Growth Prospects and Challenges in the Global Economy: Building Blocks Of Sustainable Economic Growth Strategies

ISEO

June 16, 2014

Michael Spence

Bad Ideas
Defective or Unsustainable Growth Models with Built In Decelerators

- Import substitution
- Excess economic diversification
- Natural resources and the Dutch Disease
- Excess consumption (private of gov't or both)
  - Deficient investment
  - Usually excess debt
  - Excess reliance on domestic demand for growth and employment
  - USA, UK, Ireland, Italy, Spain, Greece, Portugal
- Excess investment
  - Low return trap
  - China
- Resource and environmental constraints on the size of the global economy
  - These issues are global and longer term

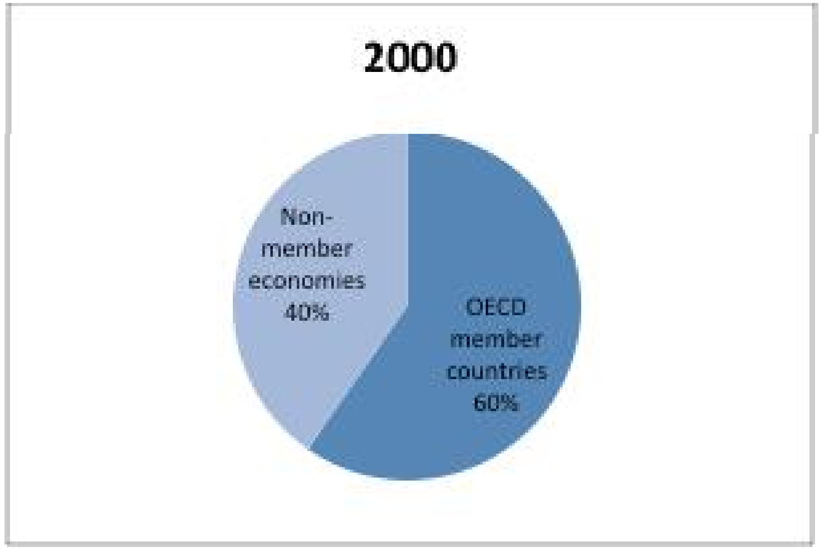
Why Do The Structural Elements of Growth Dynamics Matter?

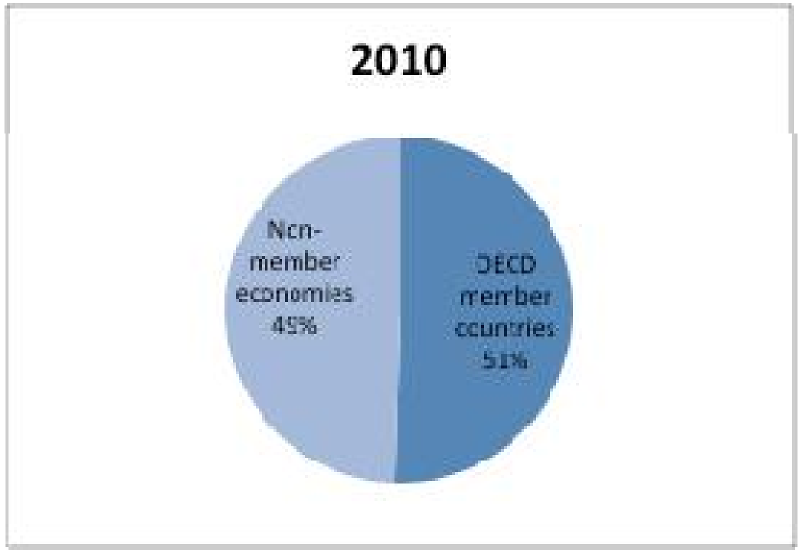
- The straight answer is that it virtually impossible to understand the growth dynamics in advanced and developing countries and the potential for defective growth patterns and recovery mechanisms without paying attention to differences between the tradable and non-tradable sectors in the factors that stimulate and constrain growth.

Brief Snapshot

- The US is growing at 1.5 -2.0% real – it is a partial recovery lead by the private sector and structural shifts
- Europe is in for an extended period of low growth (and negative in the south) because the growth engines are blocked
- China will transition to a new growth pattern and sustain 7% plus growth
- The major emerging economies having hit by slow AC growth and unconventional monetary policy externalities, will go back to sustained high growth patterns

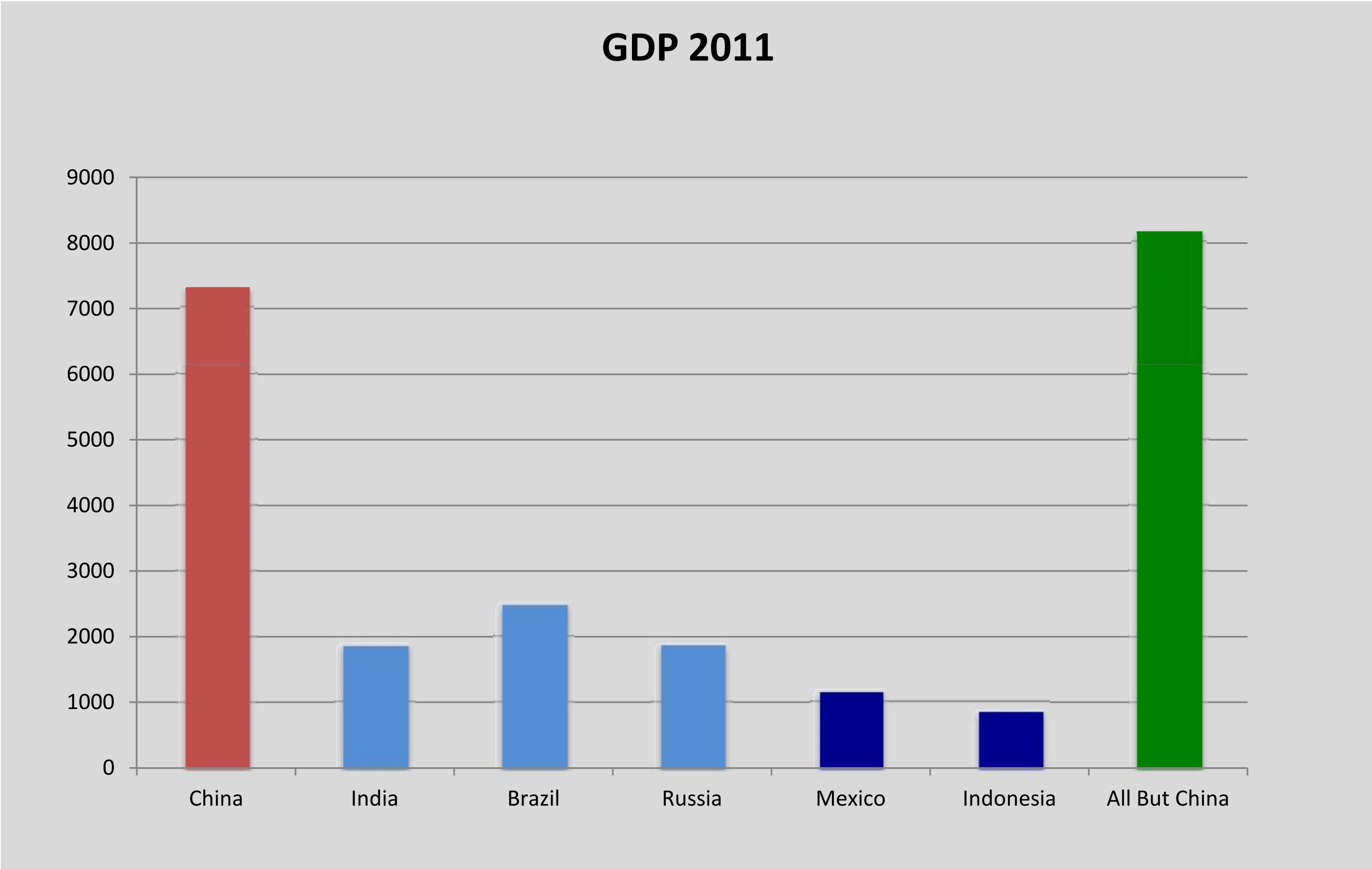
DEVELOPING COUNTRY SHARE OF GLOBAL OUTPUT



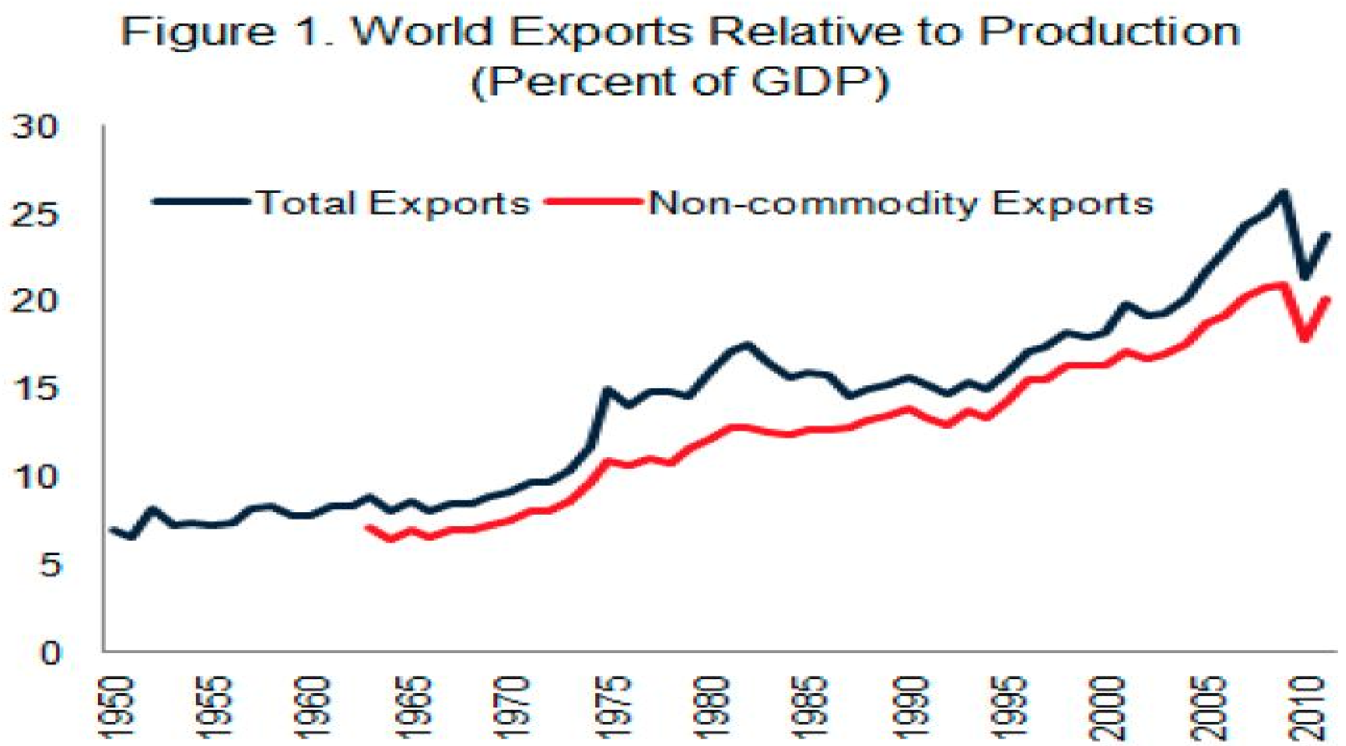


- OECD

Chinese Economy is Half the Size of the USA or EU
It is also Almost as Big as the Other BRICS Plus Mexico and Indonesia Combined



The Share of the Tradable Part of the Global Economy is Growing

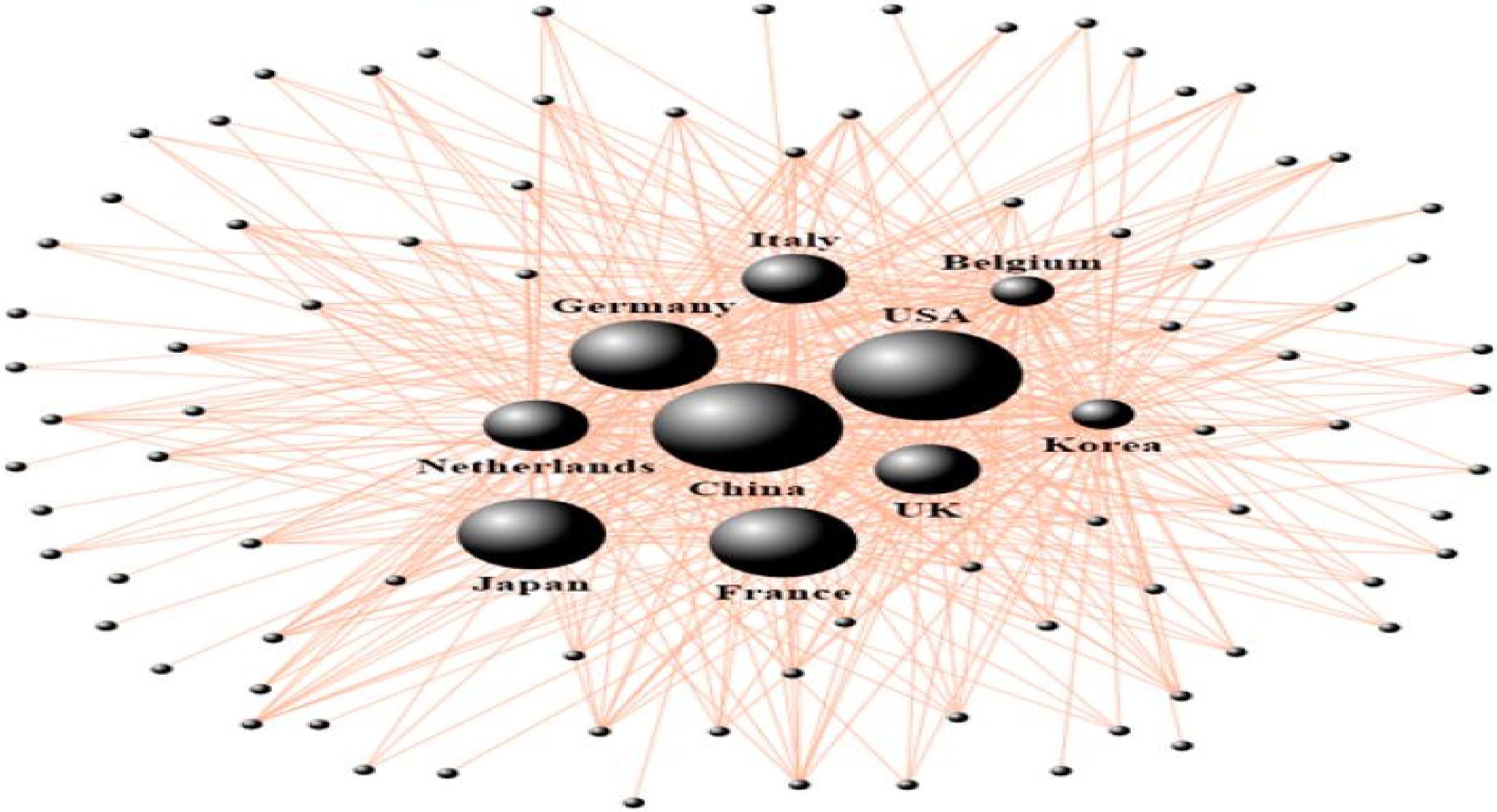


Source: DOTS, WEO and UN Comtrade. The ratio for 1949-61 is calcuated based on 15 major exporters.

Changing Patterns of Global Trade
Strategy, Policy and Review Department, IMF, June 2011

Multi-polar Network Structure
Rapidly Evolving

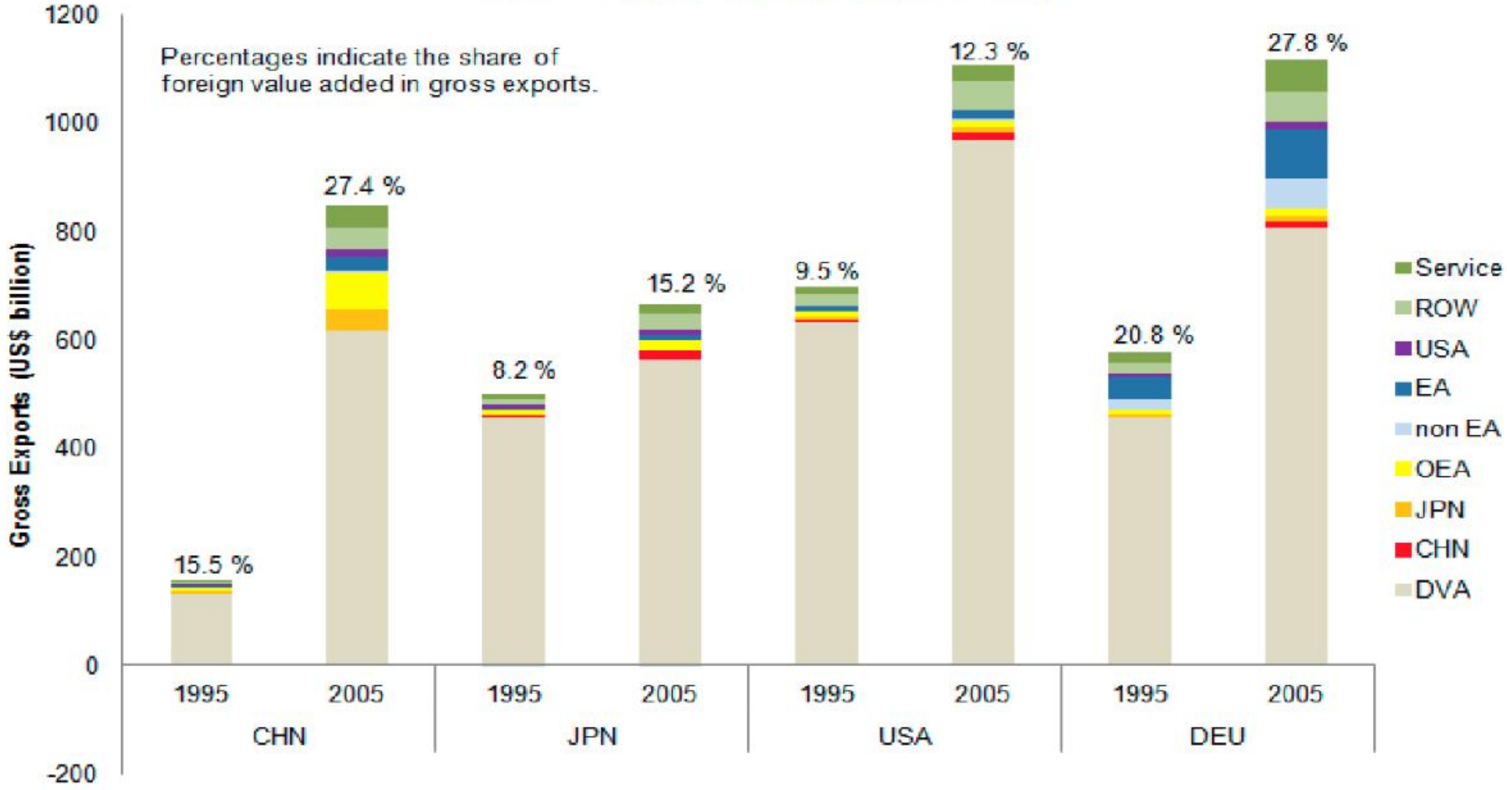
Box Figure 1.1. The Global Trade Network, 2009



Source: DOTS and Fund staff estimates.

Atomization of Global Supply Chains

Figure 9. Foreign Contents in Gross Exports



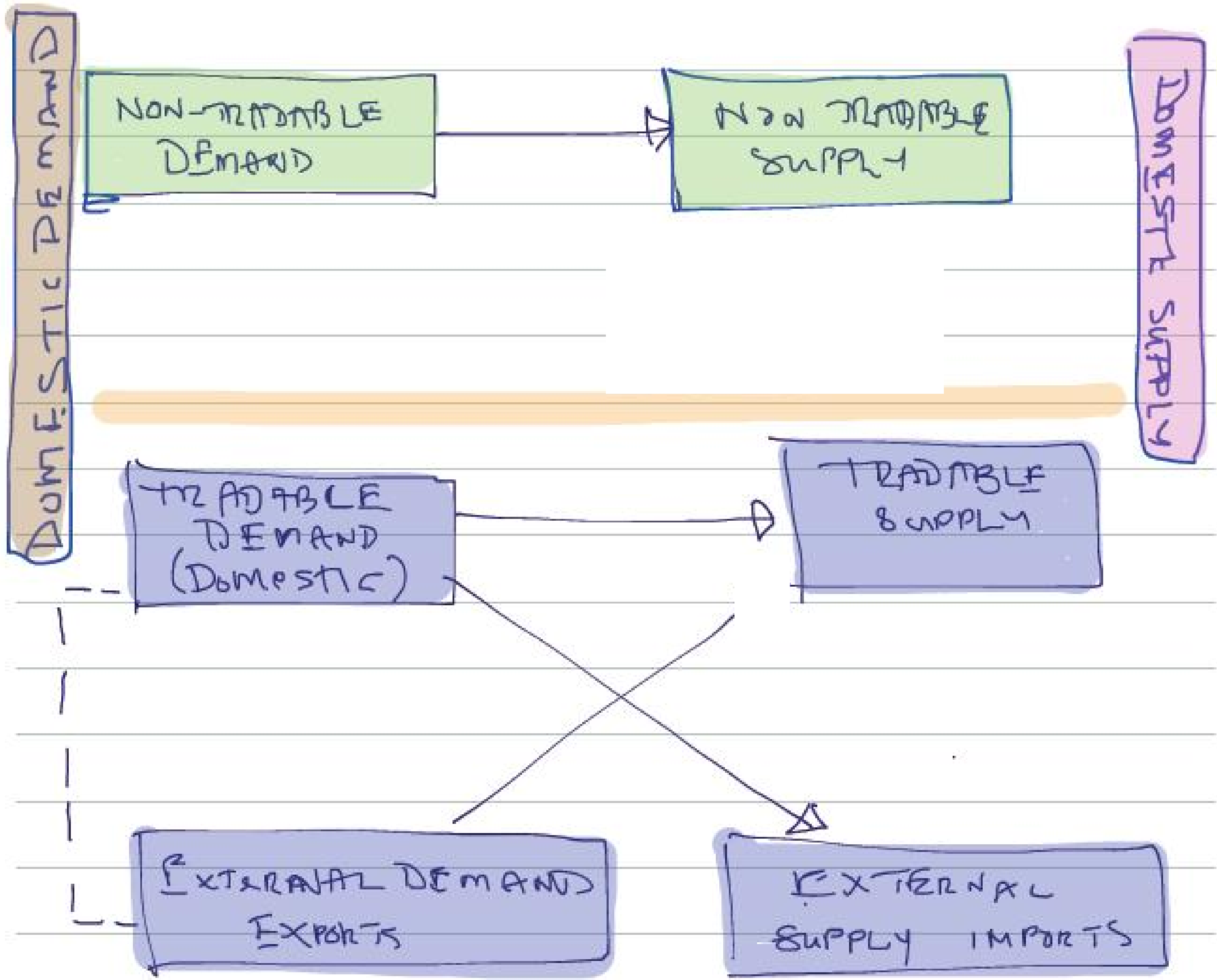
Source: Fund staff estimates using OECD Input-Output Tables, UN Comtrade and OECD STAN data.

GROWTH MODELS AND DYANMICS

- Long run determinants of growth - TFP
- Demand is largely missing
  - Except for the investment (=savings) element of the composition of aggregate demand matters
- But key elements of growth and structural dynamics have to do with demand
  - China middle income transition
  - US negative domestic aggregate demand shock
  - Southern Europe
  - At the global level: the degree of coordination in unwinding global imbalances and the question of an aggregate demand shortfall

The Argument

- In open economies, the level and composition of demand
  - Drive the supply side evolution of the economy
  - Are important in understanding defective growth patterns and the recoveries from them
  - Provide insights into the employment challenges of advanced economies
- The level can exceed or fall short of output
- The composition
  - Tradable and non-tradable
  - Government, consumption, private investment, public investment
- In many economies these get out of balance – giving rise to defective growth models
- Recovering involves more than restoring the level – it involves changing the composition
- This is much more complex than in a closed economy which is the implicit background of much growth theory



DOMESTIC DEMAND
NON-TRADABLE DEMAND
NON TRADABLE SUPPLY
DOMESTIC SUPPLY
TRADABLE DEMAND (DOMESTIC)
TRADABLE SUPPLY
EXTERNAL DEMAND EXPORTS
EXTERNAL SUPPLY IMPORTS

What is Stable and Where do the Structural Shifts Occur?

- Demand in composition is relatively stable across time and countries at a given income level
- Non-tradable supply is therefore also stable
- But the tradable supply side is highly variable across countries
  - Compare Sweden, Germany and the USA

- In the face of negative demand shocks and recoveries from them, the ability to expand the scope of the tradable sector and access external demand is crucial

- For developing economies, this will be “old hat” – huge external demand is a primary driver of growth in early stages because it relaxes the severe domestic demand constraint

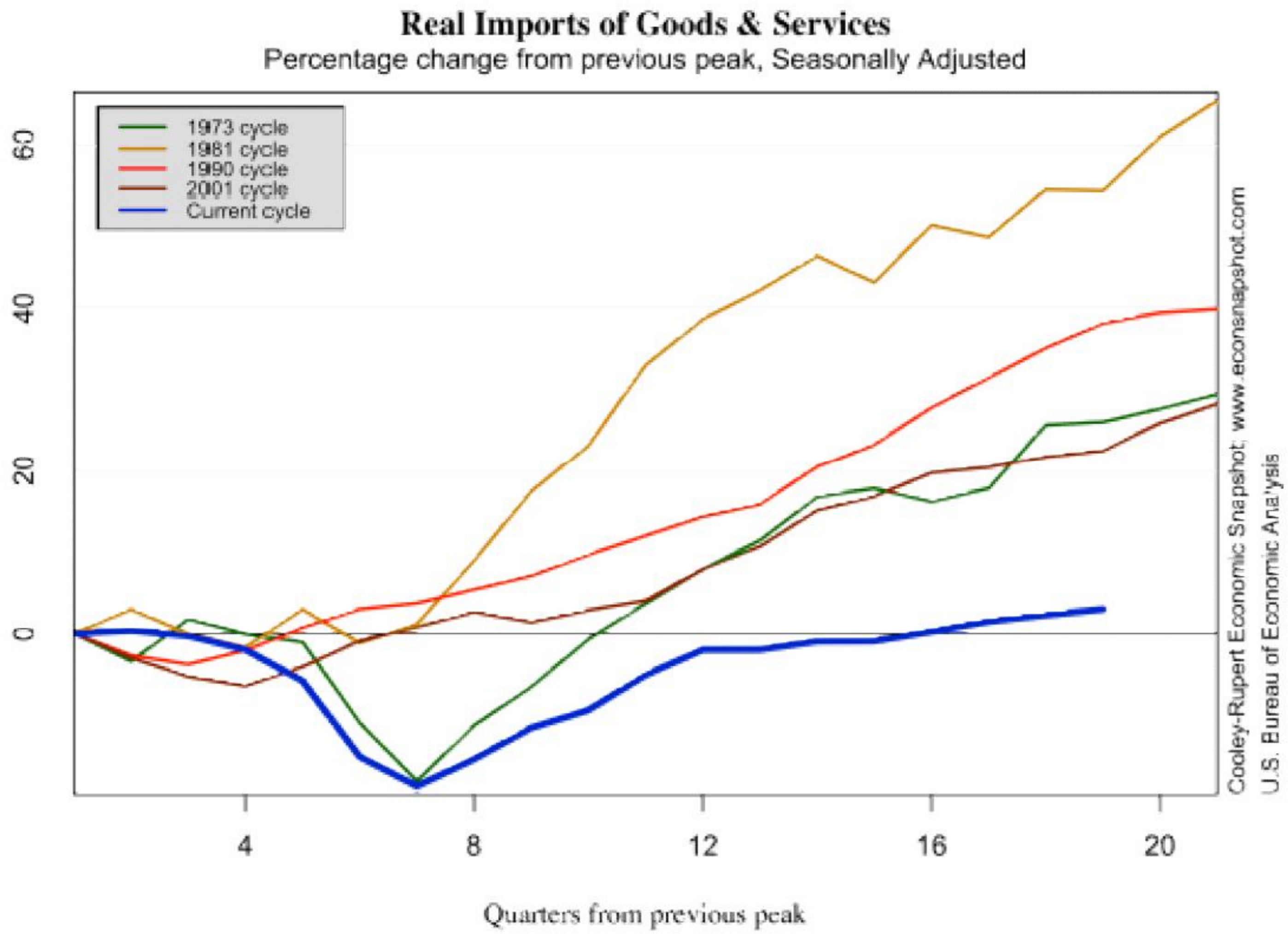
Demand Constraints in and Open Economy
Why is the Tradable/Non-tradable distinction Important

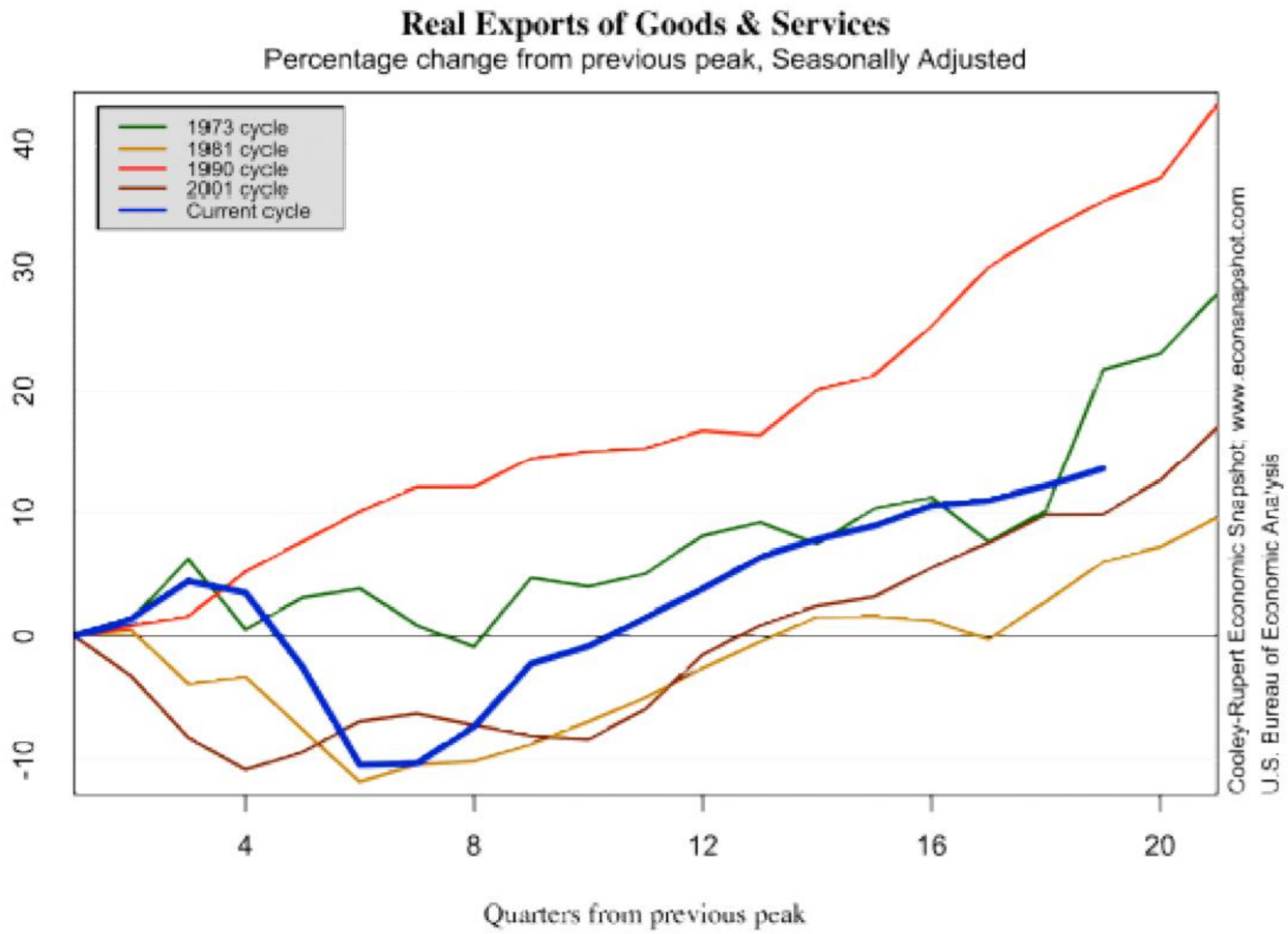
- Tradable versus non-tradable sectors – what are they?
- Roughly 2/3 of advanced economy is non-tradable
  - On the demand side – but therefore on the supply side as well unless current account surplus or deficit is large
- Non-tradable sector is driven in level and composition by domestic aggregate demand
- Tradable sector is quite different
  - The supply side has access to domestic and external demand
    - Productivity constrained rather than demand constrained
  - The demand side has access to domestic and external supply
    - Domestic aggregate demand can exceed GDP without inflation
    - i.e. you can run a persistent current account deficit provided external conditions facilitate it
- There are more potential defective growth patterns in open economies
  - And they can persist for some time before they break down

Excess Domestic Demand and a Demand Shock

- What happens?
- Prior to the shock the non-tradable sector becomes too big and reduces the scope and at the margin the competitiveness of the tradable sector
- After the shock growth slows or is negative
- And the economy is structurally out of balance:
  - To recover you may need some restoration of domestic demand (say via deleveraging and balance sheet repair)
  - But you also need a shift toward the tradable sector on the supply side, that is toward external demand
  - In a relative flexible dynamic economy, that is what happens
    - Nominal wages and incomes stop growing and real wages decline with the rate of inflation
    - Labor and capital flow toward the tradable side which expands in share, scope and growth
  - Having your own exchange rate helps

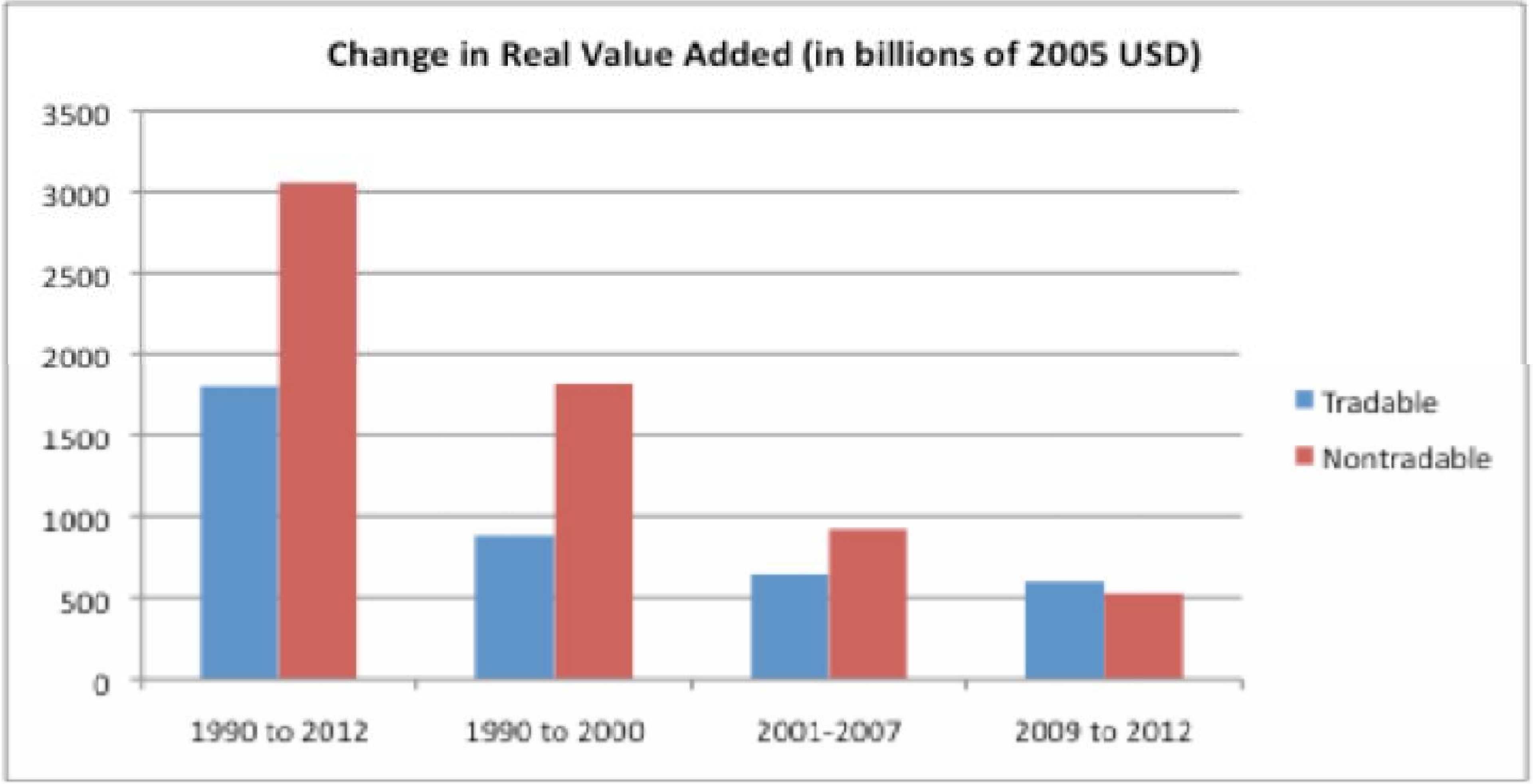
You Can See Some These Patterns Clearly in the US Case


Real Imports of Goods & Services
Percentage change from previous peak, Seasonally Adjusted
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cycle
0
20
40
60
4
8
12
16
20
Quarters from previous peak
Cooley-Rupert Economic Snapshot; www.econsnapshot.com
U.S. Bureau of Economic Analysis

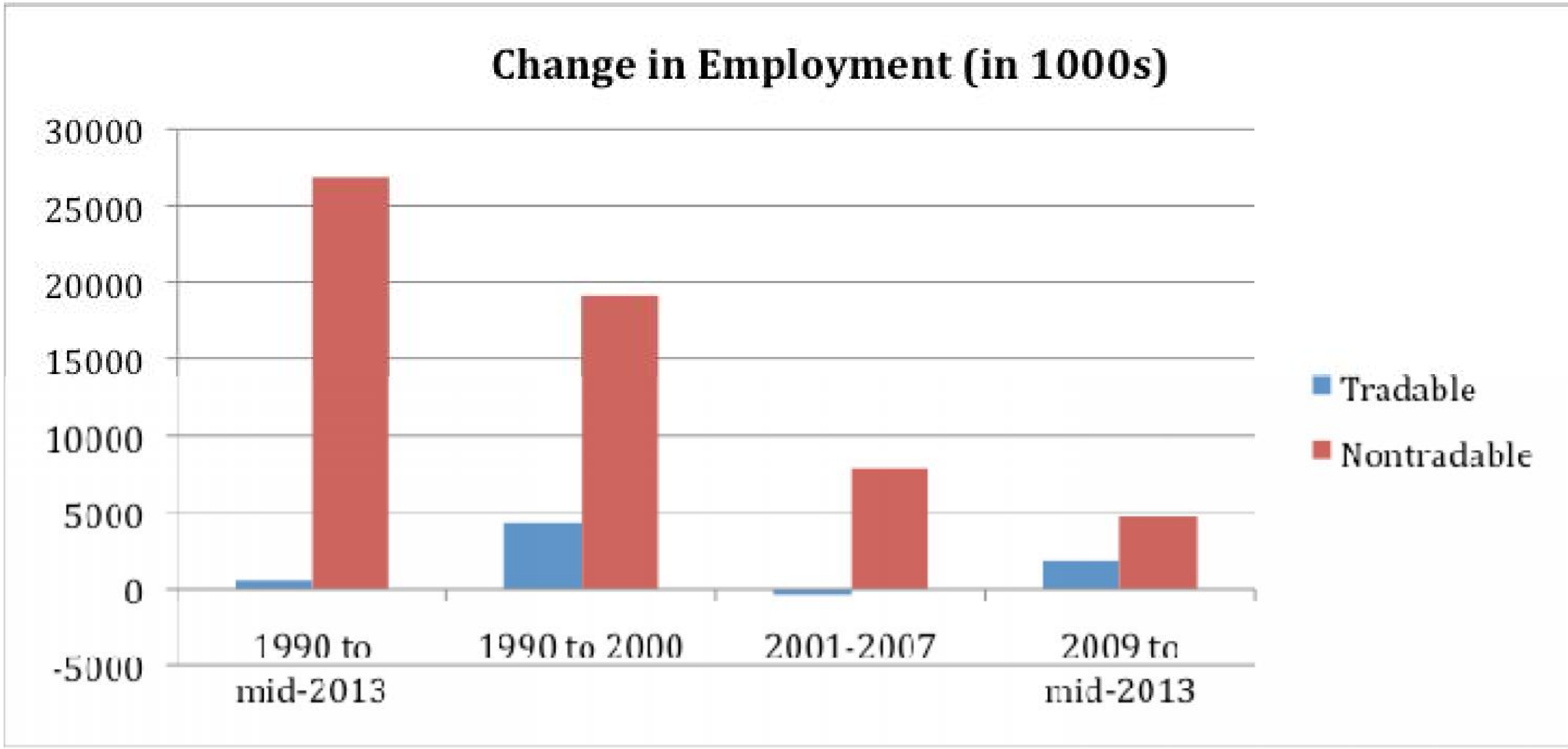


Real Exports of Goods & Services
Percentage change from previous peak, Seasonally Adjusted
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cycle
40
30
20
10
0
-10
4
8
12
16
20
Quarters from previous peak
Cooley-Rupert Economic Snapshot; www.econsnapshot.com
U.S. Bureau of Economic Analysis

US Growth

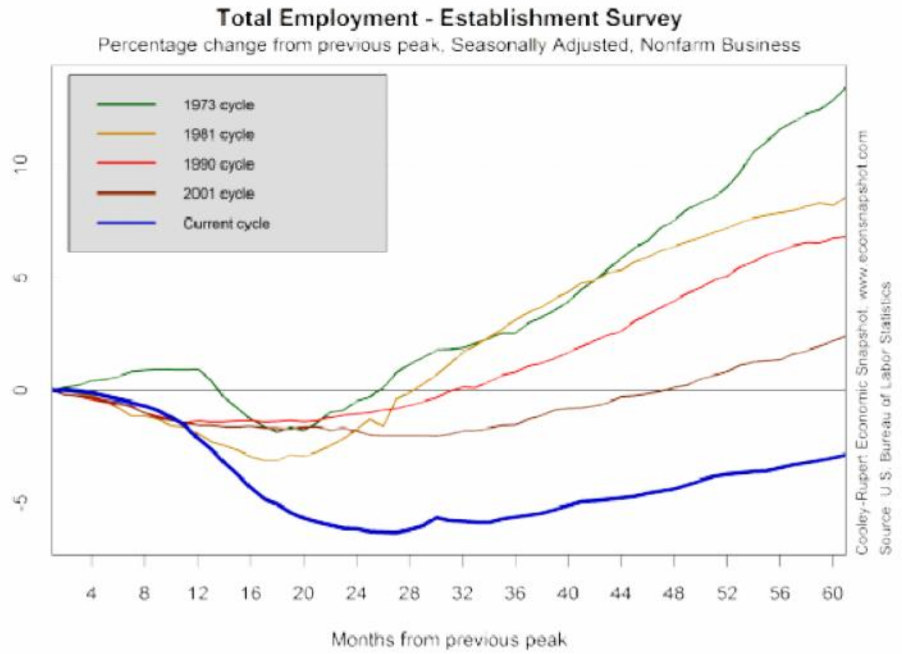

Change in Real Value Added (in billions of 2005 USD)
3500
3000
2500
2000
1500
1000
500
0
1990 to 2012
1990 to 2000
2001-2007
2009 to 2012
Tradable
Nontradable

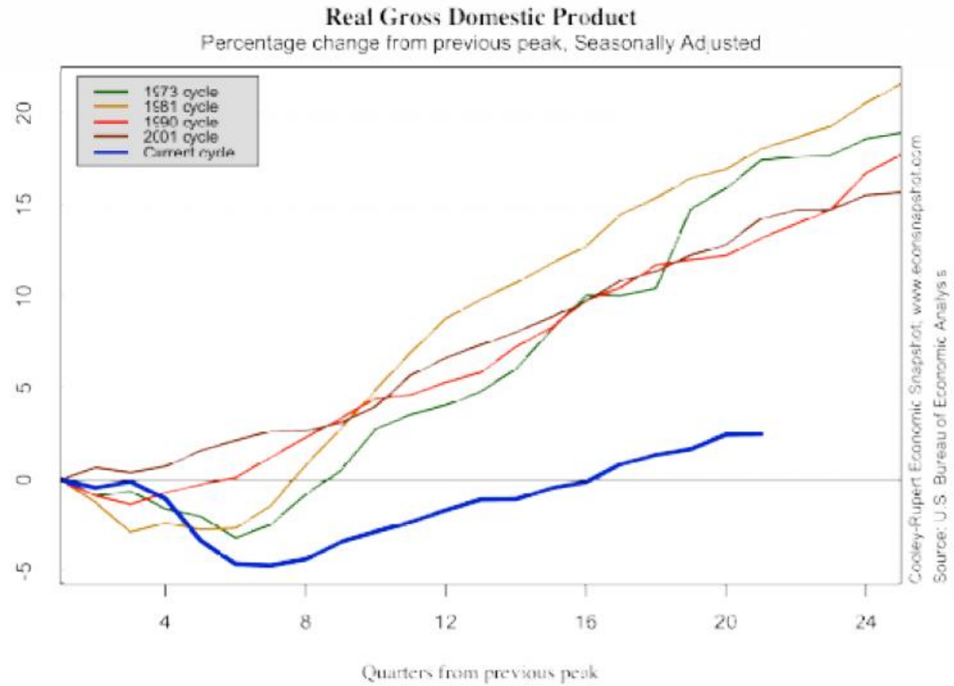
US Employment

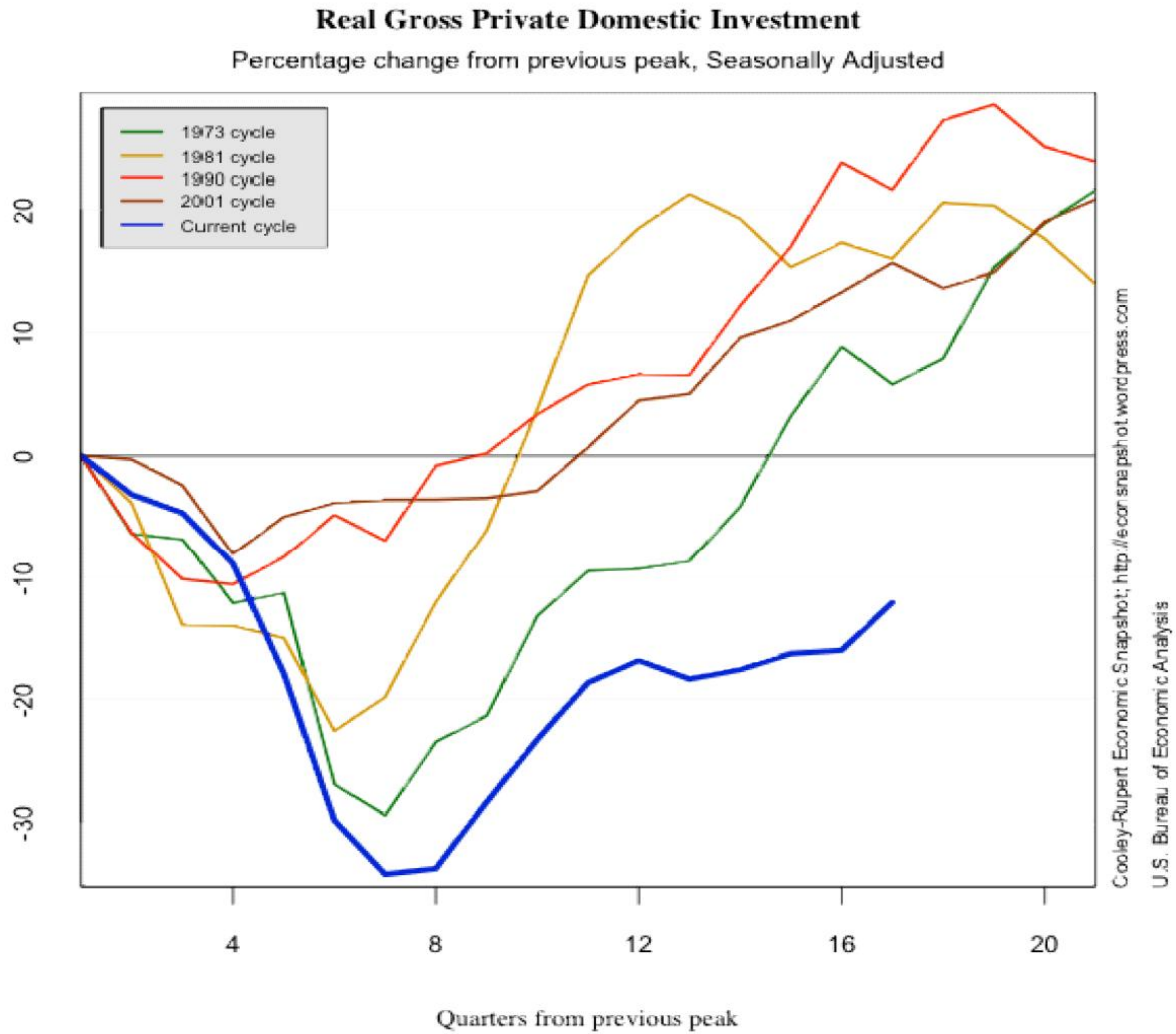


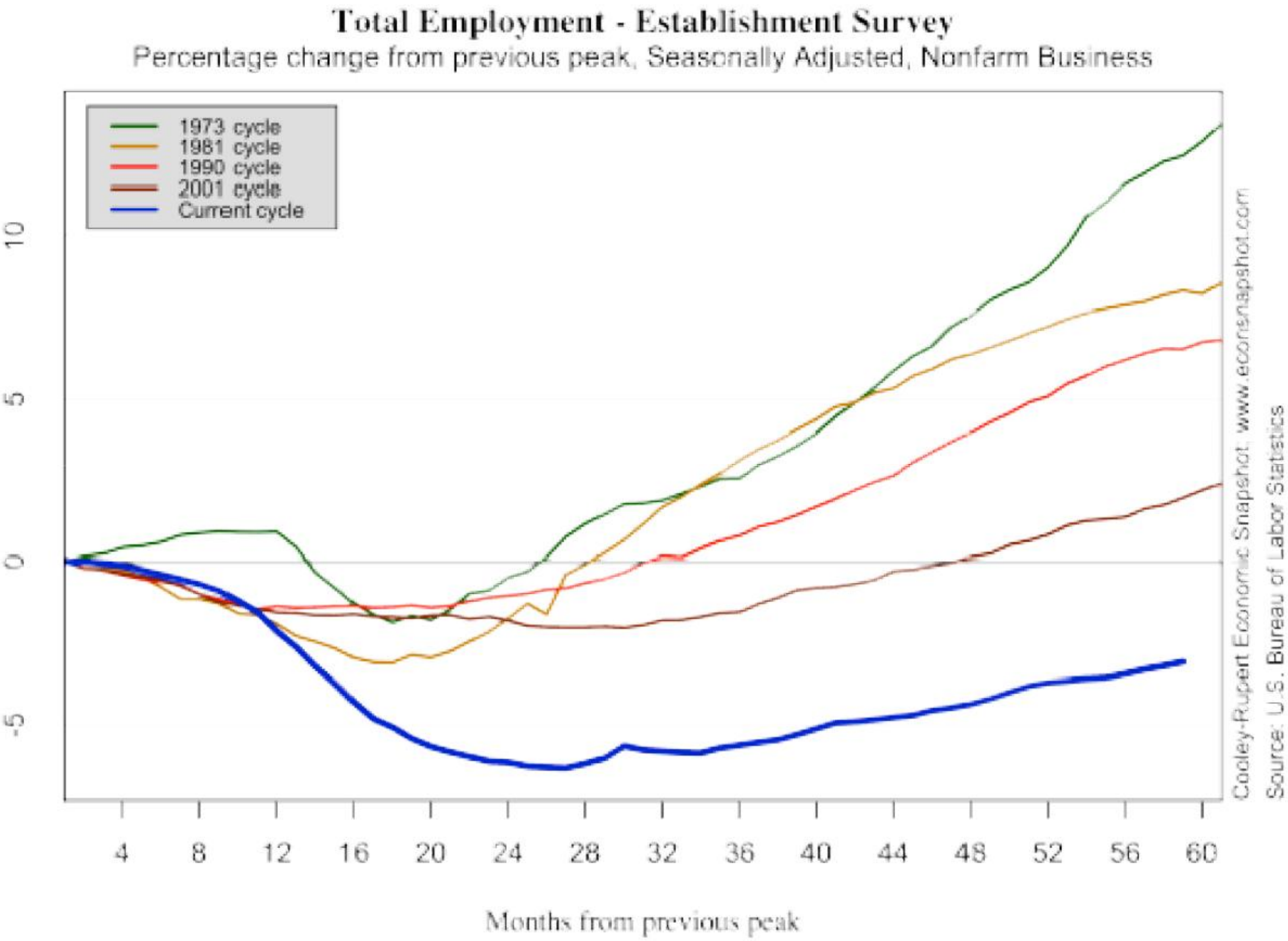
Growth and Employment in the US

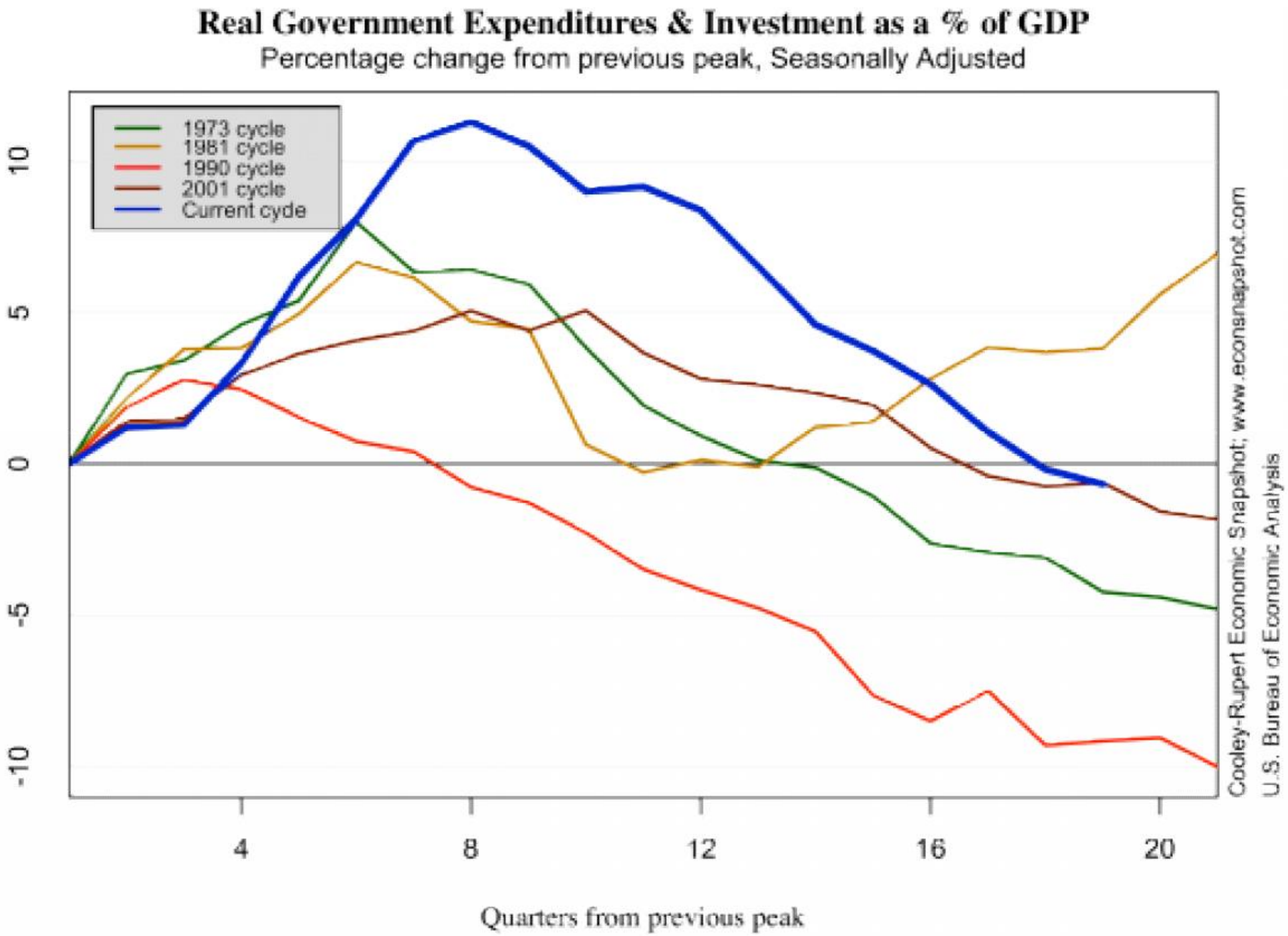
VALUE ADDED							
1990-2000			2001-2007			2009-mid 2012	
% of Gain			% of Gain			% of Gain	
Nontradable	0.66		Nontradable	0.59		Nontradable	0.44
Tradable	0.34		Tradable	0.41		Tradable	0.56
EMPLOYMENT							
1990-2000			2001-2007			2009-mid 2013	
% of Gain			% of Gain			% of Gain	
Nontradable	0.79		Nontradable	0.83		Nontradable	0.73
Tradable	0.21		Tradable	0.17		Tradable	0.27


Total Employment - Establishment Survey
Percentage change from previous peak, Seasonally Adjusted, Nonfarm Business
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cycle
Cooley-Rupert Economic Snapshot, www.econsnapshot.com
Source: U.S. Bureau of Labor Statistics
Months from previous peak

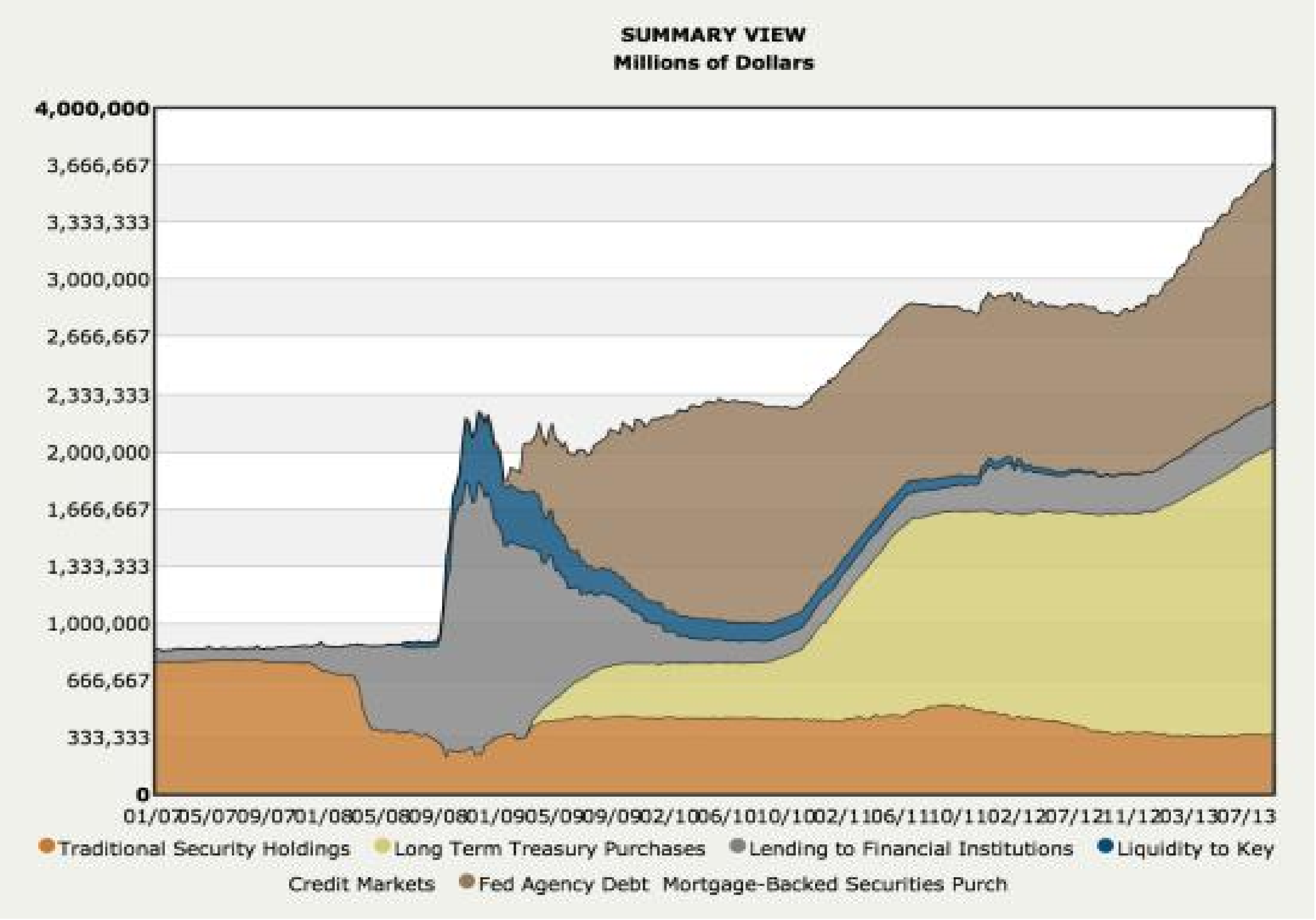

Real Gross Domestic Product
Percentage change from previous peak, Seasonally Adjusted
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cycle
Cooley-Rupert Economic Snapshot, www.econsnapshot.com
Source: U.S. Bureau of Economic Analysis
Quarters from previous peak


Real Gross Private Domestic Investment
Percentage change from previous peak, Seasonally Adjusted
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cycle
20
10
0
-10
-20
-30
4
8
12
16
20
Quarters from previous peak
Cooley-Rupert Economic Snapshot; http://econsnapshot.wordpress.com
U.S. Bureau of Economic Analysis

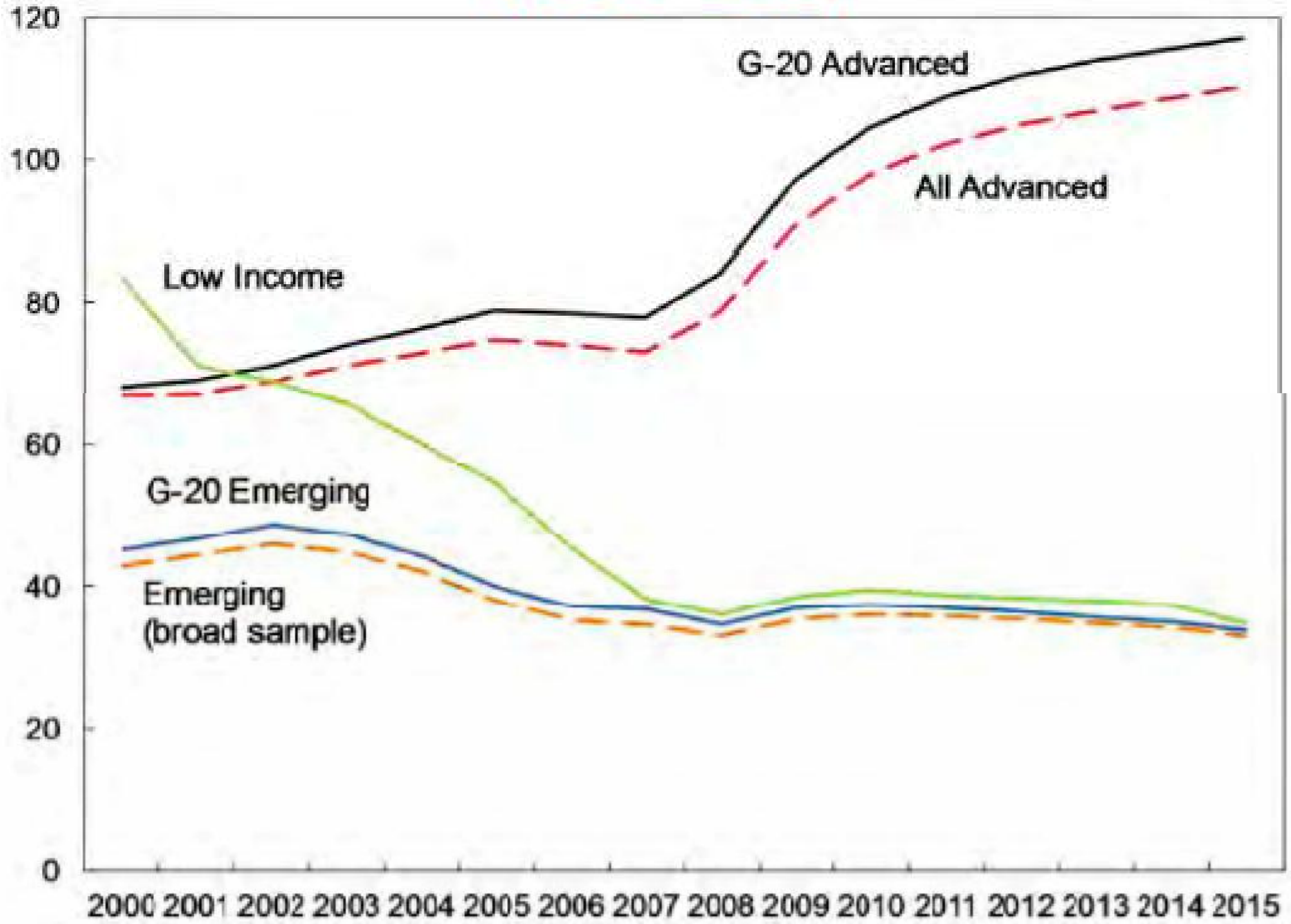

Total Employment - Establishment Survey
Percentage change from previous peak, Seasonally Adjusted, Nonfarm Business
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cycle
10
5
0
-5
4
8
12
16
20
24
28
32
36
40
44
48
52
56
60
Months from previous peak
Cooley-Rupert Economic Snapshot: www.econsnapshot.com
Source: U.S. Bureau of Labor Statistics


Real Government Expenditures & Investment as a % of GDP
Percentage change from previous peak, Seasonally Adjusted
1973 cycle
1981 cycle
1990 cycle
2001 cycle
Current cyde
10
5
0
-5
-10
4
8
12
16
20
Quarters from previous peak
Cooley-Rupert Economic Snapshot; www.econsnapshot.com
U.S. Bureau of Economic Analysis

The Assisted Growth Model
Federal Reserve Balance Sheet

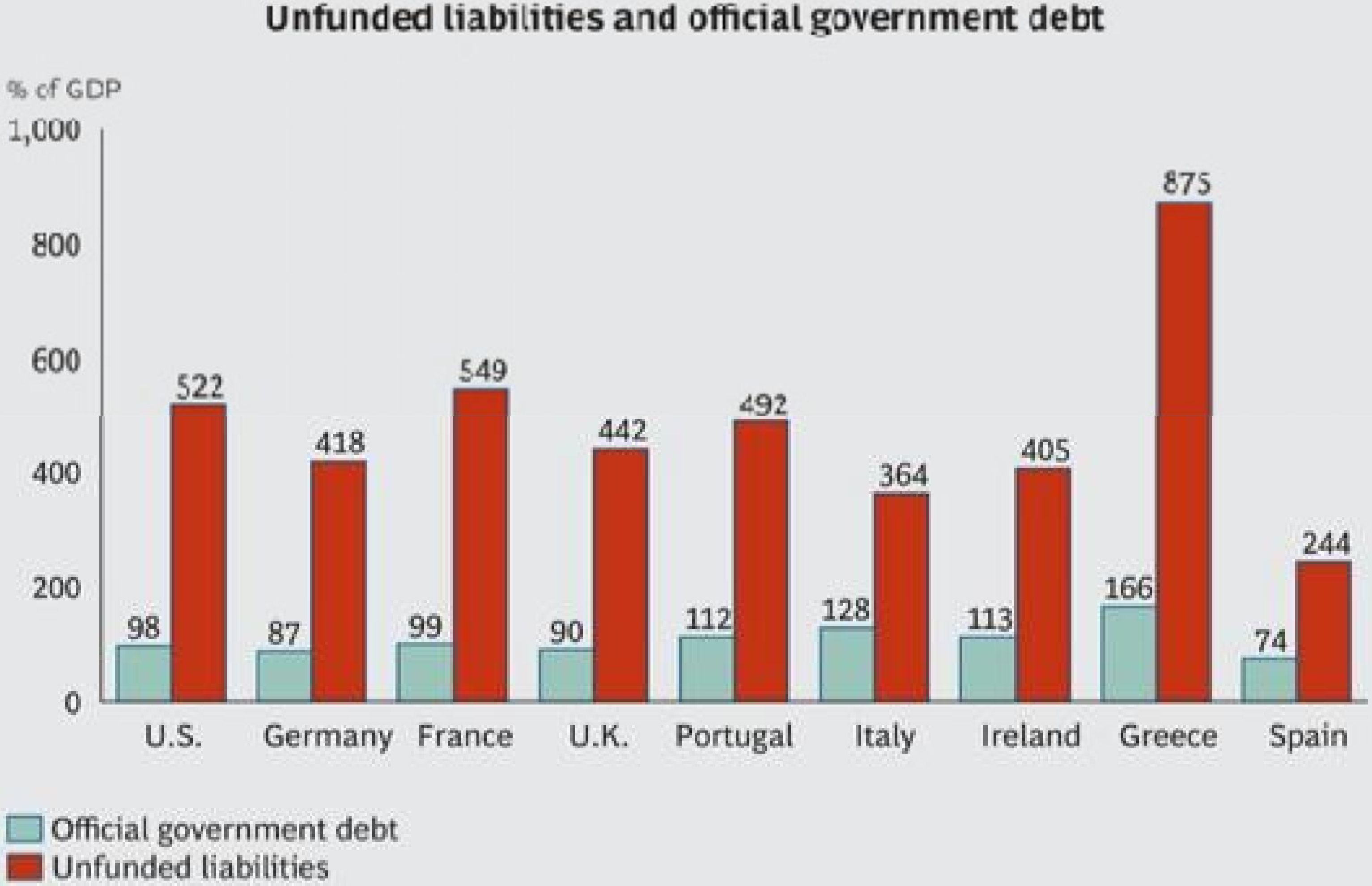


G20 Countries: General Government Debt to GDP Ratios (2000 – 2015)



Source: IMF, *Fiscal Monitor*, May 2010

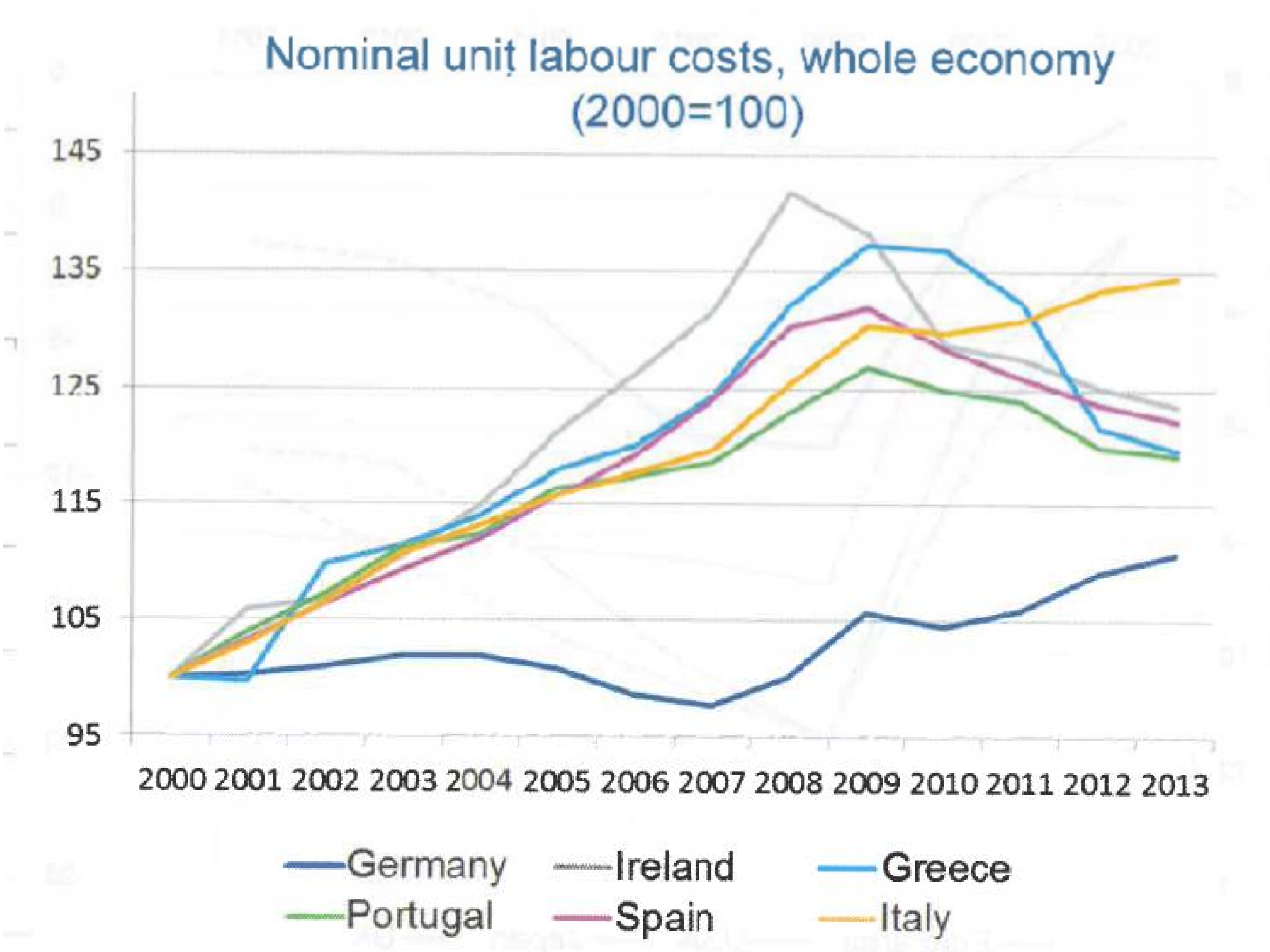
Exhibit 1 | Net Expected Tax Revenues Are Not Adequate to Continue Funding Current Social Policies



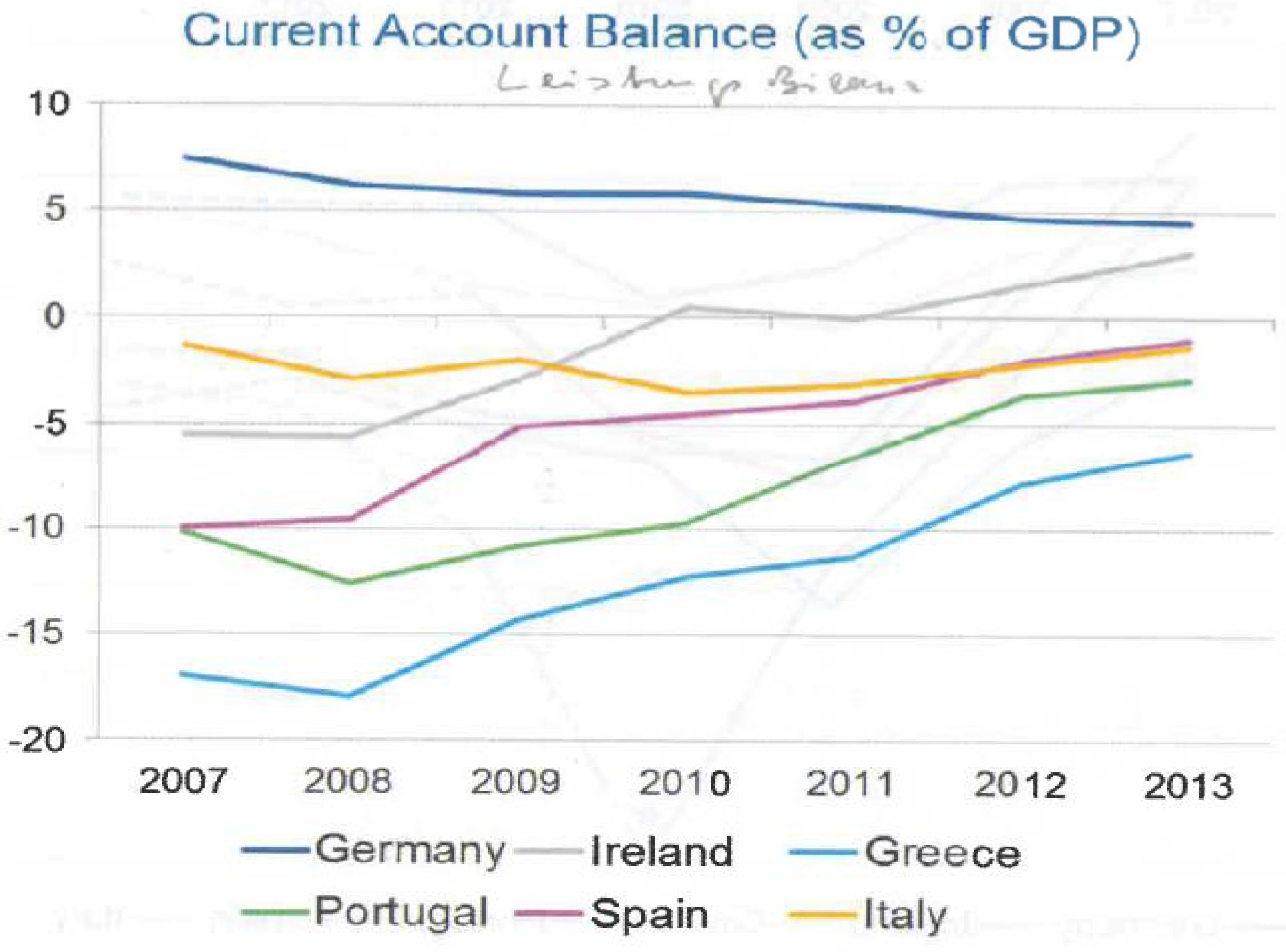
Sources: Jagadeesh Gokhal, "Measuring the Unfunded Obligations of European Countries," 2009; OECD.
Note: Unfunded liabilities are the difference between the projected cost of continuing current government programs and net expected tax revenues. Government debt based on 2011 forecasts from the OECD.

What About Southern Europe?

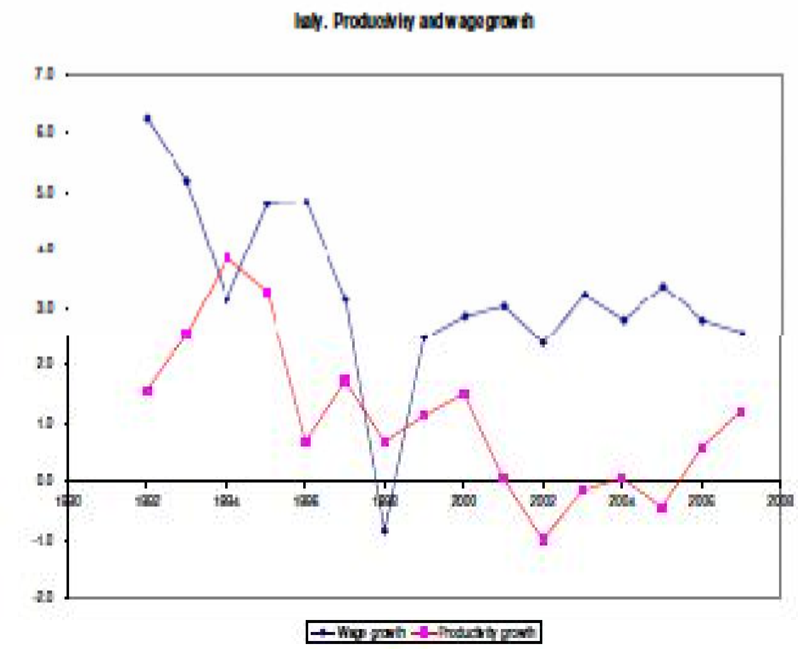
- There are two problems
  - Very large divergences in nominal unit labor costs relative to German
  - Impediments to structural shifts toward the tradable sector and external demand – in labor markets (also capital markets and product markets)
  - These are the impediments Germany had and removed in the reforms of 2003-2006
- Inflation and the common currency
- Nevertheless convergence in productivity and growth in the tradable sector is starting to happen
- The speed is determined mainly by structural flexibility in labor, capital and product markets
- Most countries have not yet had labor market reforms as large as those that occurred in Germany in 2003-2006

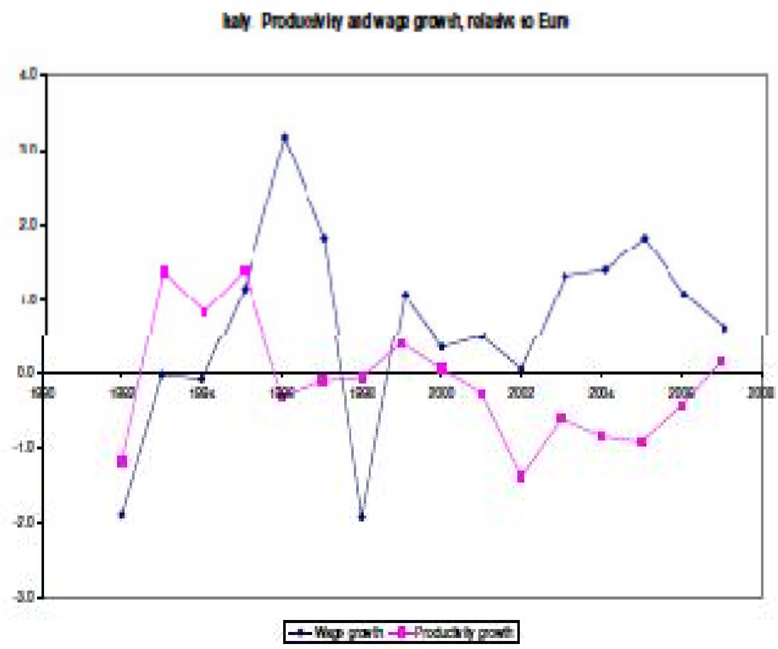


Nominal unit labour costs, whole economy
(2000=100)
145
135
125
115
105
95
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013
Germany
Ireland
Greece
Portugal
Spain
Italy


Current Account Balance (as % of GDP)
Leistungs Bilanz
10
5
0
-5
-10
-15
-20
2007
2008
2009
2010
2011
2012
2013
Germany
Ireland
Greece
Portugal
Spain
Italy

Italy: Productivity and Wage Growth





Productivity and wage growth; Absolute and relative to the euro area

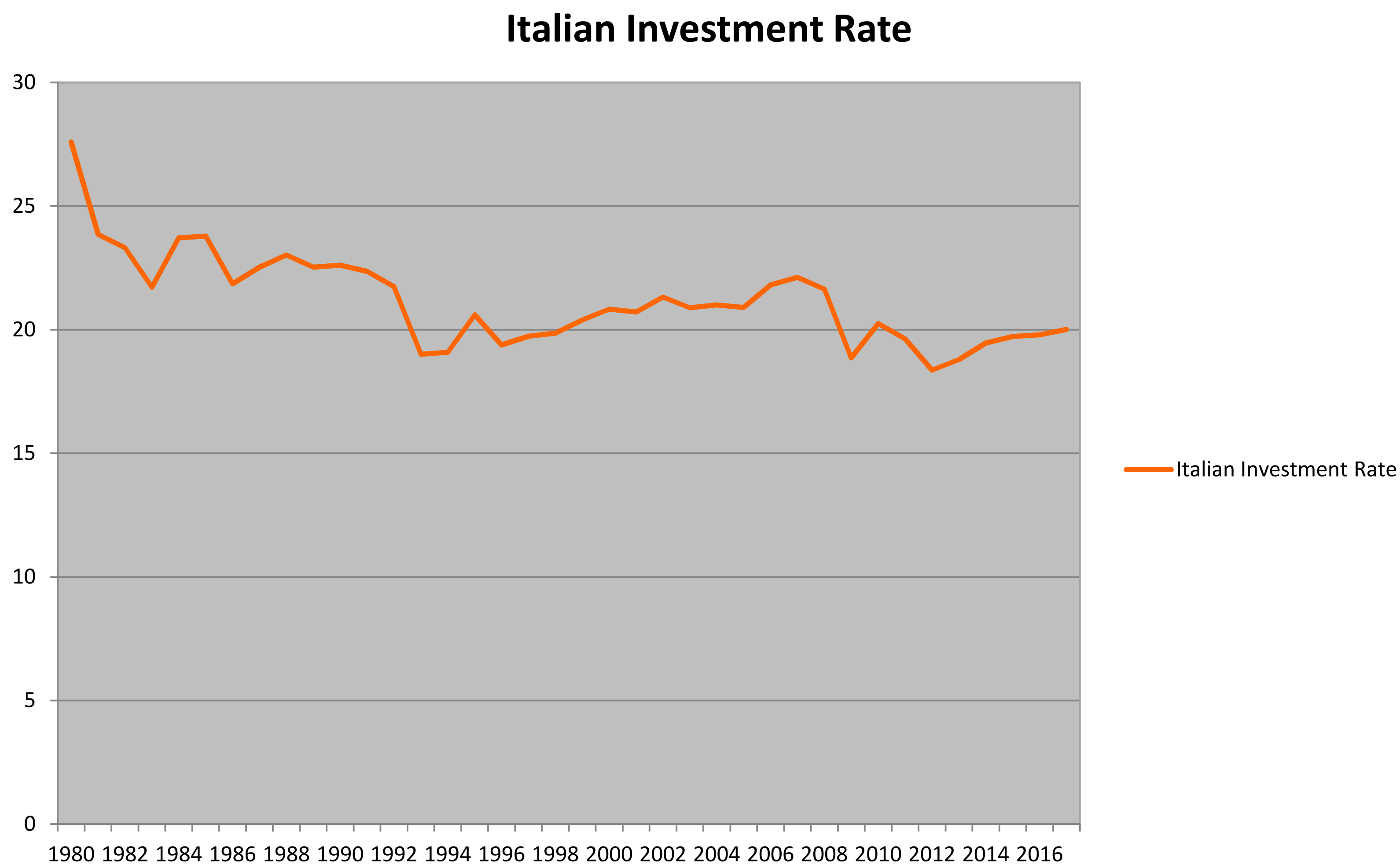
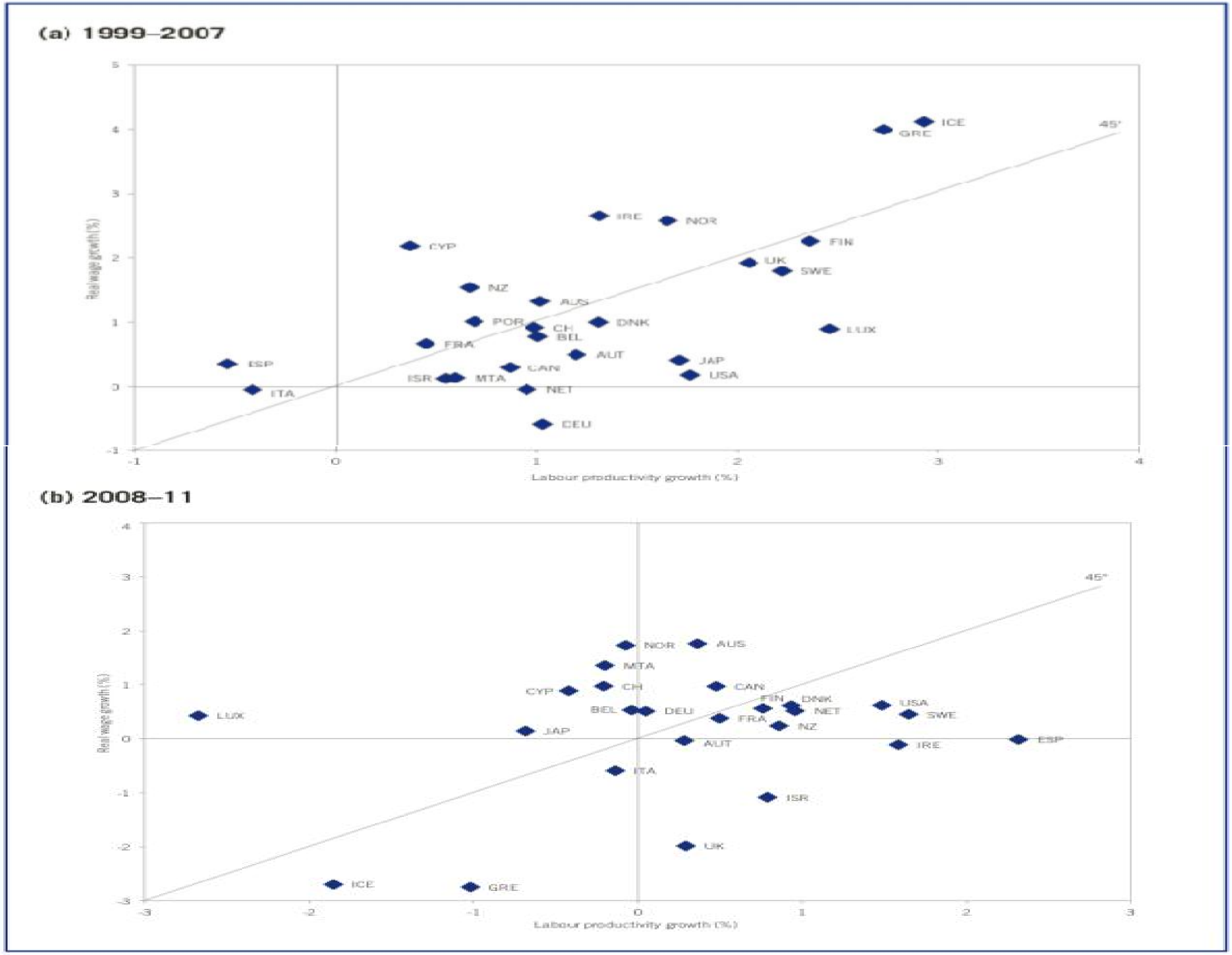

Italian Investment Rate
30
25
20
15
10
5
0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016
Italian Investment Rate

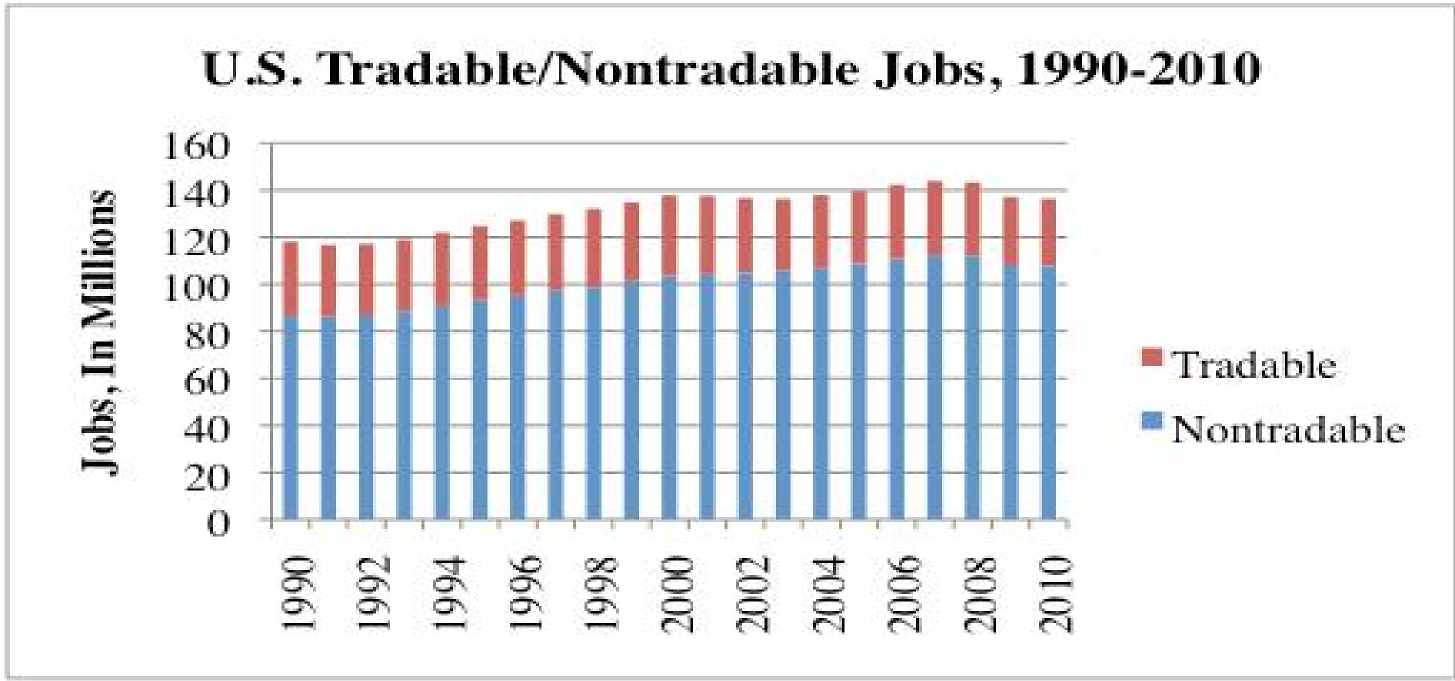
Figure 11 Growth in real wages and labour productivity in developed economies, 1999–2007 and 2008–11 (%)



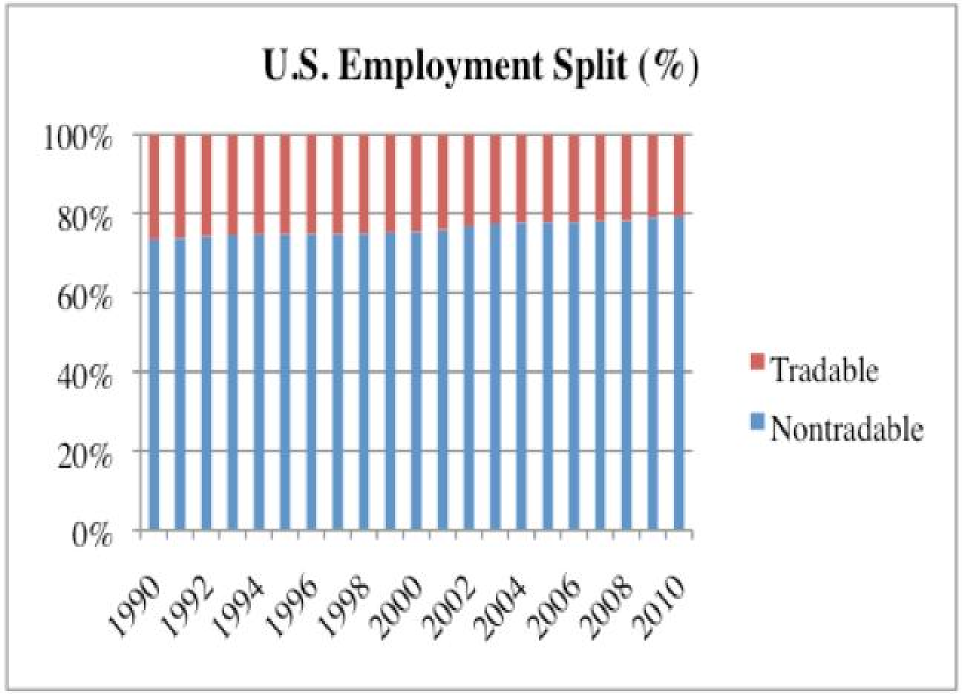
Employment and Distribution
Additional Headwinds Beyond the Growth Challenges

- Employment has been adversely affected by the negative growth shocks
- But that compounded a longer term adverse trend in employment across the tradable and non-tradable sectors
  - Which I will show you in a minute
- These longer term trends are the combined result of powerful technological and global market forces
- The latter includes
  - The increasingly efficient atomization of global supply chains
  - The rise in size of the emerging economies (now over 50% of global GDP) – especially China

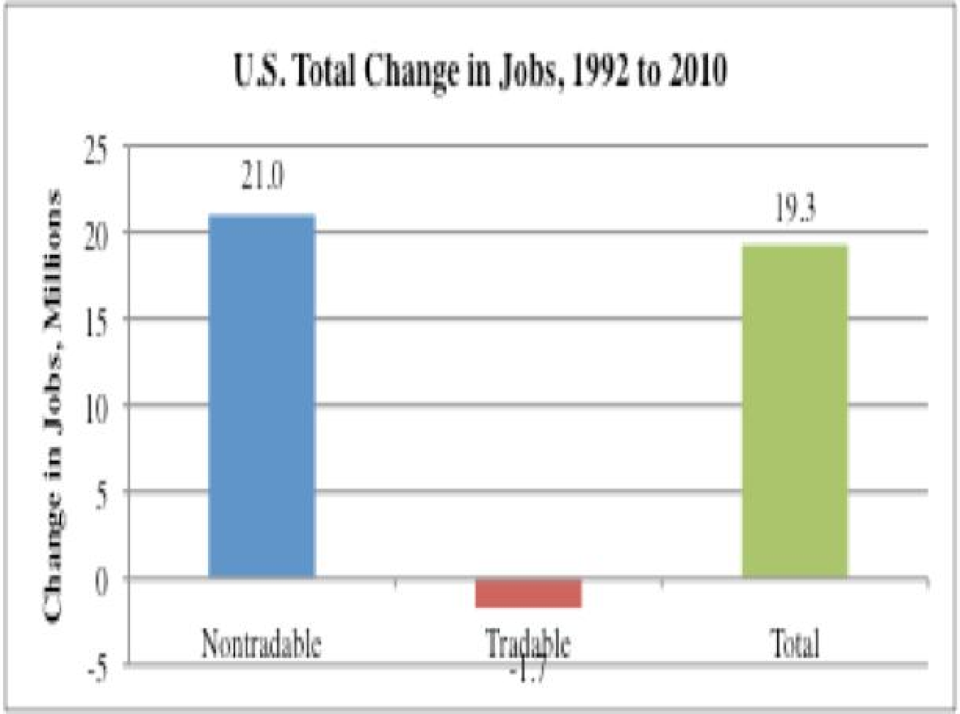
USA



U.S. Tradable/Nontradable Jobs, 1990-2010
Jobs, In Millions
160
140
120
100
80
60
40
20
0
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Tradable
Nontradable

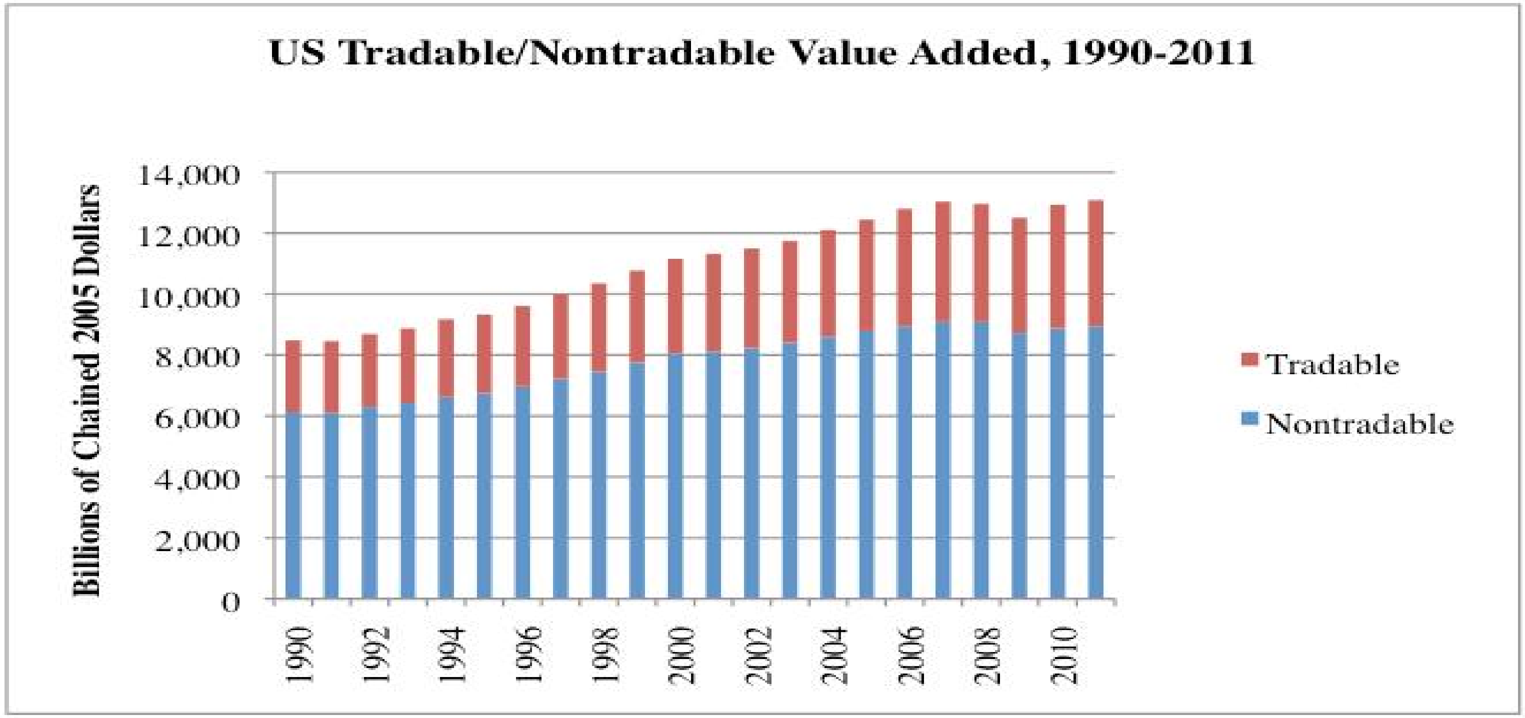


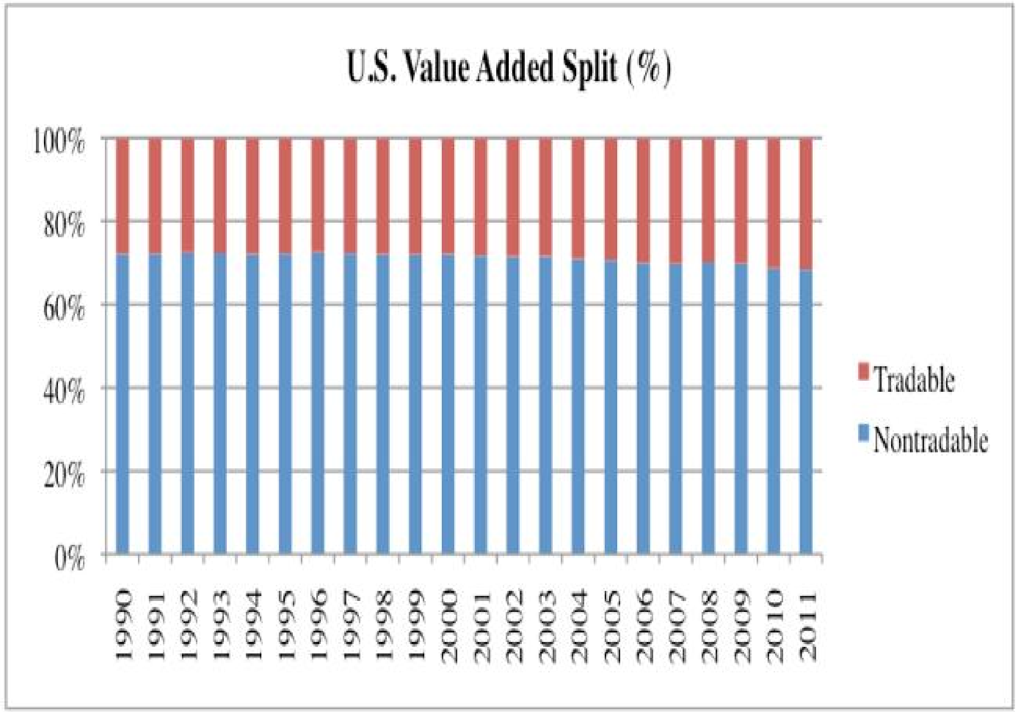
U.S. Employment Split (%)
100%
80%
60%
40%
20%
0%
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Tradable
Nontradable

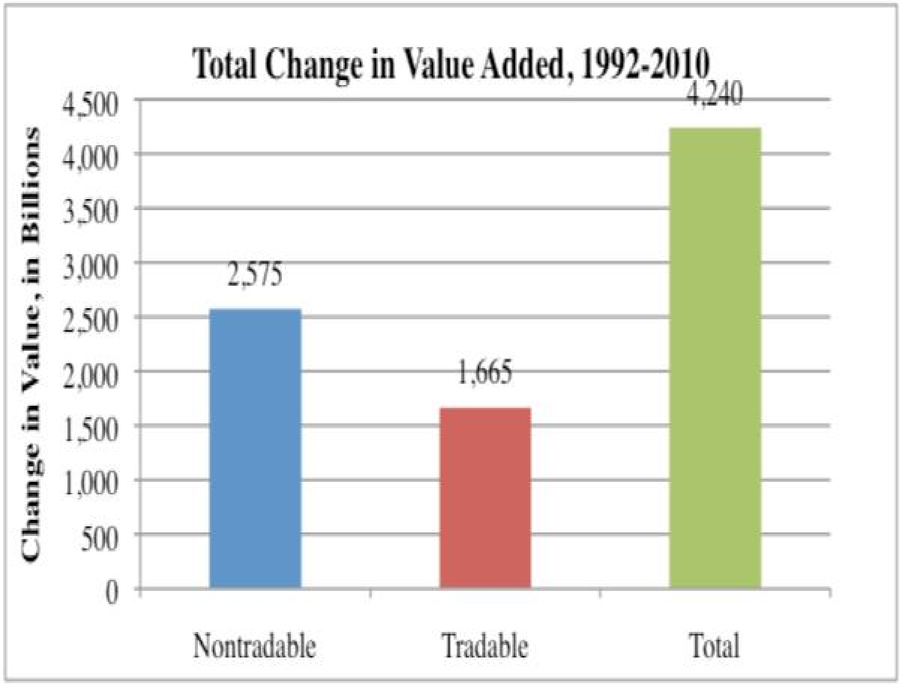


U.S. Total Change in Jobs, 1992 to 2010
Change in Jobs, Millions
25
20
15
10
5
0
-5
21.0
19.3
-1.7
Nontradable
Tradable
Total

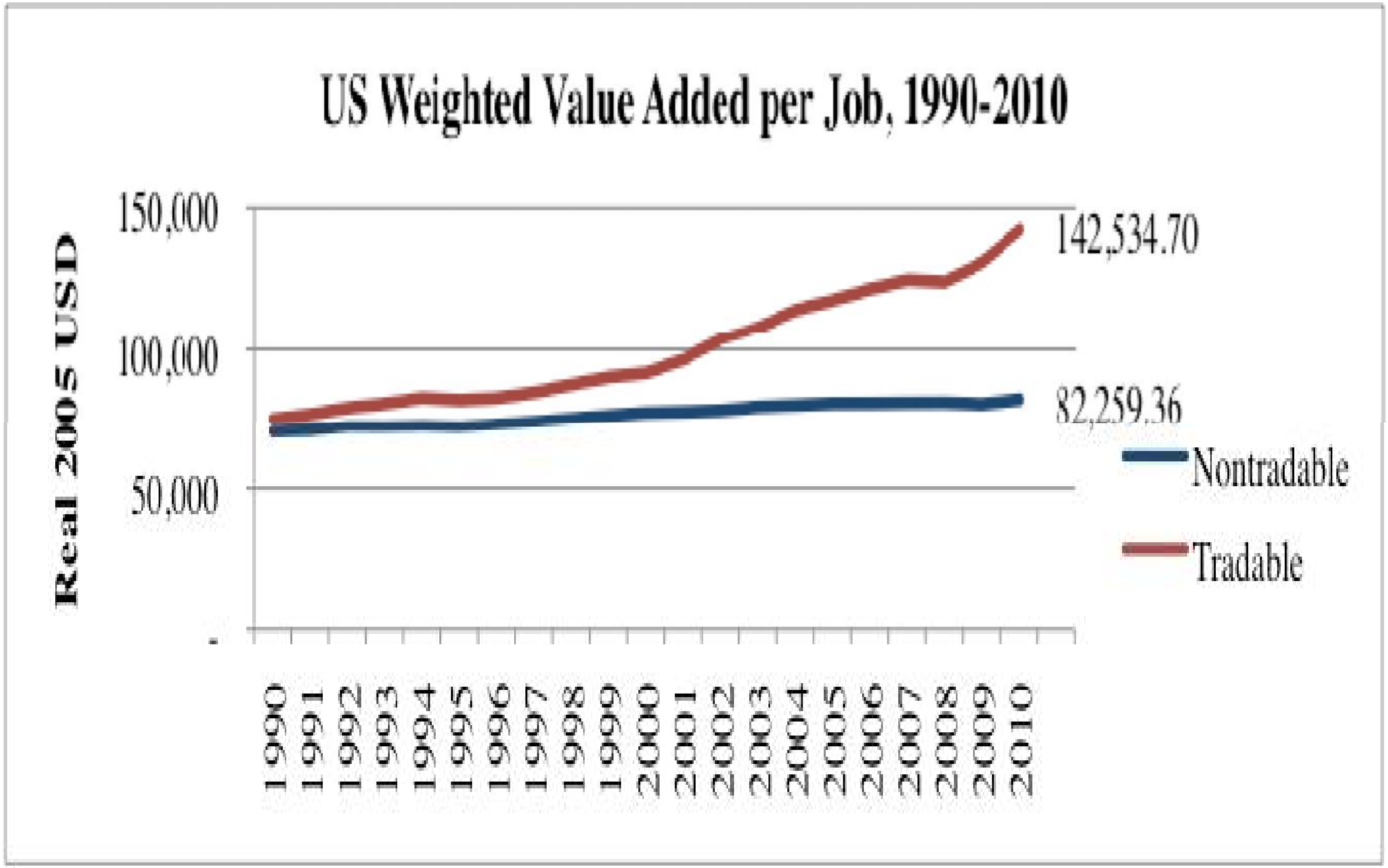
Value Added


US Tradable/Nontradable Value Added, 1990-2011
Billions of Chained 2005 Dollars
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Tradable
Nontradable

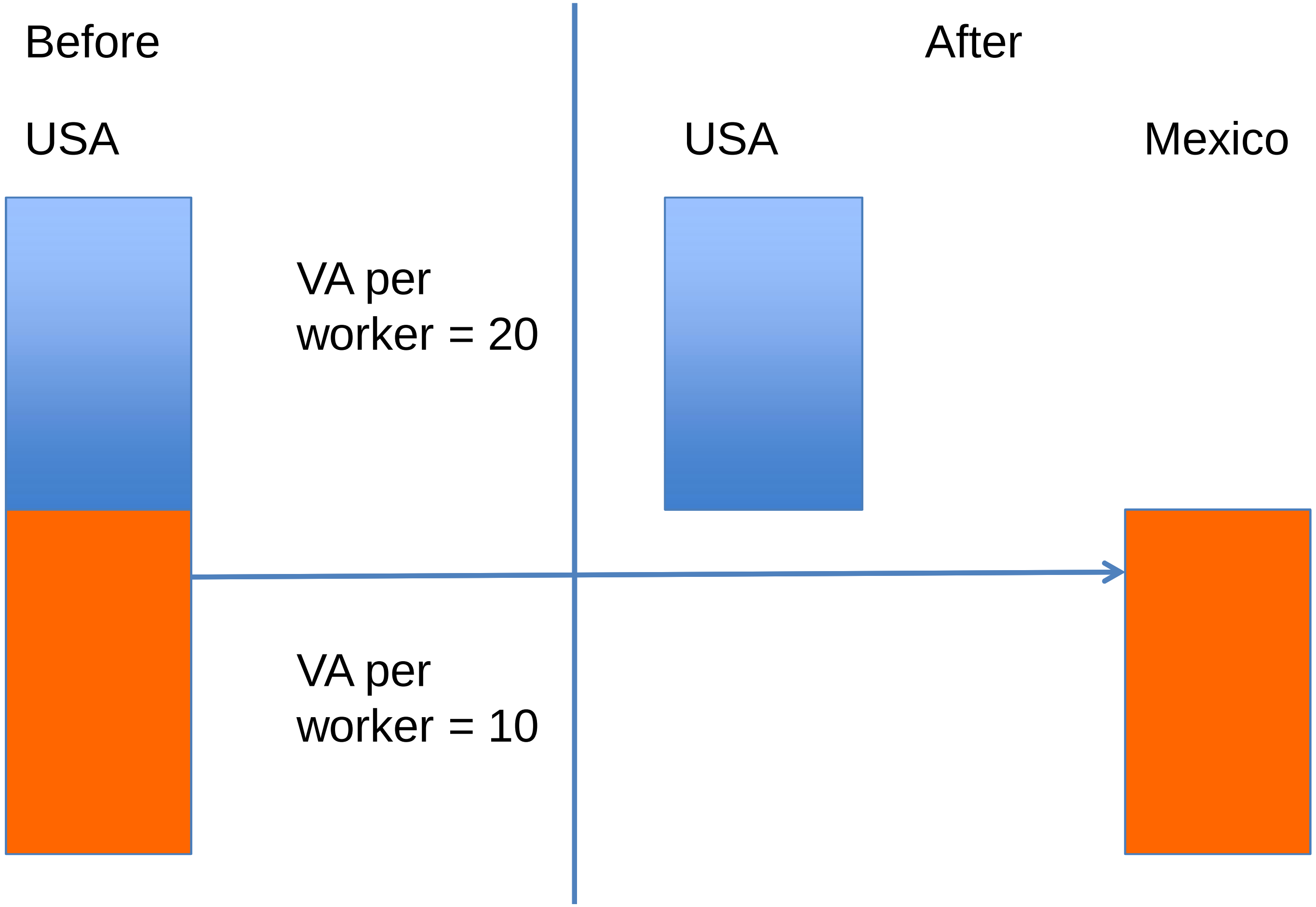

U.S. Value Added Split (%)
100%
80%
60%
40%
20%
0%
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Tradable
Nontradable

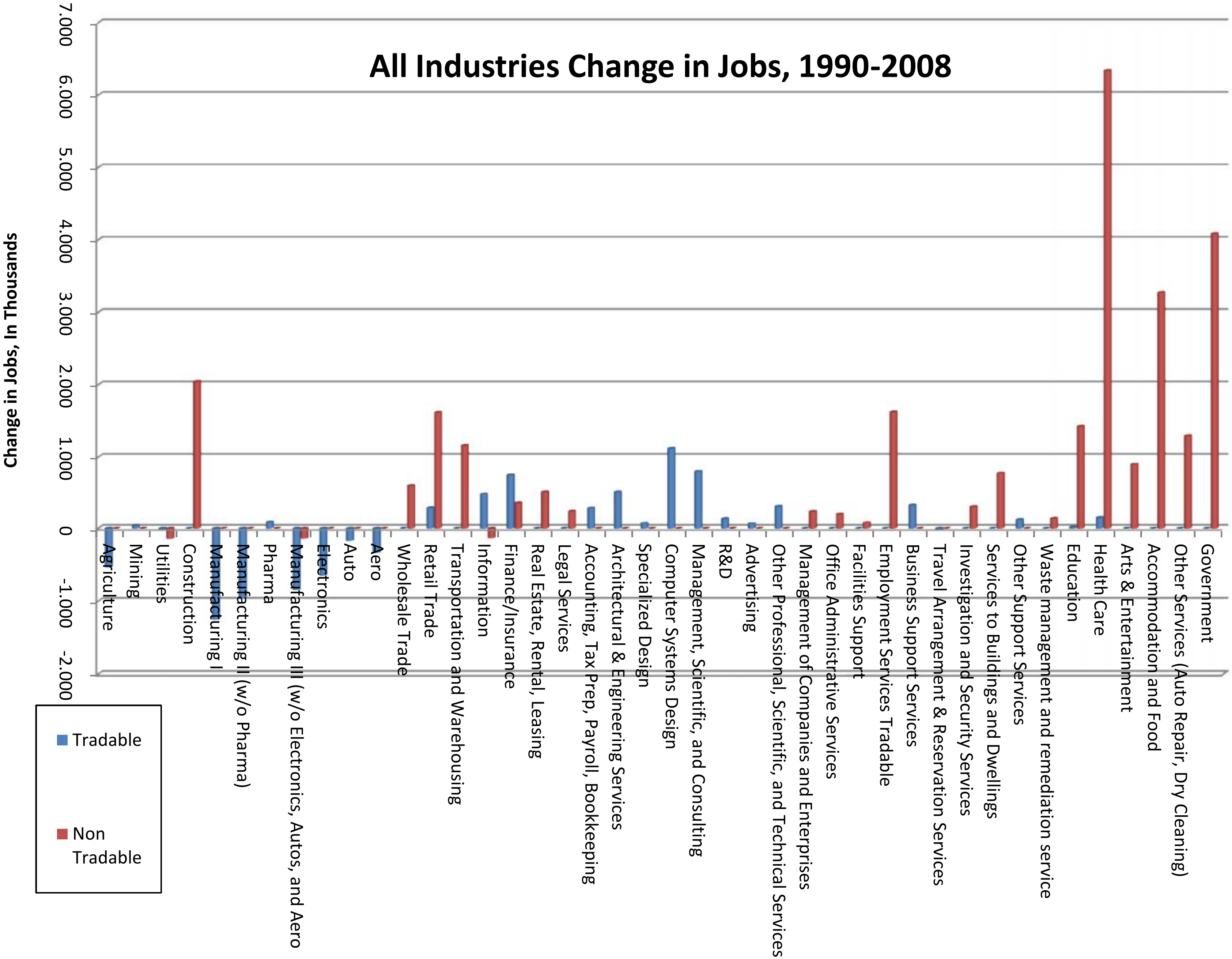

Total Change in Value Added, 1992-2010
Change in Value, in Billions
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2,575
1,665
4,240
Nontradable
Tradable
Total

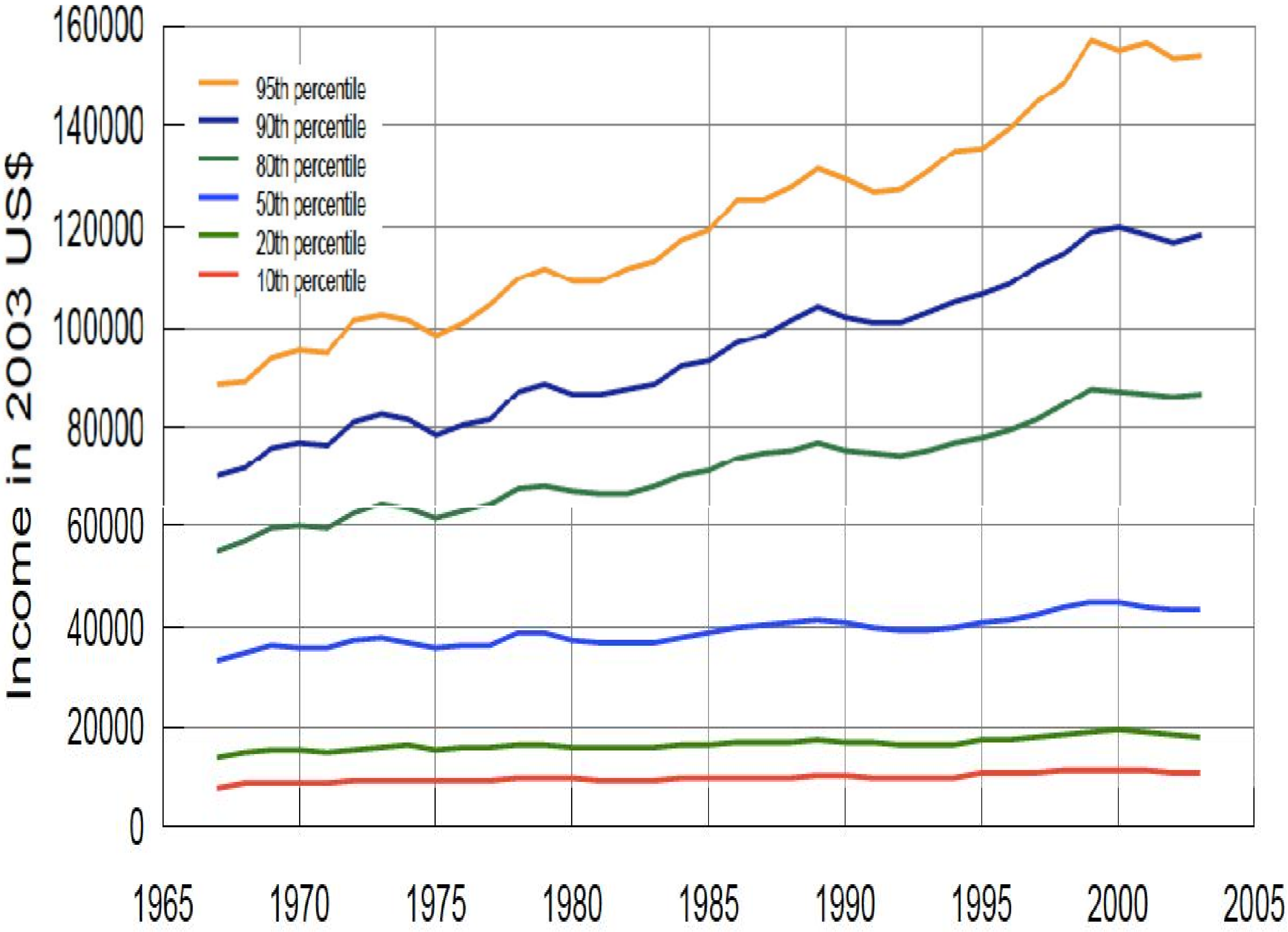
Value Added per Worker



Value added per worker and the global economy
This is often mistaken for a “normal” productivity increase




All Industries Change in Jobs, 1990-2008
Change in Jobs, In Thousands
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0
-1.000
-2.000
Agriculture
Mining
Utilities
Construction
Manufacturing I
Manufacturing II (w/o Pharma)
Pharma
Manufacturing III (w/o Electronics, Autos, and Aero
Electronics
Auto
Aero
Wholesale Trade
Retail Trade
Transportation and Warehousing
Information
Finance/Insurance
Real Estate, Rental, Leasing
Legal Services
Accounting, Tax Prep, Payroll, Bookkeeping
Architectural & Engineering Services
Specialized Design
Computer Systems Design
Management, Scientific, and Consulting
R&D
Advertising
Other Professional, Scientific, and Technical Services
Management of Companies and Enterprises
Office Administrative Services
Facilities Support
Employment Services Tradable
Business Support Services
Travel Arrangement & Reservation Services
Investigation and Security Services
Services to Buildings and Dwellings
Other Support Services
Waste management and remediation service
Education
Health Care
Arts & Entertainment
Accommodation and Food
Other Services (Auto Repair, Dry Cleaning)
Government
Tradable
Non Tradable



160000
140000
120000
100000
80000
60000
40000
20000
0
Income in 2003 US$
95th percentile
90th percentile
80th percentile
50th percentile
20th percentile
10th percentile
1965
1970
1975
1980
1985
1990
1995
2000
2005

Figure 3: Percent Change in Employment Shares by Occupation Group

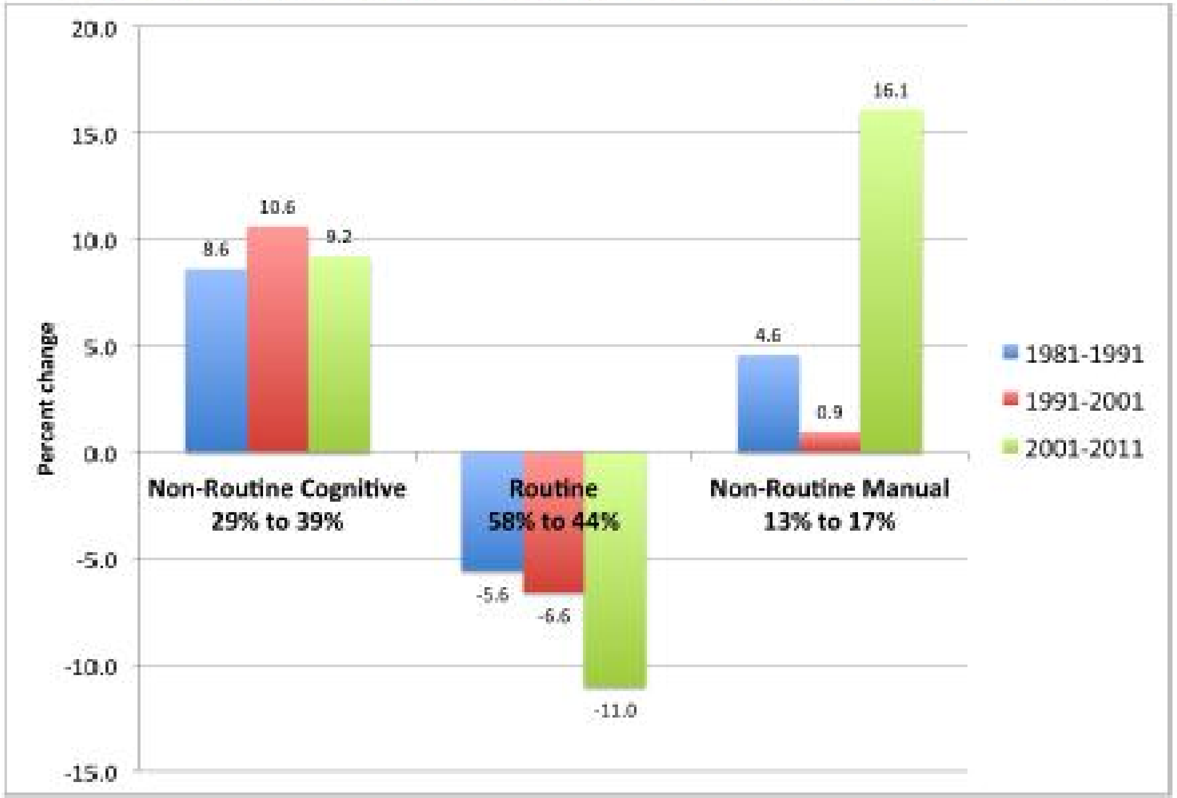
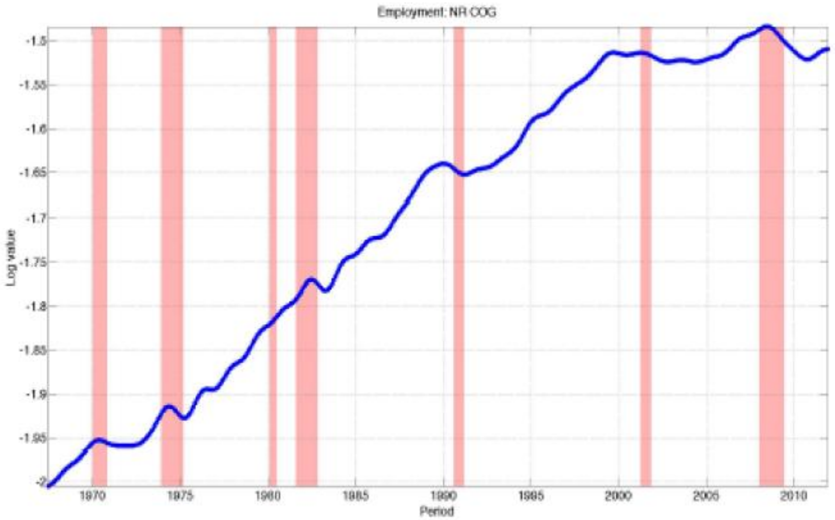
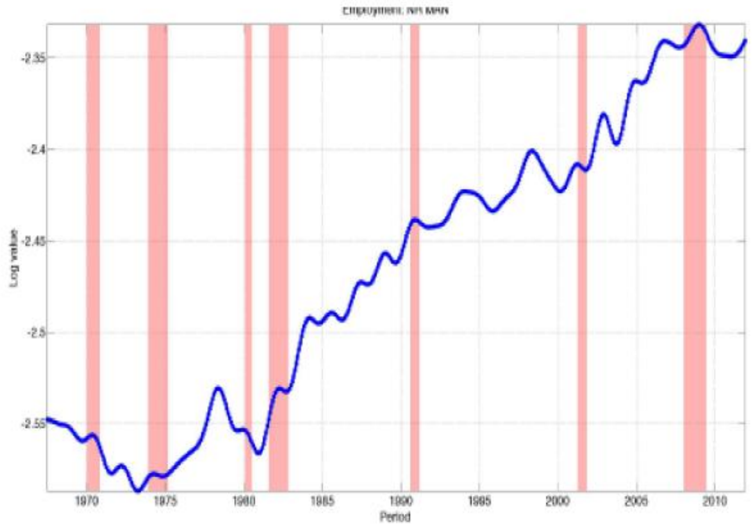


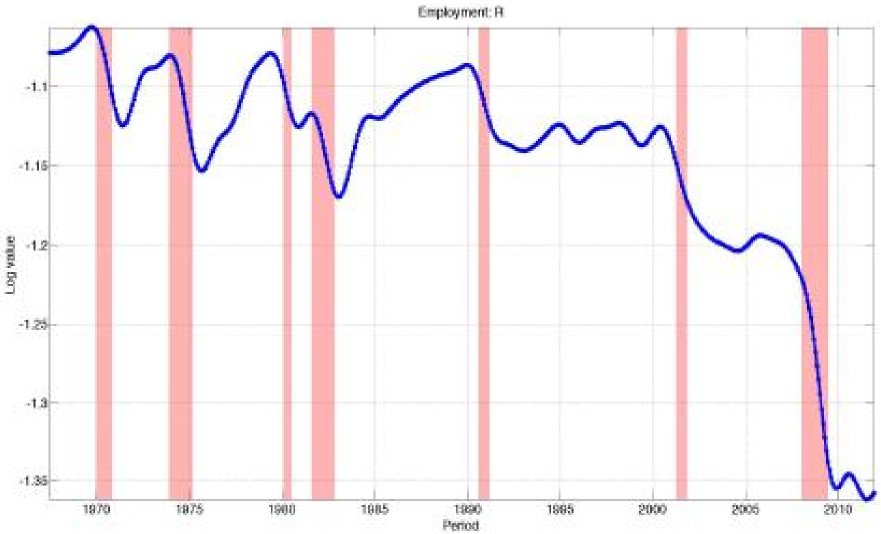
Figure 4: Employment in Occupational Groups: 1967 – 2011



Non-Routine Cognitive



Non-Routine Manual



Routine – Manual and Cognitive

THE TREND IS THE CYCLE:
JOB POLARIZATION AND JOBLESS RECOVERIES

Nir Jaimovich
Henry E. Siu

USA Income Distribution Trends

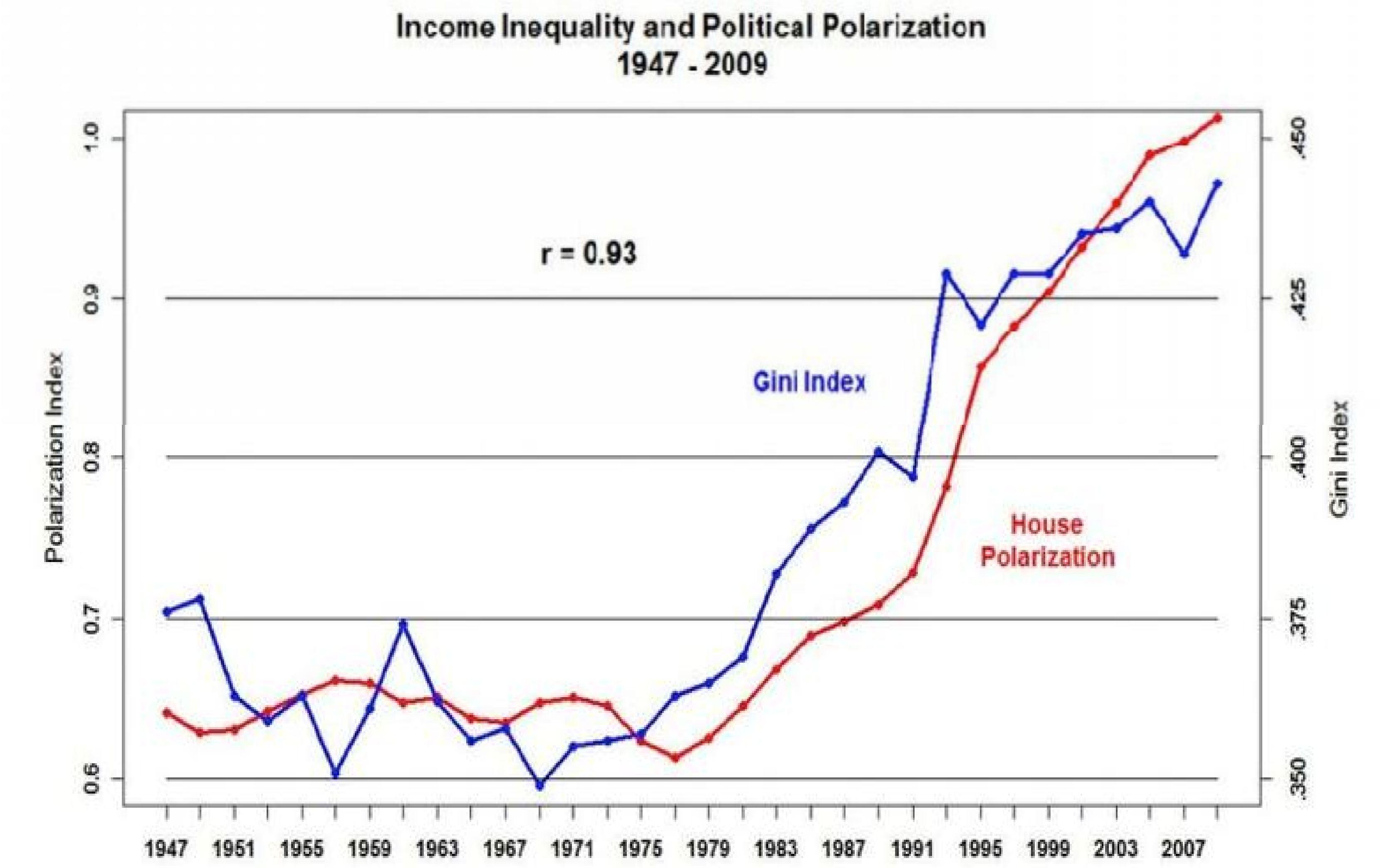
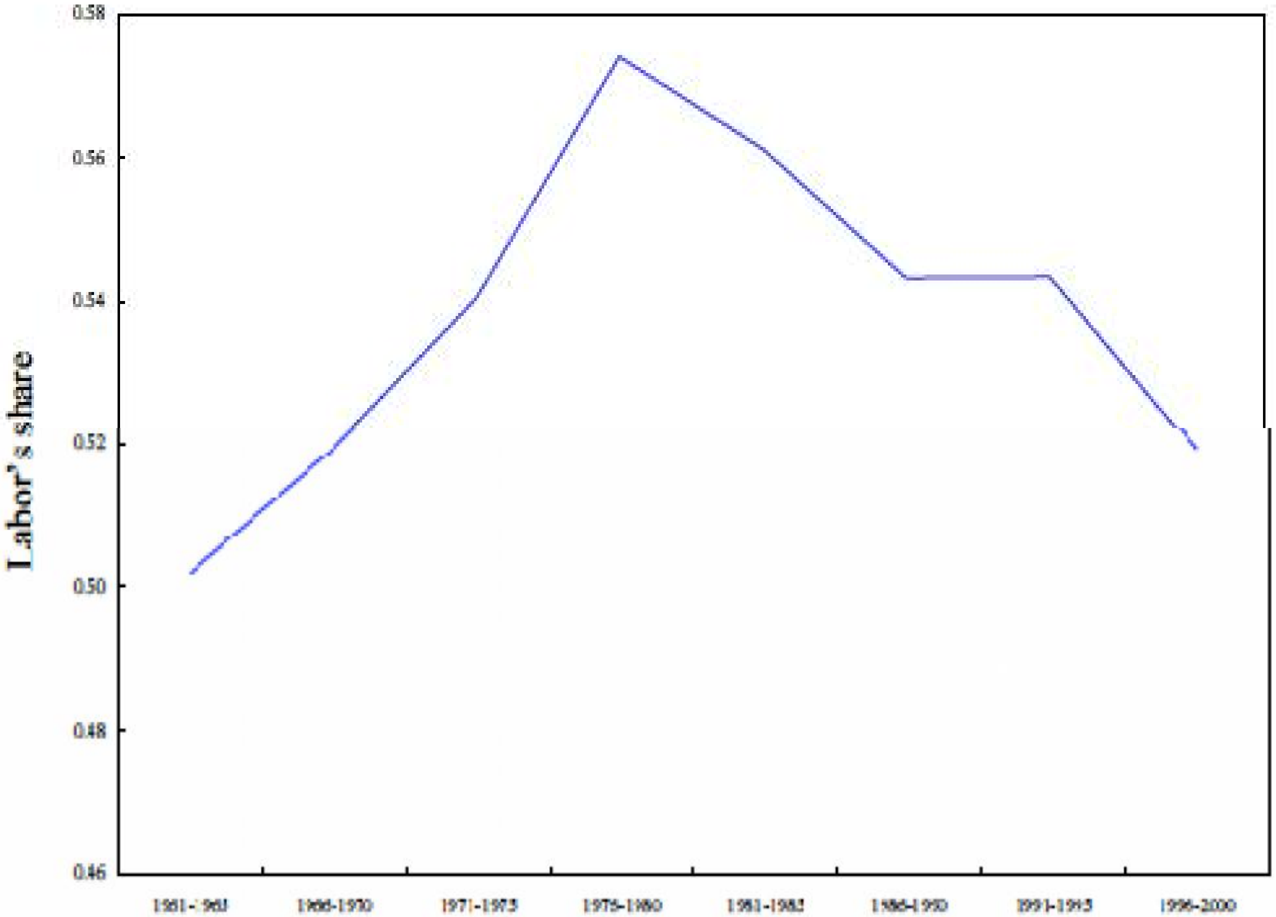


Figure 1. Cross-Country Average Labor's Share in National Income
(Ratio of labor income to national income)



Source: OECD, Structural Analysis Database.

COUNTRY	INCOME OF THE RICHEST 10% OVER THE POOREST 10%	INCOME OF THE RICHEST 20% OVER THE POOREST 20%	GINI COEFFICIENT
Australia	12.5	7	35.2
Austria	6.9	4.4	29.1
Belgium	8.2	4.9	33
Brazil	51.3	21.8	57
Canada	9.4	5.5	32.6
China (PRC)	21.6	12.2	46.9
Denmark	8.1	4.3	24.7
Finland	5.6	3.8	26.9
France	9.1	5.6	32.7
Germany	6.9	4.3	28.3
Greece	10.2	6.2	34.3
India	8.6	5.6	36.8
Israel	13.4	7.9	39.2
Italy	11.6	6.5	36
Japan	4.5	3.4	24.9
South Korea	7.8	4.7	31.6
Mexico	24.6	12.8	46.1
Netherlands	9.2	5.1	30.9
New Zealand	12.5	6.8	36.2
Norway	6.1	3.9	25.8
Russia	12.7	7.6	39.9
South Africa	33.1	17.9	57.8
Spain	10.3	6	34.7
Sweden	6.2	4	25
Switzerland	9	5.5	33.7
Turkey	16.8	9.3	43.6
United Kingdom	13.8	7.2	36
United States	15.9	8.4	40.8

Key Ingredients in the Changing Growth Patterns

Michael Spence

Nanjing

June 2014

China and the Middle Income Transition

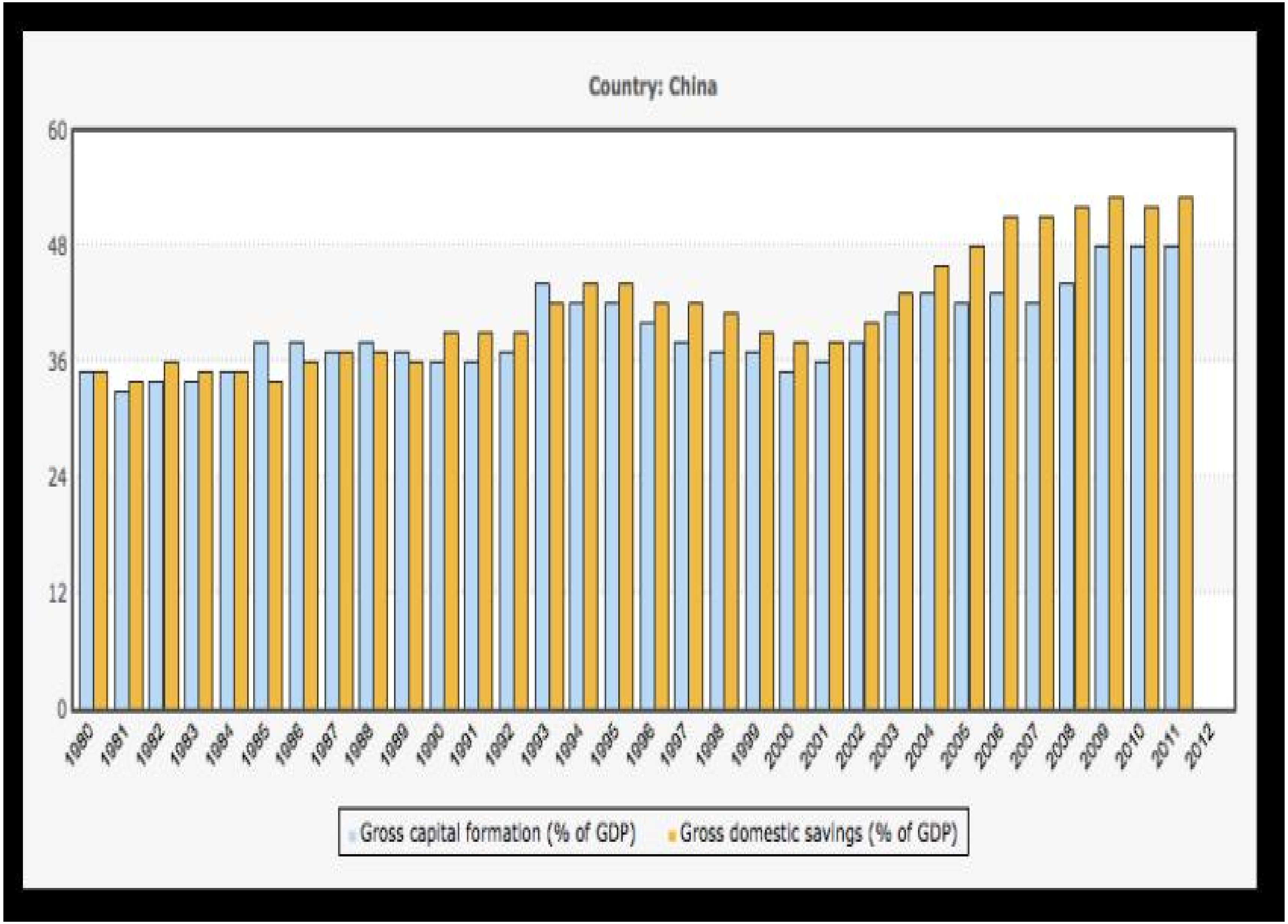
- Third largest economy if Europe is counted as a unit
- About half the size of US or Europe
  - Will be same size in 10-15 years
  - When it grows at 8% real - that is the equivalent of 4% growth in Europe or North America
- Leading export market for India, Brazil, Japan, Korea, Australia, most of east Asia, in the near future, Africa
- Huge amount at stake
- The growth model for first 30 years yielded impressive results, but has reached the end of its useful life
- The most common developing country mistake is to find a successful strategy for growth and do it too long
- Despite the high growth, there is widespread consensus (internally and externally) that reform momentum declined seriously in the past decade – and that a reversal of that trend is critical to alter and then sustain the growth pattern at this level of income

Five High Speed Transitions

- Japan
- Korea
- Taiwan/China
- Hong Kong/China
- Singapore

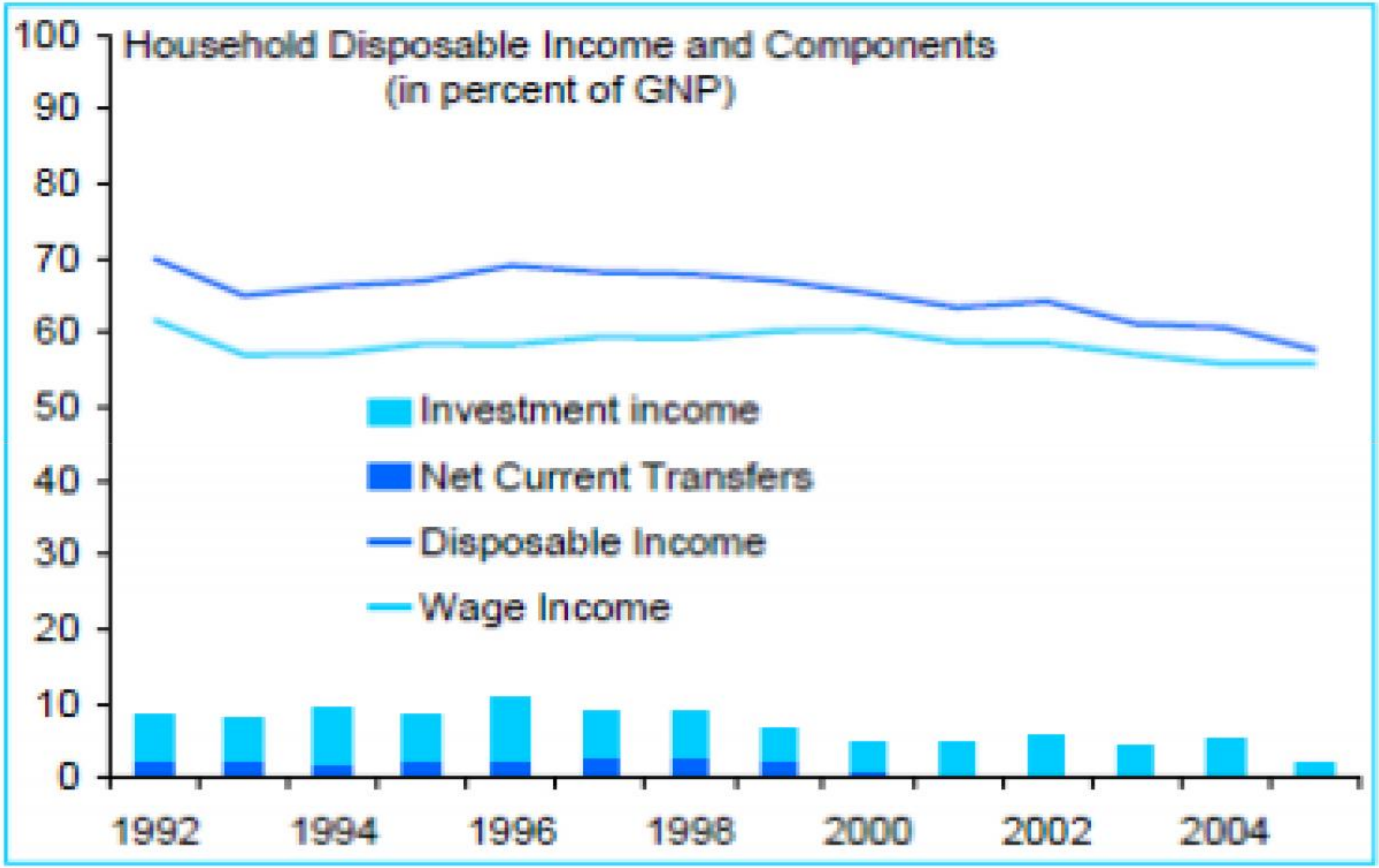
- None at China's scale
- None with strong global economic headwinds
- No predecessor was systemically important

- Most importantly – China's growth depends on no slippage in generating domestic aggregate demand
  - Unlike earlier cases (Korea, Taiwan. China, Japan)
  - One way to do that is high and rising investment levels – but that will drive investment returns (private and social) down and is not a sustainable growth pattern
  - This is all well understood in China – so the challenge is to shift the mix to consumption and high return investment – and that takes major system reforms



World Bank database

China: Disposable Income Declining Percentage of National Income
Combined with Household Savings at 30%
Consumption is below 40% of GDP

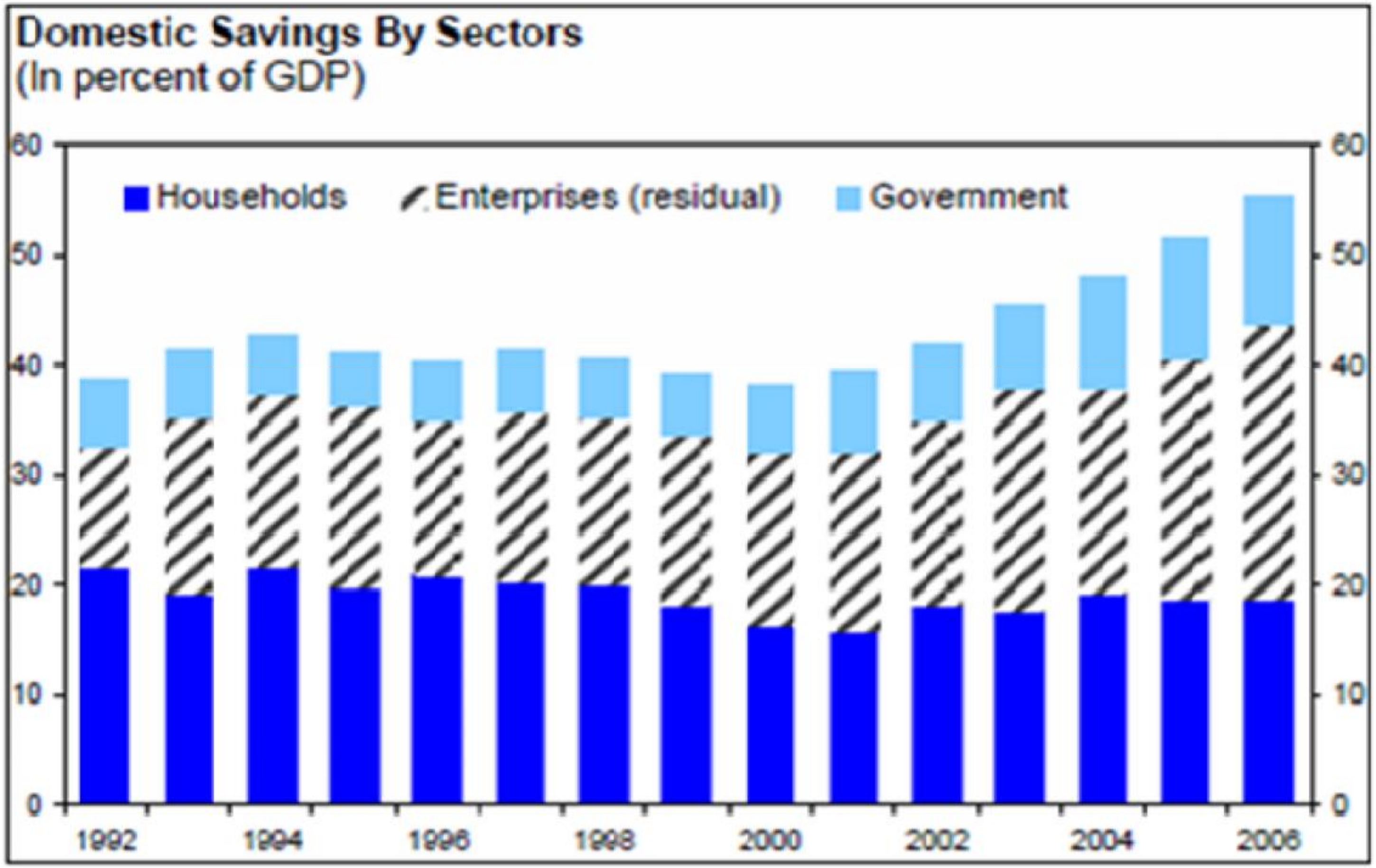


Explaining China's Low Consumption:
The Neglected Role of Household Income

Jahangir Aziz and Li Cui

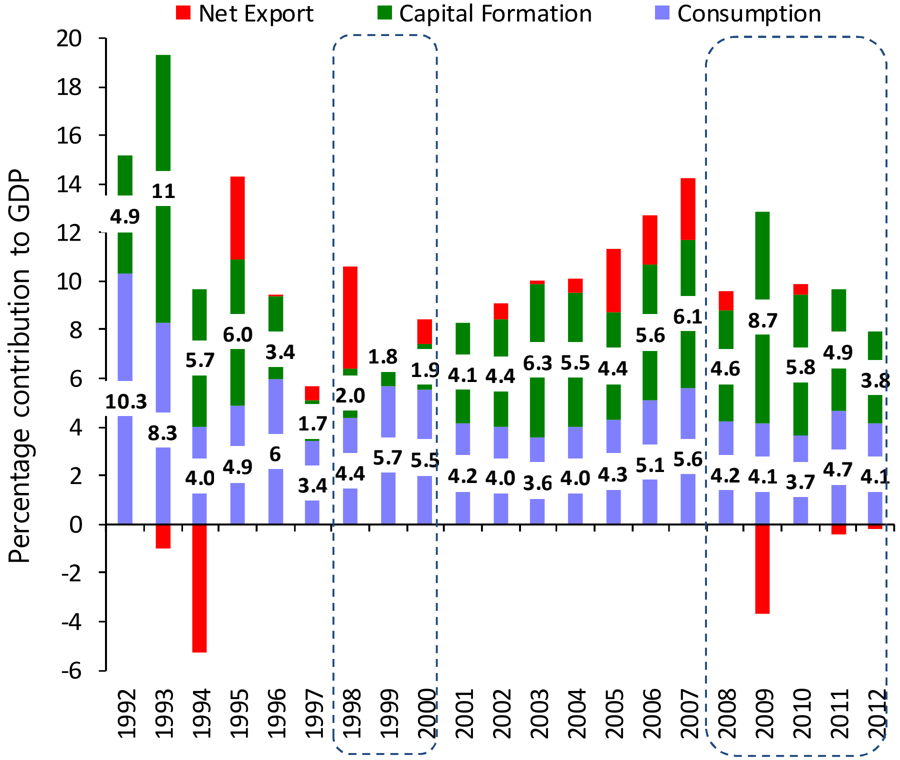
IMF WORKING PAPER 2007

Components of Savings: The Increase is in the Corporate Sector
Built in bias in the system to investment without adequate risk adjusted return filters

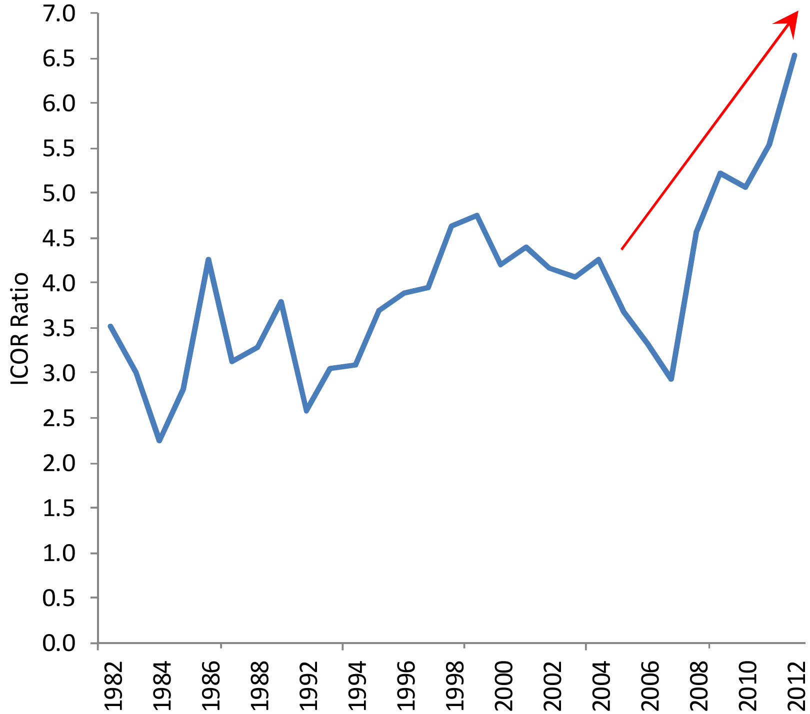


Investment-Led Growth is Showing Signs of Reaching Its Limits…

Demand Contributions to GDP Growth



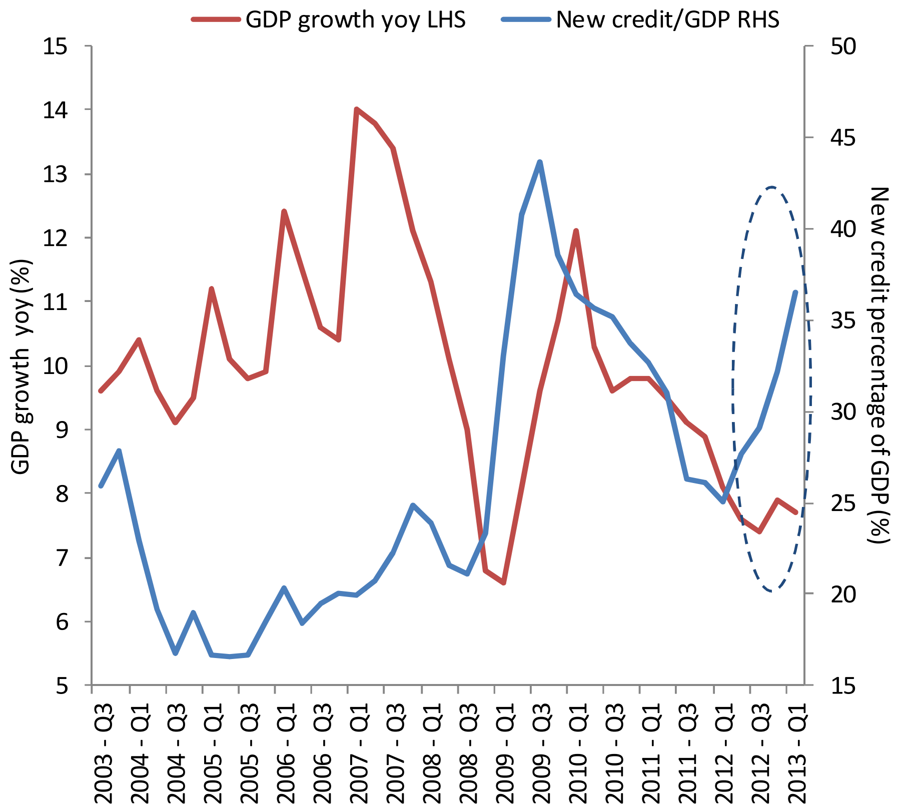
Incremental Capital / Output Ratio



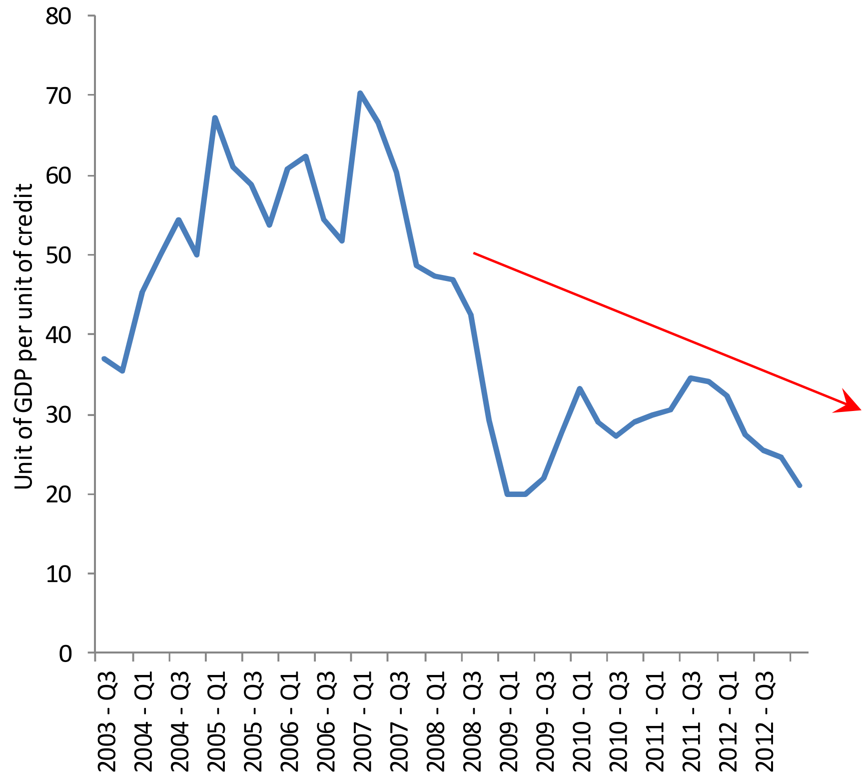
SOURCE: CEIC, PBOC, PIMCO

…Which is Also Evident in Credit Channel Losing Traction on Growth

New Credit/GDP vs. GDP Growth



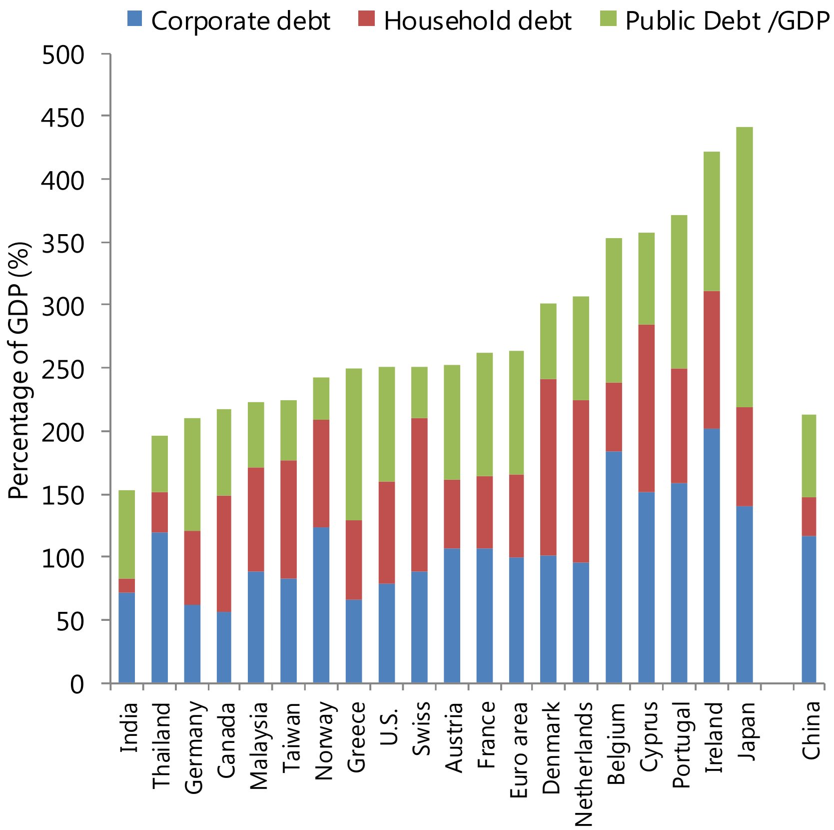
Marginal Return of New Credit



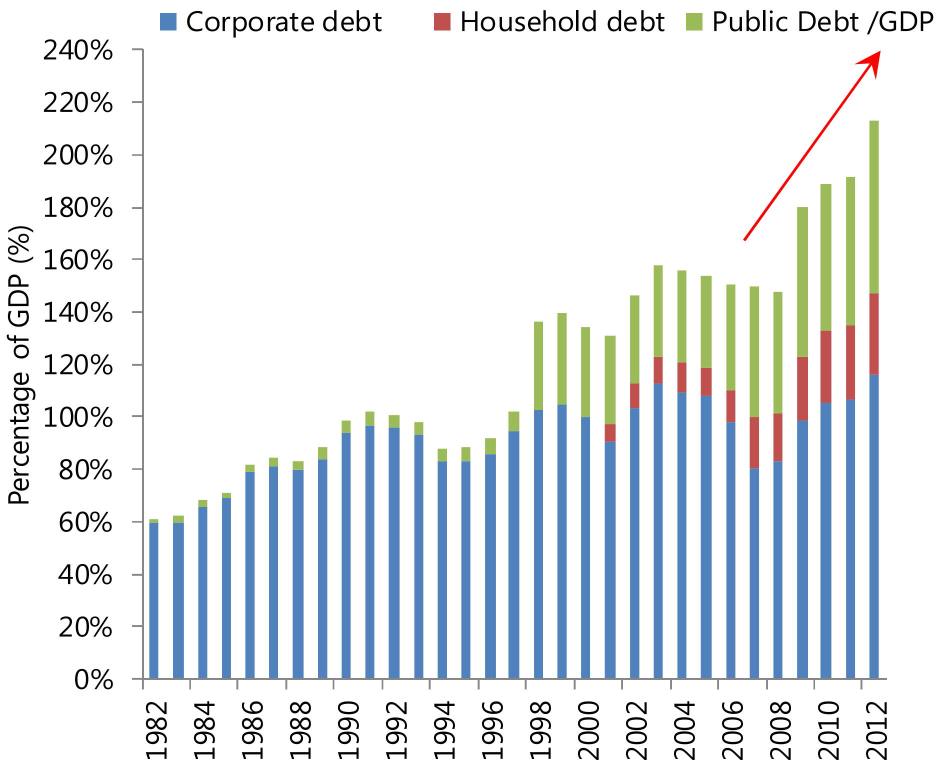
SOURCE: CEIC, PBOC, PIMCO

By International Comparisons China's Debt Level is Not Flashing Red;
Trajectory, Channels, and Rate of Growth is Source of Risk

Total Debt/GDP Ratios By Country (2012)



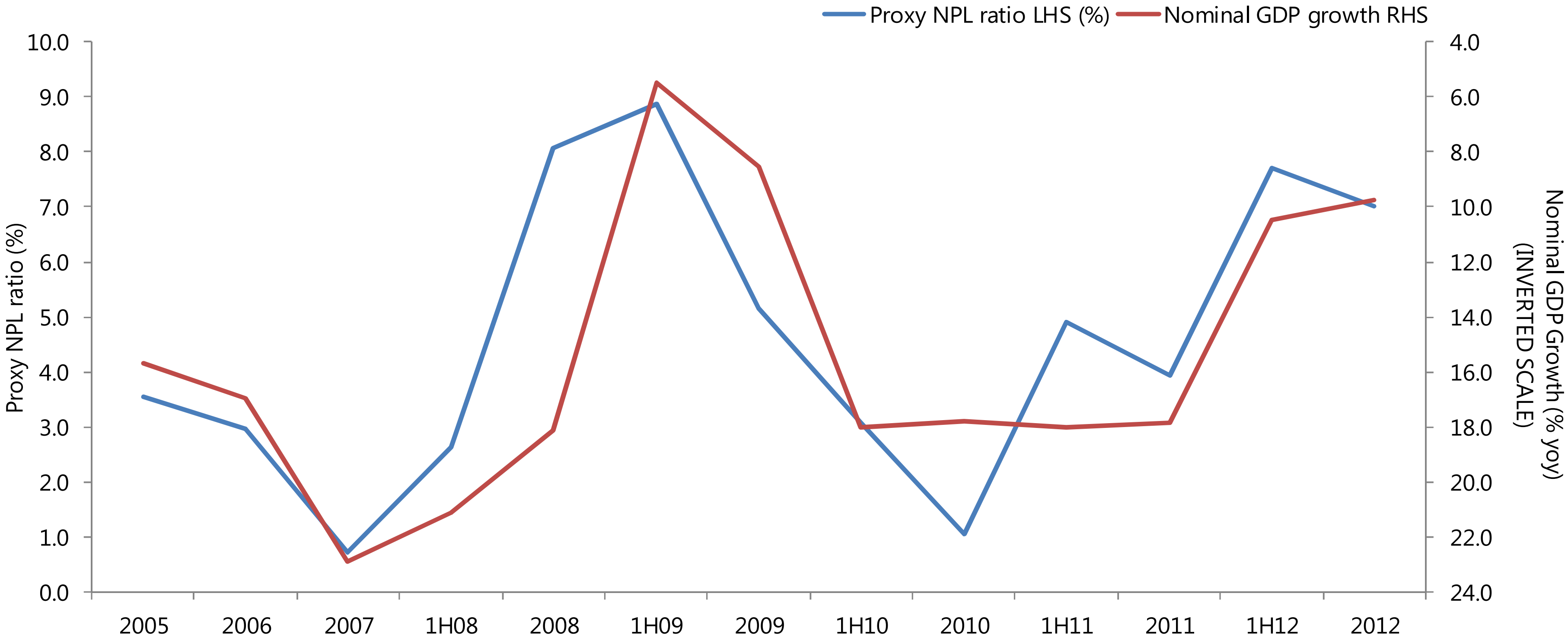
Composition of China's Total Debt to GDP



SOURCE: CEIC, PBOC, Fitch Rating, PIMCO

NPL Trends Linked to Nominal GDP Growth

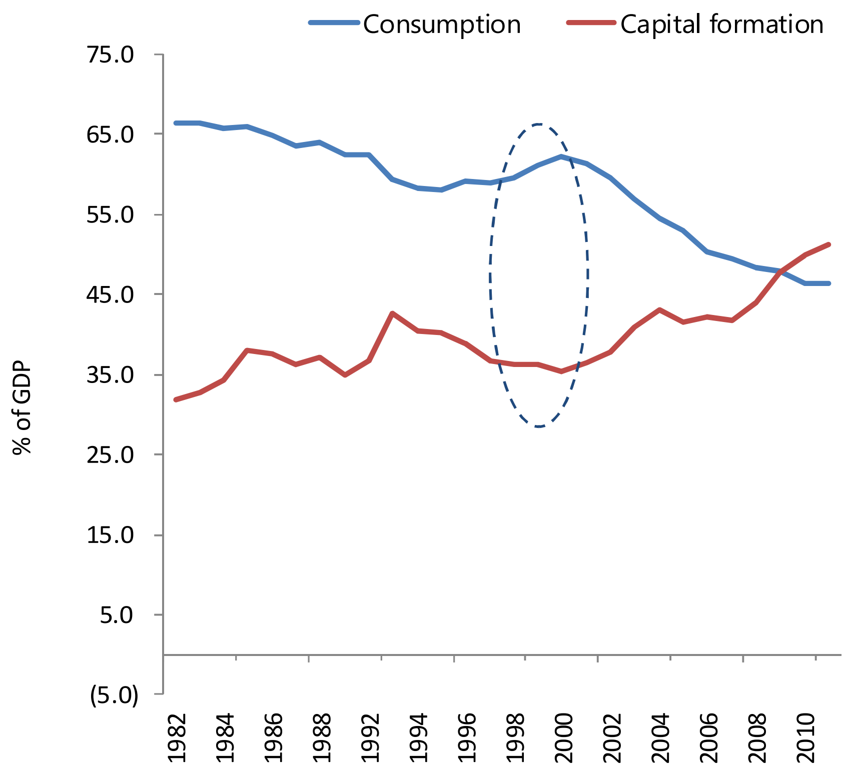
Nominal GDP Growth & Proxy NPL Ratio



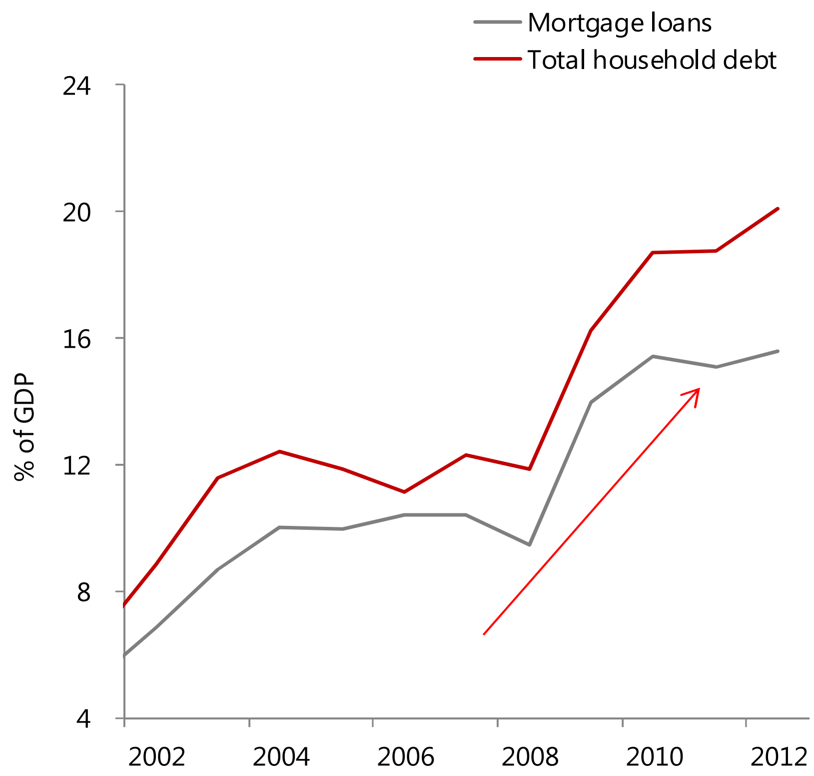
SOURCE: CEIC, PBOC, PIMCO, CS

Potential for Households is Significant When Viewed through Both National Income & Balance Sheet Perspectives

Consumption vs. Capital Formation as % of GDP



Household Balance Sheets



SOURCE: CEIC, PBOC

Old Growth Patterns

- Growth in the past driven by
  - Deployment of underutilized human capital
  - Productivity growth
  - Very high levels of investment
  - Exports and the tradable sector
  - Financial policies that repressed savers and lowered cost of capital
  - Leverage in the post crisis period

These Growth Patterns Have Reached the End of Their Useful Life

- Higher Public Investment
  - Generates aggregate demand
  - But pushed into low social return territory at the margin
    - Social return can be thought of as the present value of future increments to GDP, divided by the cost of the investment
  - That makes it a defective growth model
- Export sector is contributing little to growth
  - Still important
  - Advanced countries growing very slowly
  - Other developing countries dependent on China
  - China has a huge market share globally in tradable sectors
- Household income < 60% of GDP and savings 30%
  - Puts consumption at less than 40%
- But that is where the aggregate demand needs to come from
  - And if it doesn't then the evolution of the supply side will be distorted and eventually unsustainable as a growth pattern

Historical Note

- Five economies went through the middle income transition at high speed (Japan, Korea, Taiwan, Hong Kong, Singapore)
- All are smaller and did it when the advanced countries were 65% or more of the global economy and growing
- China is doing it at much larger scale with very little help from the export sector.
- So the handoff to domestic consumption is more important
- Since it is impossible to synchronize this precisely, and the government should be unwilling to fill in the gap with investment, there may be a transitional growth slow down in China
- The government does have valuable services to deliver and that can legitimately be used to ease the transition (education, health, social security)

Growth

- In the long run, it is driven by productivity growth
- In the short and medium run, growth can be constrained by demand
- It is not just the level of aggregate demand that matters
- The composition matters too
  - Household Consumption
  - Private Investment
  - Public expenditures
  - Public investment
  - External demand in the tradable sector
- The evolution of the supply follows demand in a flexible economy like that of China or the USA
- So the composition of demand guides the supply side evolution
- If one is out of balance the other will be also

Chinese Growth

- Has slowed in part because it is demand constrained
- That is OK and is part of the structural transformation of the economy

- Export sector is shifting up in terms of value added
  - External demand growth is weak

- Policy makers are reigning in low return investment

- Rapid growth of credit and leverage is being cut back

- Both of these would be the wrong way to relax the demand constraint

- These levers (credit and public sector investment) were used as a crisis response
  - That’s OK if not persistent
  - Investment was pushed into low return territory at the margin
  - Credit created asset bubbles and non performing loans

Elements of Structural Change as the Growth Model Shifts

TABLE 1 China: Projected growth pattern assuming steady reforms and no major shock

Indicator	1995–2010	2011–2015	2016–20	2021–25	2026–30
GDP growth (percent per year)	9.9	8.6	7.0	5.9	5.0
Labor growth	0.9	0.3	−0.2	−0.2	−0.4
Labor productivity growth	8.9	8.3	7.1	6.2	5.5
Structure of economy (end of period, %)					
Investment/GDP ratio	46.4	42	38	36	34
Consumption/GDP ratio	48.6	56	60	63	66
Industry/GDP ratio	46.9	43.8	41.0	38.0	34.6
Services/GDP ratio	43.0	47.6	51.6	56.1	61.1
Share of employment in agriculture	38.1	30.0	23.7	18.2	12.5
Share of employment in services	34.1	42.0	47.6	52.9	59.0

Source: DRC.

Where is the 7% Growth Coming From?

- The short answer is that household incomes are rising now, reversing the past long term trend
- And the domestic service business sector in the non-tradable part of the economy is showing signs of growing quite rapidly.
- Retail is growing and online retail is exploding
  - **China's online shopping market registered stunning growth last year.** According to iResearch, China's online market in 2013 hit gross merchandise volume (GMV) of 1,841.0 billion yuan, up by 39.4% yoy. In particular, GMV for the B2C segment soared by 65.2% yoy.
- These are important elements in the structural changes and shift the economy to a new and different kind of sustainable growth pattern

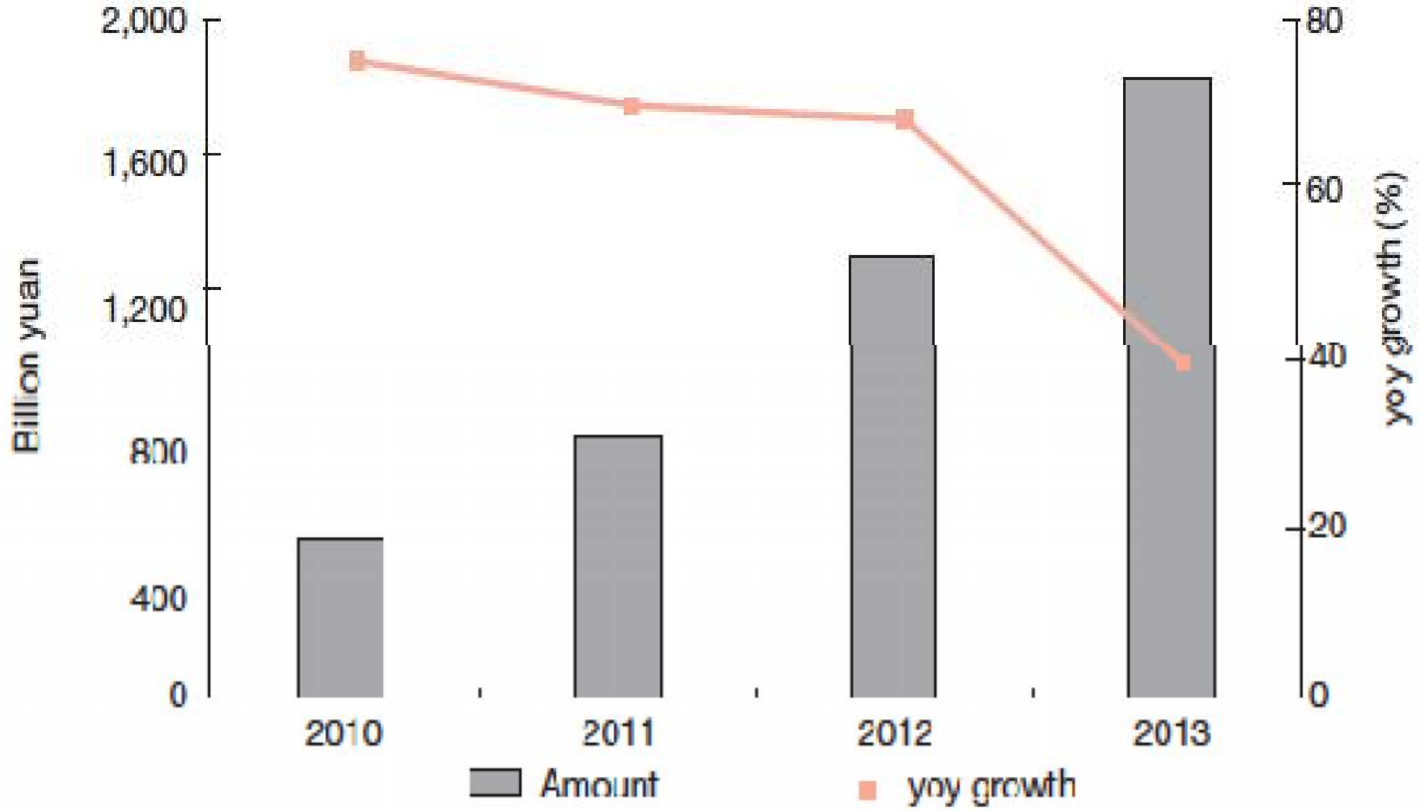
Recent Growth by Category

Nominal growth, yoy (%)

	FY13	1Q14	Apr
Grain, oil, food, beverages, tobacco and liquor	13.9	10.1	11.9
Clothing, shoes, hats and textiles	11.6	8.7	11.2
Cosmetics	13.3	9.3	6.6
Gold, silver and jewellery	25.8	4.7	-30.0
Products for daily use	14.1	8.7	10.7
Sports and entertainment products	7.2	1.3	-1.1
Home appliances and video equipment	14.5	9.2	2.9
Chinese and Western medicines	17.7	16.8	14.2
Stationery and office accessories	11.8	9.5	18.0
Furniture	21.0	14.2	15.5
Telecommunications equipment	20.4	14.7	28.8
Petroleum and related products	9.9	6.0	8.0
Automobiles	10.4	12.3	12.3
Building and decoration materials	22.1	12.2	16.7

Source: National Bureau of Statistics, PRC

Exhibit 16: Gross merchandise volume of China's online shopping market, 2010 to 2013



Source: IResearch

The top seven provinces and municipalities in terms of foreign trade va

Provinces/ Municipalities	Foreign trade value (billion yuan)
Guangdong	1,360
Jiangsu	777.0
Shanghai	669.3
Beijing	666.4
Zhejiang	464.1
Shandong	402.9
Fujian	237.3

Source: China Customs

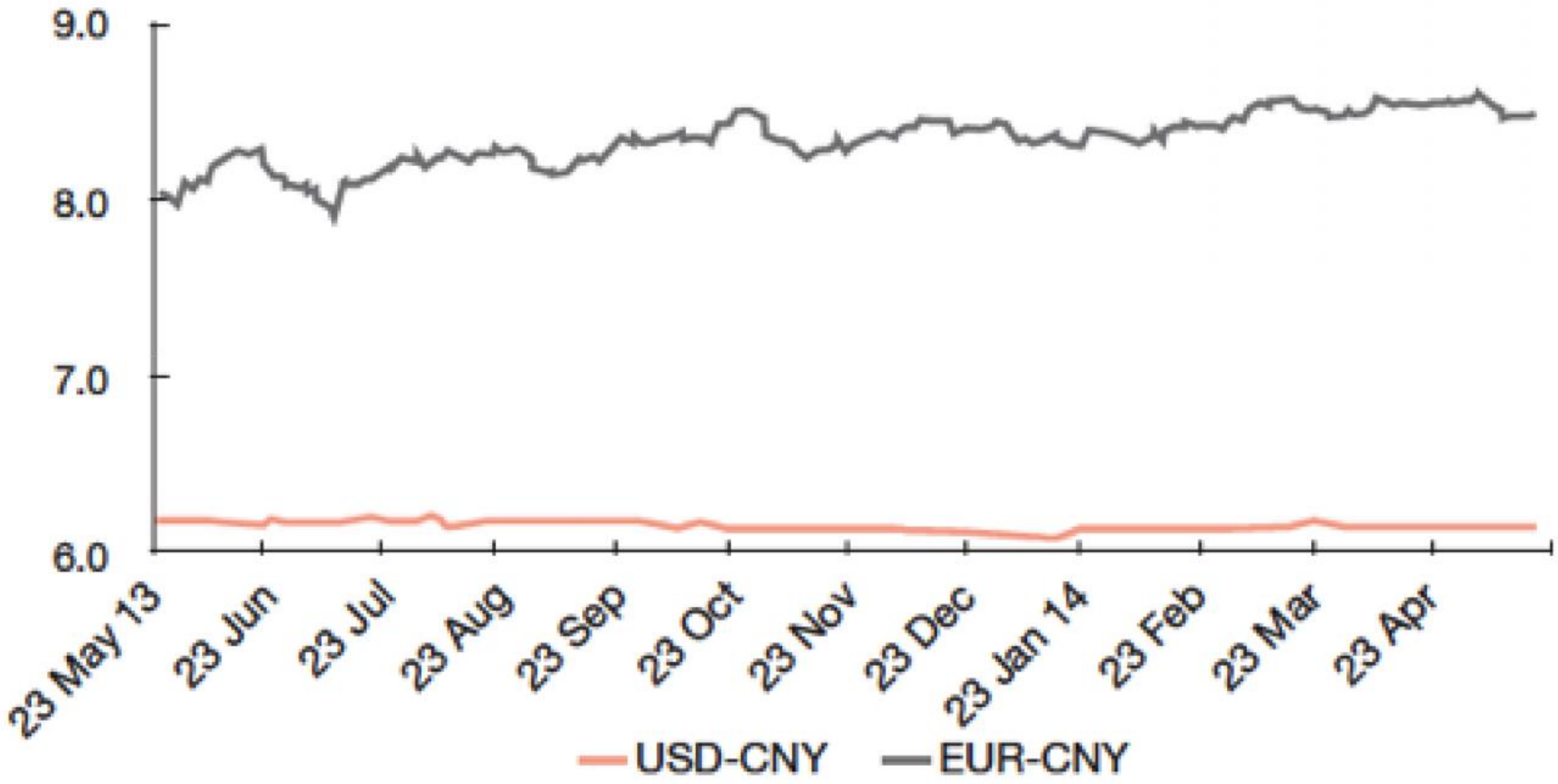
Exhibit 34: Foreign exchange reserves by quarter, 2Q13 to 1Q14

USD billion

	Accumulation	End of the quarter
FY13	**509.7**	**3,821.3**
2Q13	54.1	3,496.7
3Q13	166.0	3,662.7
4Q13	158.7	3,821.3
1Q14	126.8	3,948.1

Source: State Administration of Foreign Exchange, PRC

Exhibit 35: USD-CNY and EUR-CNY daily fixing rates, May 2013 to May 2014



Source: State Administration of Foreign Exchange

GLOBAL ECONOMY OUTLOOK

Exhibit 47: GDP growth forecasts by the International Monetary Fund

yoy growth (%)

	2013	2014 (Forecasts)	2015 (Forecasts)
World economy	3.0	3.6	3.9
Advanced economies	1.3	2.2	2.3
- US	1.9	2.8	3.0
- Eurozone[25]	-0.5	1.2	1.5
- Japan	1.5	1.4	1.0
Emerging markets and developing economies	4.7	4.9	5.3
- China	7.7	7.5	7.3
- India	4.4	5.4	6.4
- ASEAN-5[26]	5.2	4.9	5.4
- Brazil	2.3	1.8	2.7
Russia	1.3	1.3	2.3

Source:International Monetary Fund, World Economic Outlook, April 2014

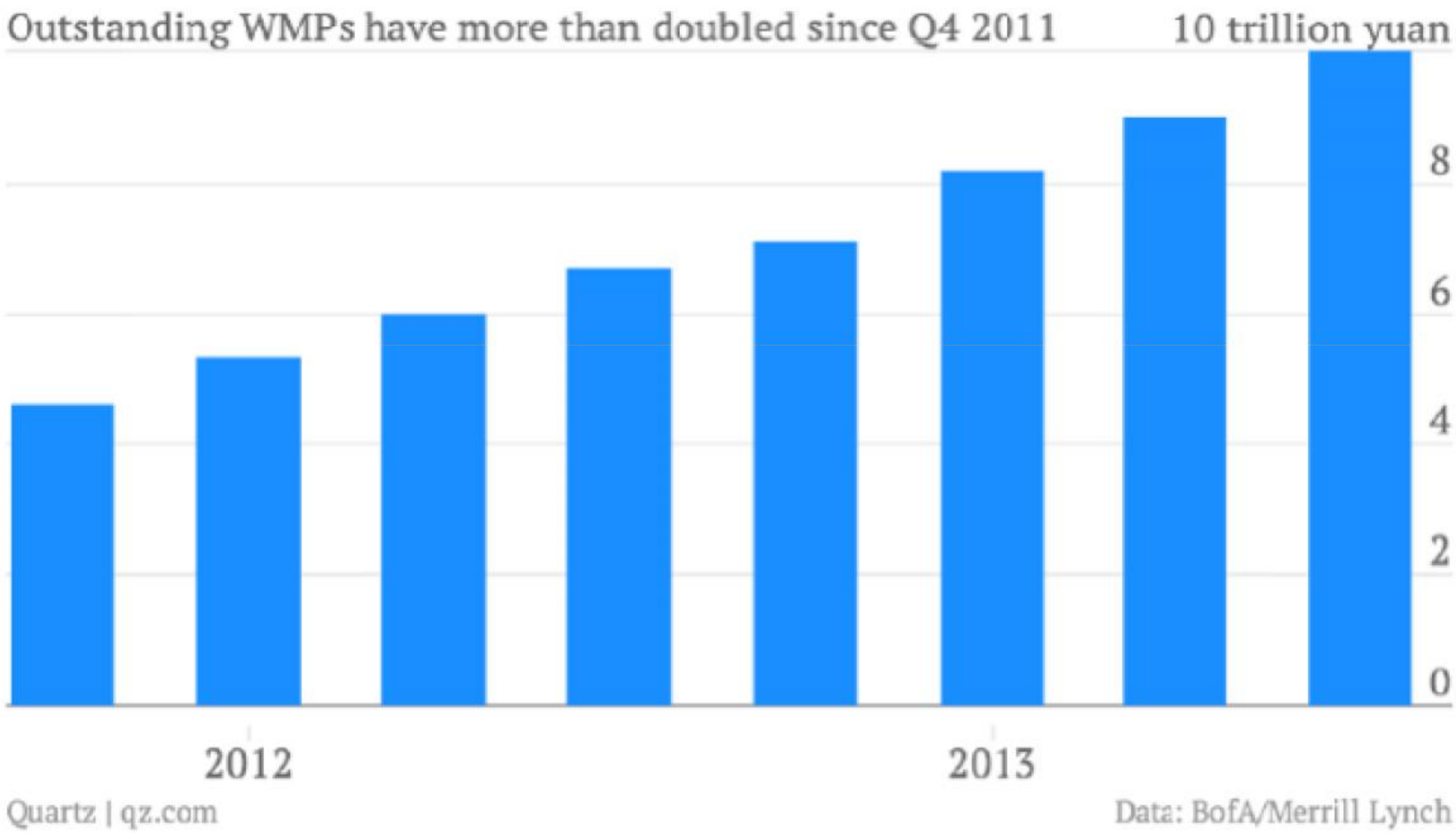
The Financial Sector

- In the past, the financial sector was dominated by state owned entities, primarily banks
- Returns to savers were controlled or repressed to lower the cost of capital for the investment lead growth model.
- Access to credit was not a level playing field with SOE’s and governments in the front of the queue
- This is now counterproductive

Shadow Banking

- The shadow banking system with higher returns (and a richer menu) for savers and alternative sources of credit to SME’s is part of financial sector development
- And it is important
- That is why the policy approach is not to suppress it but rather to regulate it properly to prevent naïve and excessive risk taking
- State owned banks are important intermediaries (and some what shadow banking suppressed)
- But with with SOB’s as intermediaries there is an implicit government guarantee and that can and probably does lead to excessive risk taking

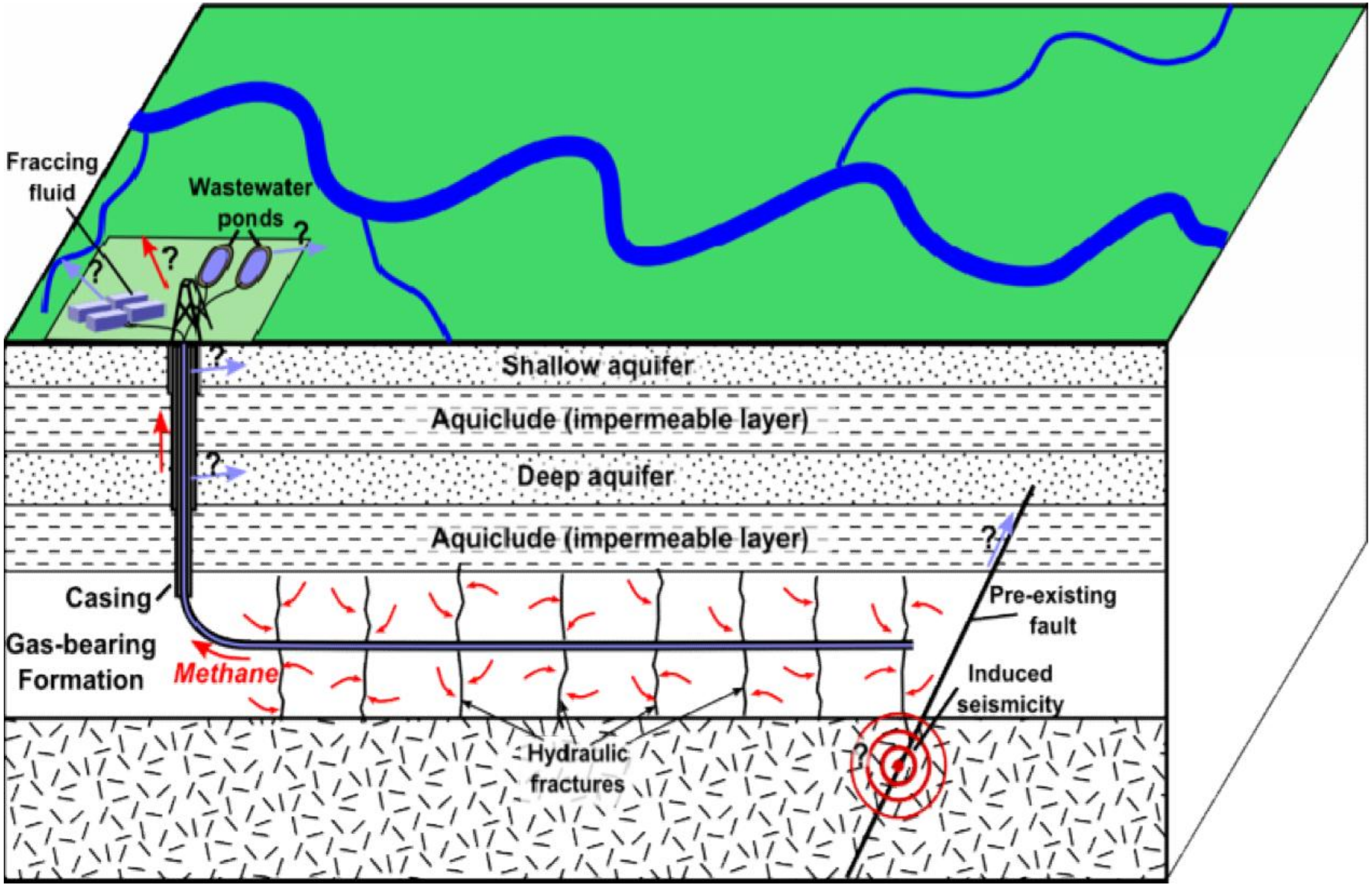
Wealth Management Products



Data from BofA/Merrill Lynch

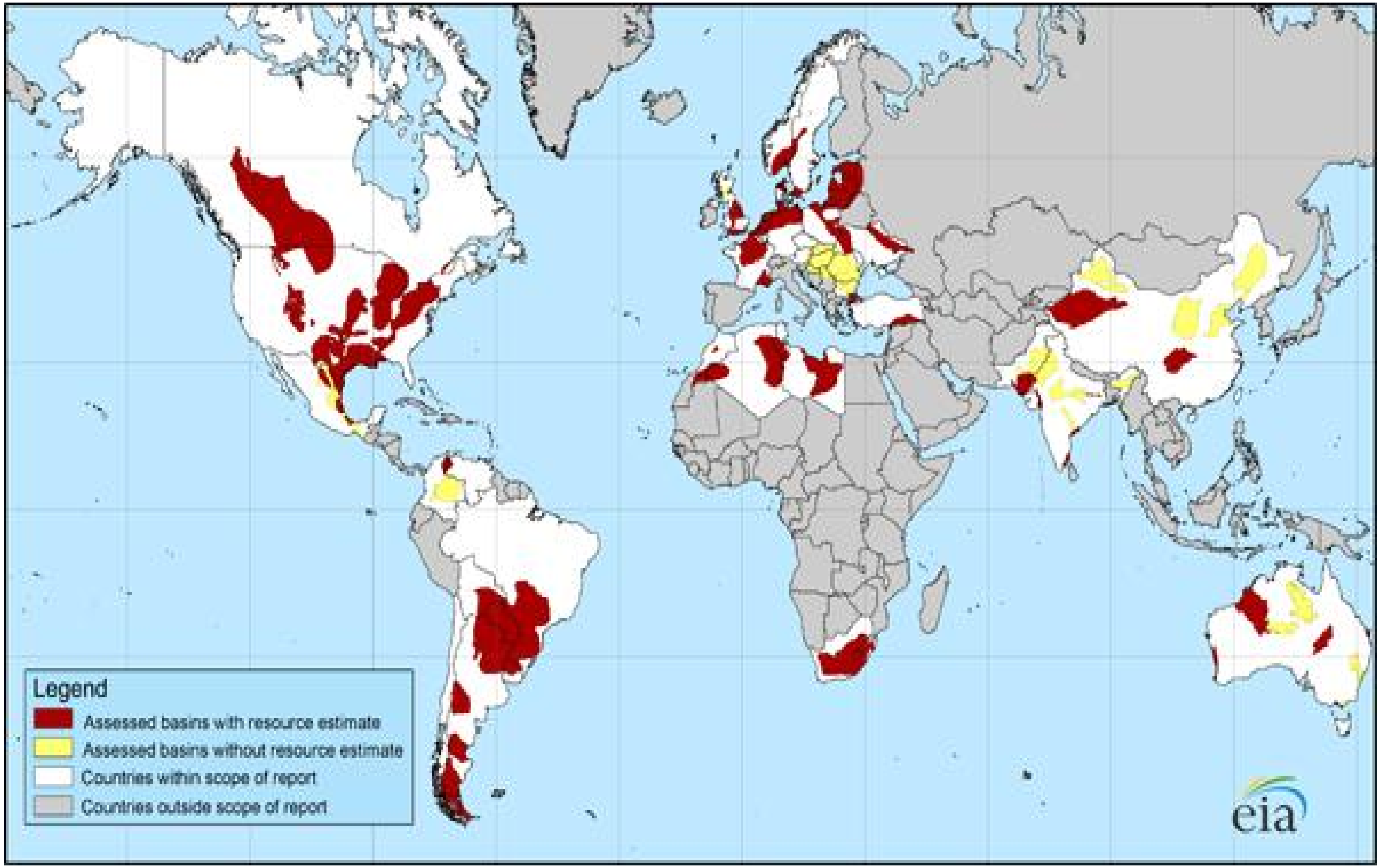
Game Changing Technologies

- Shale Gas
- Mobile Phones
- 3D Printing
- “Smart” Robotics with Sensors
  - Manufacturing
  - Logistics
- Digital Capital
  - Displacement of Labor

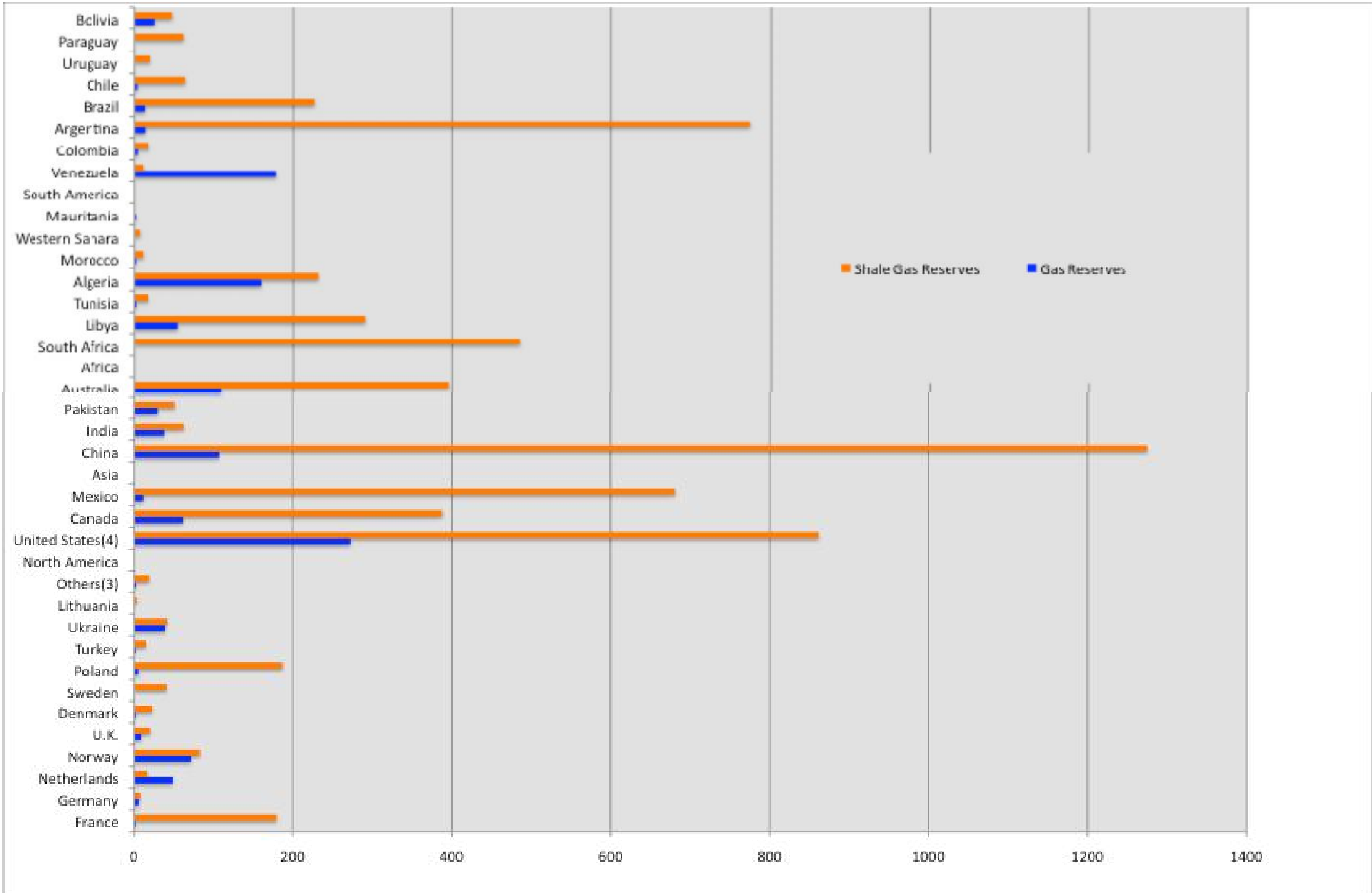


Fraccing fluid
Wastewater ponds
?
Shallow aquifer
Aquiclude (impermeable layer)
Deep aquifer
Aquiclude (impermeable layer)
Casing
Gas-bearing Formation
Methane
Pre-existing fault
Induced seismicity
Hydraulic fractures

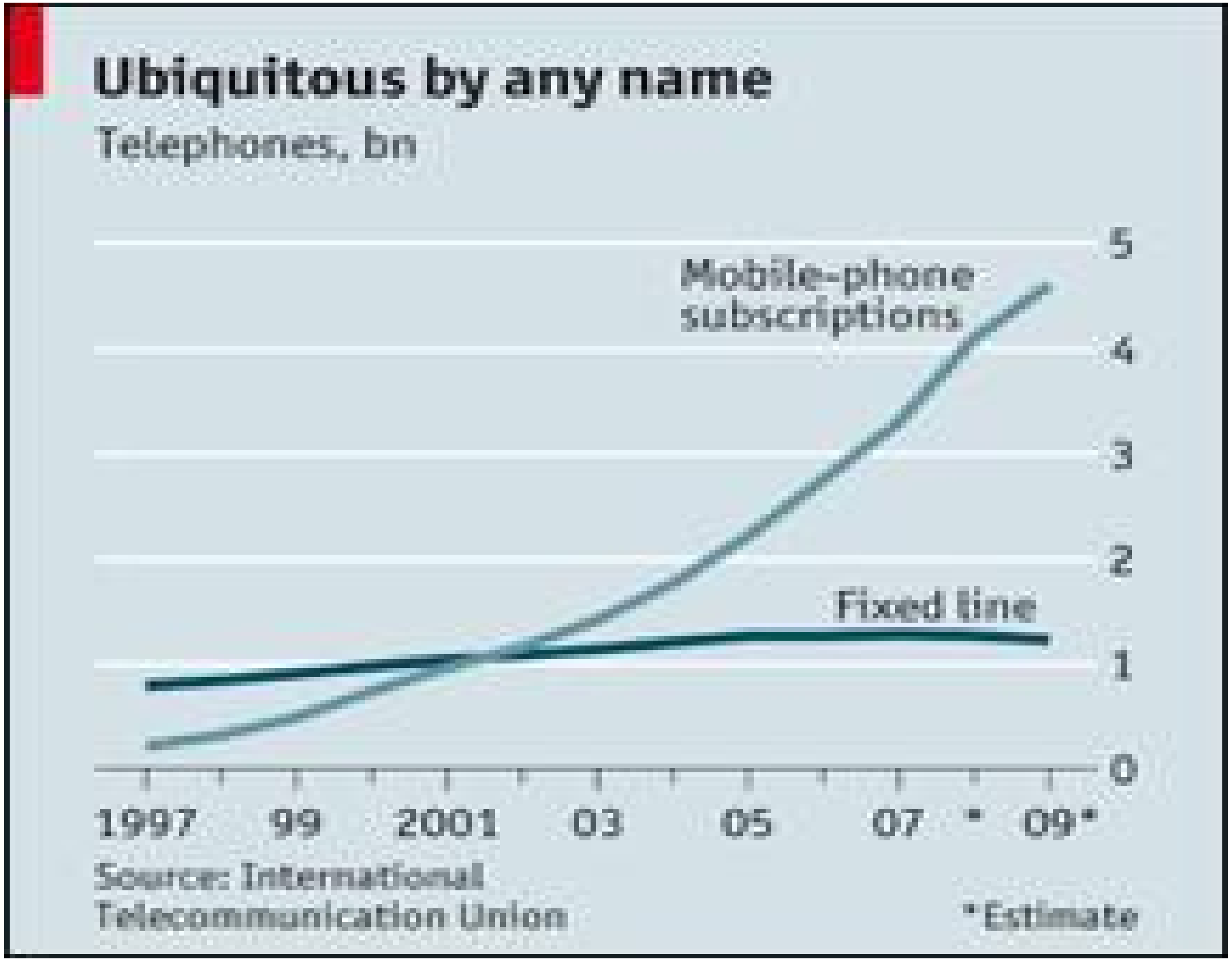
Location

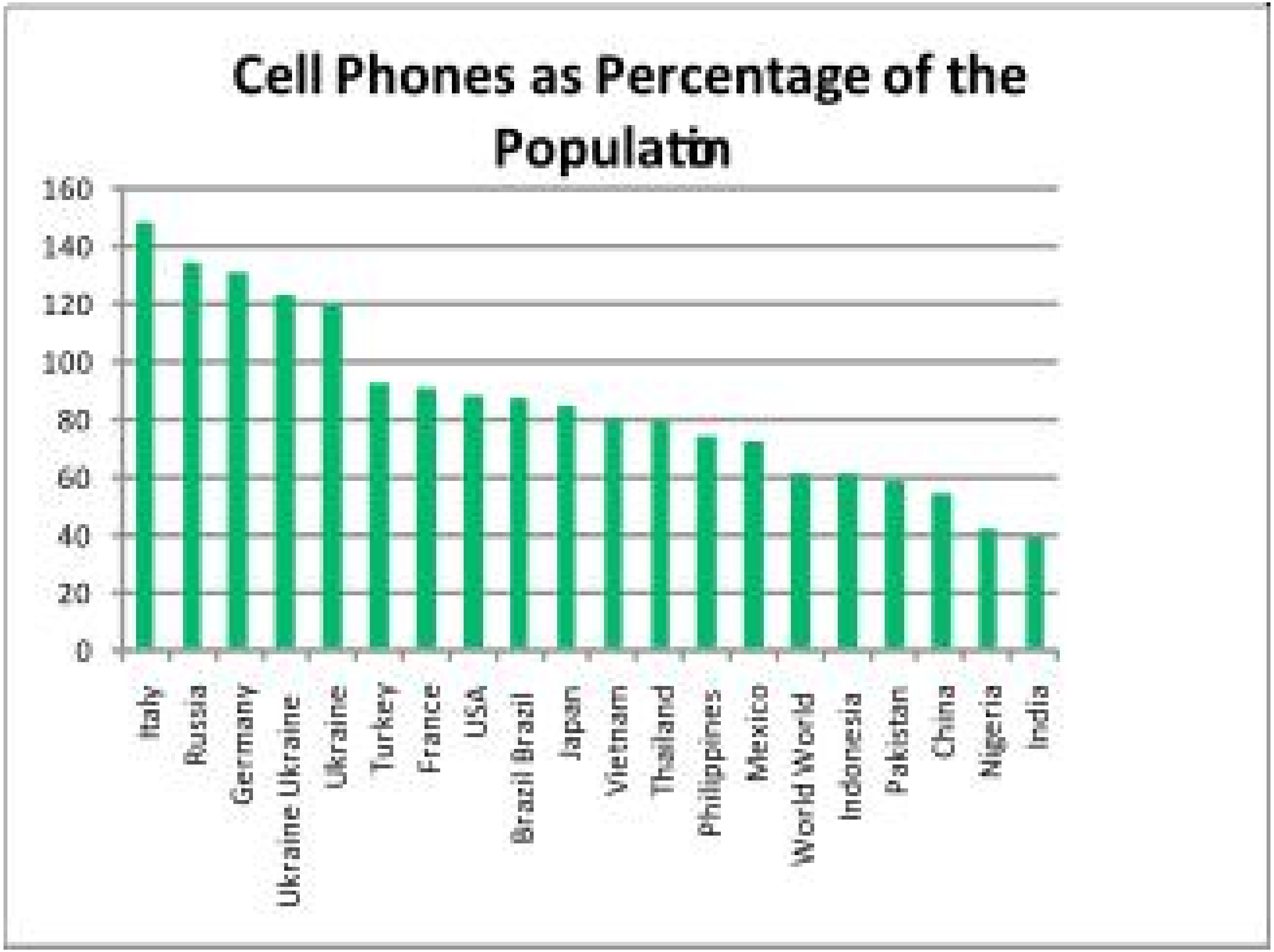

Legend
Assessed basins with resource estimate
Assessed basins without resource estimate
Countries within scope of report
Countries outside scope of report
eia

Conventional and Shale Gas Reserves



Mobile Phone Growth: Elimination of the Digital Divide




Cell Phones as Percentage of the Populatin
160
140
120
100
80
60
40
20
0
Italy
Russia
Germany
Ukraine Ukraine
Ukraine
Turkey
France
USA
Brazil Brazil
Japan
Vietnam
Thailand
Philippines
Mexico
World World
Indonesia
Pakistan
China
Nigeria
India

3D Printing

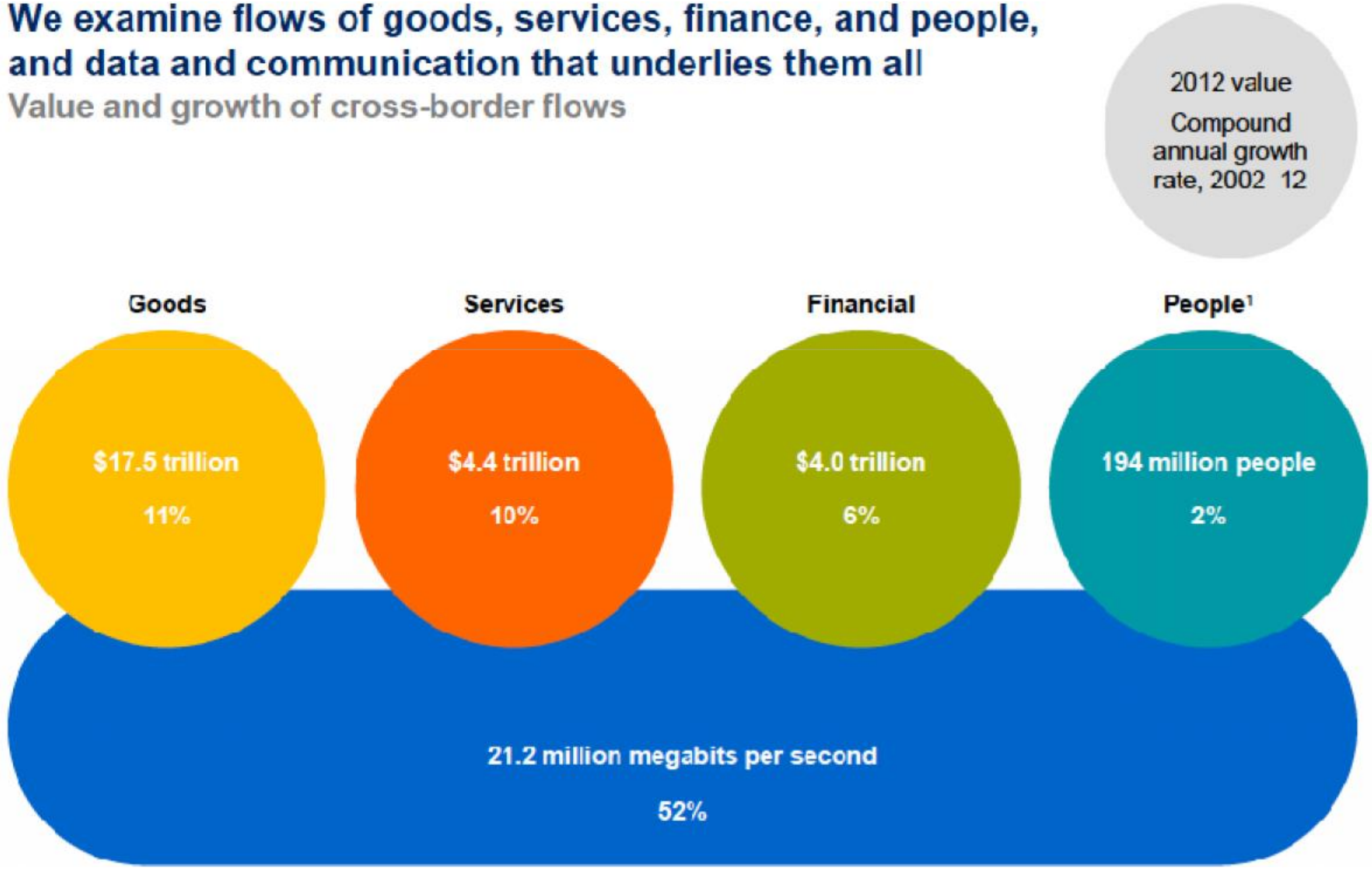
Electronics Assembly

Global Flows

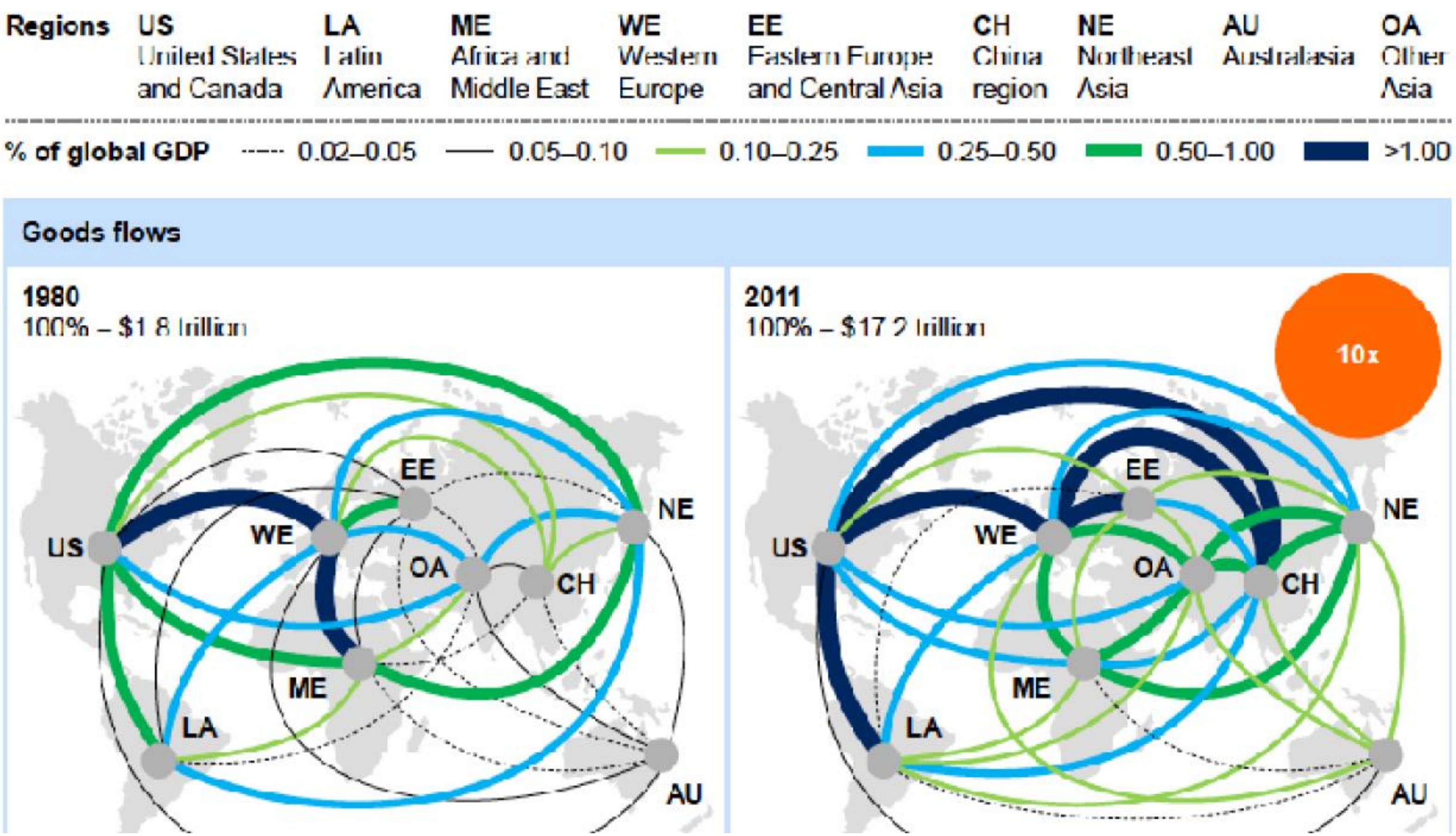
- Goods
- Services
- Capital/Finance
- People
- Data, Information, Knowledge

We examine flows of goods, services, finance, and people, and data and communication that underlies them all

Value and growth of cross-border flows

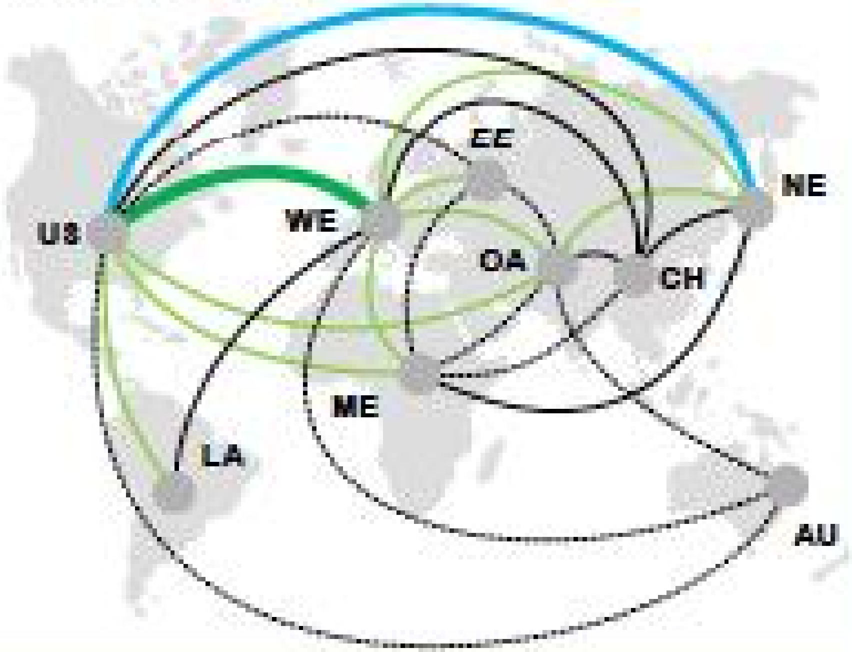


Goods


Regions
US United States and Canada
LA Latin America
ME Africa and Middle East
WE Western Europe
EE Eastern Europe and Central Asia
CH China region
NE Northeast Asia
AU Australasia
OA Other Asia
% of global GDP
0.02–0.05
0.05–0.10
0.10–0.25
0.25–0.50
0.50–1.00
>1.00
Goods flows
1980
100% = $1.8 trillion
2011
100% = $17.2 trillion
10x
US
WE
EE
NE
OA
CH
ME
LA
AU

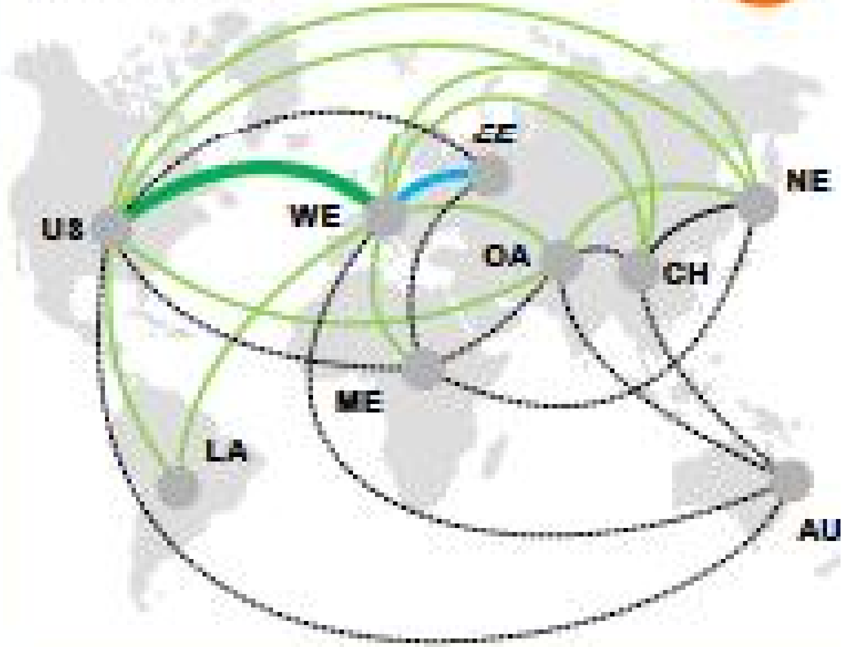
Services flows

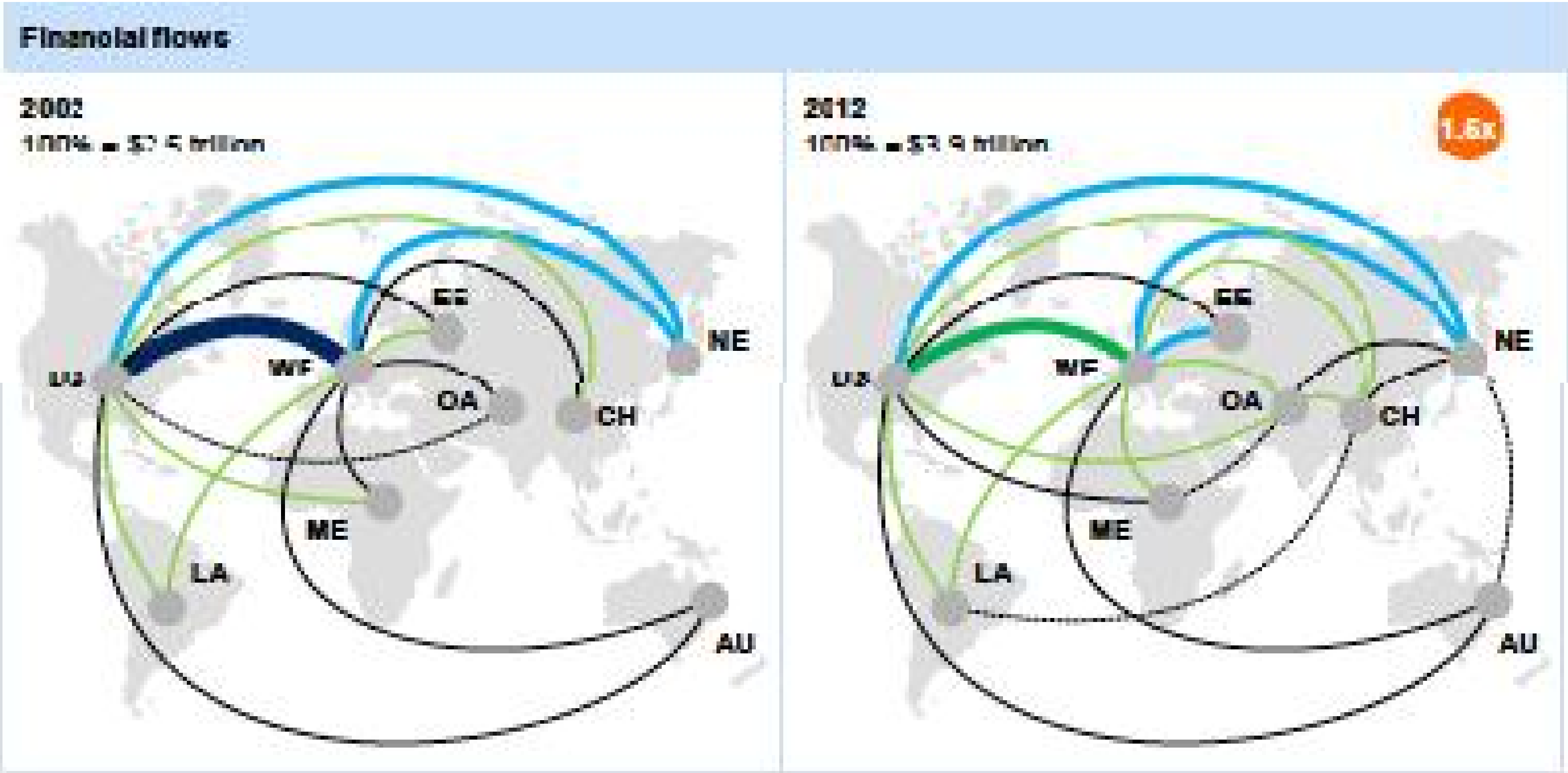
2001
100% = $1.5 trillion[1]



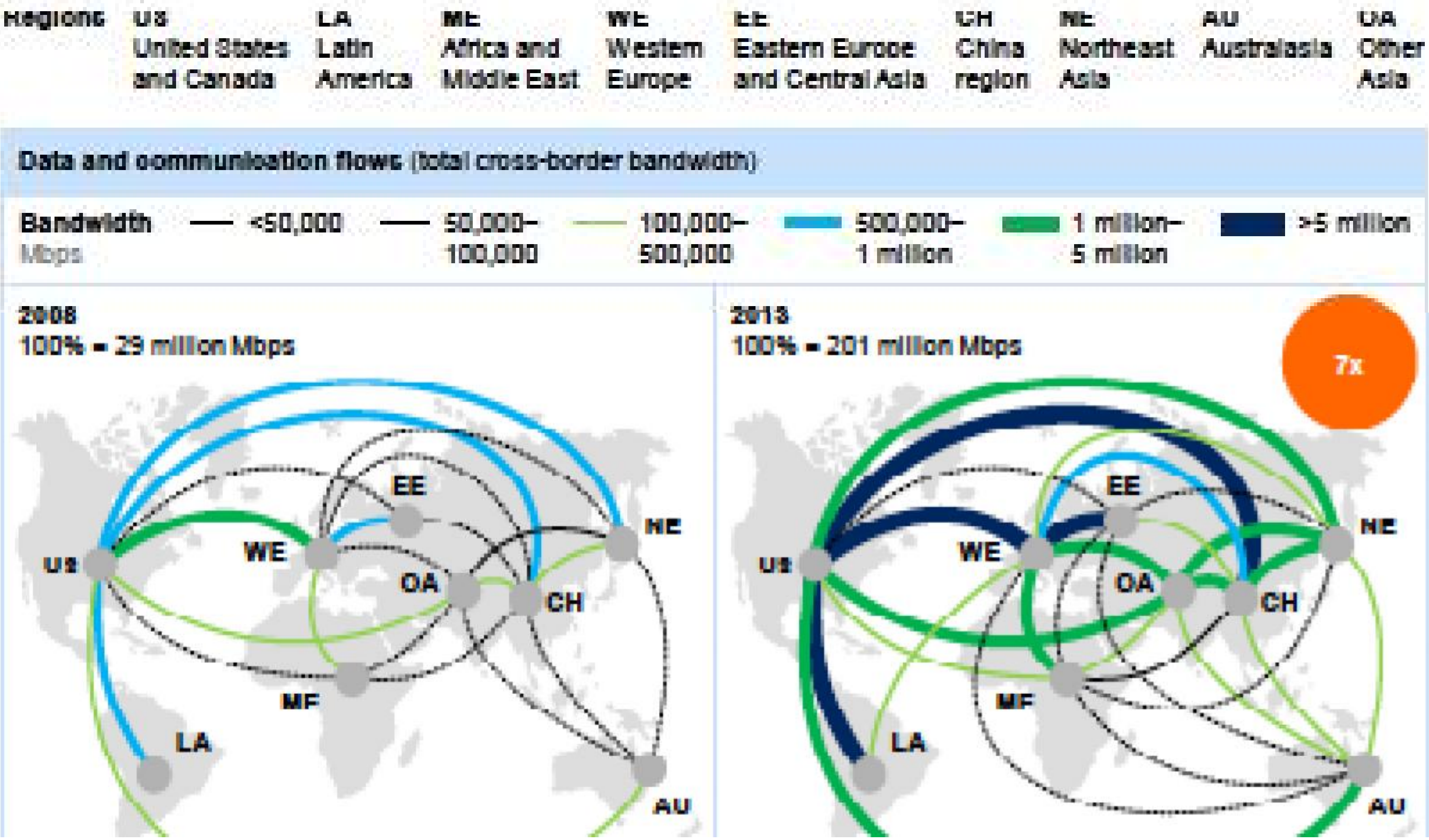
2011
100% = $4.1 trillion[2]

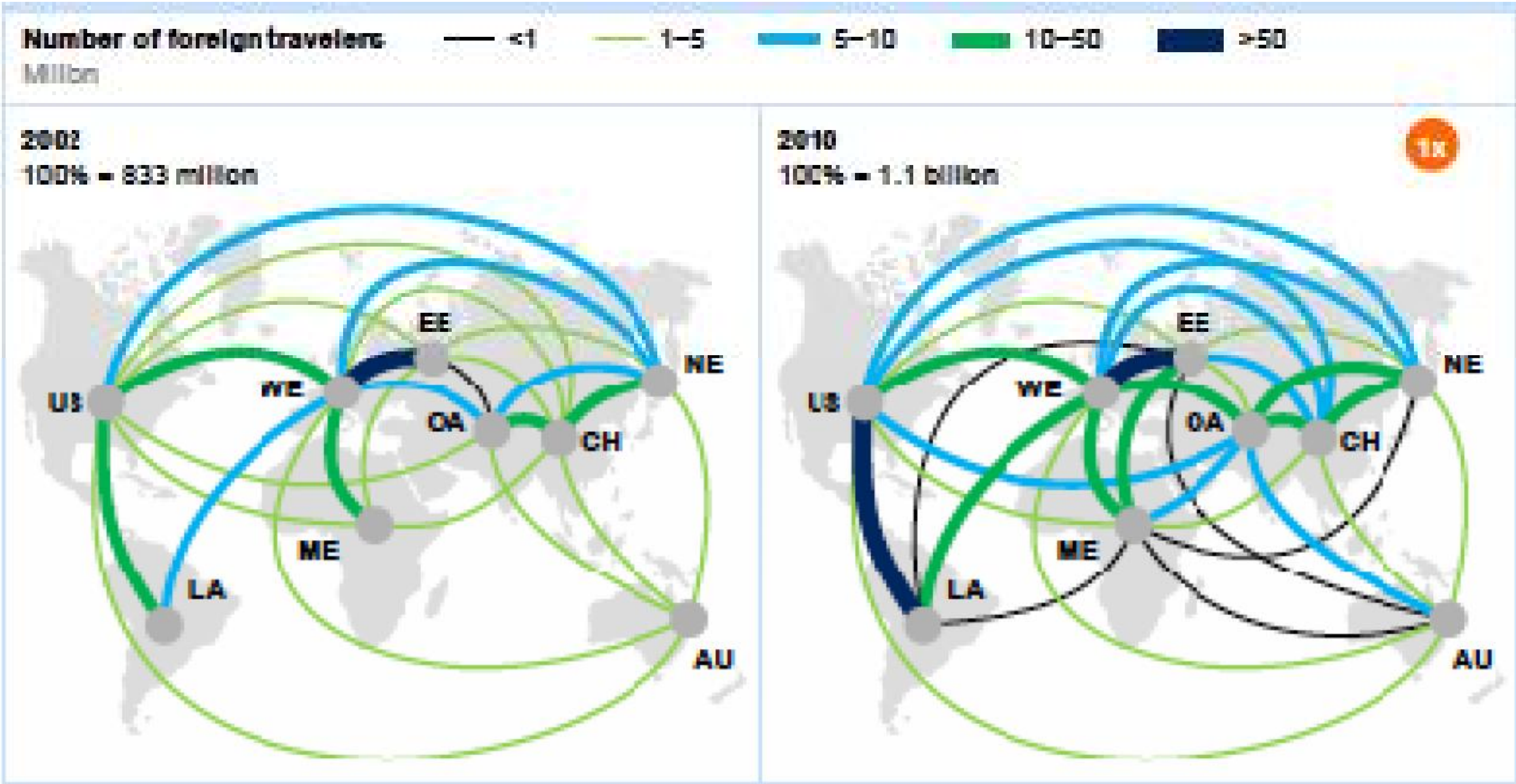
3x





1 2001 services flows are estimated based on 55 percent coverage with a bilateral data set.
2 2011 services flows are estimated based on 61 percent coverage with a bilateral data set.
SOURCE: Comtrade; IMF Balance of Payments; World Development Indicators, World Bank; McKinsey Global Institute analysis


Regions
US United States and Canada
LA Latin America
ME Africa and Middle East
WE Western Europe
EE Eastern Europe and Central Asia
CH China region
NE Northeast Asia
AU Australasia
OA Other Asia
Data and communication flows (total cross-border bandwidth)
Bandwidth Mbps
<50,000
50,000–100,000
100,000–500,000
500,000–1 million
1 million–5 million
>5 million
2008
100% = 29 million Mbps
2013
100% = 201 million Mbps
7x
US
WE
EE
OA
CH
NE
ME
LA
AU



SOURCE: Telegography; World Trade Organization; McKinsey Global Institute analysis