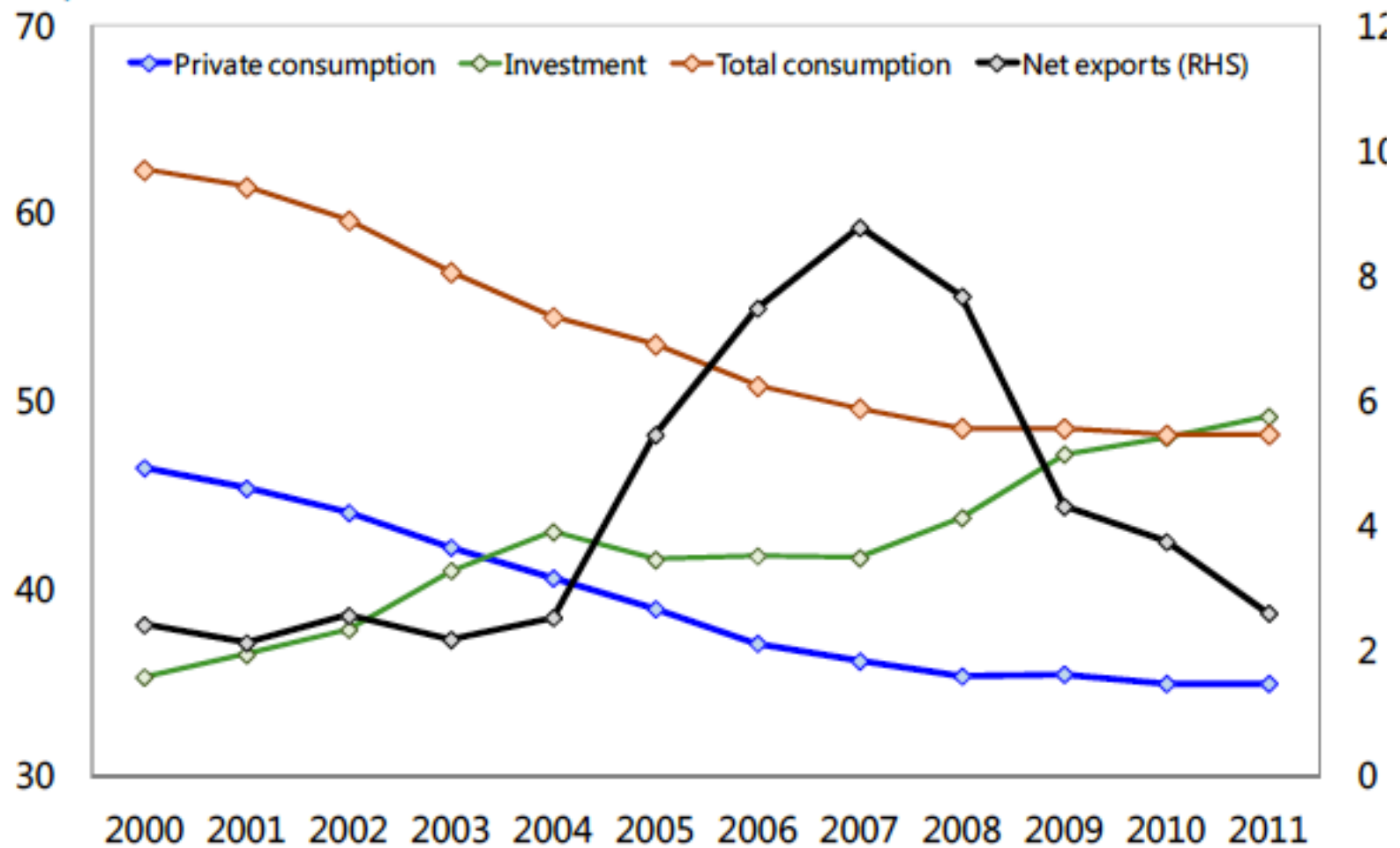
- financial deepening is a challenge that all developing countries face
- that means that macroeconomic policy in LDCs differs systematically from that employed by OECD countries
- Σ monetary policy is not a refined tool
- SO: what of fiscal policy?

irony

- China as a developing country subsidizes capital
 - which leads to a bias towards using capital rather than labor
 - the OPPOSITE of what rational policy should do
 - AND it makes macro policy harder

GDP Expenditure Components

(In percent of GDP*)

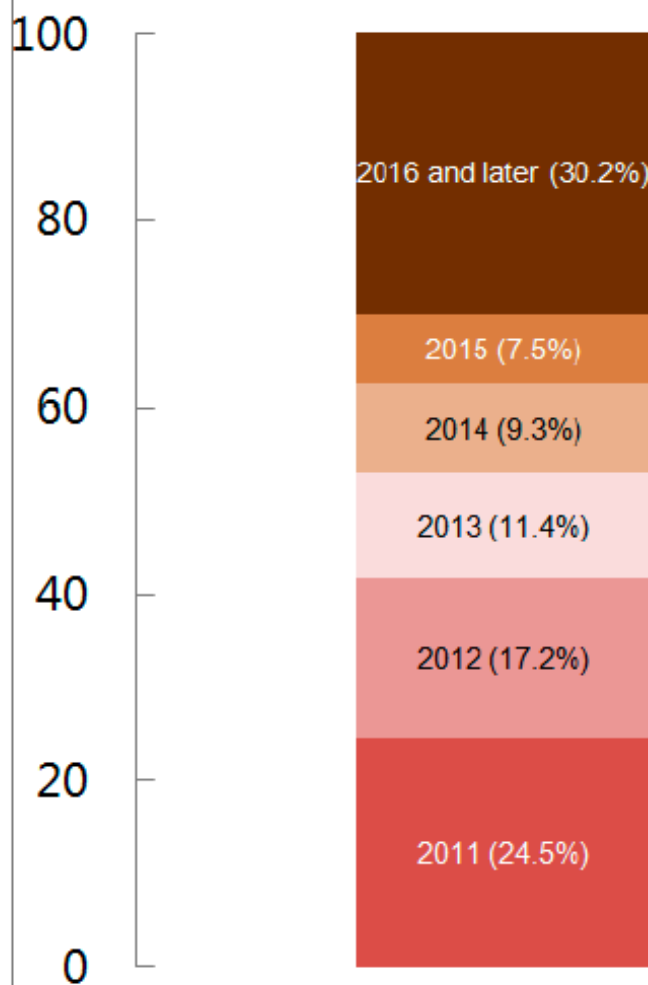


* Expenditure-based GDP.

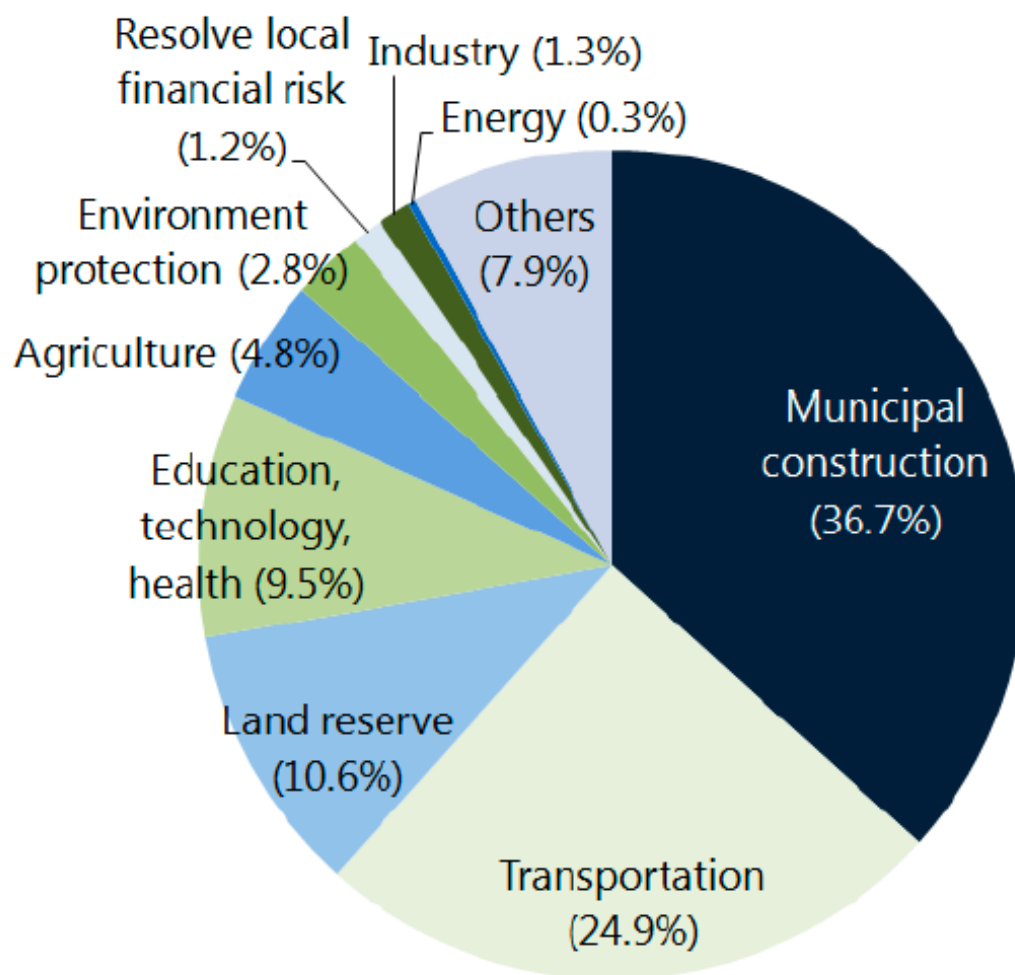
Local Government Debt

(In percent of total)

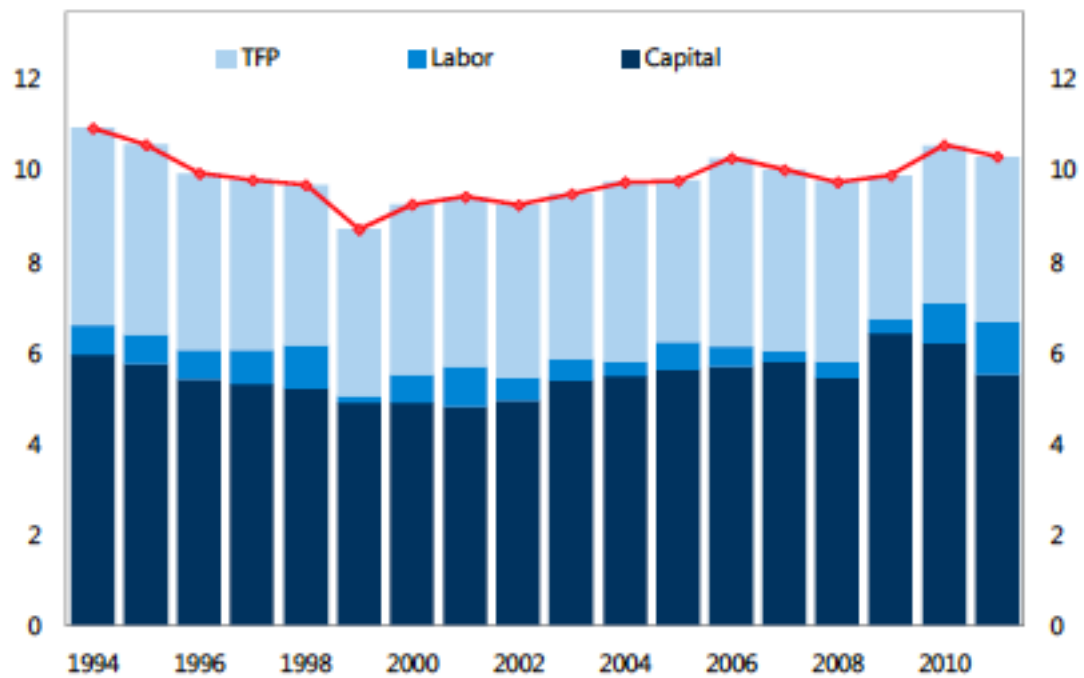
By Maturity



By Sector

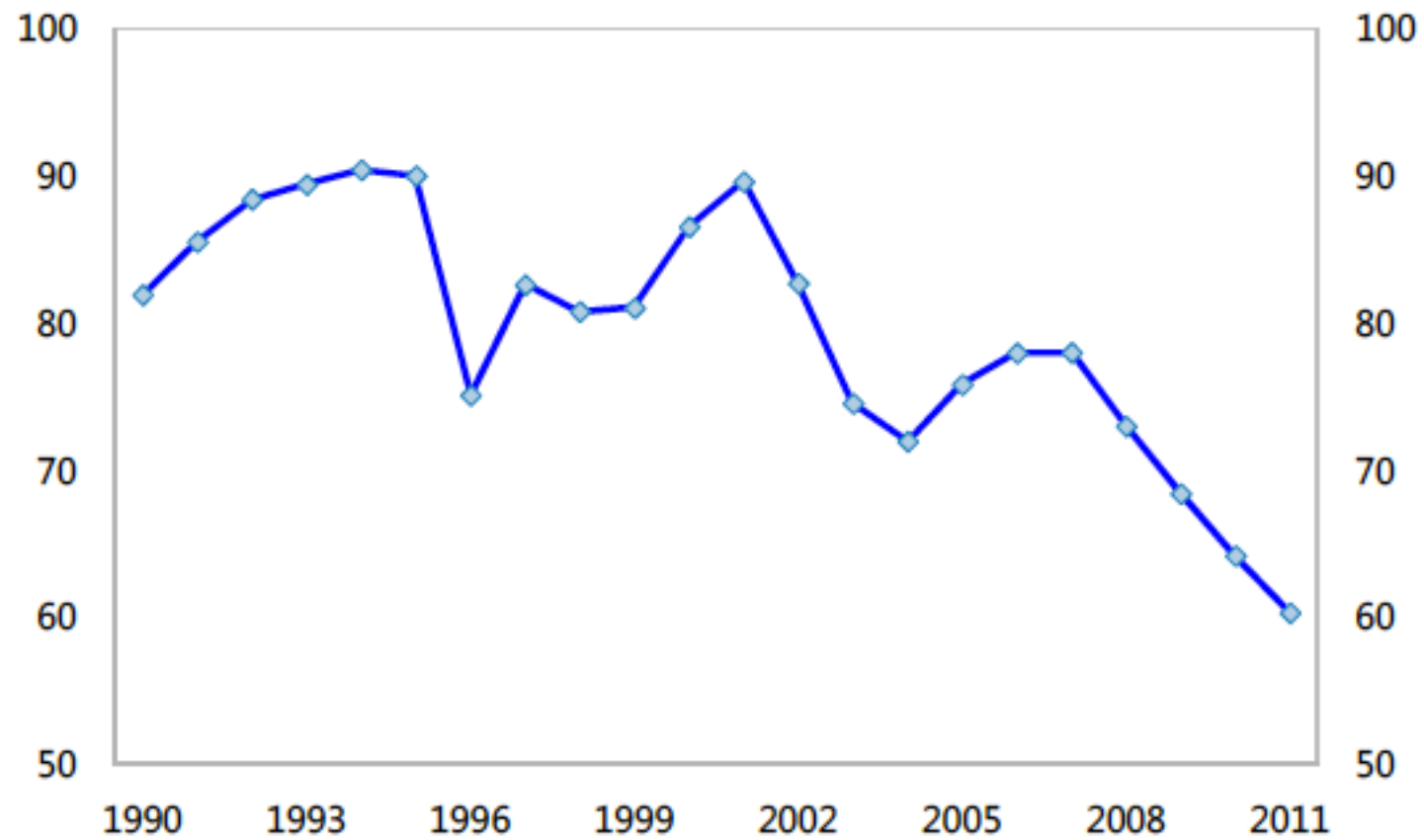


China: Potential Output Growth (In percent)

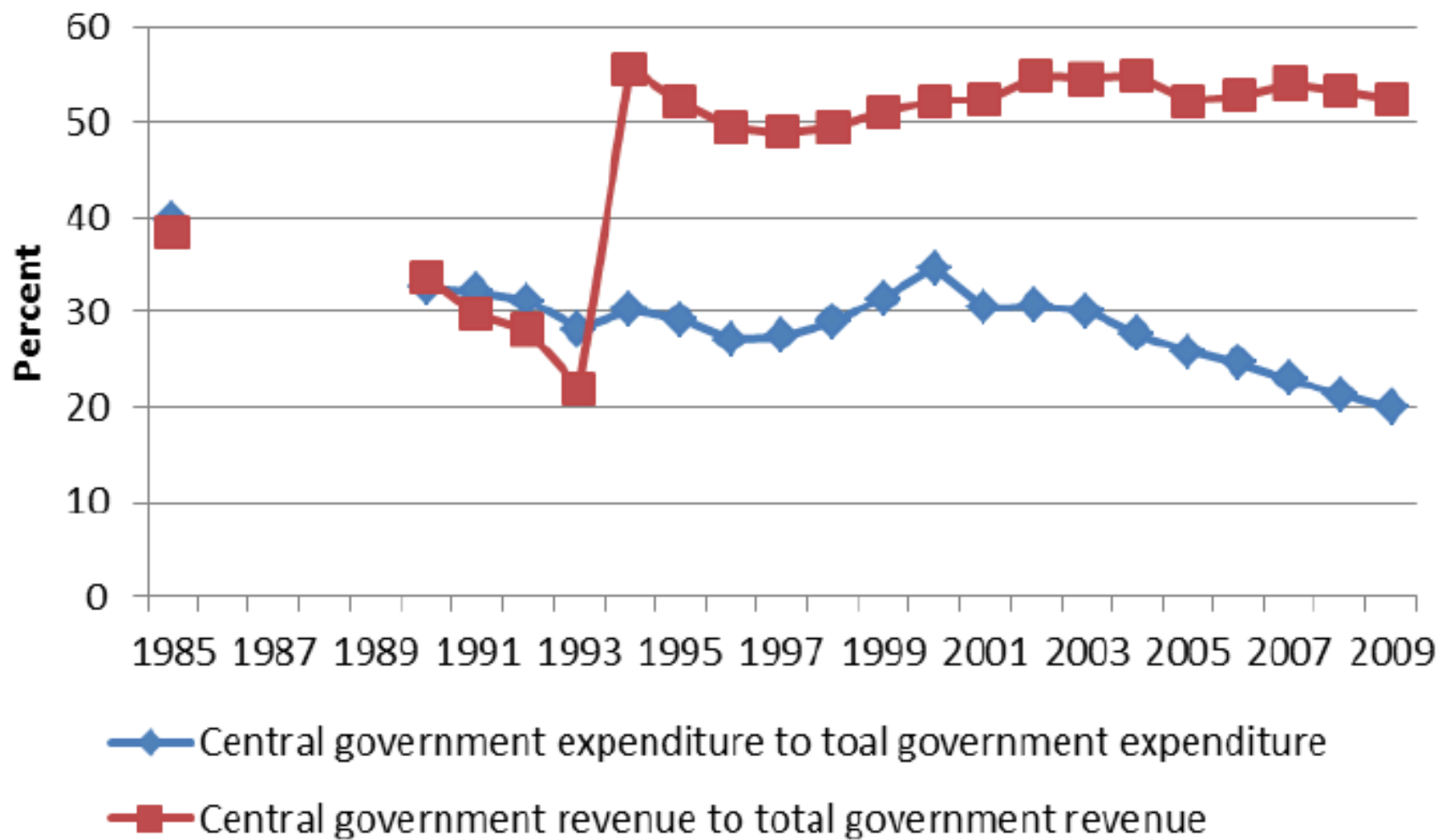


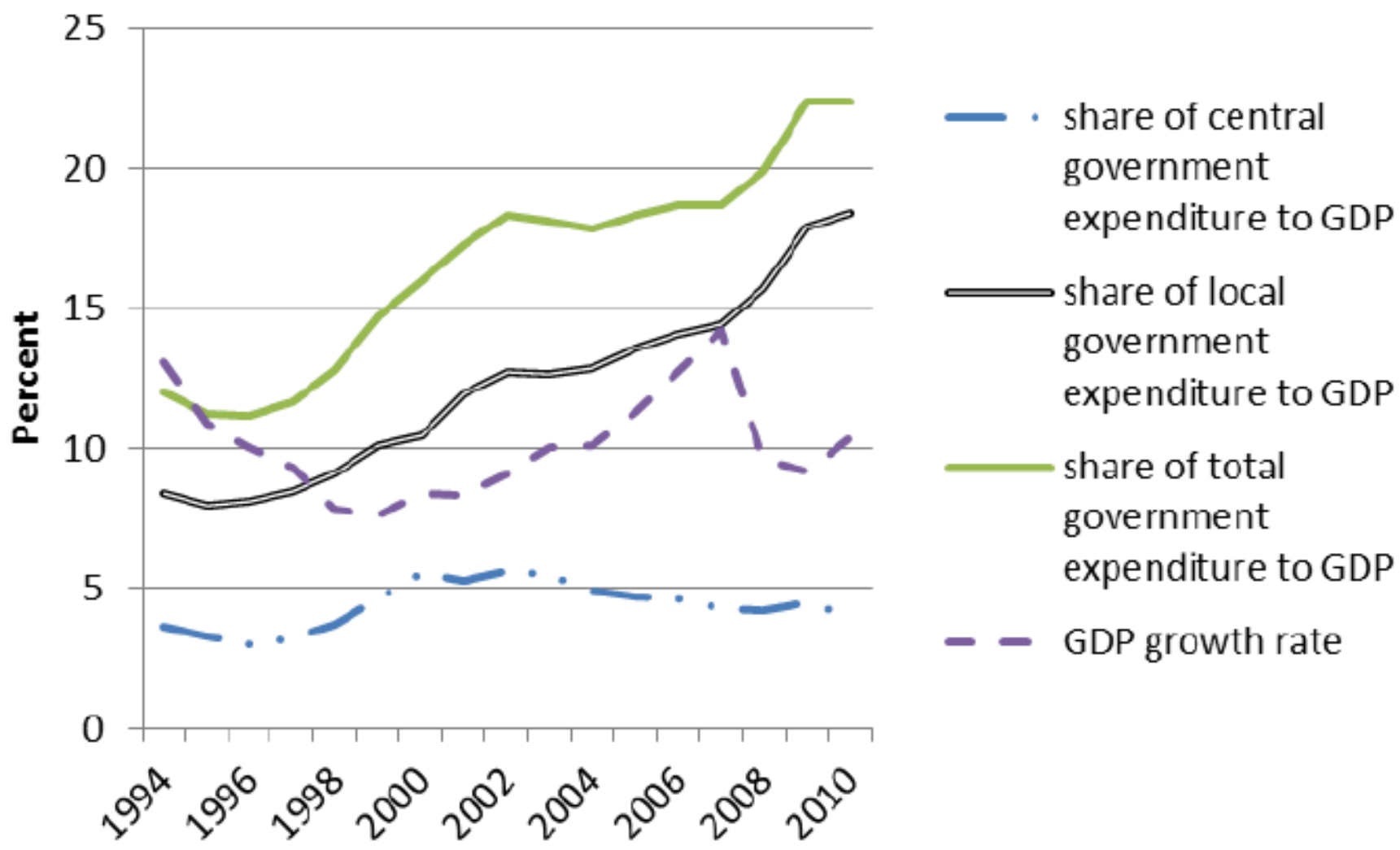
Average Capacity Utilization

(In percent)



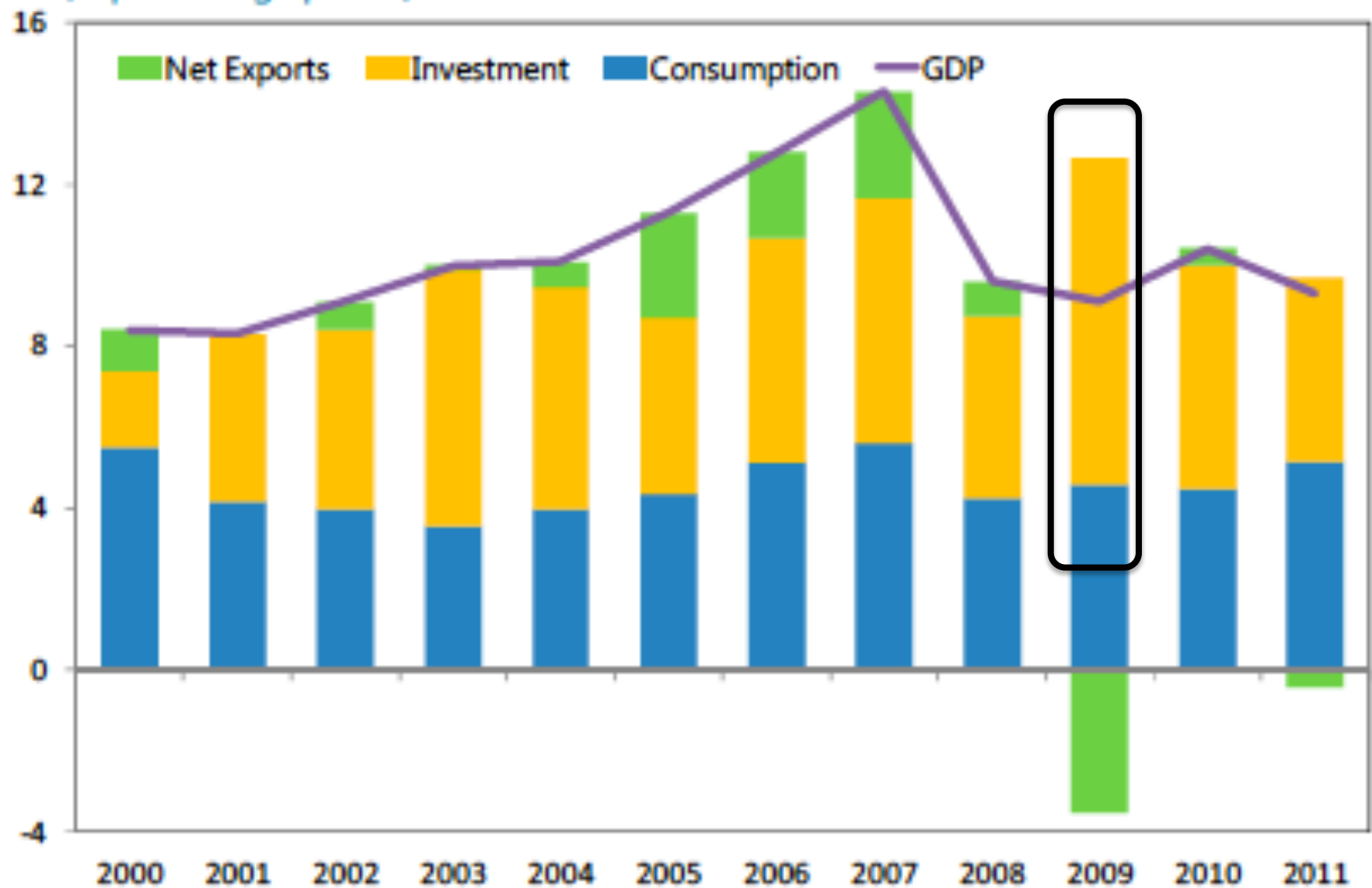
Sources: IMF staff calculations.





China GDP: Contributions to Growth

(in percentage points)



Future of the Economy

- Growth Model
 - $Y = f(K, L) = A K^\alpha L^{1-\alpha}$ Cobb-Douglas
 - per capita: $Y / L = A (K/L)^\alpha$ rearranging the above
 - now “I” investment $\Rightarrow \Delta K$
 - K suffers from depreciation
 - K has diminishing returns as input
 - we look at K on Wednesday
 - and at A (total factor) productivity (TFP) or technical change

So today

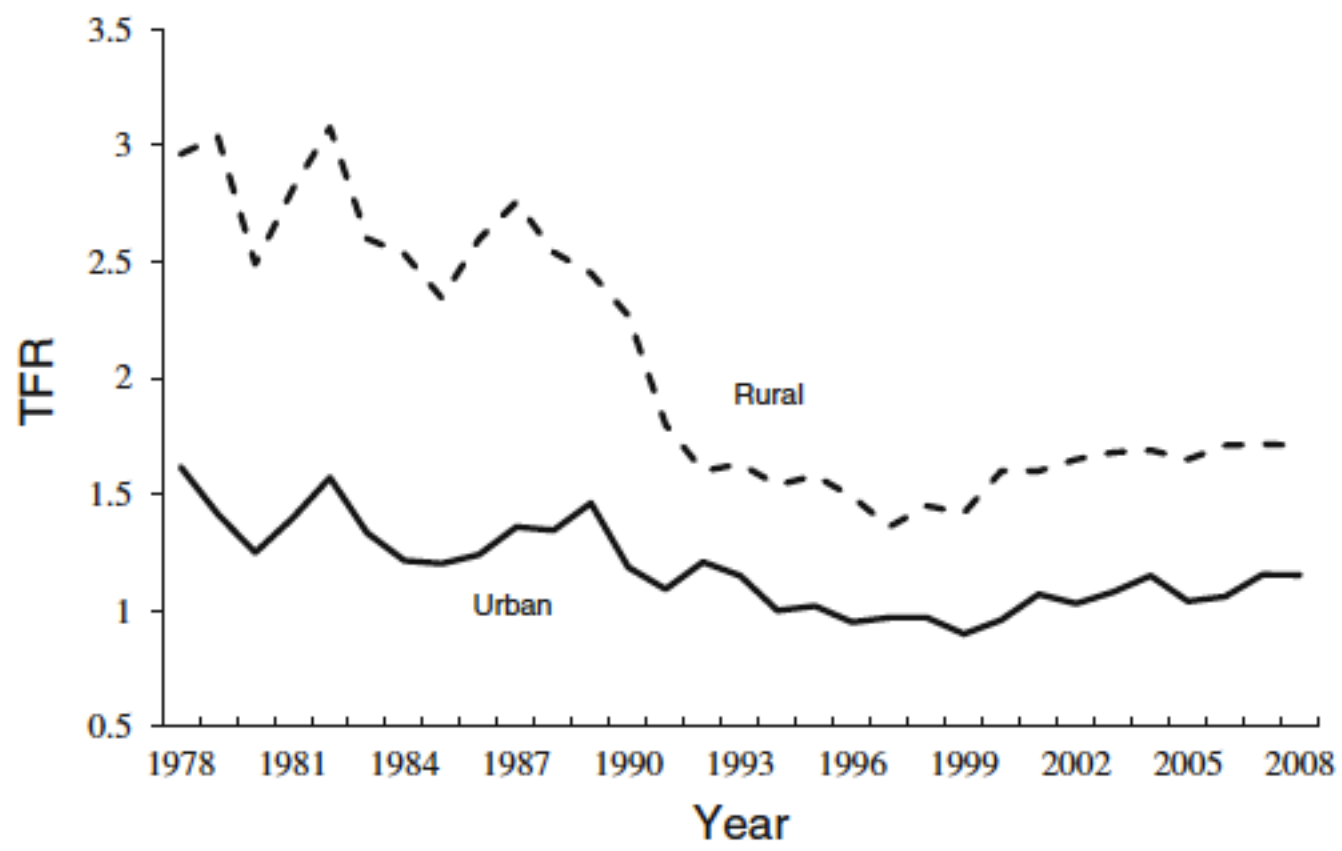
- Changes in labor force
 - So where do children come from
 - OK, the birds and the bees
 - and accidents do happen
- Economists approach fertility as a choice
- but remember time lags
 - today's children don't become workers for 20 years
 - today's girls don't become mothers for 25 years

Fertility Decision

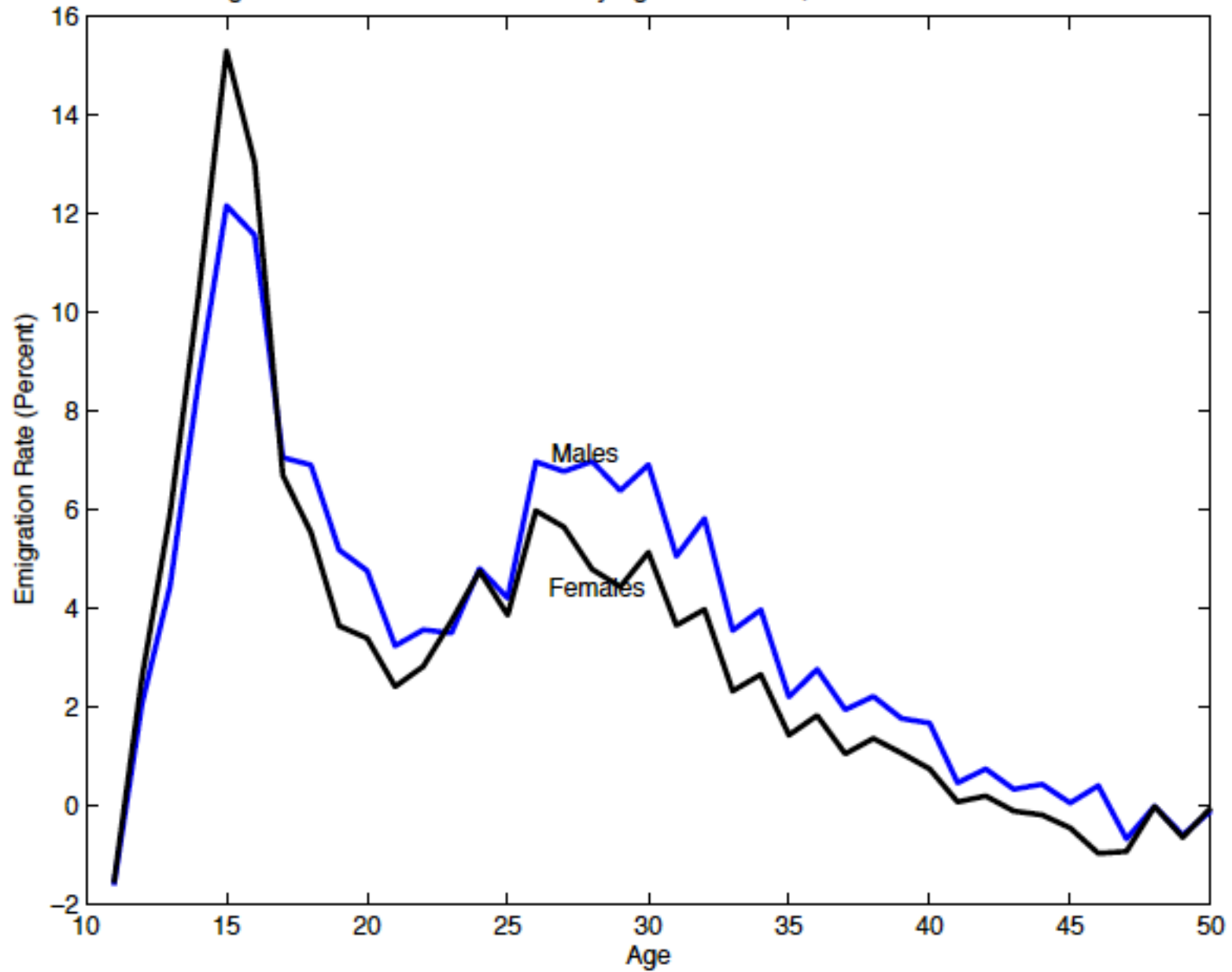
Costs	Benefits
↑ Education	↓ Labor
↑ Mother's Time	↓ Investment = Retirement
≈ Out-of-Pocket	≈ Psychological
	<i>note economies of scale: older can care for younger and receive hand-me-downs</i>

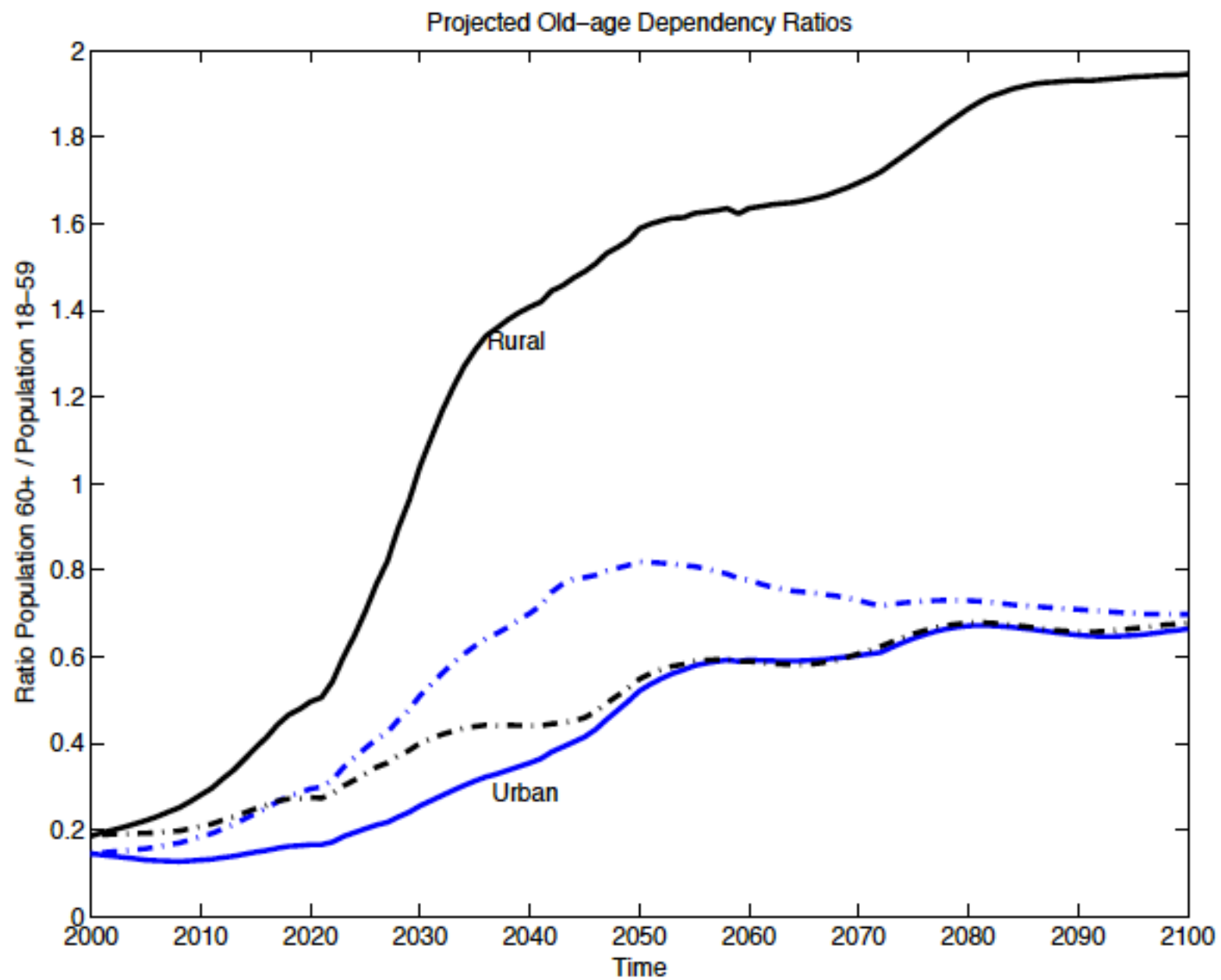
So what happens

- think 1980, when fertility restrictions (the “One Child” Policy) tightened
- so what happens in 2040?
 - given current policy of retirement at age 60
- but few children
 - population ages
 - and as following charts illustrate, migration amplifies

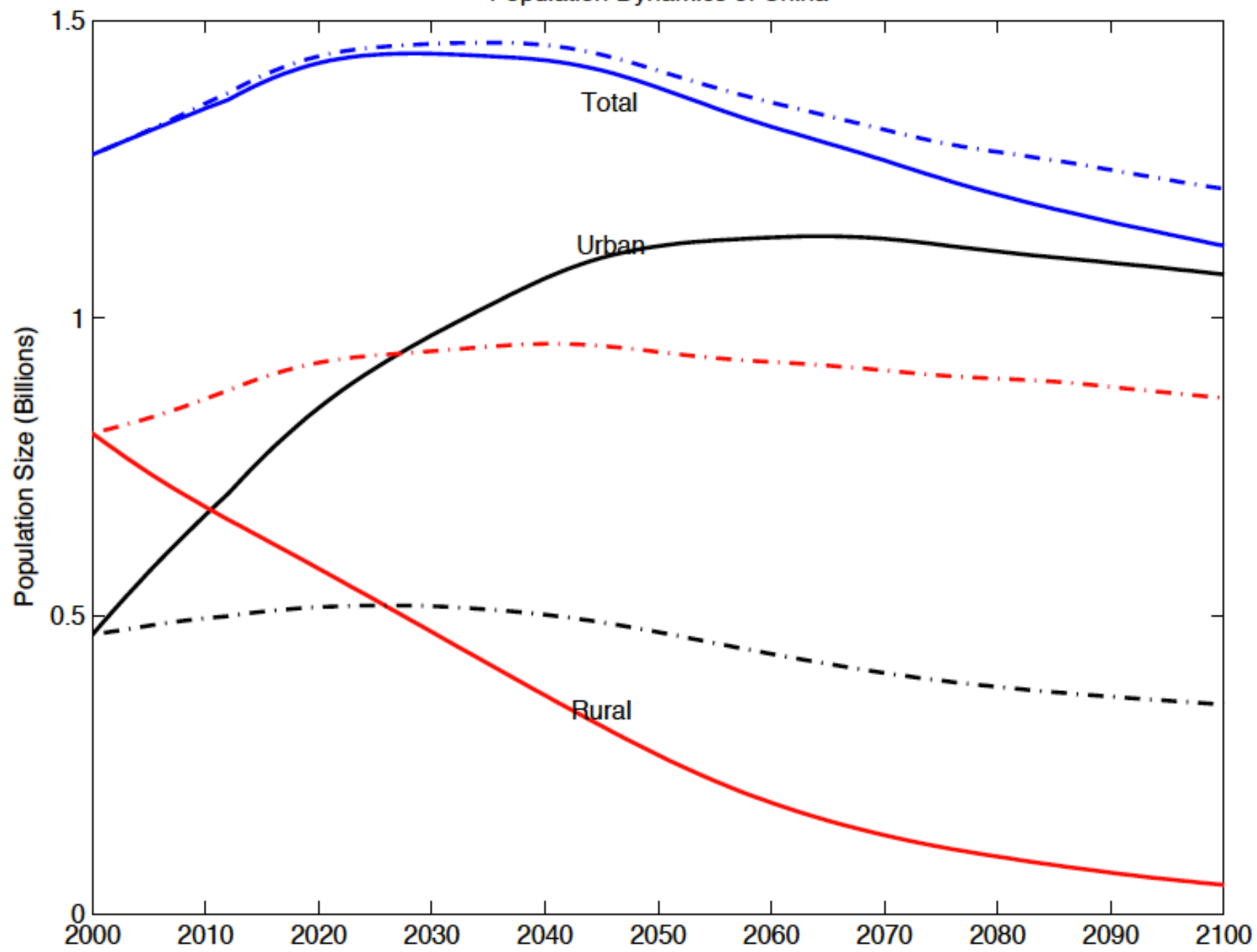


Emigration Rates from Rural Areas by Age and Gender, as a Share of Each Cohort





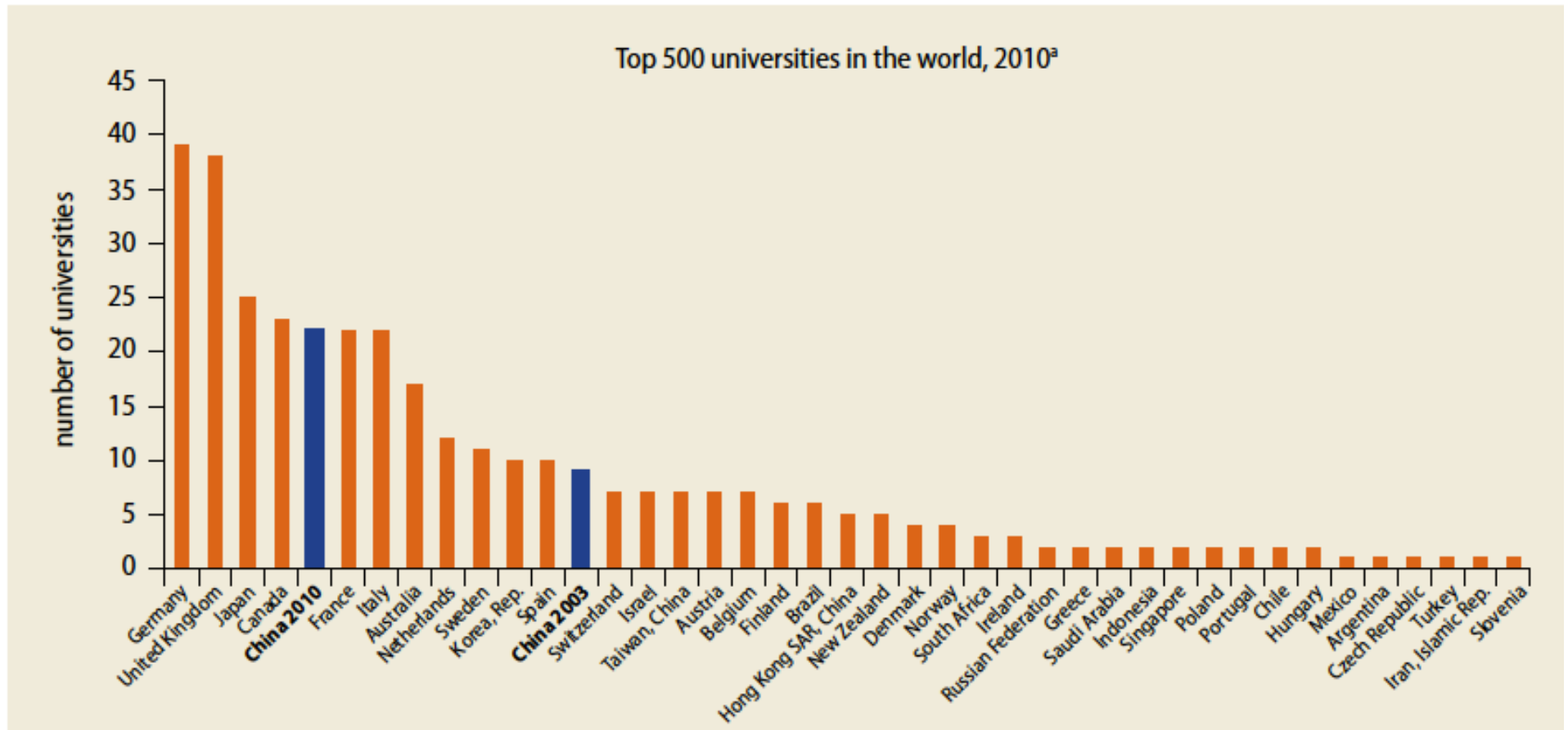
Population Dynamics of China



Quantity but ...

- The fall will be offset by the presence of surplus labor
 - The Lewis “turning point” will be ... 2020?
- But effective labor can continue to expand if quality rises
- So ... education

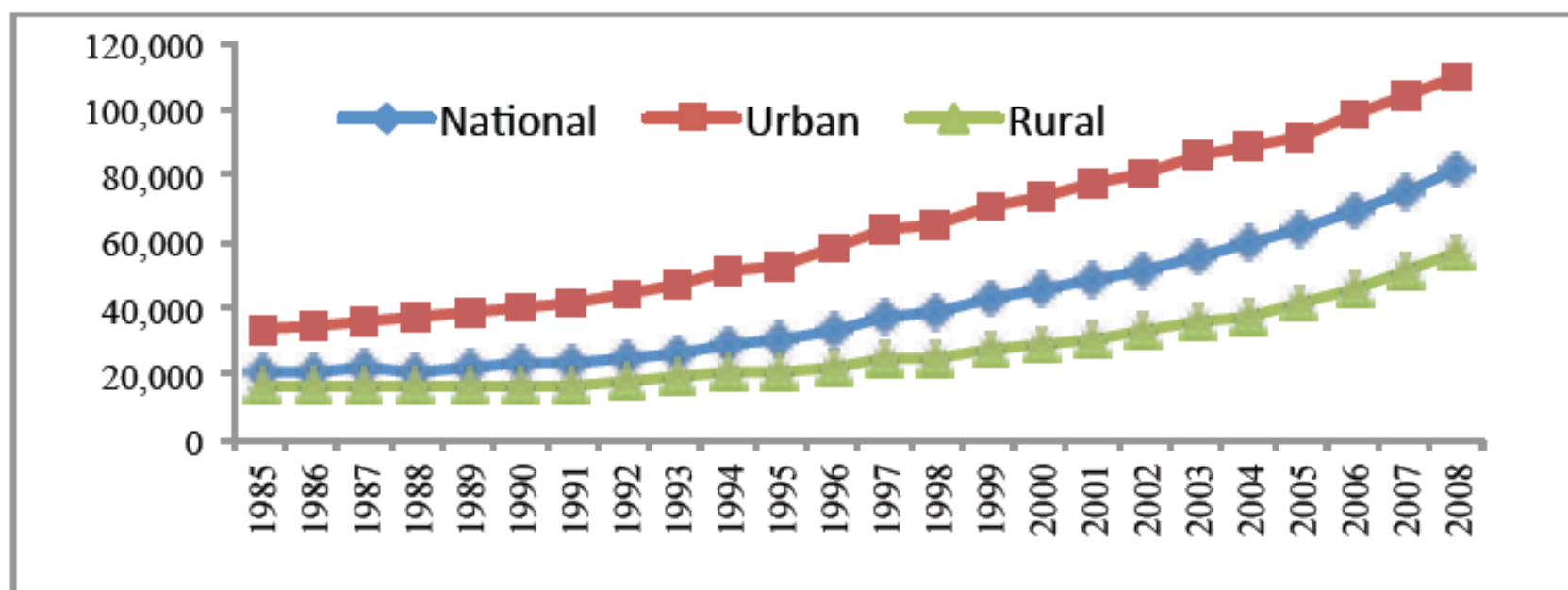
FIGURE 5 The quality of China's tertiary education system is improving rapidly



Source: Shanghai Jiao Tong University 2010.

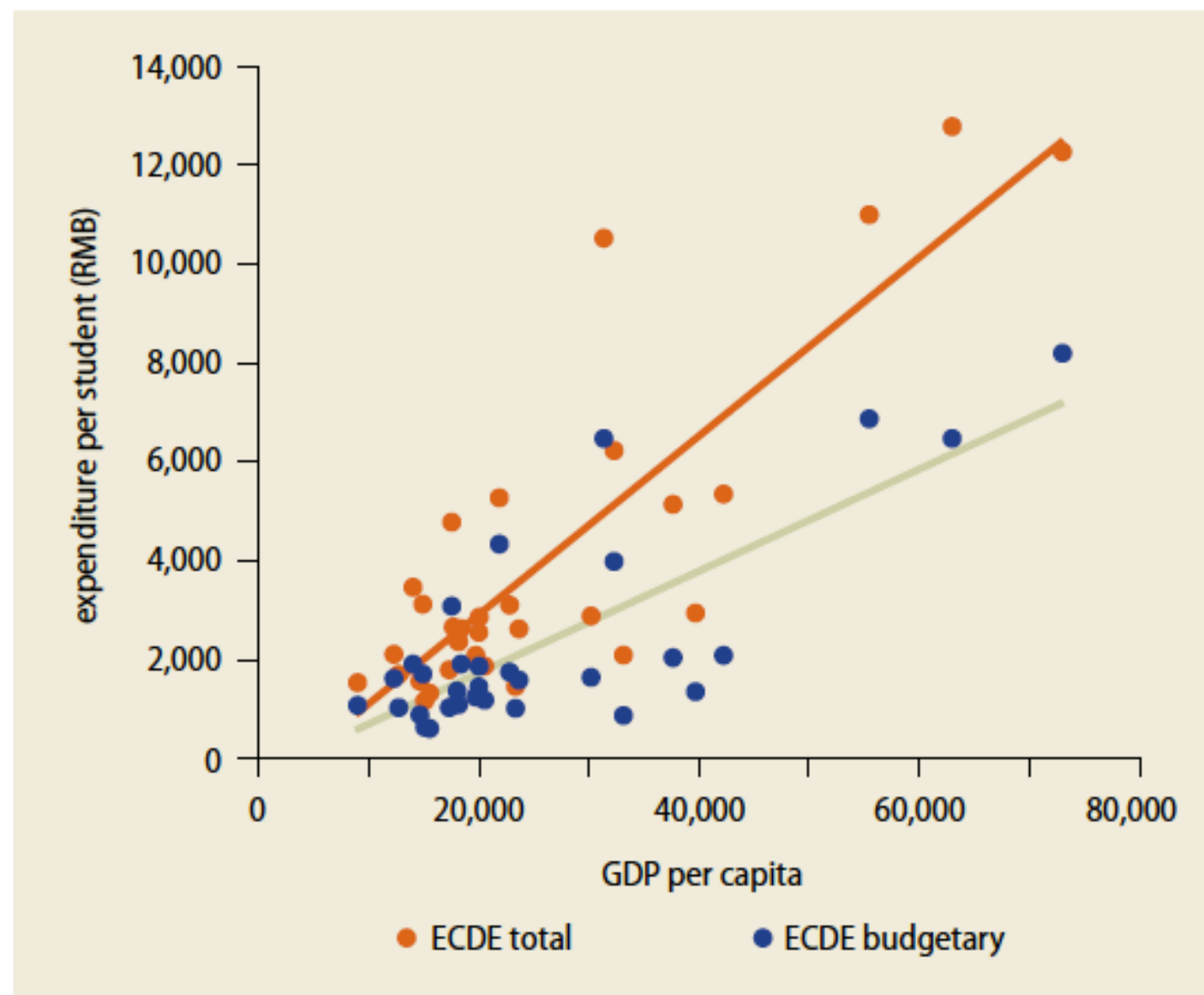
a. The United States, which has 154 top universities, is not shown.

FIGURE 1.1 Per capita human capital: national, urban and rural, 1985–2008 (1985 RMB)



Source: China Centre for Human Capital and Labor Market Research (2010).

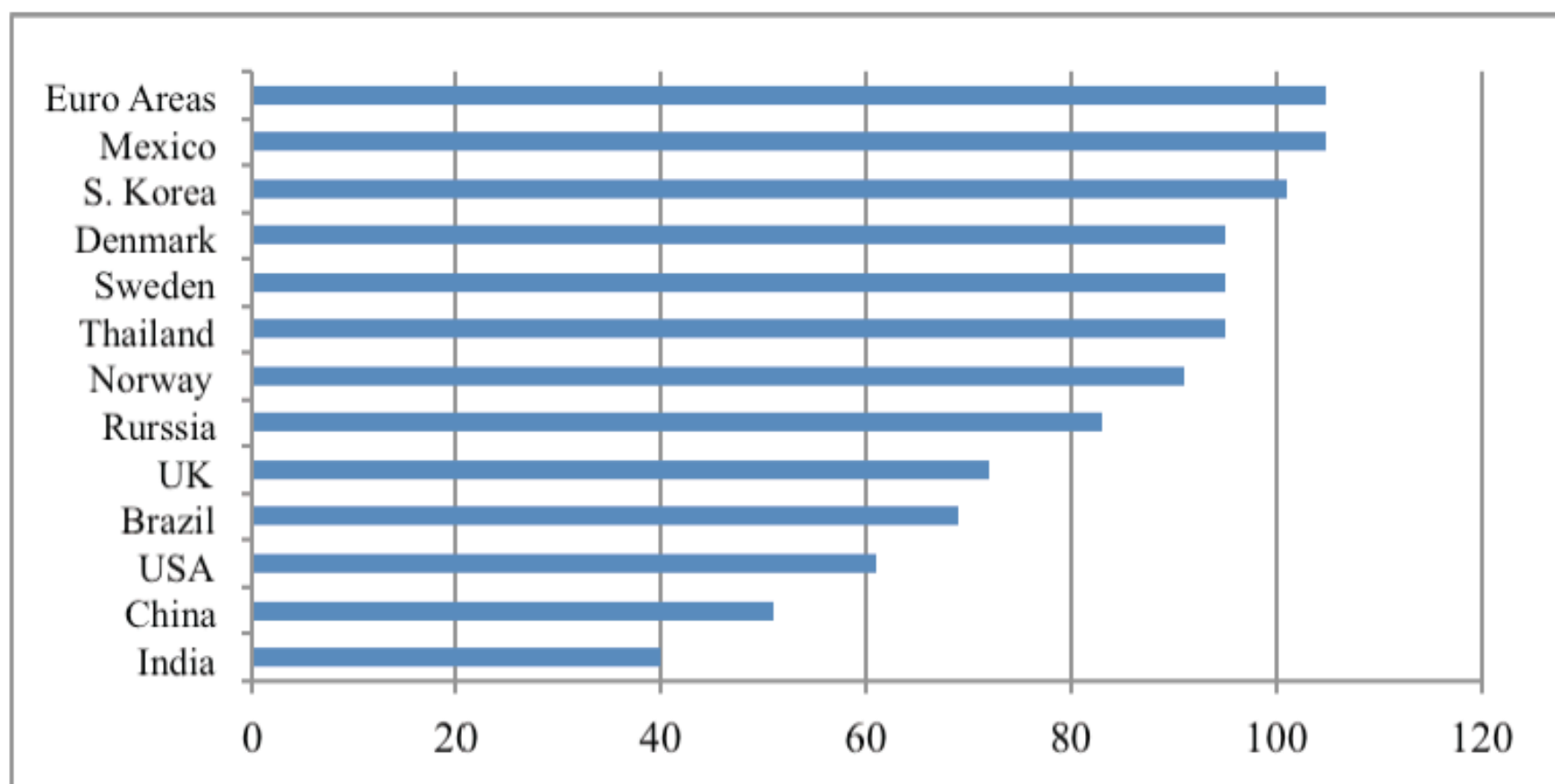
FIGURE 6 Unequal spending on early childhood development across Chinese provinces



Source: World Bank staff estimates based on data from Chinese authorities.

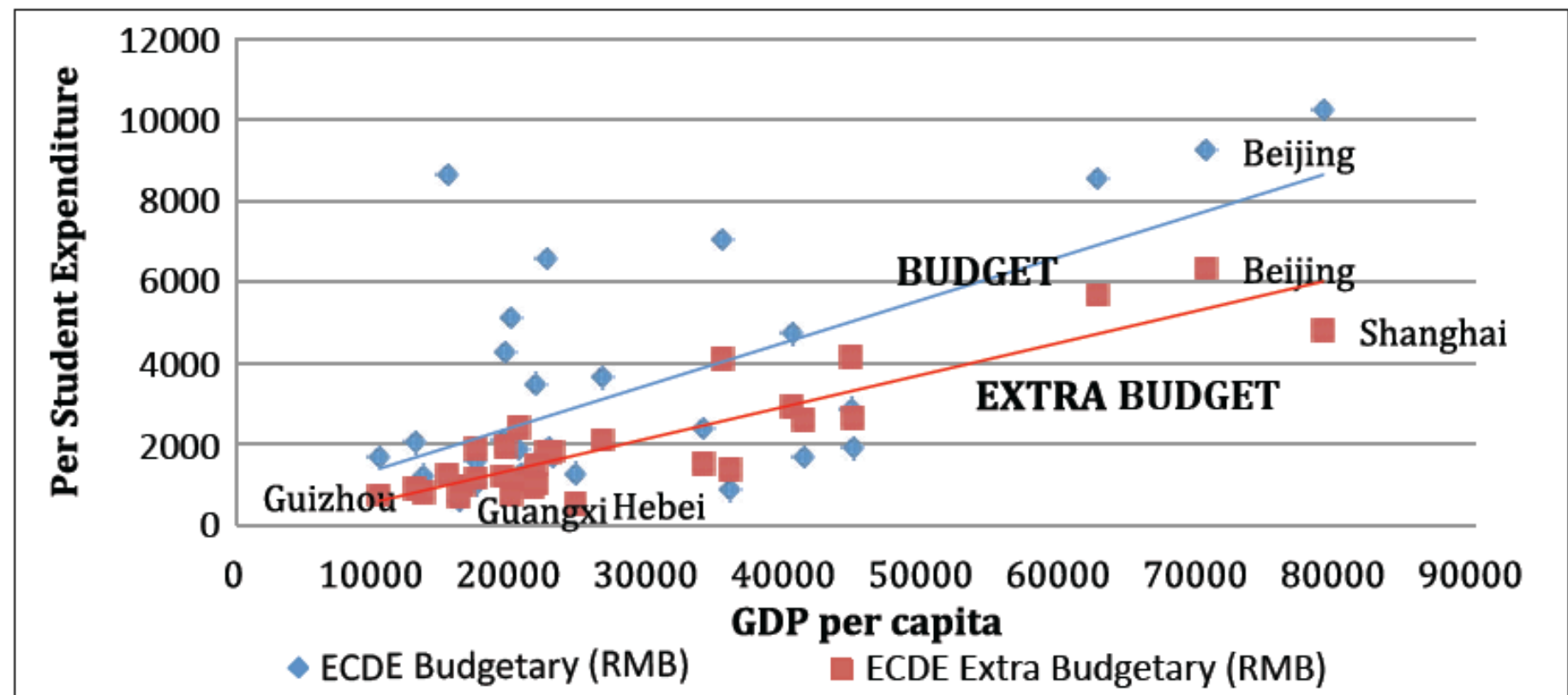
Note: ECDE = Early Childhood Development and Education.

FIGURE 3.4 International comparison of coverage of nursery/kindergarten for 2–5/6 year olds (%)



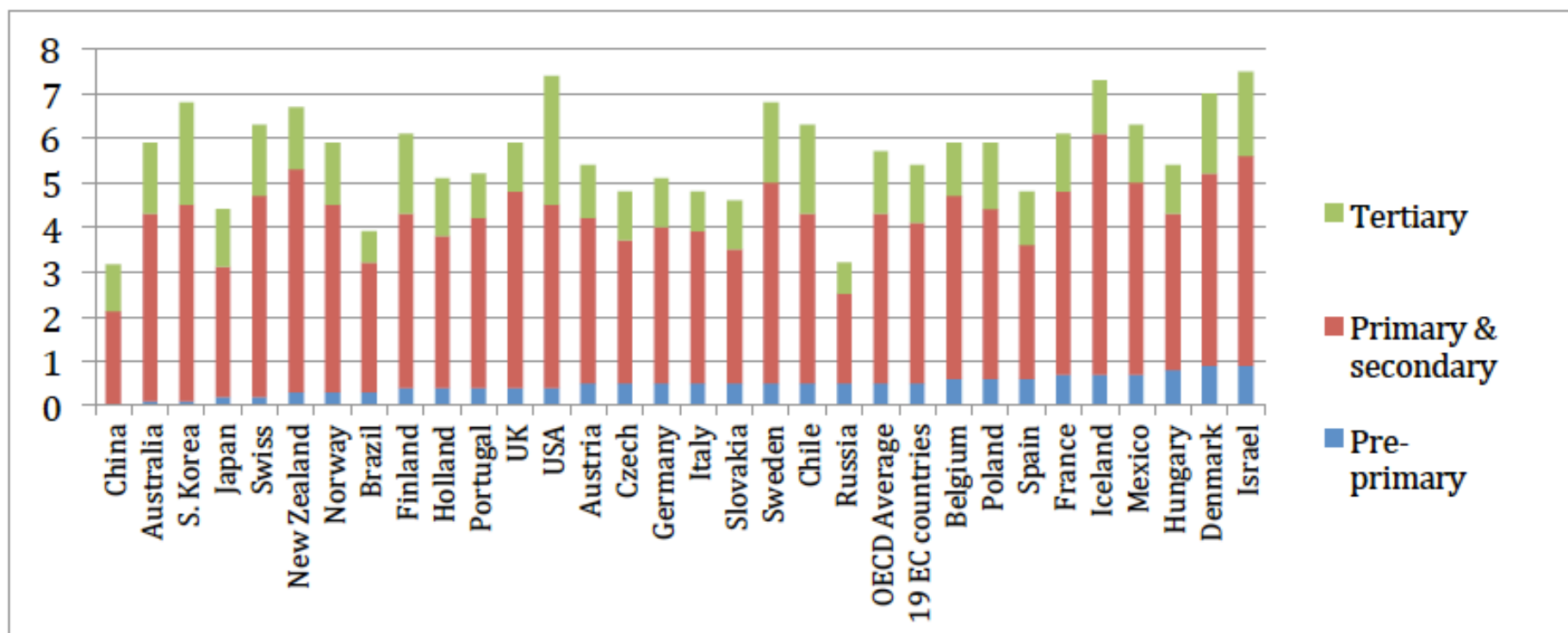
Source: OECD (2008), and China 2009 in World Bank (2011).

FIGURE 3.7 Budgetary and total spending per student on ECDE by province, 2009 Unit: RMB



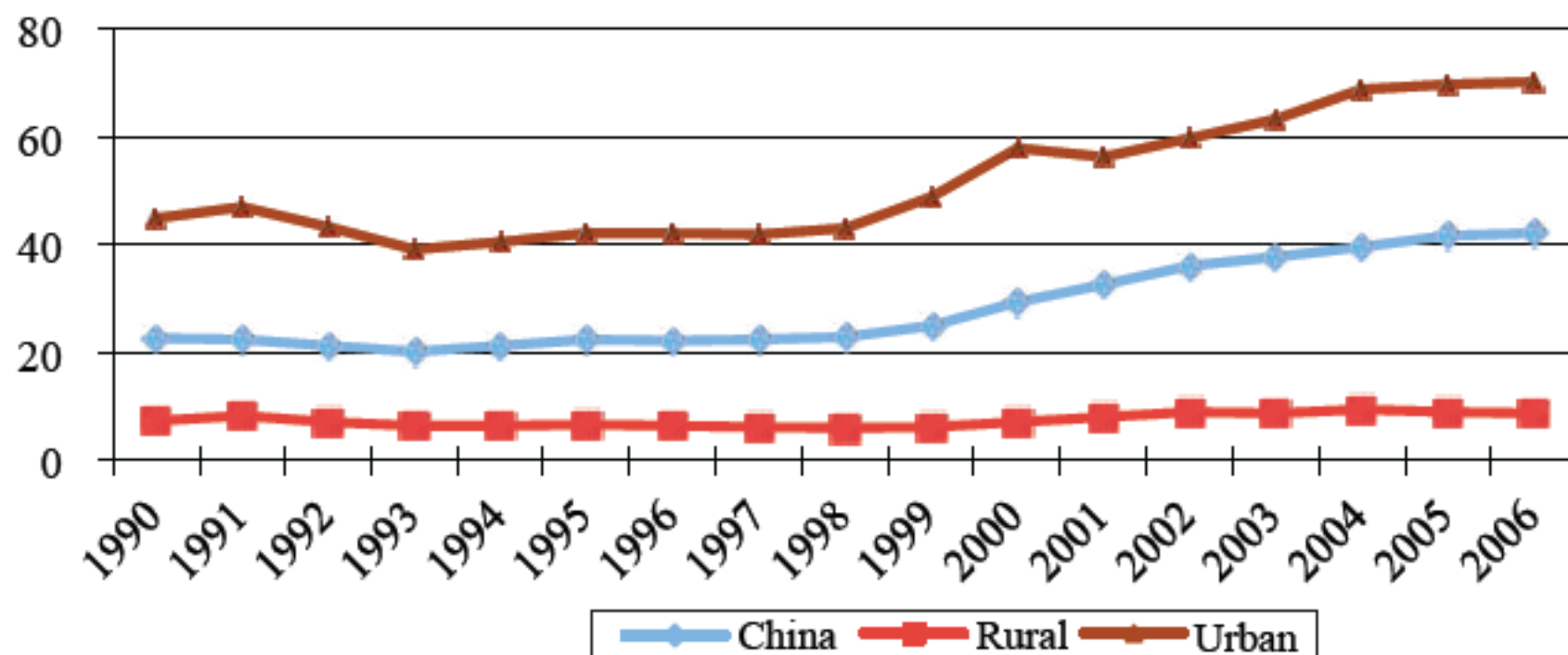
Source: MOE (2010).

FIGURE 3.8 Comparison of public expenditure on education by level, 2008 (% GDP)



Source: World Bank (2010).

FIGURE 3.11 Official promotion rates from junior high school to academic high school, urban/rural, 1990–2006



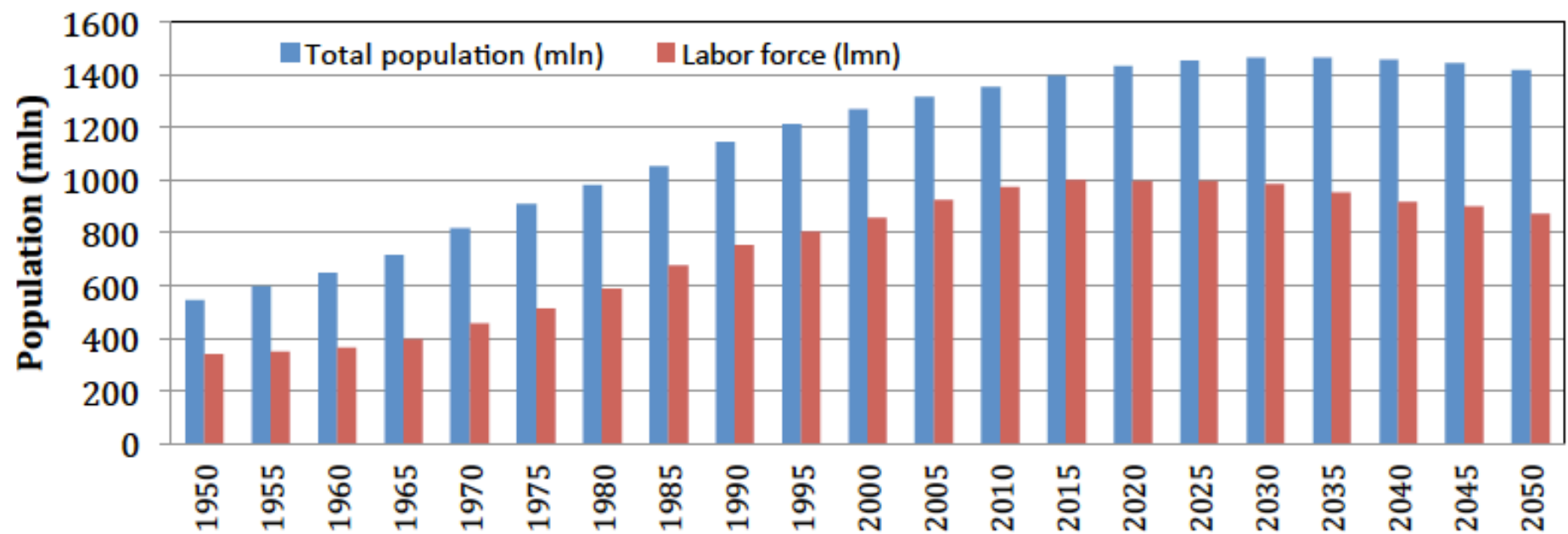
Source: Rozelle et al, calculated from China Statistical Yearbook (various years).

Note: Rural promotion rate includes only rural child promoting in rural areas.

Still...

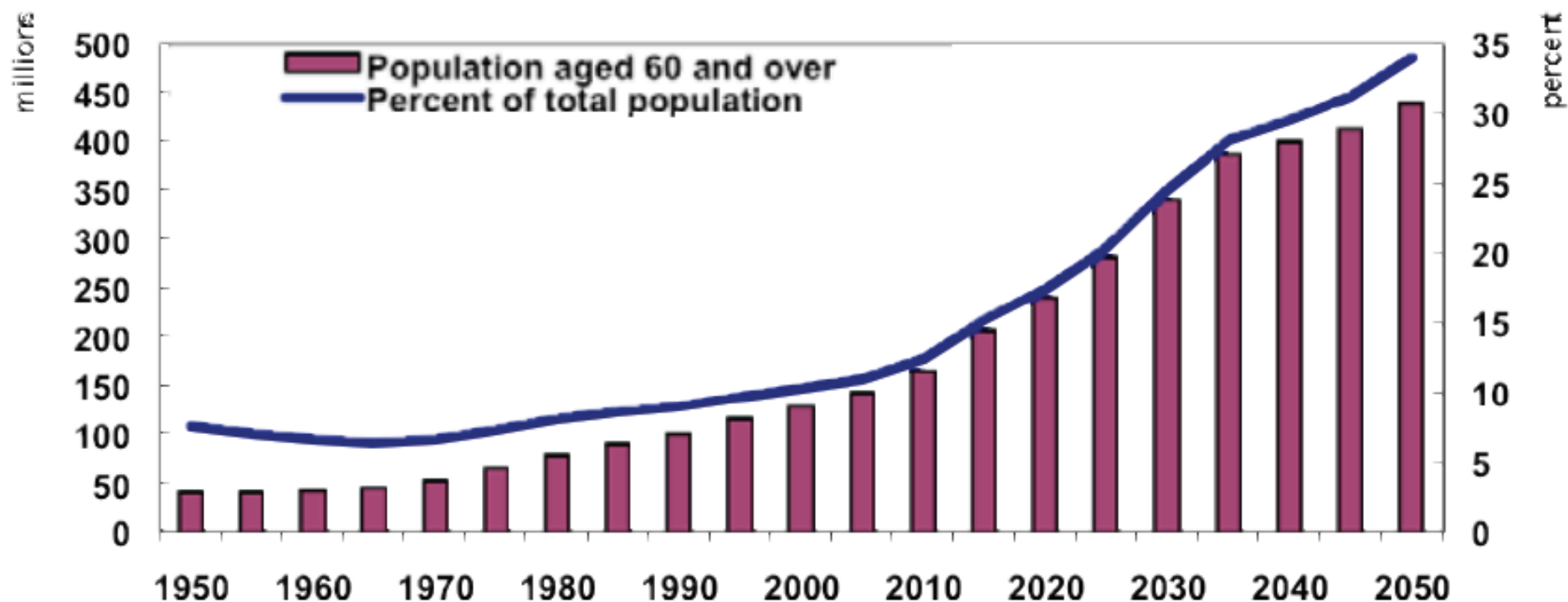
- the ratio of older chinese will be very high
- and the labor force (or rather the working age population) is **ALREADY** declining
- So ... are old-age dependents more expensive than young dependents?
 - empirically, not until their health begins to fail
 - thereafter, it depends on structure of healthcare system

FIGURE 1.5 Total population and labor force, 1980–2050

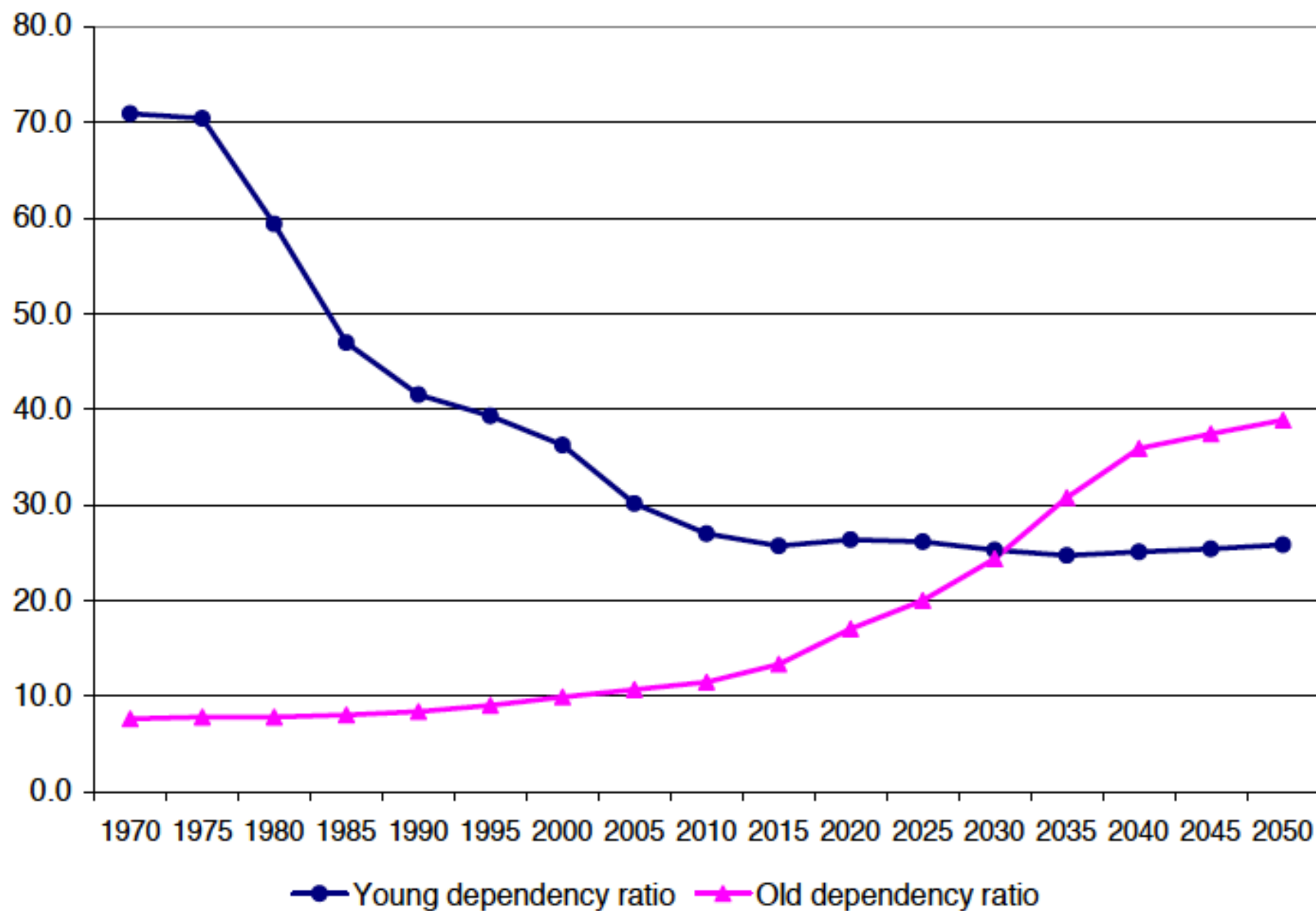


Source: United Nations Secretariat, World Population Prospects: 2010 Revision.

FIGURE 1.4 Number and share of population 60 and over, 1950–2050



Source: For 1953, 1964, 1982, 1985, 1990, 1993, 2000, 2002 and 2010, National Bureau of Statistics, and for 2020 to 2050 UN 2010 Revision.



Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2008 Revision, <http://esa.un.org/unpp>.

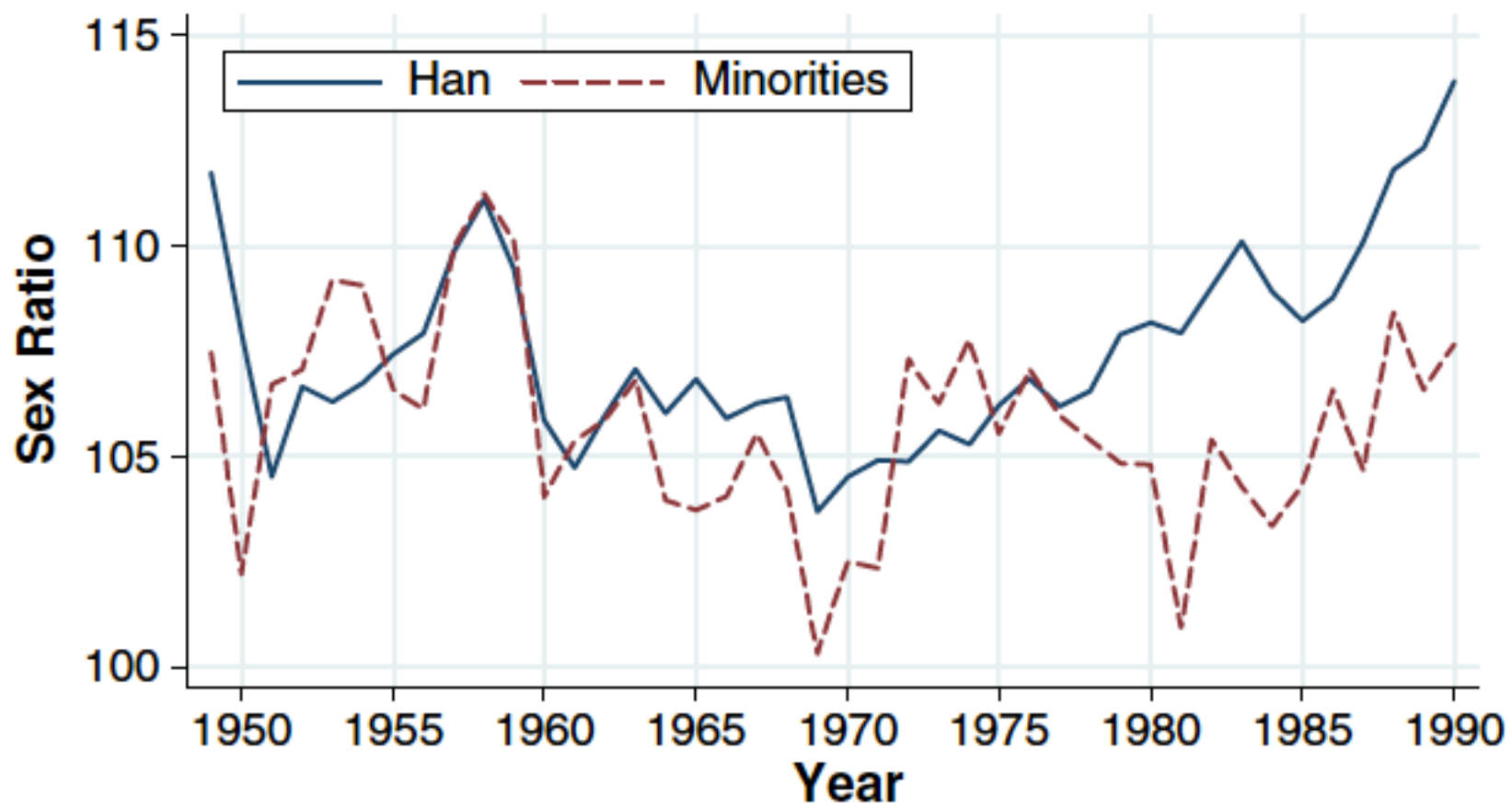
Side effects of one-child policy

- spoiled children
 - “Little emperors”
- son preference
 - virilocal (patrilocal) marriage
 - patrilocal in that join husbands family
 - virilocal if women leave natal village
 - so having girls doesn’t pay
 - nor does investing in them

TABLE 3.1 Prevalence of Overweight and Obesity of Students 7–18 Years Old in Urban and Rural China, 2005 (%)

Age	Urban Areas				Rural Areas			
	Male		Female		Male		Female	
	Overweight	Obesity	Overweight	Obesity	Overweight	Obesity	Overweight	Obesity
7-9	12.6	10.6	8.0	5.3	6.3	4.4	4.8	2.8
10-12	16.1	8.3	7.1	4.4	7.7	3.2	3.6	2.1
13-15	12.3	5.3	7.5	3.0	5.4	2.1	4.8	1.3
16-18	11.3	4.3	7.2	1.7	5.4	1.5	5.5	0.6
Average	13.1	7.1	7.4	3.6	6.2	2.8	4.7	1.7

Source: Ji (2008).



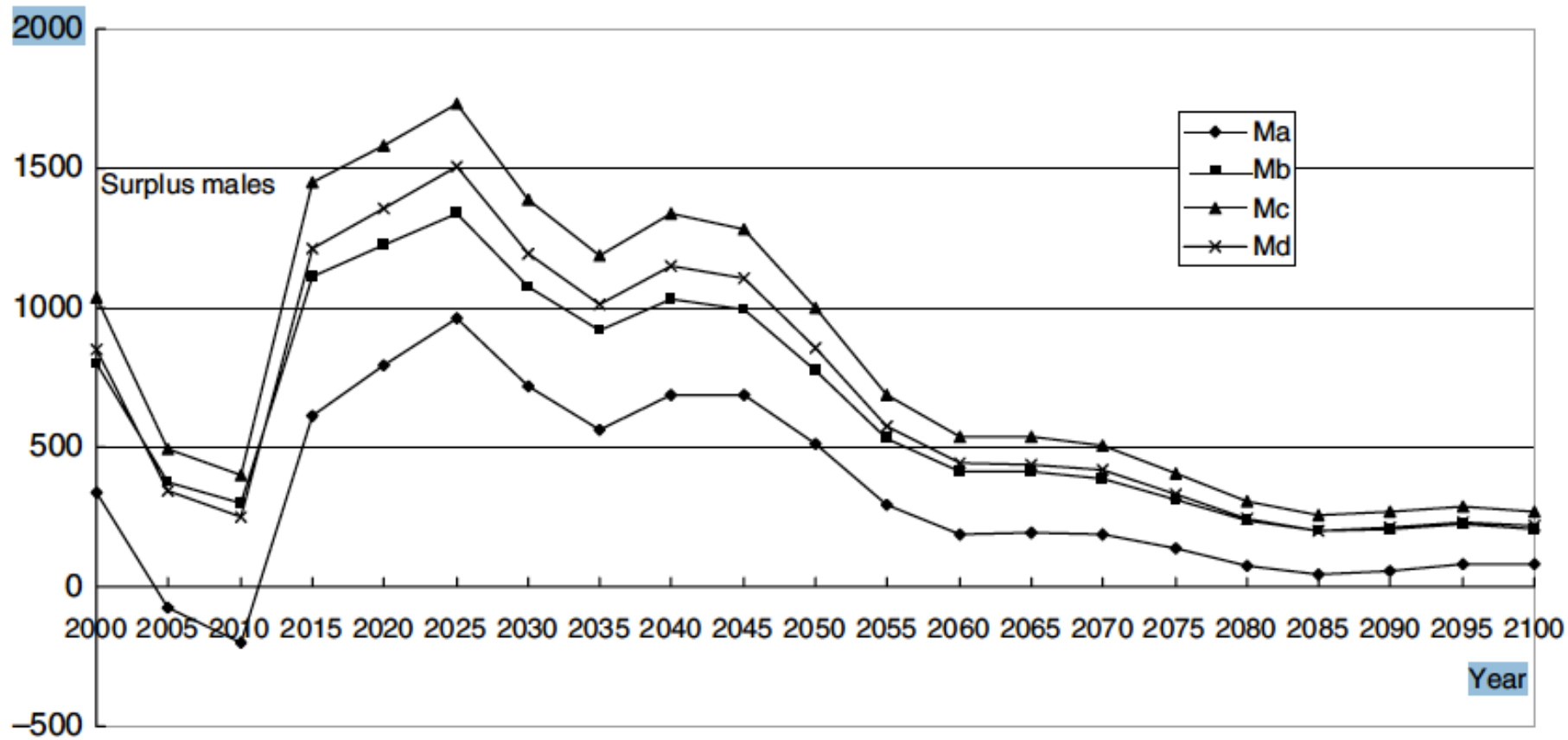
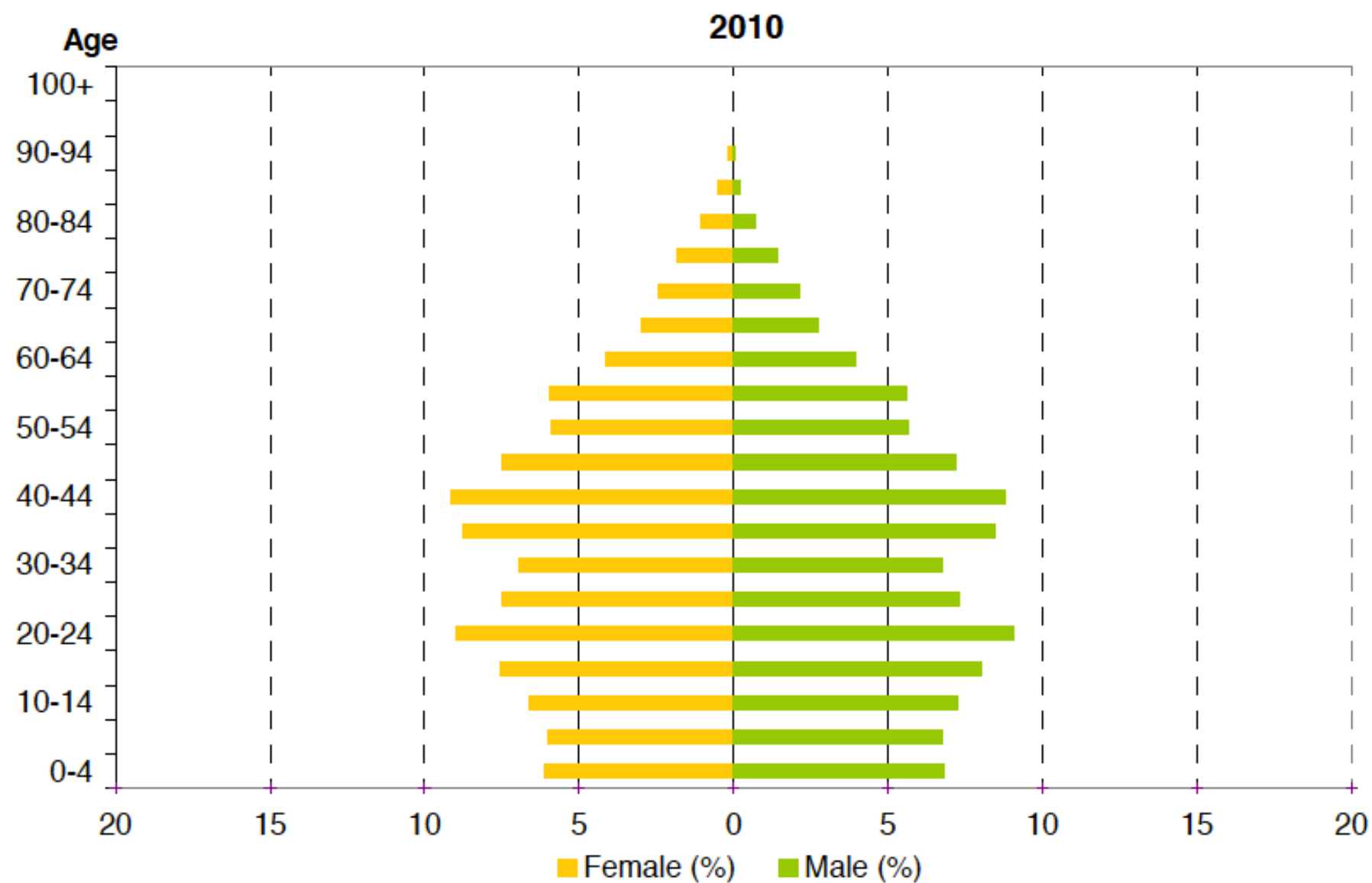


FIGURE 3

Numbers of surplus males in Scenario 1 (in thousands).

A New Society

- The Dutch Republic had a surplus of women
 - as have various post-war societies across history
- China will be the first with surplus men
 - a future crime wave?
- Education of girls today reflects very little gender bias
 - but that's after the fact
 - will sex-selective abortions follow suit??





A society without youth?

- Surprised that the estimates don't show an inverted pyramid
- Rural areas already well along path to a society of few children
 - exception: villages of grandparents and elementary school children already visible

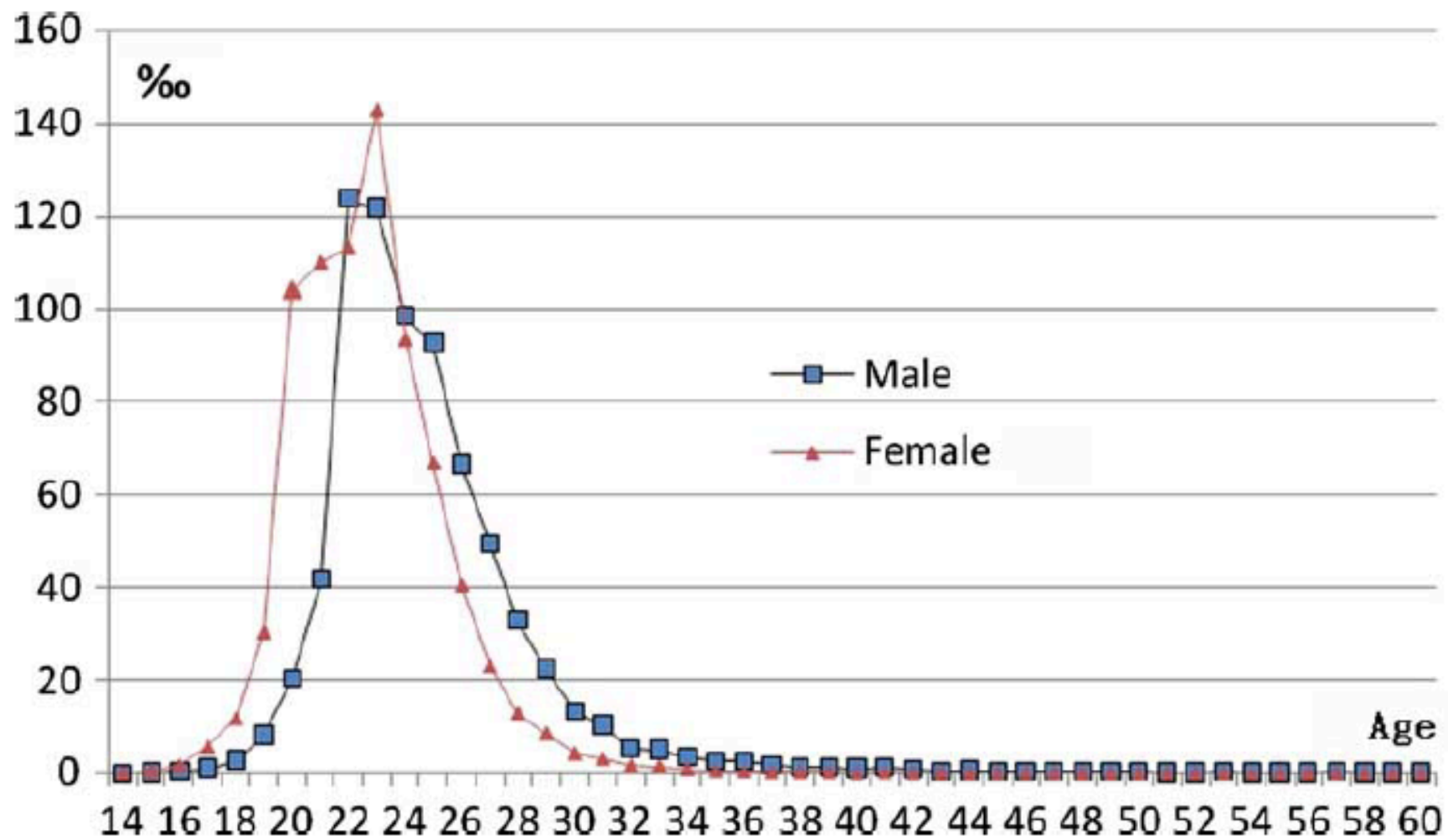


FIGURE 1

First marriage frequencies in 2000.

Not Exceptional

- This fertility shift is not unique to China
 - the rest of East Asia has even lower fertility
 - the rapidity of aging however is a function of the rapidity of fertility decline
 - here China is a little faster

Figure 1. Total fertility rate (TFR) by human development index (HDI) in selected Asian countries

