The business of making money

- In a modern monetary economy, goods are typically not exchanged for goods but for fiat money.
- Therefore, even though people are ultimately interested in getting goods, the first activity in which people must engage is raising money.
- One way of raising money consists of selling goods others want. Thus, one may sell his/her time for a wage or a good he/she can produce for a price.
- What if one has no good others may want? Then one can raise money by issuing a financial asset, which is essentially a promise to pay money.

Financial assets

- A financial asset is basically an IOU: a paper where someone acknowledges a debt ("I owe you").
- A financial asset is a substitute for money, as it represents a promise today to pay money in the future. It is a way of capitalizing future revenues.
- Suppose you do not have money today, but expect you will have in the future. A financial asset is like a time machine allowing you to take your money back from the future: you issue an IOU and sell it today for money. Problem: part of your future money is lost while going back to the present.

Rate of return of a simple asset /1

- Suppose you know you will get €1,000 in a month and need (or want) them today. You then issue a financial asset stating that you will pay €1,000 in a month to the bearer (owner) of the asset.
- But it will illusory to expect to sell that asset for €1,000, for the buyer gives €1,000 and receives €1,000 in a month: the buyer loses the possession of €1,000 for a month in exchange for nothing.
- So the asset must be sold for less than €1,000. The interest rate of the asset is its implicit rate of return.

Rate of return of a simple asset /1

- Let V the nominal (face) value of the asset: how much it promises to pay in the future.
- Let P be the price at which the asset is sold.
- Then the (implicit) rate of return i_R (or rate of profit) of the asset is the profit $V - P$ obtained from buying the asset per monetary unit invested in the purchase. The formula is (multiply the right-hand side by 100 to get a percentage):

$$i_R = \frac{V - P}{P}.$$

- For instance, if $V = 1{,}000$ and $P = 800$, then $i_R = 0.25 = 25\%$.

The role of financial assets /1

- From the perspective of the purchaser, the financial asset is a way of saving purchasing power (a way of sending it from the present to the future).
- From the perspective of the issuer (or the seller, if the original buyer becomes a seller), the financial asset is a way of acquiring purchasing power (a way of bringing it from the future to the present).
- A financial asset is an instrument to get money if you need it from someone not needing it now. In short, a financial asset is (like) a loan of money.

The role of financial assets /2

- Financial assets channel purchasing power (in the form of money) from those who wish to lend to those who wish to borrow.

- Those wishing to borrow have a deficit: planned expenditure larger than current income. For those wishing to lend, planned expenditure is smaller than current income: they have a surplus.

- A financial asset is a financial claim by means of which a lender has a claim on a borrower to pay a certain amount of money at a given time.

Properties of financial assets

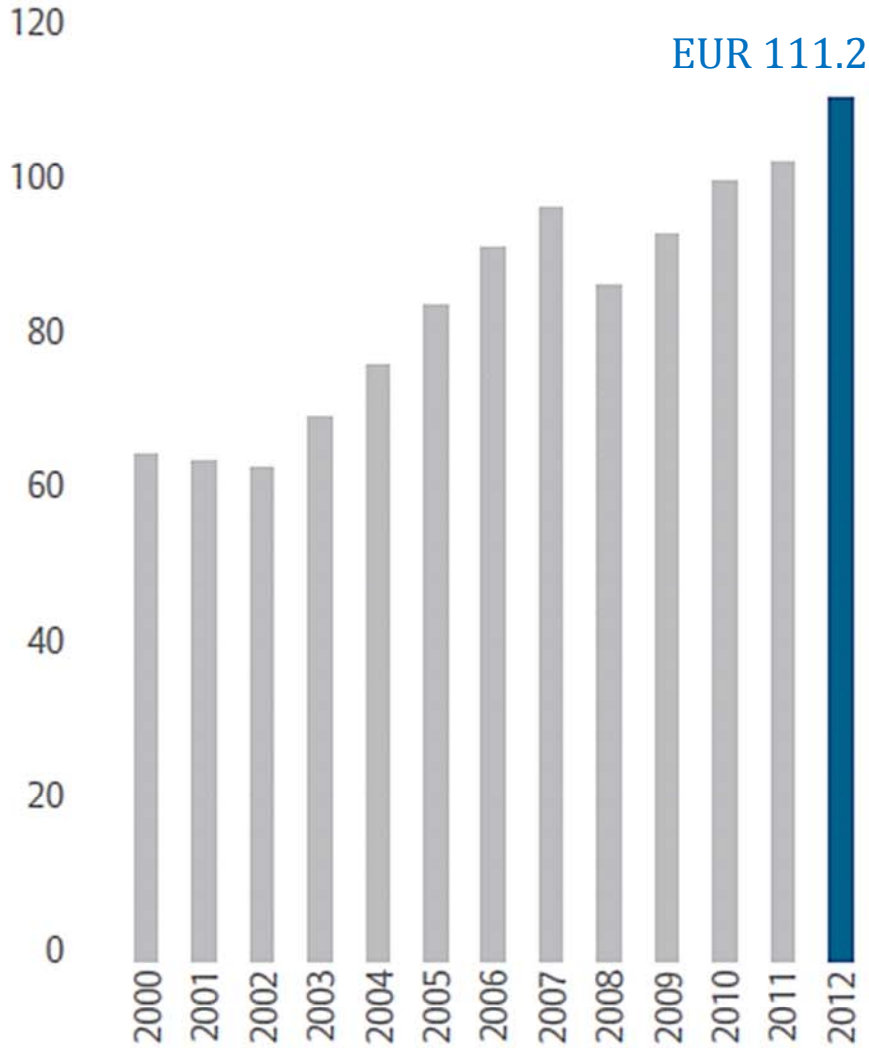
- To repeat, the owner of a financial asset has a claim on someone else to pay a certain amount of money.
- Maturity. Date at which the claim must be satisfied.
- (Default) Risk. The likelihood that the claim will not be satisfied at maturity.
- Liquidity. Ease and rapidity with which the asset can be turned into money (be sold) before maturity.
- Rate of return. Ratio of the profit the asset generates to the cost of obtaining that profit.

Basic types of financial assets

- Currency can be considered a financial asset with instant maturity (€1 pays €1 now), no return, no risk, and maximum liquidity.
- Financial securities ("securities") are tradable (can be bought and sold) financial assets. A security is any fungible, negotiable financial instrument.
- Securities are divided into debt securities and equity. The market where securities are initially sold (by the issuer) is the primary market. Subsequent sales take place in the secondary market.

Global financial assets: Strong recovery across all asset classes

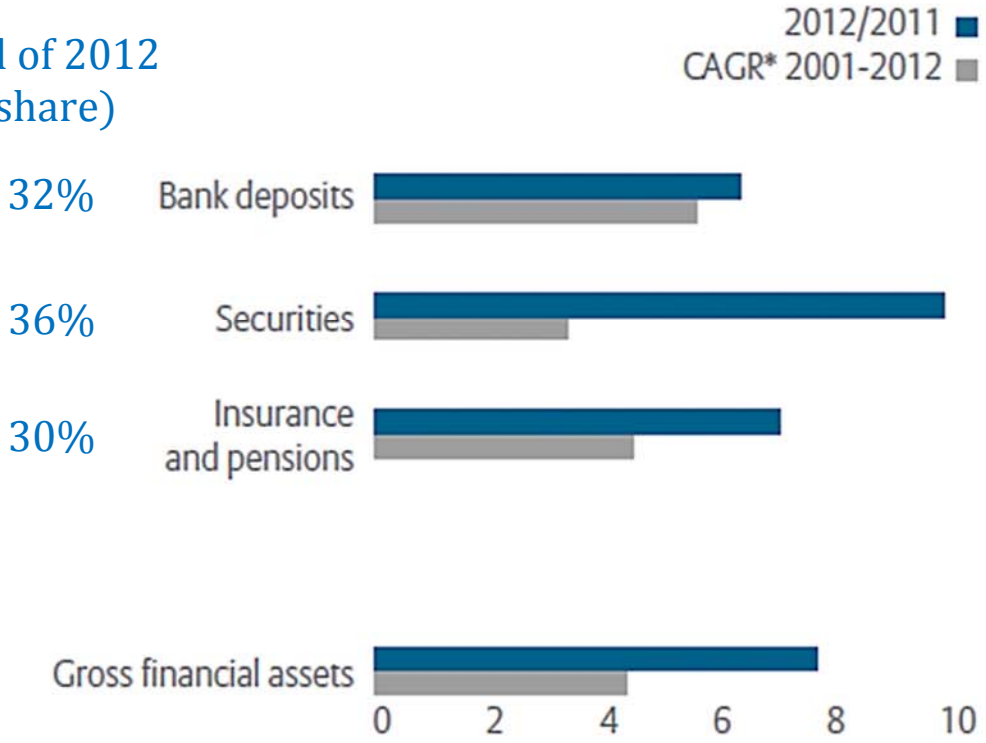
Global gross financial assets, in EUR tn



EUR 111.2 trillion

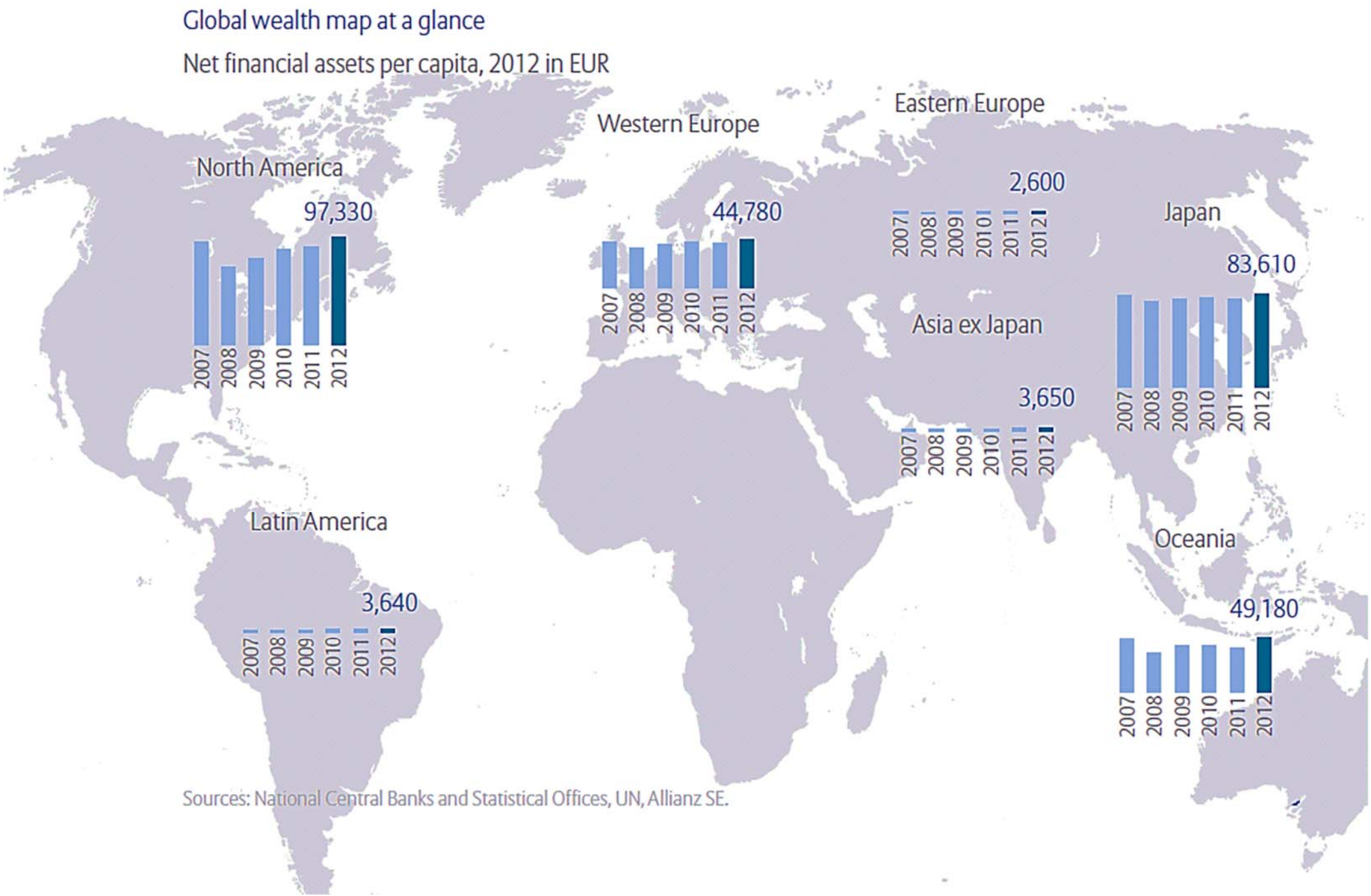
World GDP (2012) ≈ USD 72 trillion
Average rate USD/EUR (2012) = 1.2848
World GDP (2012) ≈ EUR 92.5 trillion

Percentage change of asset classes



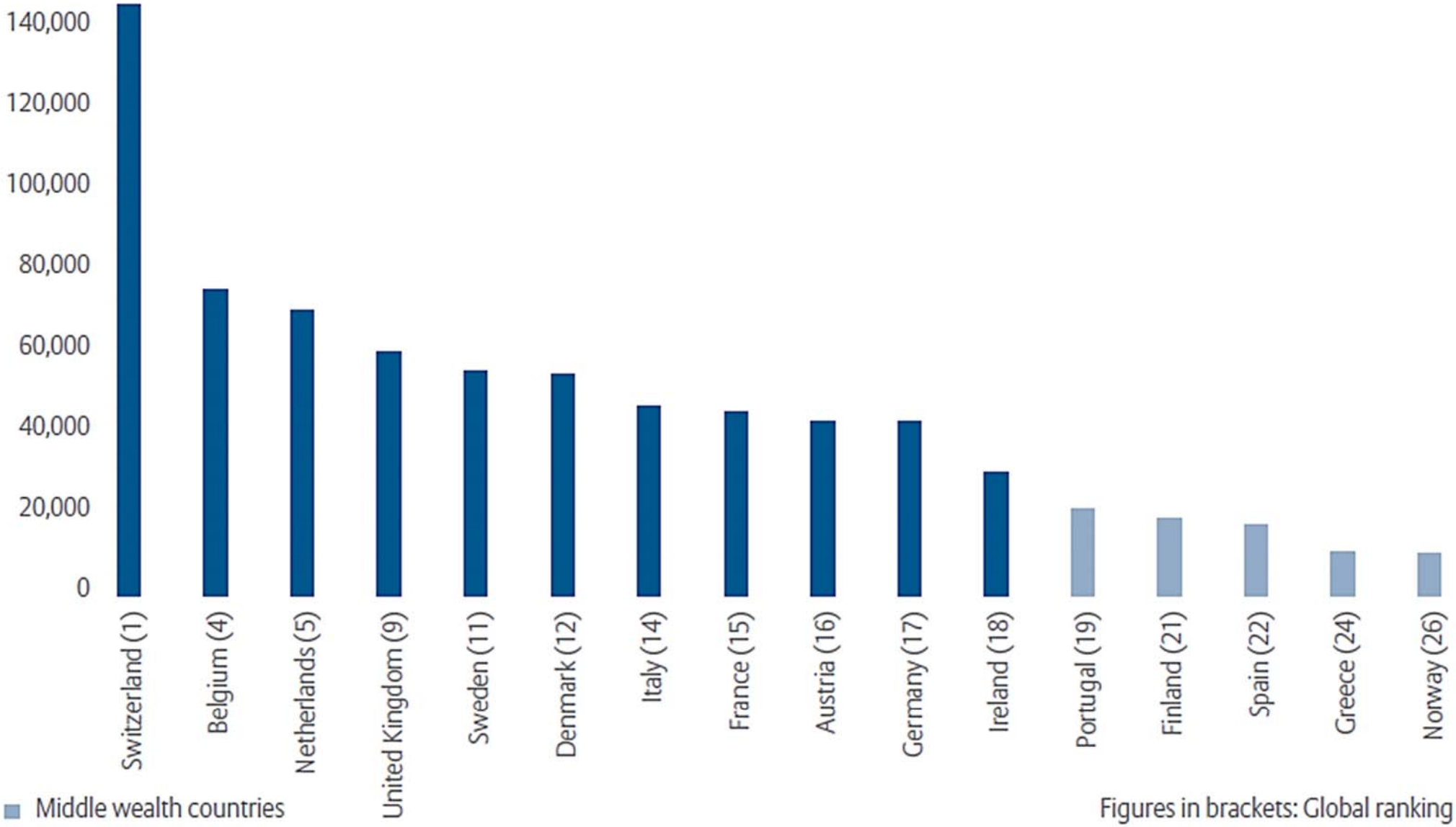
*CAGR = Compound Annual Growth Rate
Sources: National Central Banks and Statistical Offices, Allianz SE.

https://www.allianz.com/v_1380187782000/media/economic_research/publications/specials/en/AGWR2013e.pdf


Global wealth map at a glance
Net financial assets per capita, 2012 in EUR
North America
97,330
Western Europe
44,780
Eastern Europe
2,600
Japan
83,610
Asia ex Japan
3,650
Latin America
3,640
Oceania
49,180
2007
2008
2009
2010
2011
2012
Sources: National Central Banks and Statistical Offices, UN, Allianz SE.

Ranking Western Europe

by net financial assets per capita, in EUR, 2012

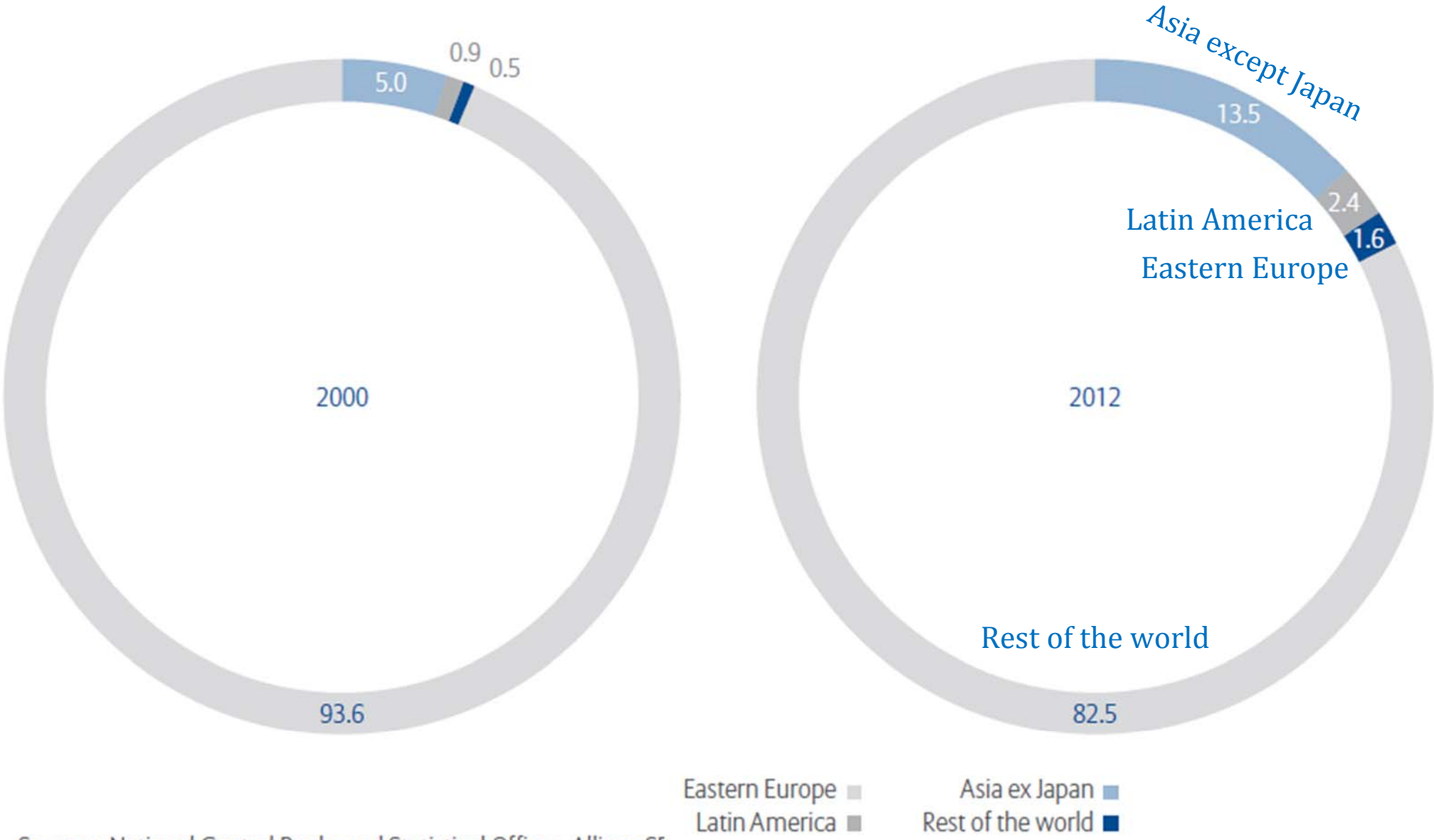


Figures in brackets: Global ranking

Sources: National Central Banks and Statistical Offices, UN, Allianz SE.

The world's poorer regions are catching up

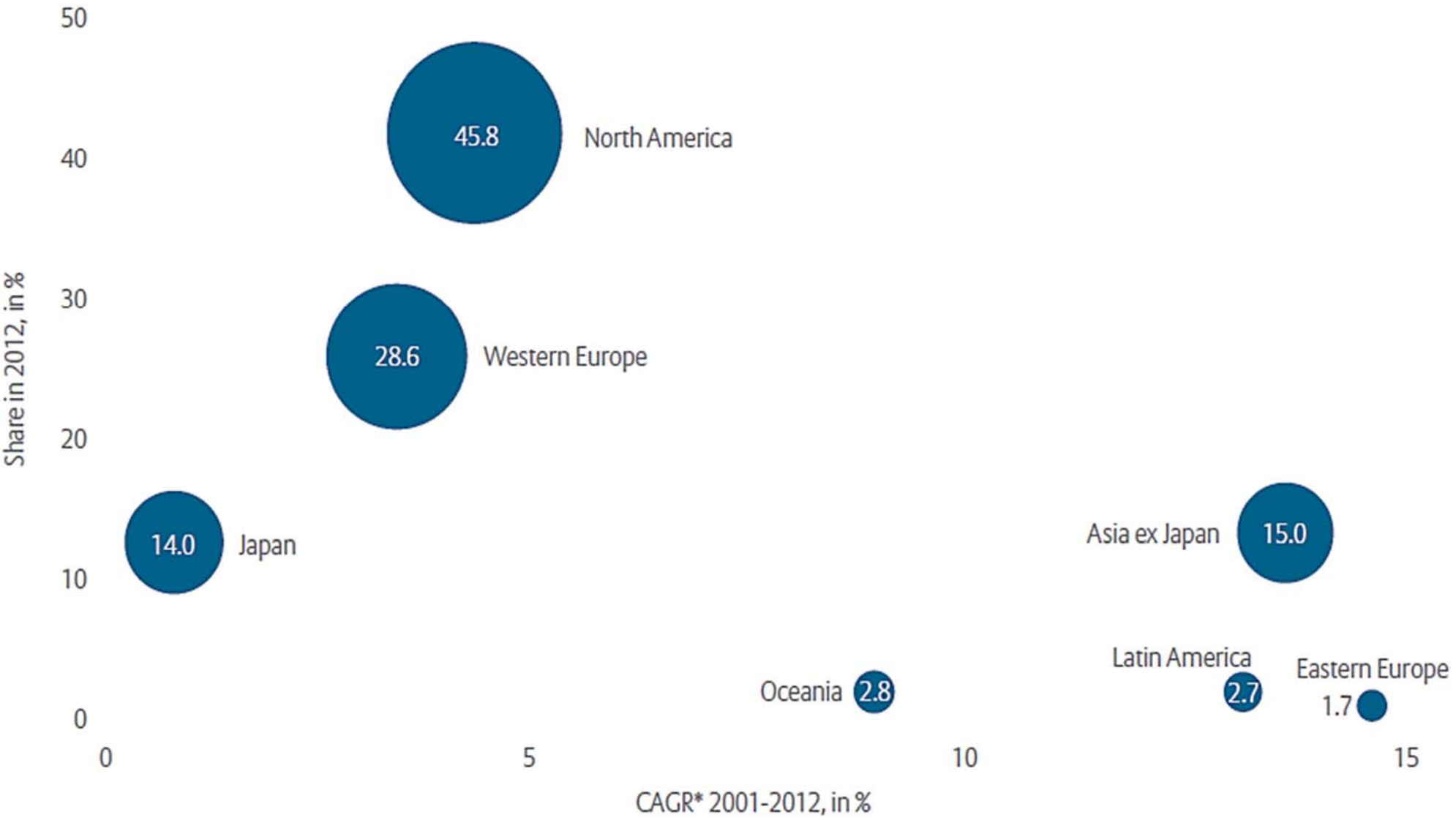
Share of global gross financial assets 2000 und 2012, in %



Sources: National Central Banks and Statistical Offices, Allianz SE

Wealth and growth by region

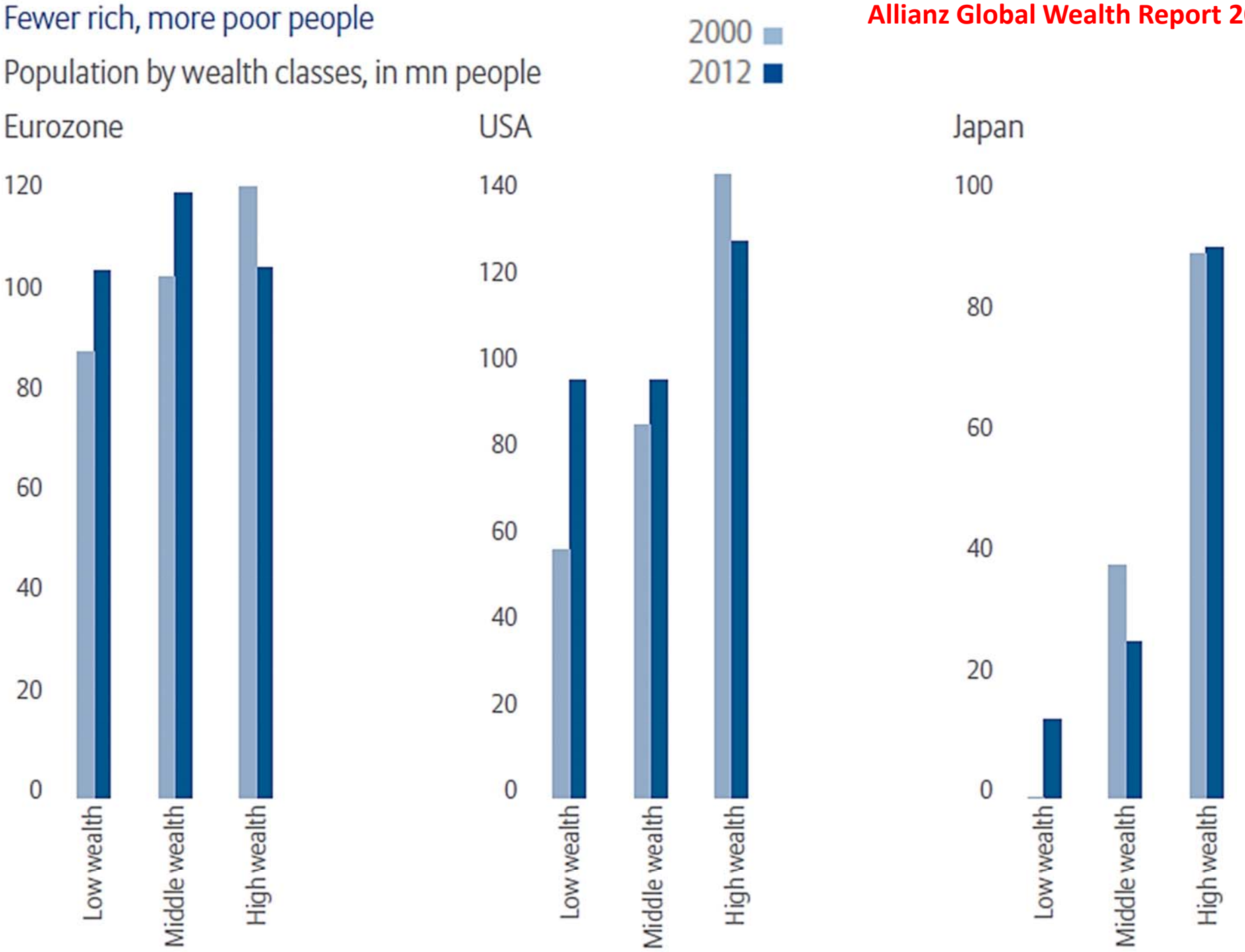
Share of global gross financial assets 2012 and compound annual growth since the end of 2000



*CAGR = Compound Annual Growth Rate

Sources: National Central Banks and Statistical Offices, Allianz SE.

Absolute amount of gross financial assets, in EUR trillion ■



Sources: National Central Banks and Statistical Offices, UNU-WIDER, World Bank, Allianz SE.

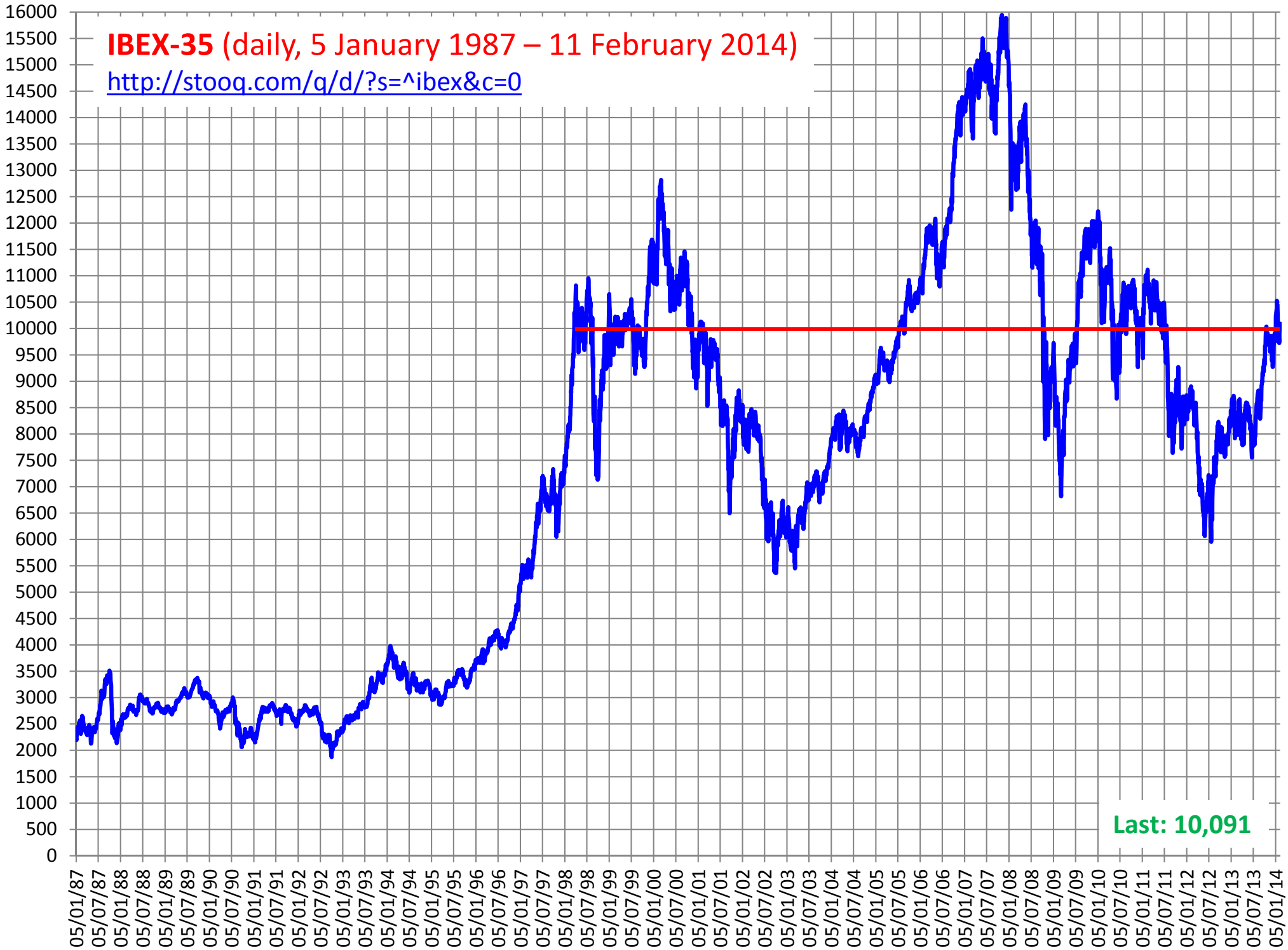
Tradable financial assets: bonds

- Bond. Debt security that, in exchange for the face value V, pays a given amount (interest payment) at fixed periods before maturity and repays V at maturity. A 4-year €100 bond offering an annual 5% interest rate pays €5 at the end of years 1, 2, 3 , and 4, and repays the €100 at the end of year 4.
- Bonds issued at discount. That is, they are sold for less than the face value. Examples: Treasure bills (or, for short, T-bills) and commercial paper, which are unsecured promissory notes issued by firms to fund operational expenses (short-term debt, like payroll) and maturity not greater than 270 days.

Are shares financial assets?

- In a strict sense, shares of a firm are not financial assets, since they represent parts of a firm: the owner of shares is a shareholder (owns the firm).
- Unlike debt securities, shares do not entitle to a regular payment: the payment of dividends is discretional. But shares typically represent such a small part of the value of a firm that they are bought and sold not because of their intrinsic value, but because of the expected evolution of their price. Money invested in shares is mostly a matter of gambling, unconcerned with the firm's business (example: dot-com bubble of 1997- 2000).

http://en.wikipedia.org/wiki/Dot.com_bubble


IBEX-35 (daily, 5 January 1987 – 11 February 2014)
http://stooq.com/q/d/?s=^ibex&c=0
Last: 10,091
16000
15500
15000
14500
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13500
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12500
12000
11500
11000
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10000
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8500
8000
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7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
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05/07/87
05/01/88
05/07/88
05/01/89
05/07/89
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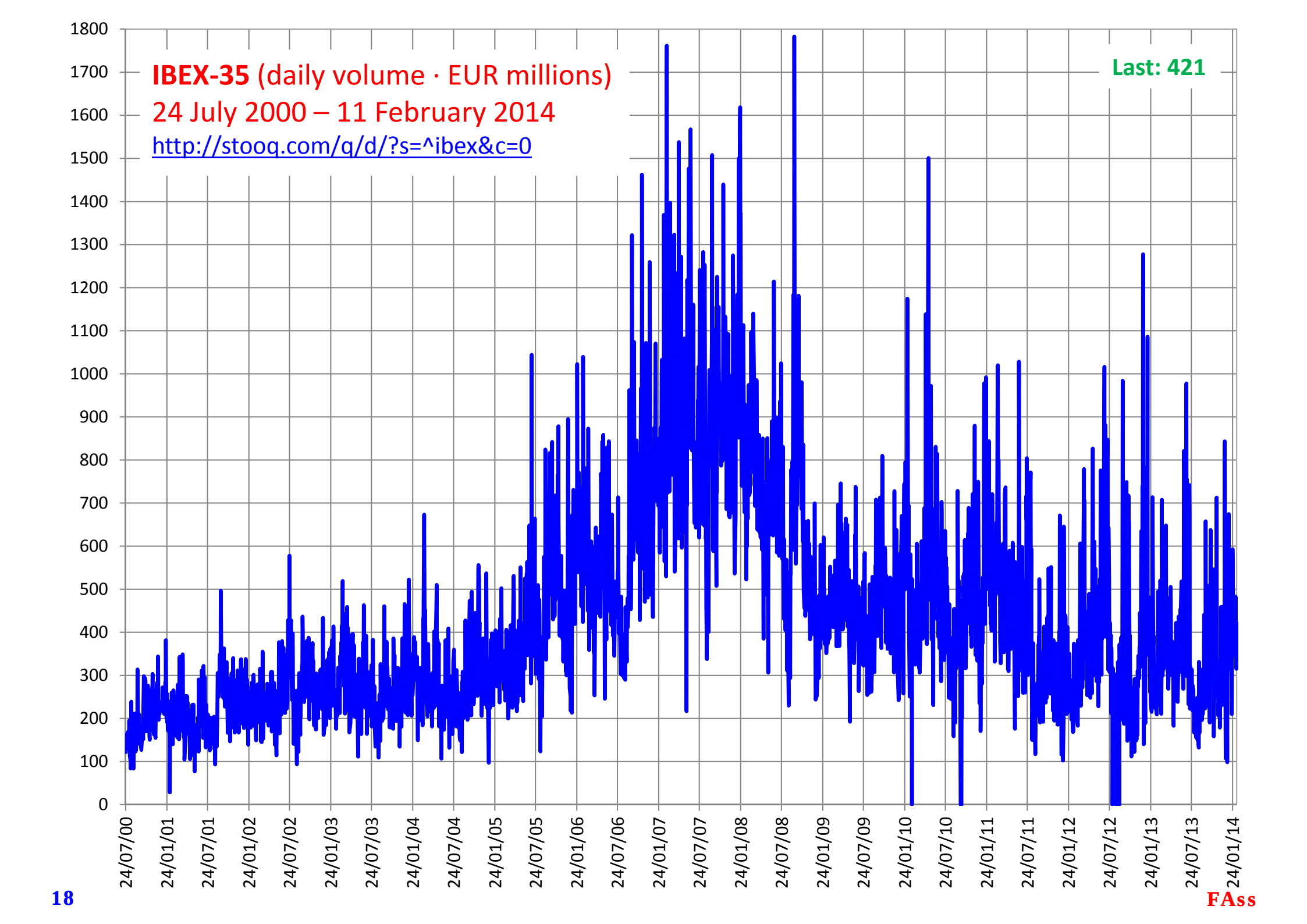
05/07/13
05/01/14


IBEX-35 (daily volume · EUR millions)
24 July 2000 – 11 February 2014
http://stooq.com/q/d/?s=^ibex&c=0
Last: 421
1800
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1200
1100
1000
900
800
700
600
500
400
300
200
100
0
24/07/00
24/01/01
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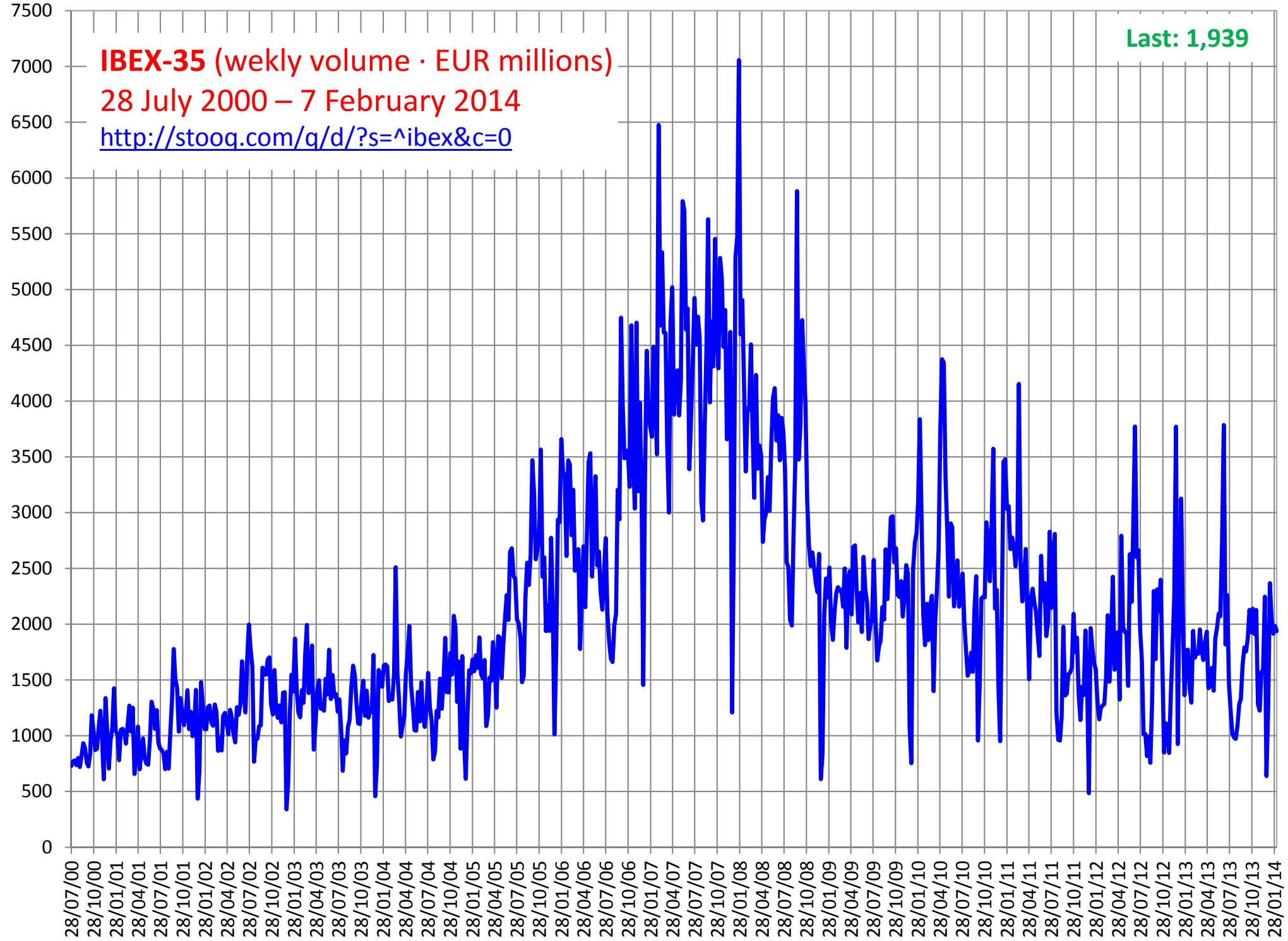
24/07/13
24/01/14


IBEX-35 (wekly volume · EUR millions)
28 July 2000 – 7 February 2014
http://stooq.com/q/d/?s=^ibex&c=0
Last: 1,939
7500
7000
6500
6000
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4500
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3500
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2500
2000
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500
0
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28/04/01
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28/01/14

Goods behaving like financial assets

- Buying shares is a form of saving, and selling them is a form of raising money. Thus, shares become indistinguishable from financial assets.
- Any commodity sold and bought according to the expected evolution of its price behaves like a financial asset: it is not sold or bought due to intrinsic qualities, but as a tool for making money by exploiting price changes.
- This may generate "speculative bubbles". Known cases: oil, real estate, raw materials, stamps…

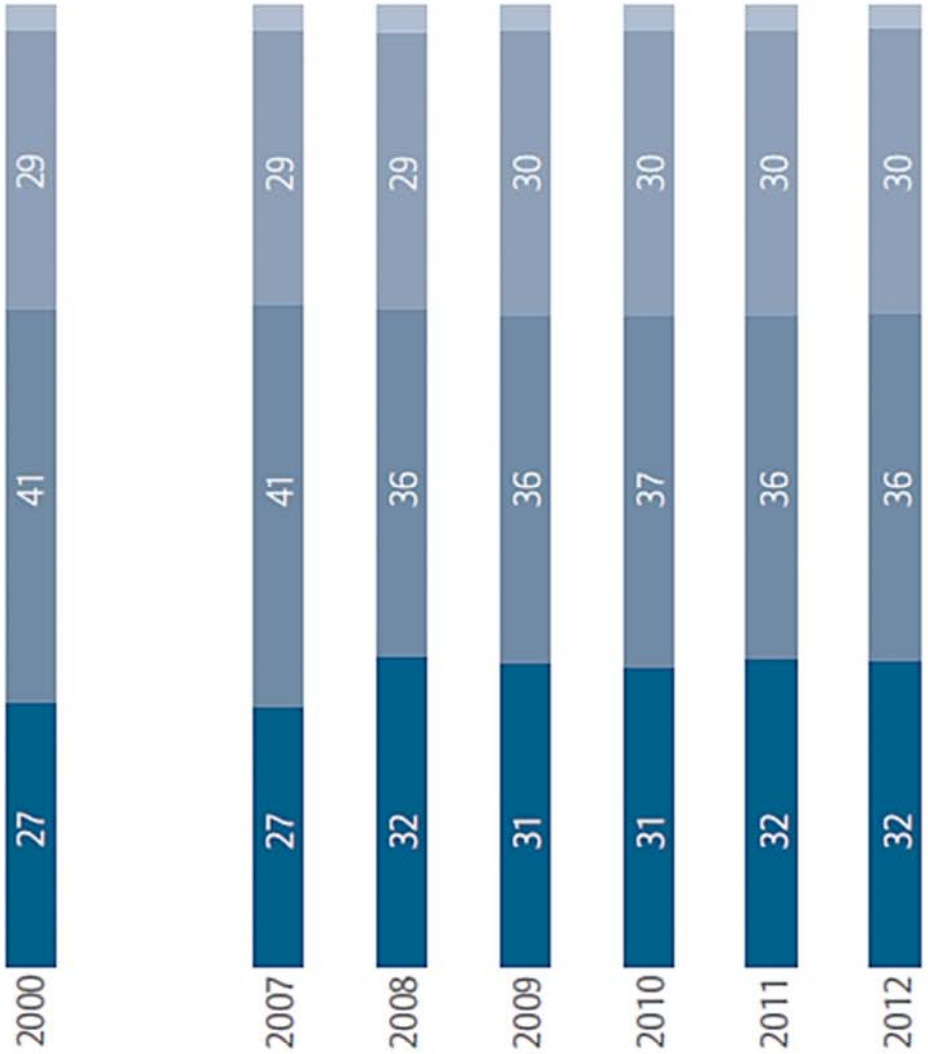
Non-tradable financial assets: examples

- Bank deposit. By depositing money in a bank, the depositor is purchasing an asset issued by the bank: the deposit. This asset is riskier than currency: if the bank goes bankrupt, the money is lost. Since there is no market where people can buy or sell their bank deposits, they are iliquid assets (a liquid asset may turn iliquid: preferred shares).

- Loan. The loan is the reverse of the deposit: it is as if the bank deposited money on you in exchange for a premium and the repayment of the deposit. In principle, to transform the loan into money the bank must wait until it is repaid.

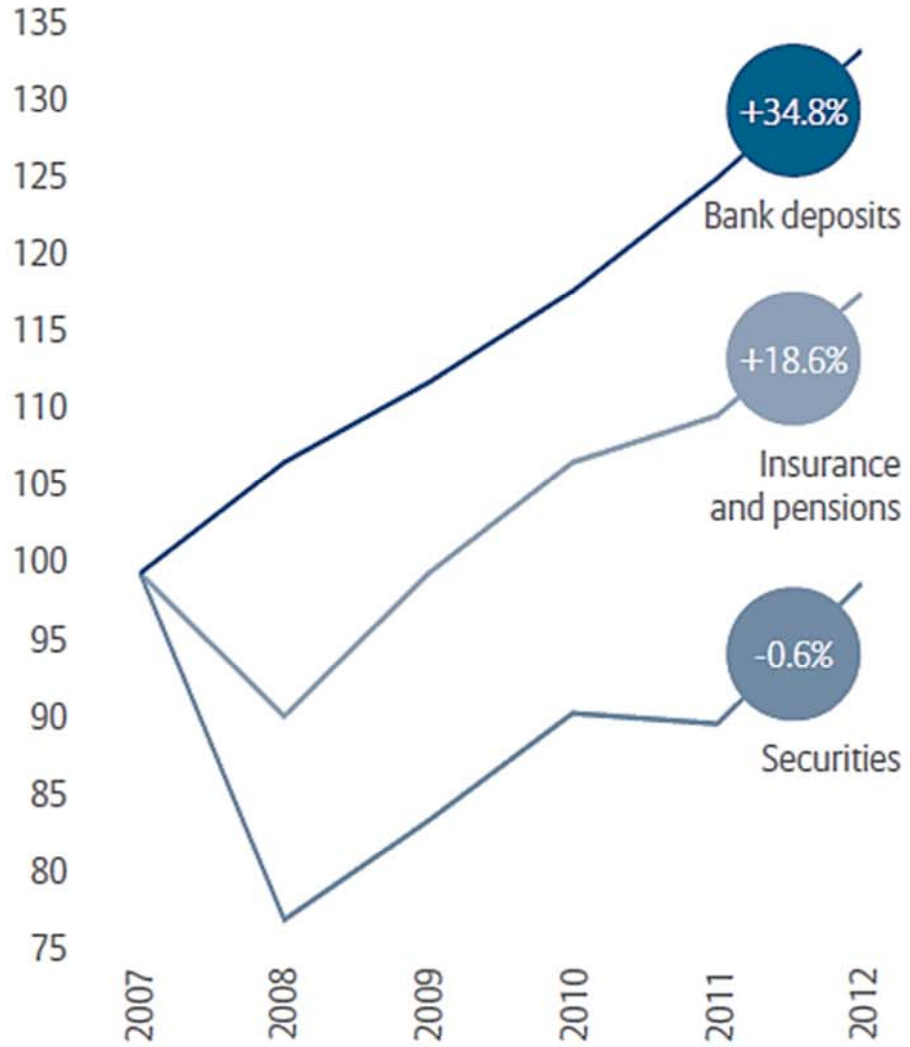
Flight into 'safe haven' bank deposits

Asset classes as % of gross financial assets



Growth of the three big asset classes since 2007

Index (2007=100)



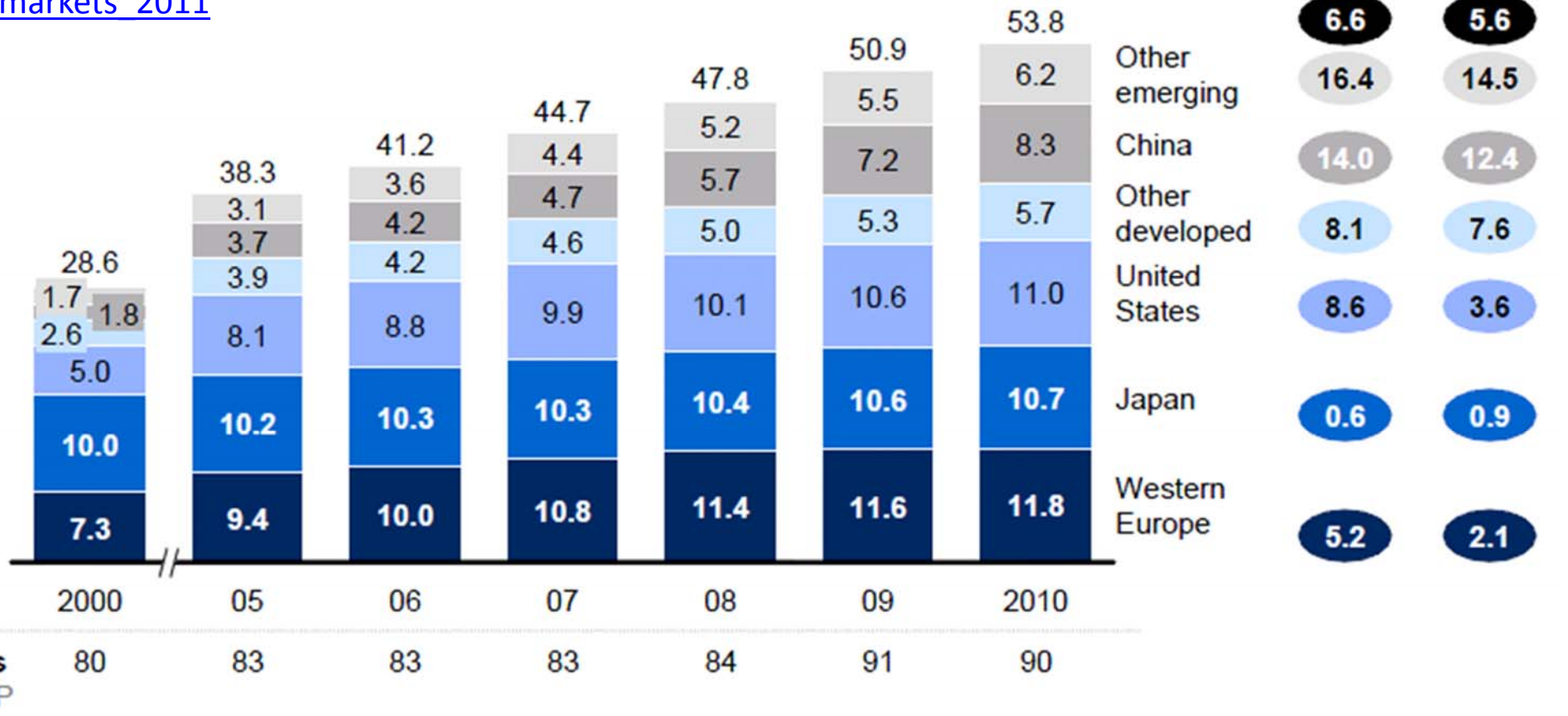
Sources: National Central Banks and Statistical Offices, Allianz SE.

Bank deposits grew by 5.6 percent to total $54 trillion globally by the end of 2010

Global bank deposits[1]

$ trillion, end of period, constant 2010 exchange rates

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011



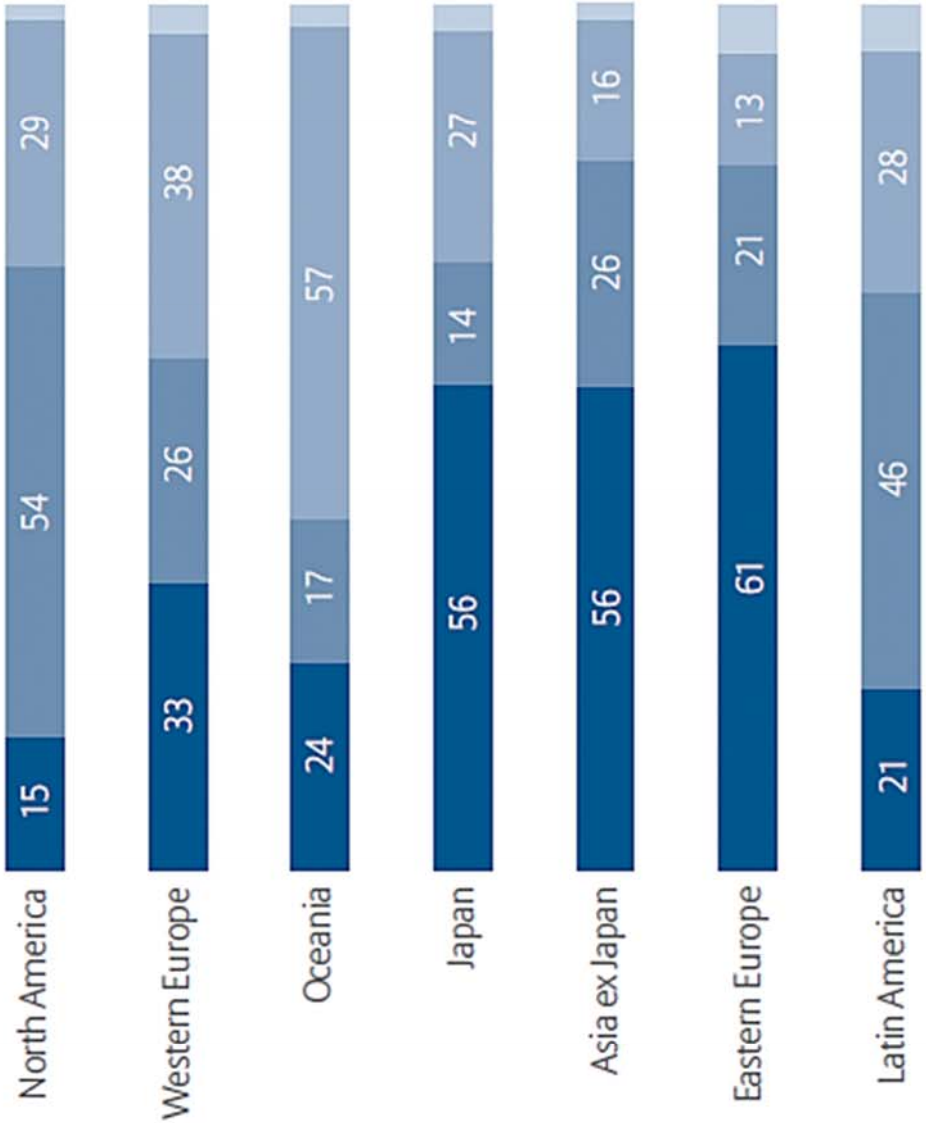
1 Excludes cash in circulation, money market instruments, and deposits made by nonbank financial institutions with other parts of the banking system.

NOTE: Numbers may not sum due to rounding.

SOURCE: National central banks; McKinsey Global Banking Pools; McKinsey Global Institute analysis

Asset structure and growth by region

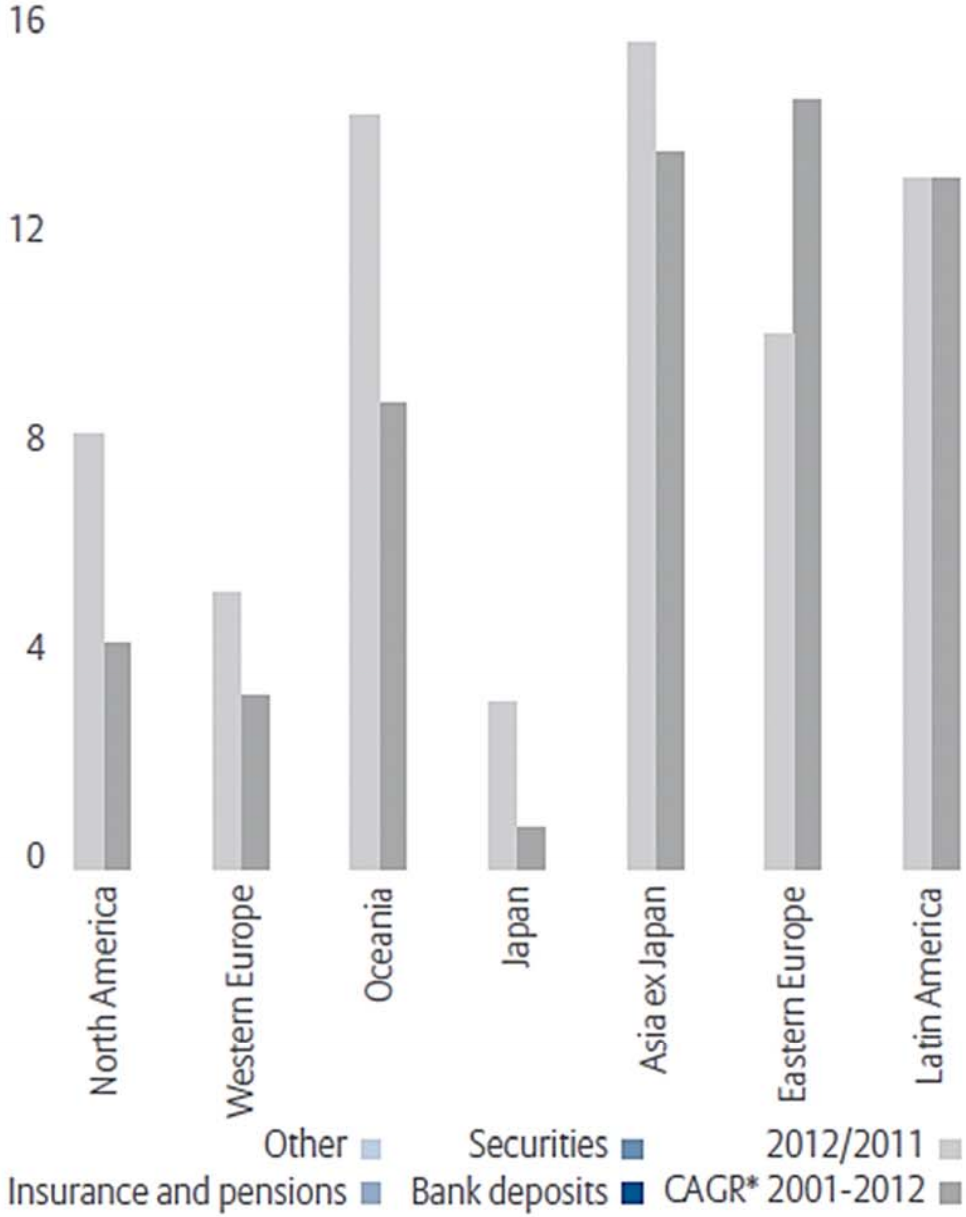
Asset classes as % of gross financial assets, 2012



*CAGR = Compound Annual Growth Rate

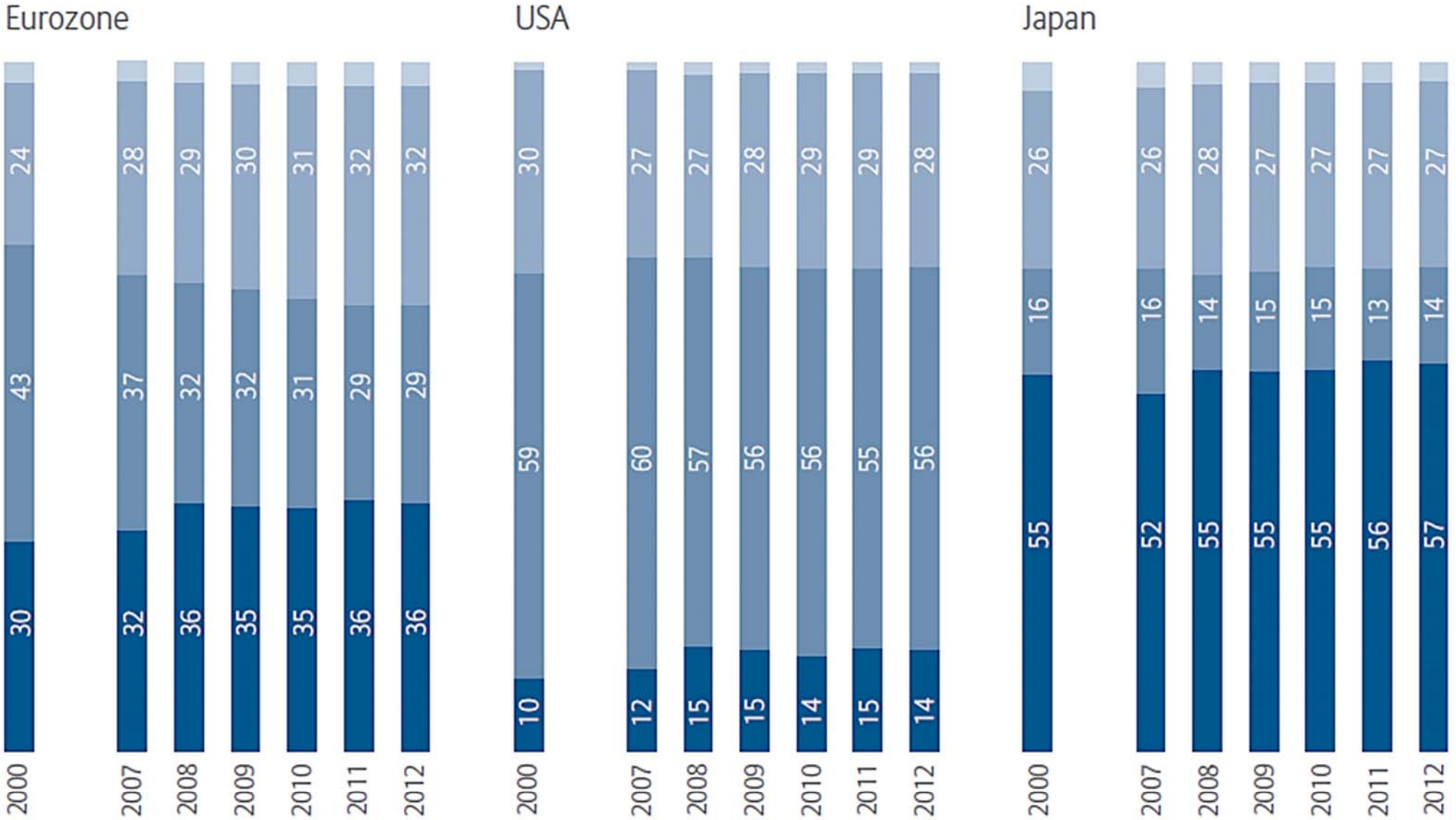
Sources: National Central Banks and Statistical Offices, Allianz SE.

Rate of change of gross financial assets, in %



Europe comes closer to Japan

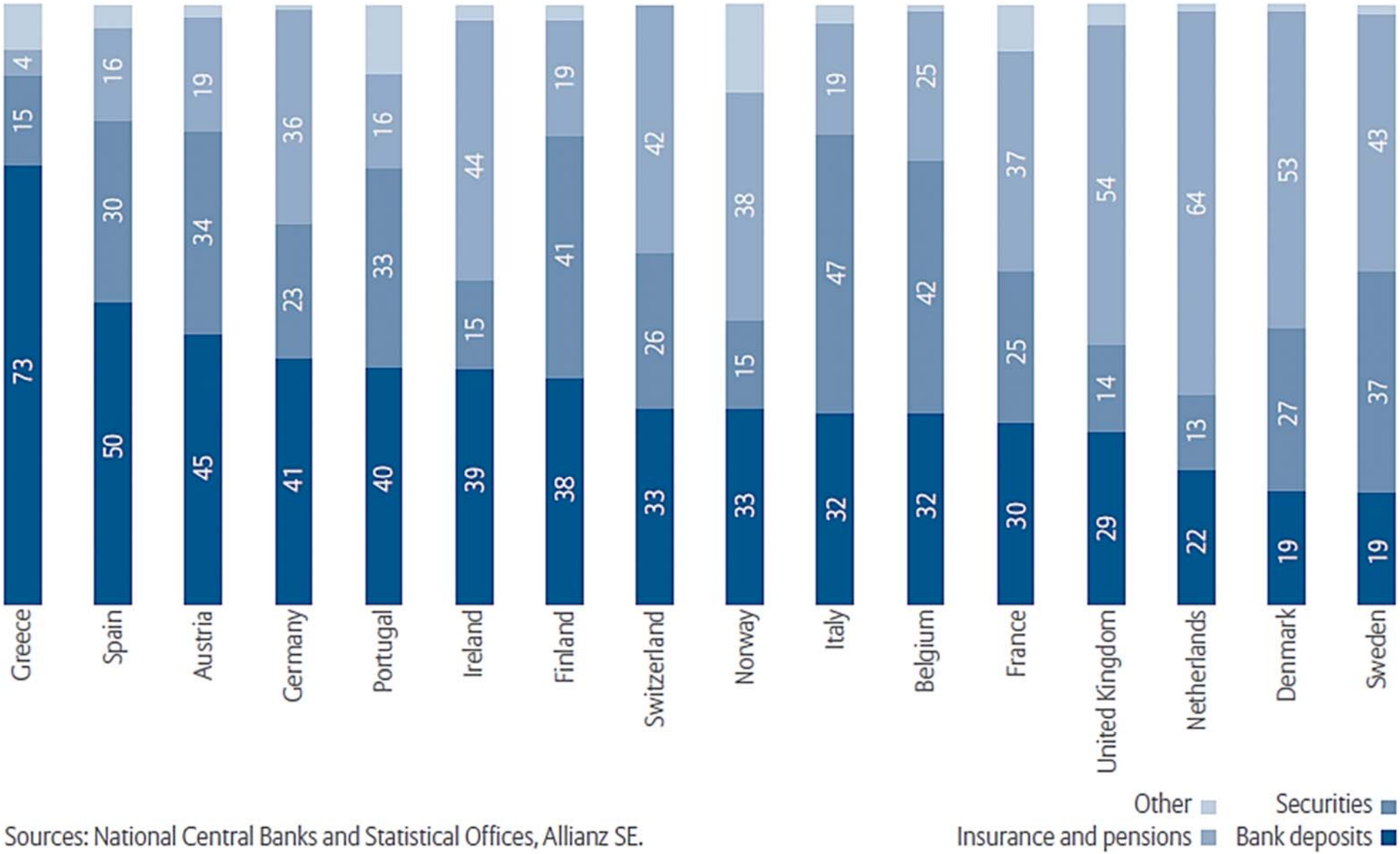
Asset classes as % of gross financial assets



Sources: National Central Banks and Statistical Offices, Allianz SE.

Different preferences across countries

Asset classes as % of gross financial assets, 2012

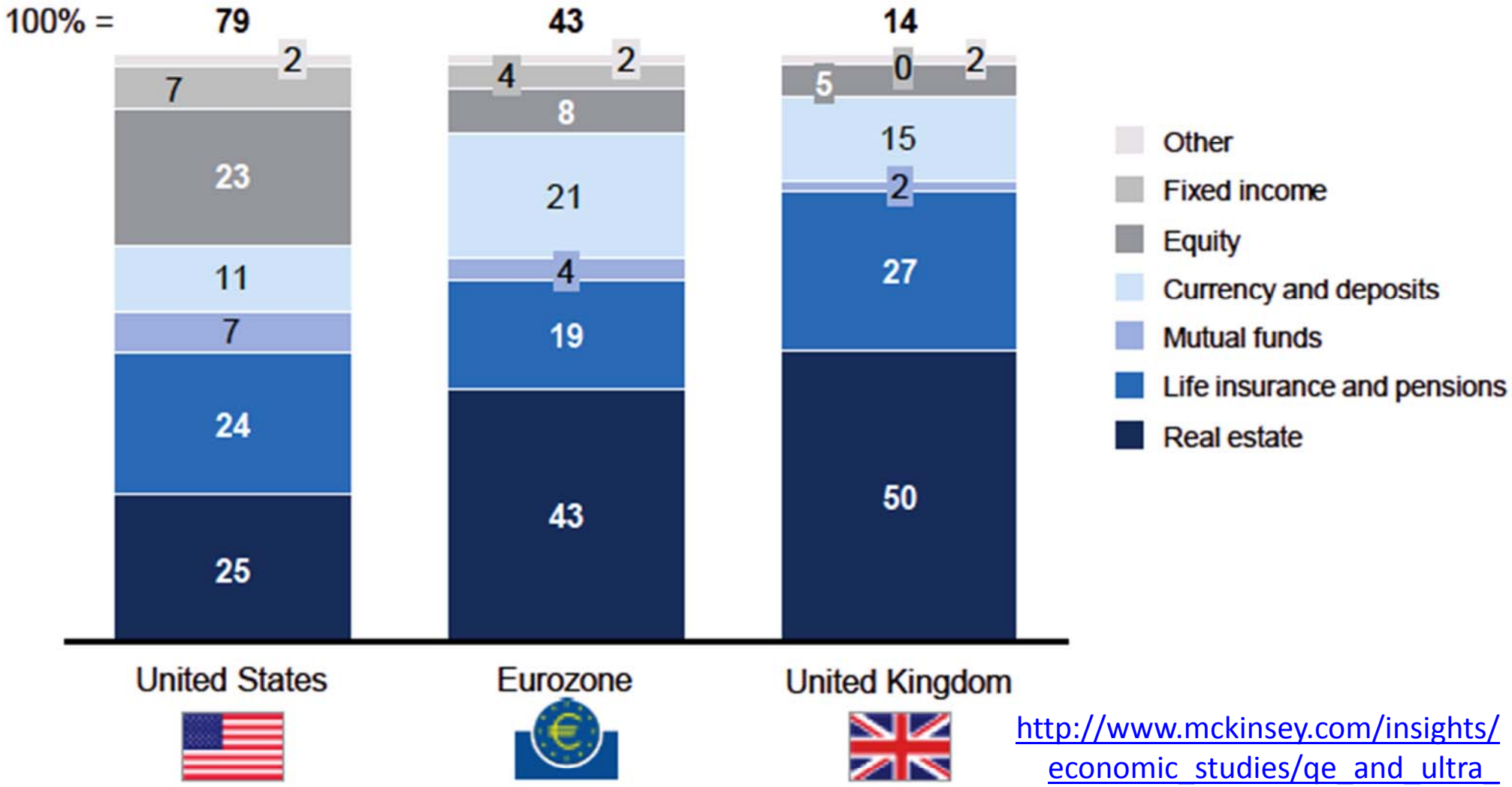


Sources: National Central Banks and Statistical Offices, Allianz SE.

A large share of household wealth comes from real estate holdings

Household wealth by source, 2012[1]

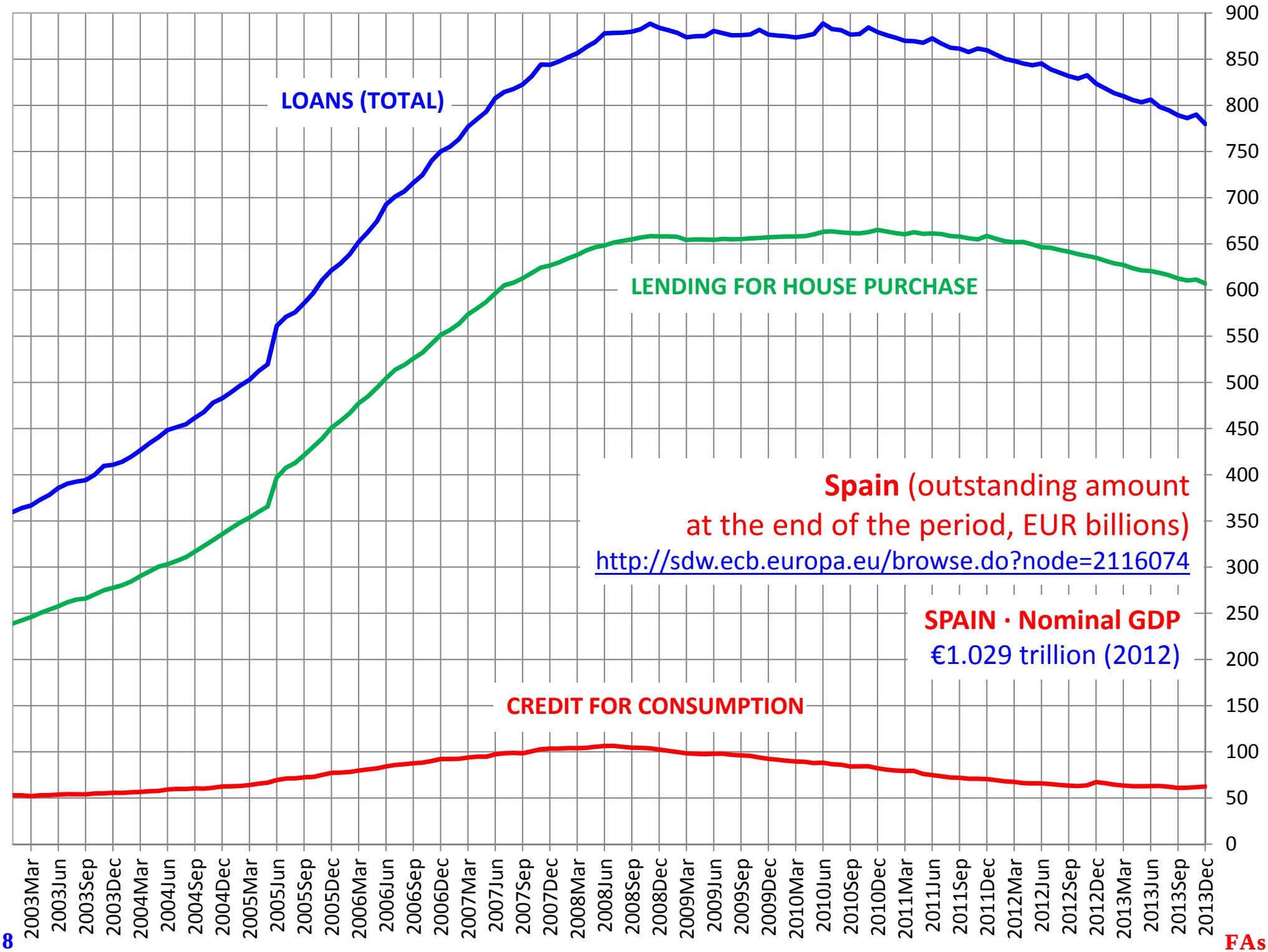
%; $ trillion



http://www.mckinsey.com/insights/economic_studies/qe_and_ultra_low_interest_rates_distributional_effects_and_risks

1 Excludes consumer durables but includes wealth of non-profits.
NOTE: Numbers may not sum due to rounding.

SOURCE: US Federal Reserve; Eurostat; European Central Bank; Bank of England; McKinsey Global Institute analysis


LOANS (TOTAL)
LENDING FOR HOUSE PURCHASE
CREDIT FOR CONSUMPTION
Spain (outstanding amount
at the end of the period, EUR billions)
http://sdw.ecb.europa.eu/browse.do?node=2116074
SPAIN · Nominal GDP
€1.029 trillion (2012)
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
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2003Mar
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2003Sep
2003Dec
2004Mar
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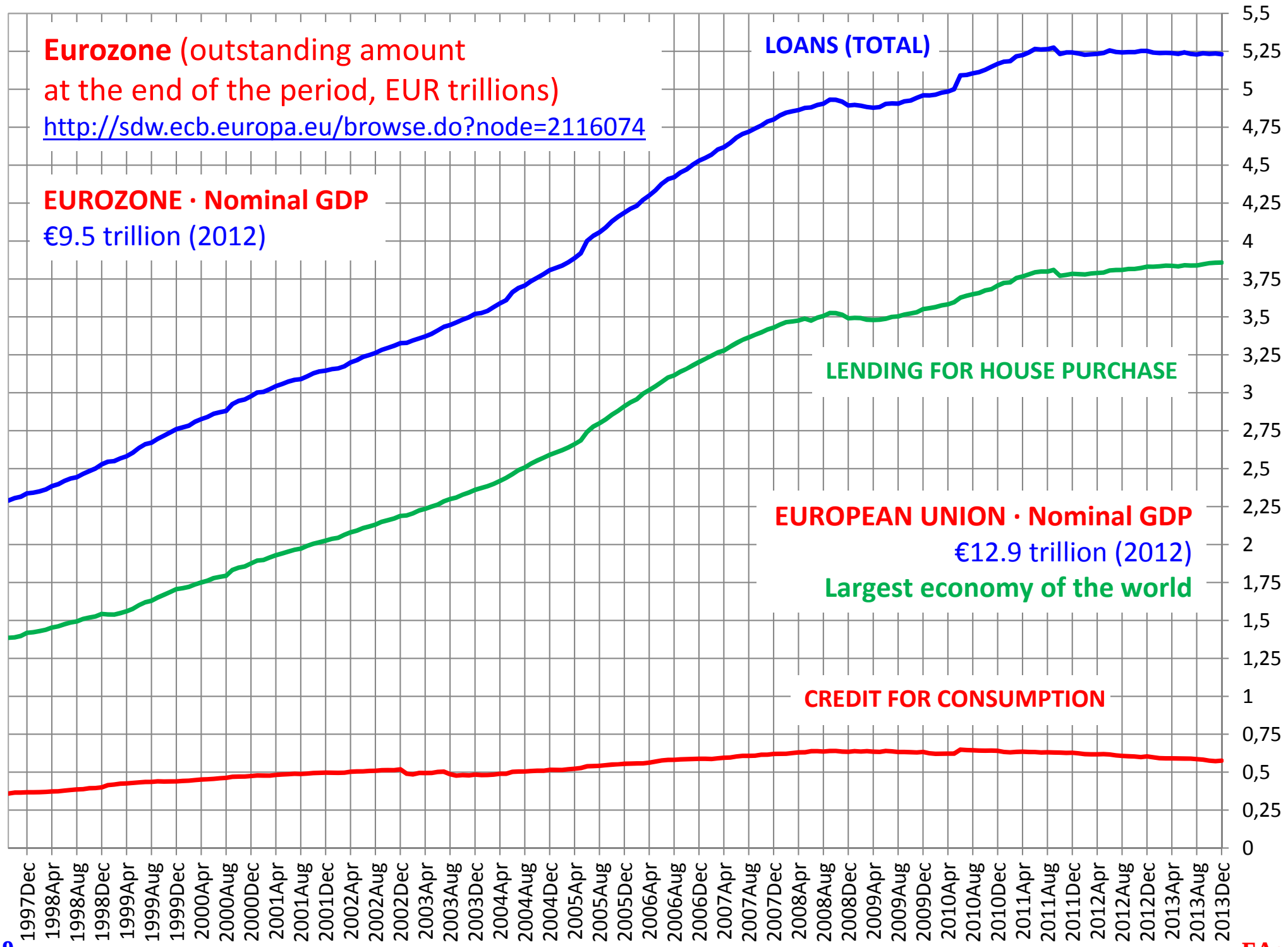
Eurozone (outstanding amount
at the end of the period, EUR trillions)
http://sdw.ecb.europa.eu/browse.do?node=2116074
LOANS (TOTAL)
EUROZONE · Nominal GDP
€9.5 trillion (2012)
LENDING FOR HOUSE PURCHASE
EUROPEAN UNION · Nominal GDP
€12.9 trillion (2012)
Largest economy of the world
CREDIT FOR CONSUMPTION
5,5
5,25
5
4,75
4,5
4,25
4
3,75
3,5
3,25
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2,5
2,25
2
1,75
1,5
1,25
1
0,75
0,5
0,25
0
1997Dec
1998Apr
1998Aug
1998Dec
1999Apr
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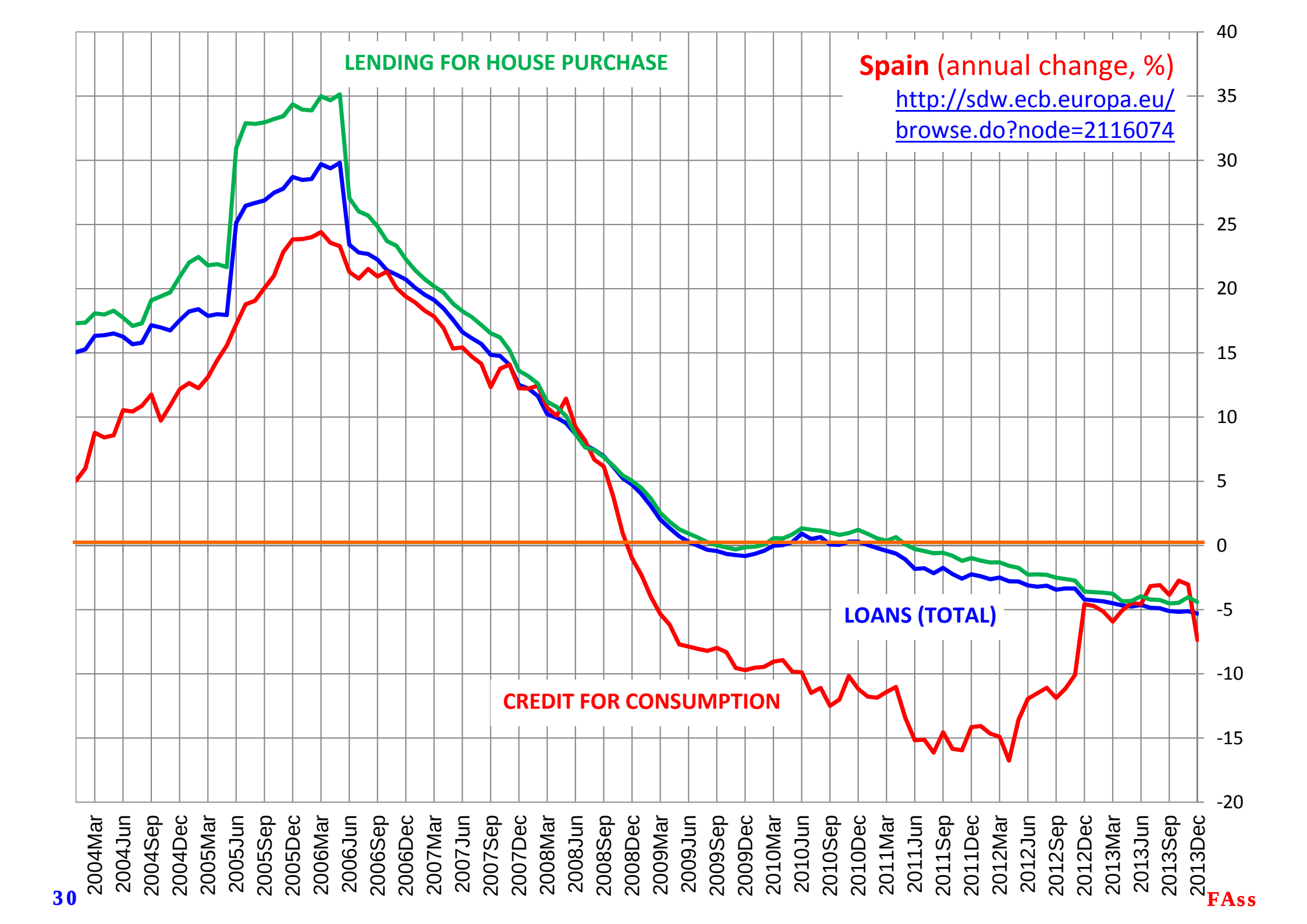
LENDING FOR HOUSE PURCHASE
Spain (annual change, %)
http://sdw.ecb.europa.eu/browse.do?node=2116074
LOANS (TOTAL)
CREDIT FOR CONSUMPTION
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
2004Mar
2004Jun
2004Sep
2004Dec
2005Mar
2005Jun
2005Sep
2005Dec
2006Mar
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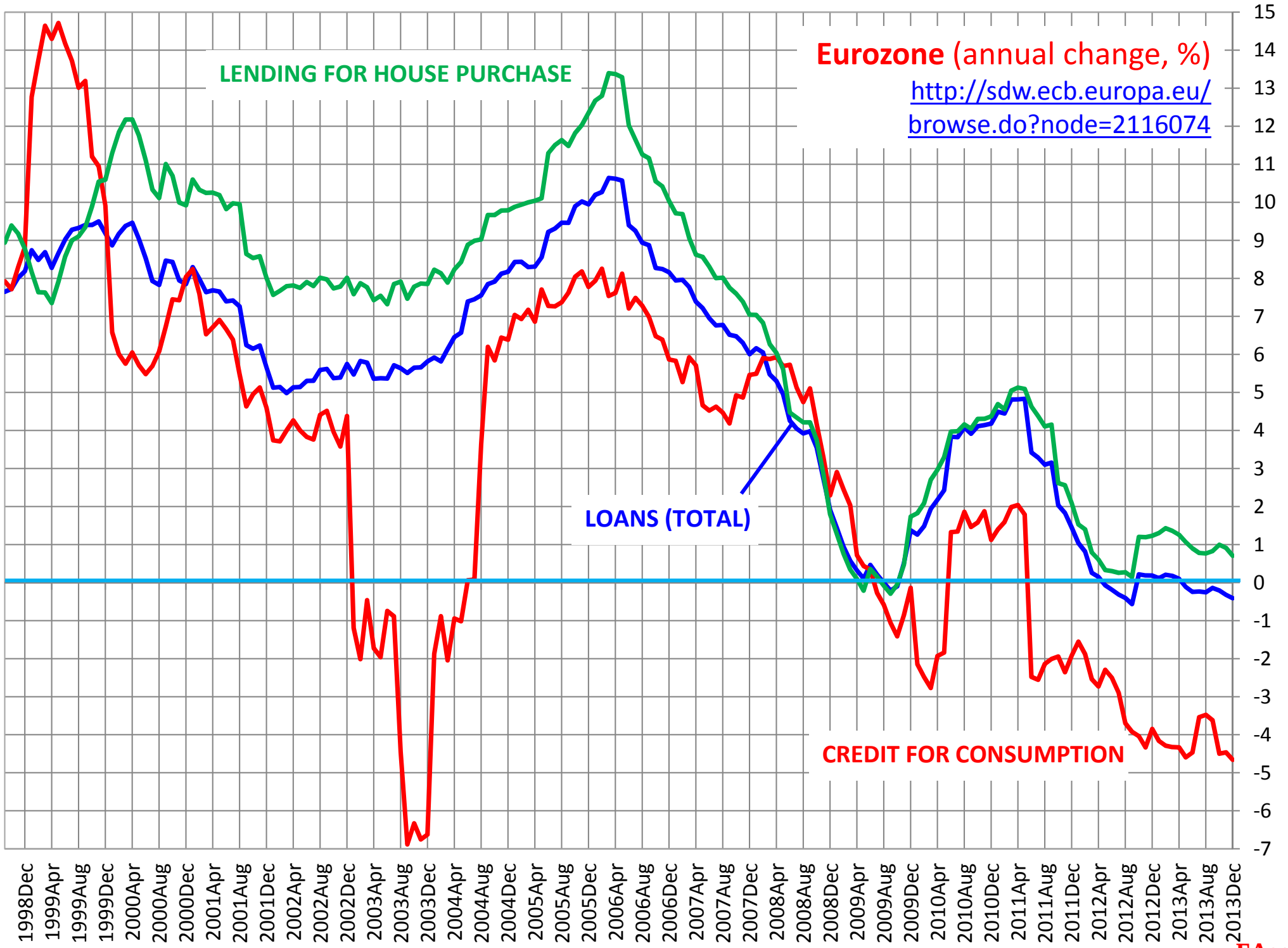
Eurozone (annual change, %)
http://sdw.ecb.europa.eu/browse.do?node=2116074
LENDING FOR HOUSE PURCHASE
LOANS (TOTAL)
CREDIT FOR CONSUMPTION
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
1998Dec
1999Apr
1999Aug
1999Dec
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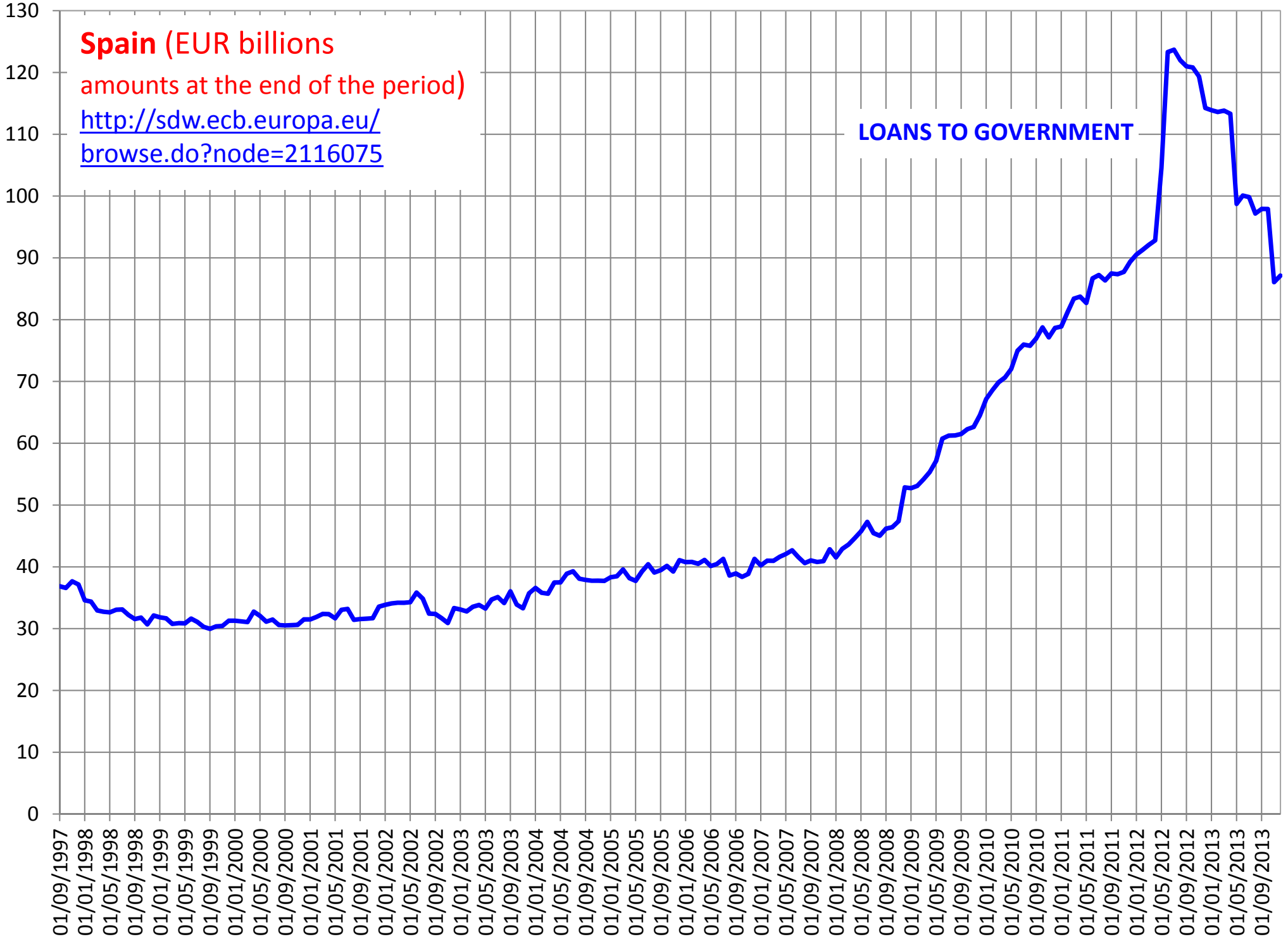
Spain (EUR billions
amounts at the end of the period)
http://sdw.ecb.europa.eu/browse.do?node=2116075
LOANS TO GOVERNMENT
130
120
110
100
90
80
70
60
50
40
30
20
10
0
01/09/1997
01/01/1998
01/05/1998
01/09/1998
01/01/1999
01/05/1999
01/09/1999
01/01/2000
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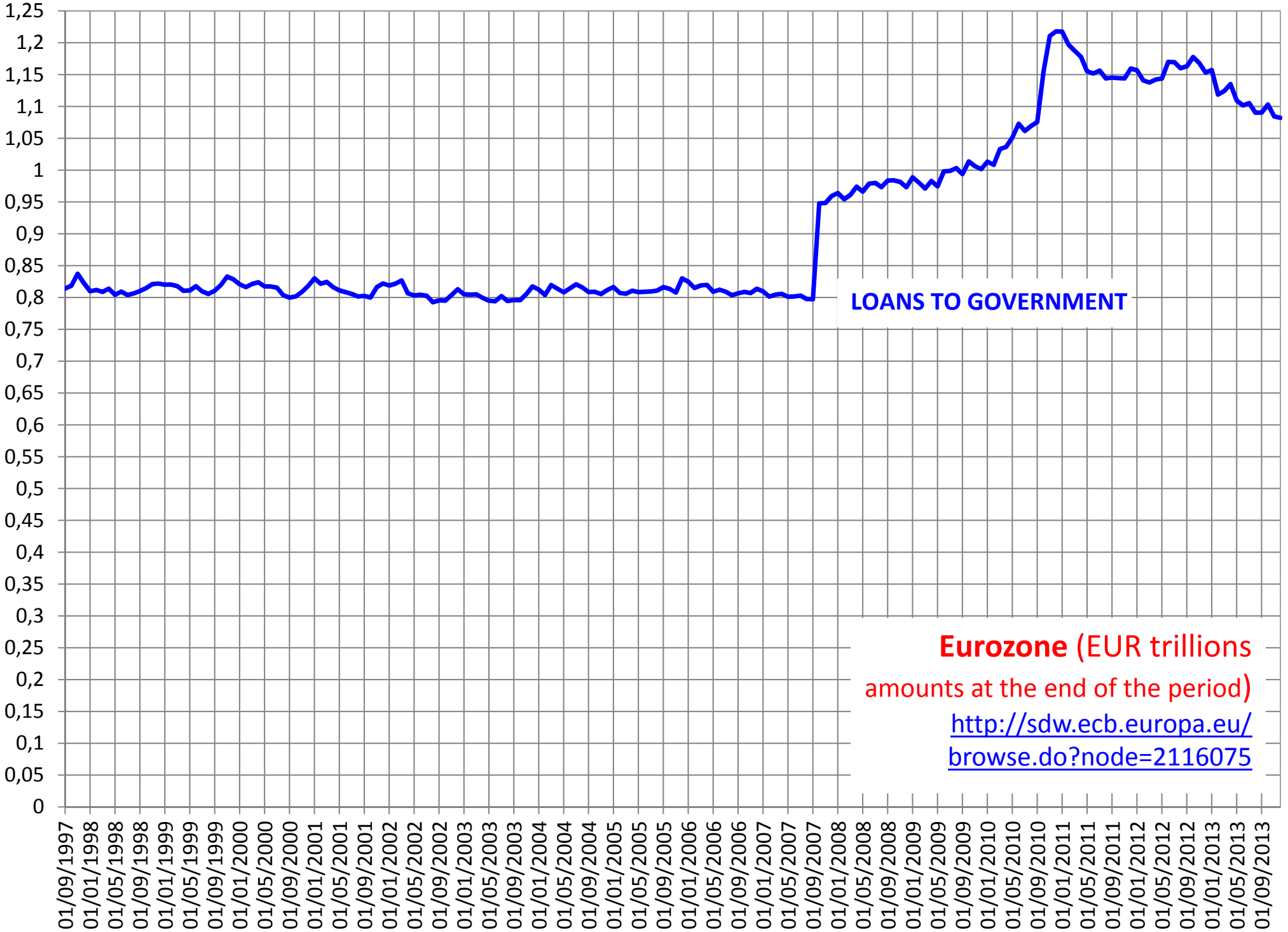
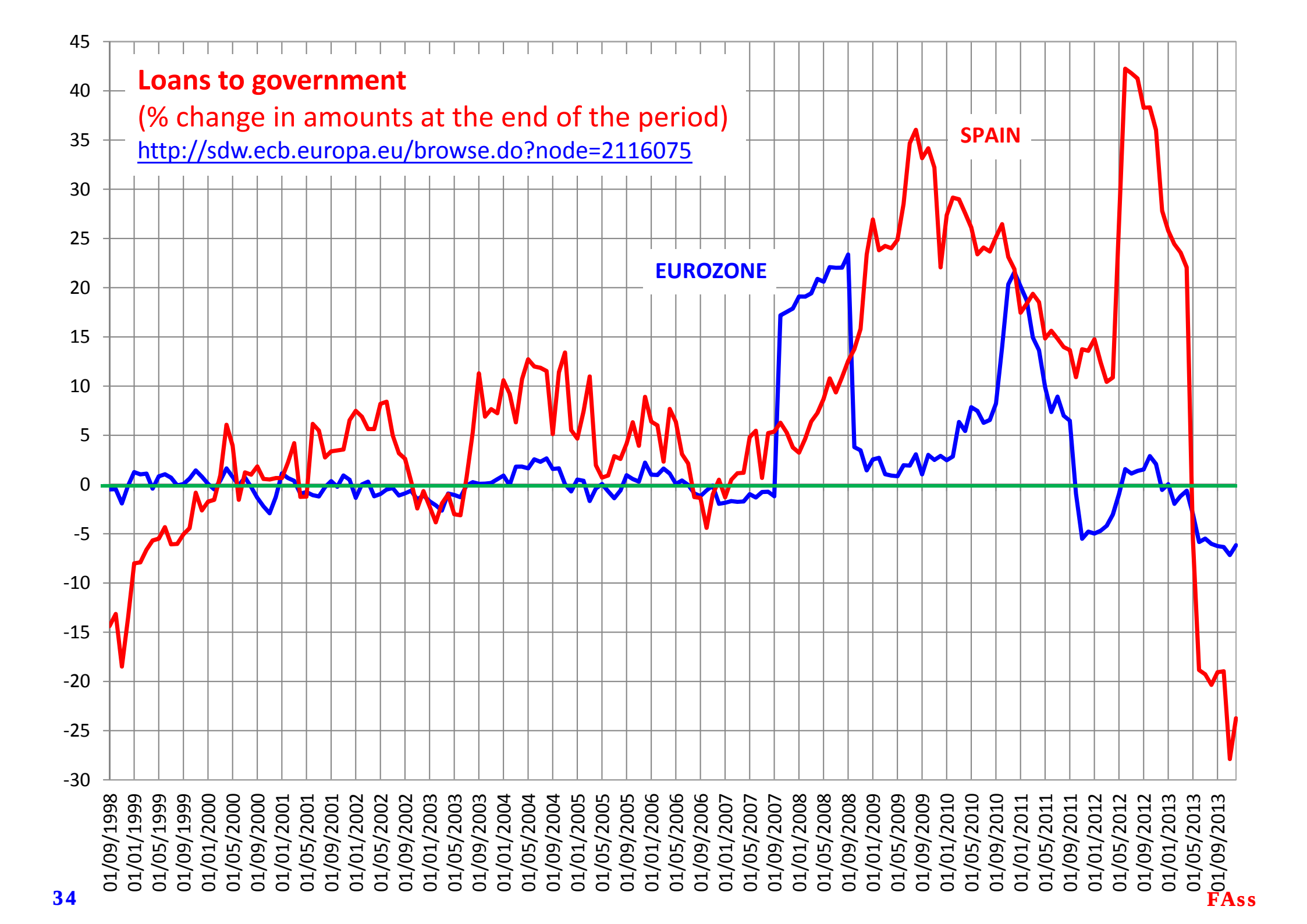
01/09/2013


LOANS TO GOVERNMENT
Eurozone (EUR trillions
amounts at the end of the period)
http://sdw.ecb.europa.eu/browse.do?node=2116075


Loans to government
(% change in amounts at the end of the period)
http://sdw.ecb.europa.eu/browse.do?node=2116075
SPAIN
EUROZONE
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
01/09/1998
01/01/1999
01/05/1999
01/09/1999
01/01/2000
01/05/2000
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01/01/2012
01/05/2012
01/09/2012
01/01/2013
01/05/2013
01/09/2013

The composition of debt varies widely across countries

Total debt,[1] Q2 2011
% of GDP

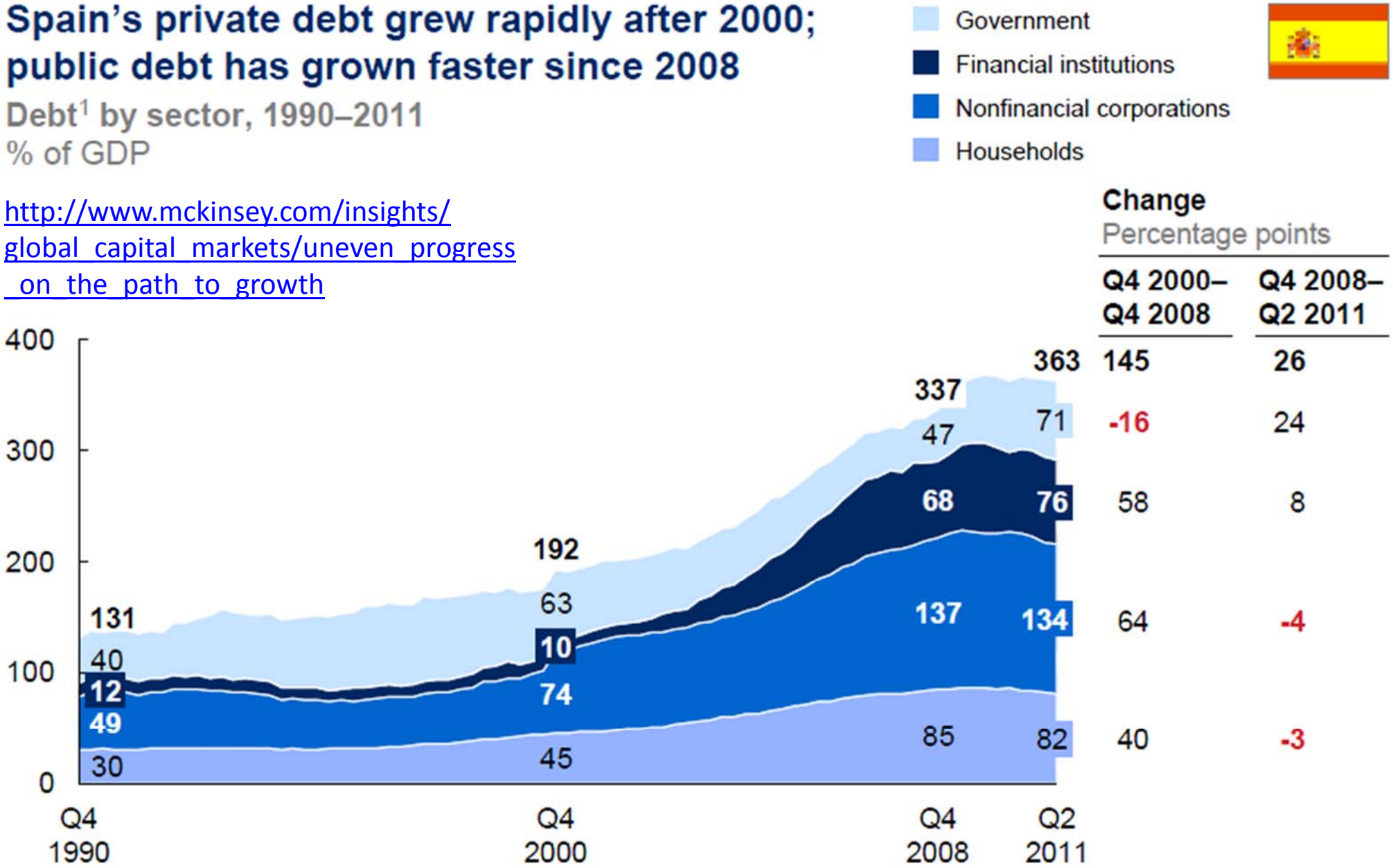
http://www.mckinsey.com/insights/global_capital_markets/uneven_progress_on_the_path_to_growth

1 Includes all loans and fixed-income securities of households, corporations, financial institutions, and government.
2 Q1 2011 data.
NOTE: Numbers may not sum due to rounding.
SOURCE: Haver Analytics; Bank for International Settlements; national central banks; McKinsey Global Institute

Spain's private debt grew rapidly after 2000; public debt has grown faster since 2008

Debt[1] by sector, 1990–2011
% of GDP

Government
Financial institutions
Nonfinancial corporations
Households



	Change Percentage points	
	Q4 2000–Q4 2008	Q4 2008–Q2 2011
	145	26
	-16	24
	58	8
	64	-4
	40	-3

1 Includes all loans and credit market borrowing (e.g., bonds, commercial paper); excludes asset-backed securities to avoid double counting of the underlying loan.

NOTE: Numbers may not sum due to rounding.

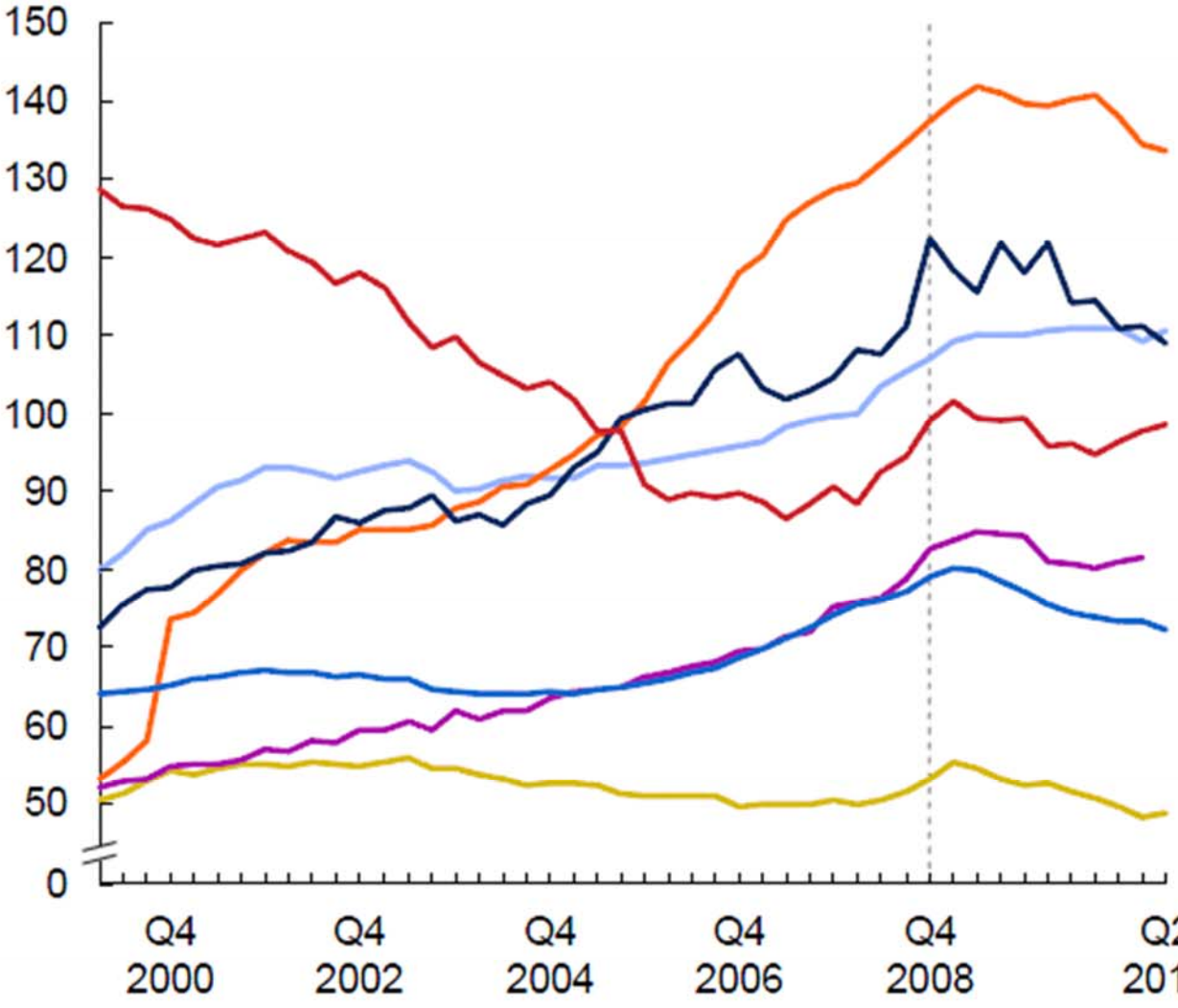
SOURCE: Haver Analytics; McKinsey Global Institute

http://www.mckinsey.com/insights/global_capital_markets/uneven_progress_on_the_path_to_growth

The debt levels of Spanish corporations grew dramatically from 2000 to 2008

Total debt of nonfinancial corporations, Q1 2000–Q2 2011

% of GDP



	Change, Percentage points	
	Q4 2000–Q4 2008	Q4 2008–Q2 2011
Spain	64	-4
France	21	4
United Kingdom	45	-14
Japan	-26	0
Italy[1]	28	-1
United States	14	-7
Germany	-1	-5

1 Data through Q1 2011.

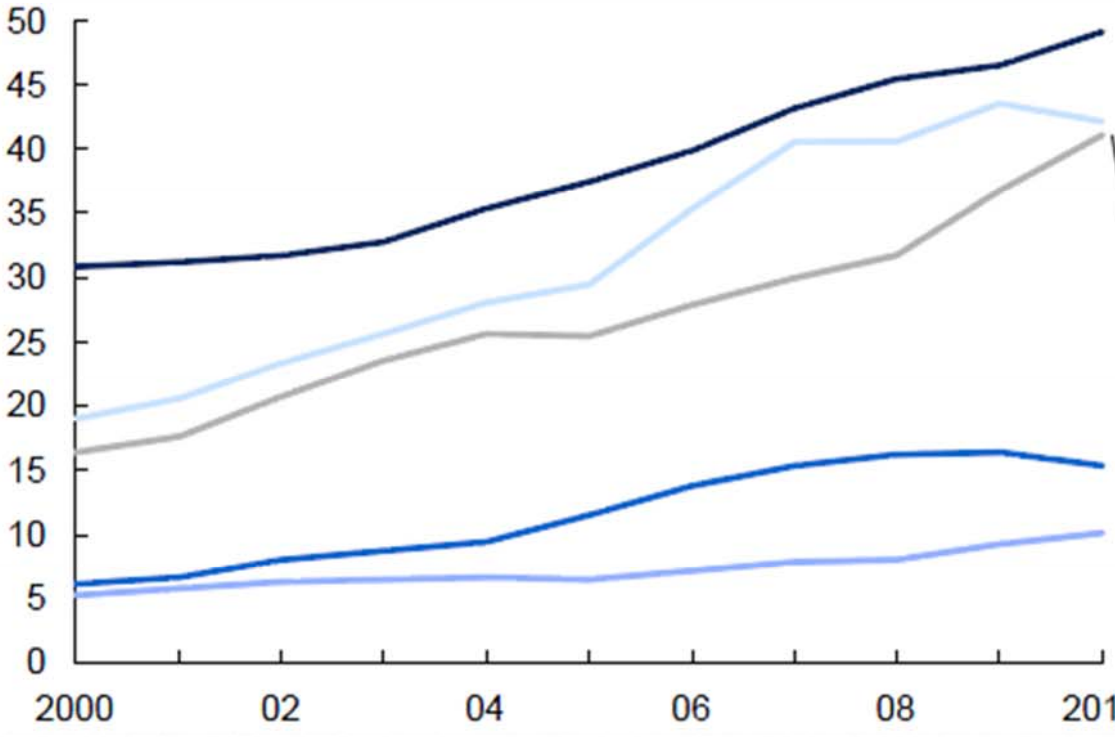
SOURCE: Haver Analytics; national central banks; McKinsey Global Institute

http://www.mckinsey.com/insights/global_capital_markets/uneven_progress_on_the_path_to_growth

Growth in public debt continued in 2010, but nonsecuritized loans remain the largest class of debt

Outstanding debt by asset class, 2000–10

$ trillion, end of period, constant 2010 exchange rates



Compound annual growth rate %	2000–09	2009–10
Nonsecuritized loans outstanding	4.7	5.9
Financial institution bonds outstanding	9.7	-3.3
Public debt securities outstanding	9.3	11.9
Securitized loans outstanding	11.7	-5.6
Nonfinancial corporate bonds outstanding	6.5	9.7

Global debt[1]						
$ trillion	77.6	90.3	105.5	123.9	141.8	158.1
% GDP	218	235	242	249	250	266

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011

1 Sum of financial institution bonds outstanding, public debt securities outstanding, nonfinancial corporate bonds outstanding, and both securitized and nonsecuritized loans outstanding.

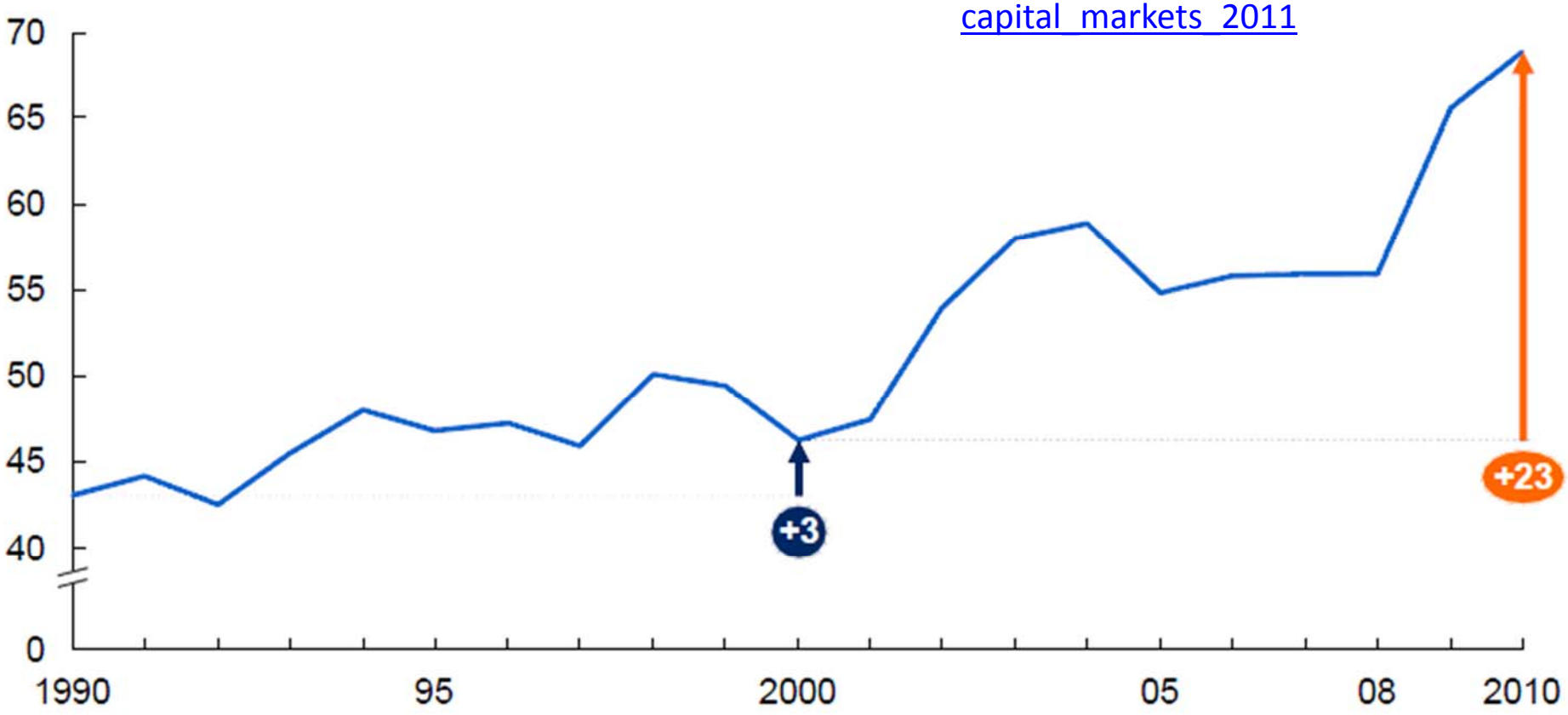
SOURCE: Bank for International Settlements; Dealogic; SIFMA; McKinsey Global Banking Pools; McKinsey Global Institute analysis

Global public debt has increased by $24.6 trillion over the last decade, reaching 69 percent of GDP in 2010

Growth
(percentage points)

Gross outstanding public debt[1] as % of GDP
%, end of period, constant 2010 exchange rates

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011



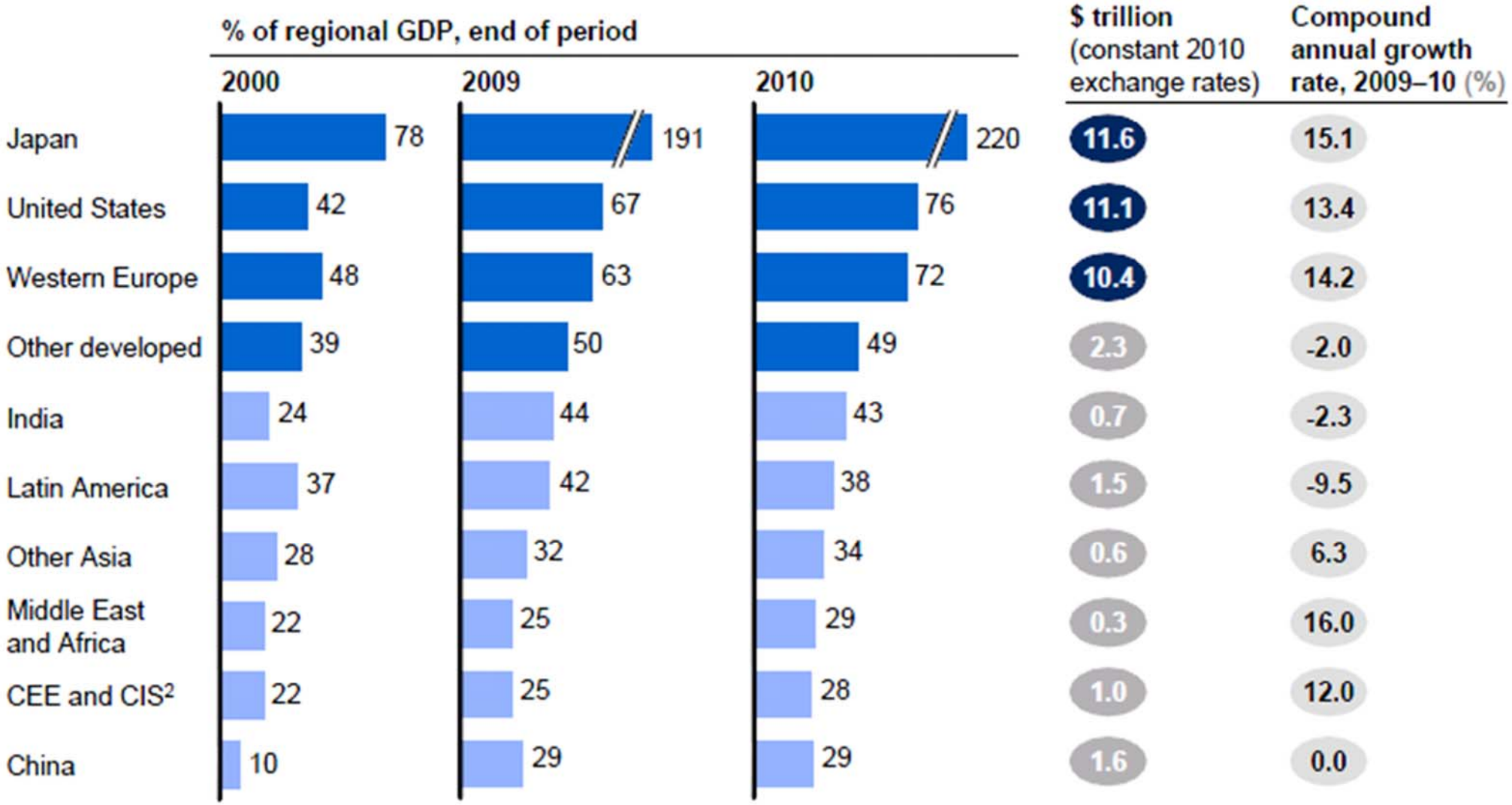
	1990	95	2000	05	08	2010
Public debt total $ trillion	8.9	12.8	16.5	25.4	31.7	41.1

1 Defined as general government marketable debt securities; excludes government debt held by government agencies (e.g., US Social Security Trust Fund).

SOURCE: Bank for International Settlements; McKinsey Global Institute analysis

Governments in many developed economies have steadily increased public debt over the last ten years

Gross public debt outstanding[1] per region



1 Defined as general government marketable debt securities; excludes government debt held by government agencies (e.g., US Social Security Trust Fund).

2 Central and Eastern Europe and Commonwealth of Independent States.

SOURCE: Bank for International Settlements; McKinsey Global Institute analysis

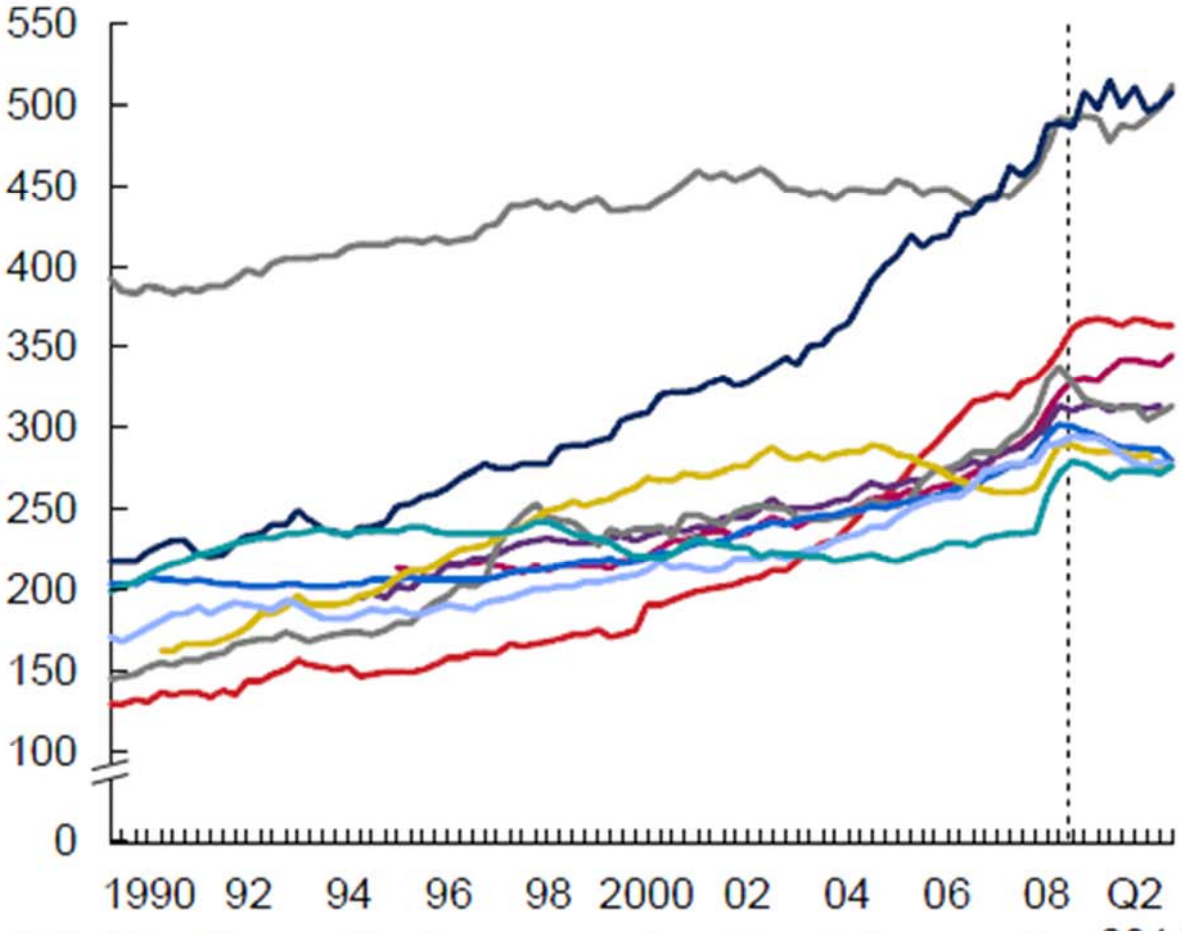
http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011

Deleveraging has only just begun in the ten largest developed economies

Total debt,[1] 1990–Q2 2011

% of GDP

The burden of debt



▲ Significant increase in leverage[2]

▼ Deleveraging

	Change, Percentage points	
	2000–08	2008–Q2 2011[3]
Japan	37	39 ▲
United Kingdom	177	20
Spain	145	26 ▲
France	89	35 ▲
Italy	68	12
South Korea	91	-16 ▼
United States	75	-16 ▼
Germany	7	1
Australia	77	-14 ▼
Canada	39	17

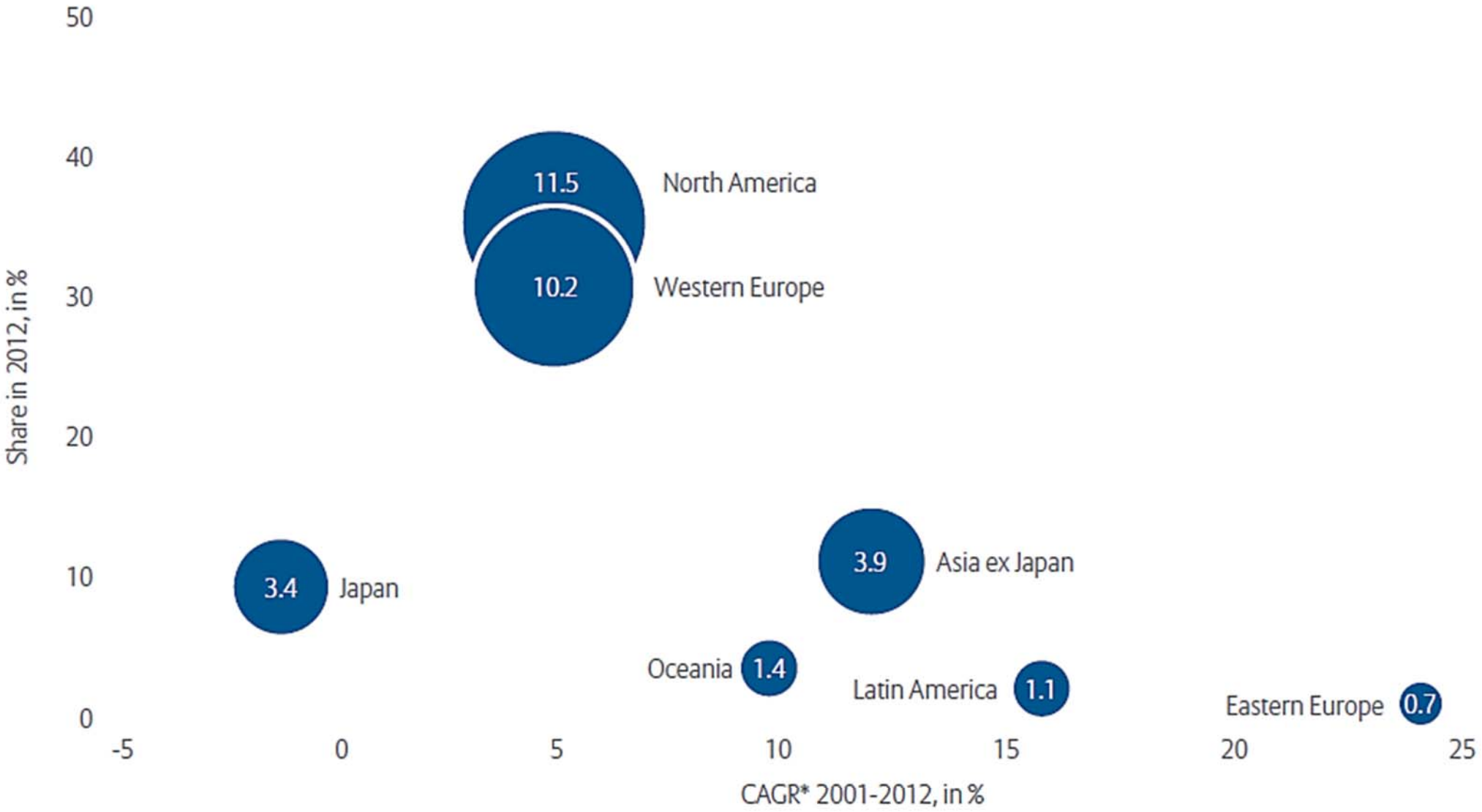
1 Includes all loans and fixed-income securities of households, corporations, financial institutions, and government.
2 Defined as an increase of 25 percentage points or more.
3 Or latest available.

SOURCE: Haver Analytics; national central banks; McKinsey Global Institute

http://www.mckinsey.com/insights/global_capital_markets/uneven_progress_on_the_path_to_growth

Liabilities and growth by region

Share of global debt burden 2012 and compound annual growth since the end of 2000



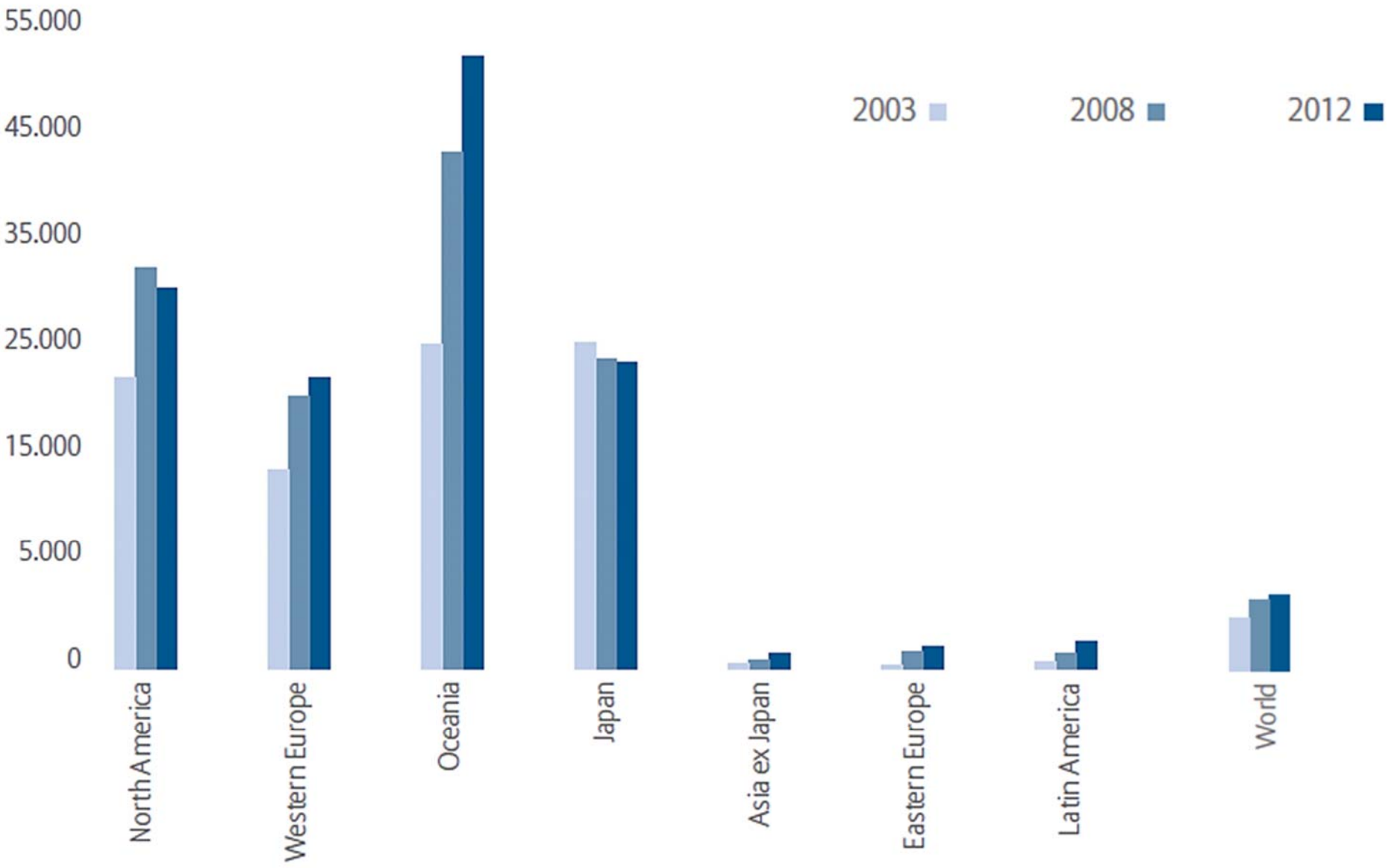
*CAGR = Compound Annual Growth Rate

Sources: National Central Banks and Statistical Offices, Allianz SE.

Absolute amount of liabilities, in EUR trillion ■

Regional differences in debt per capita

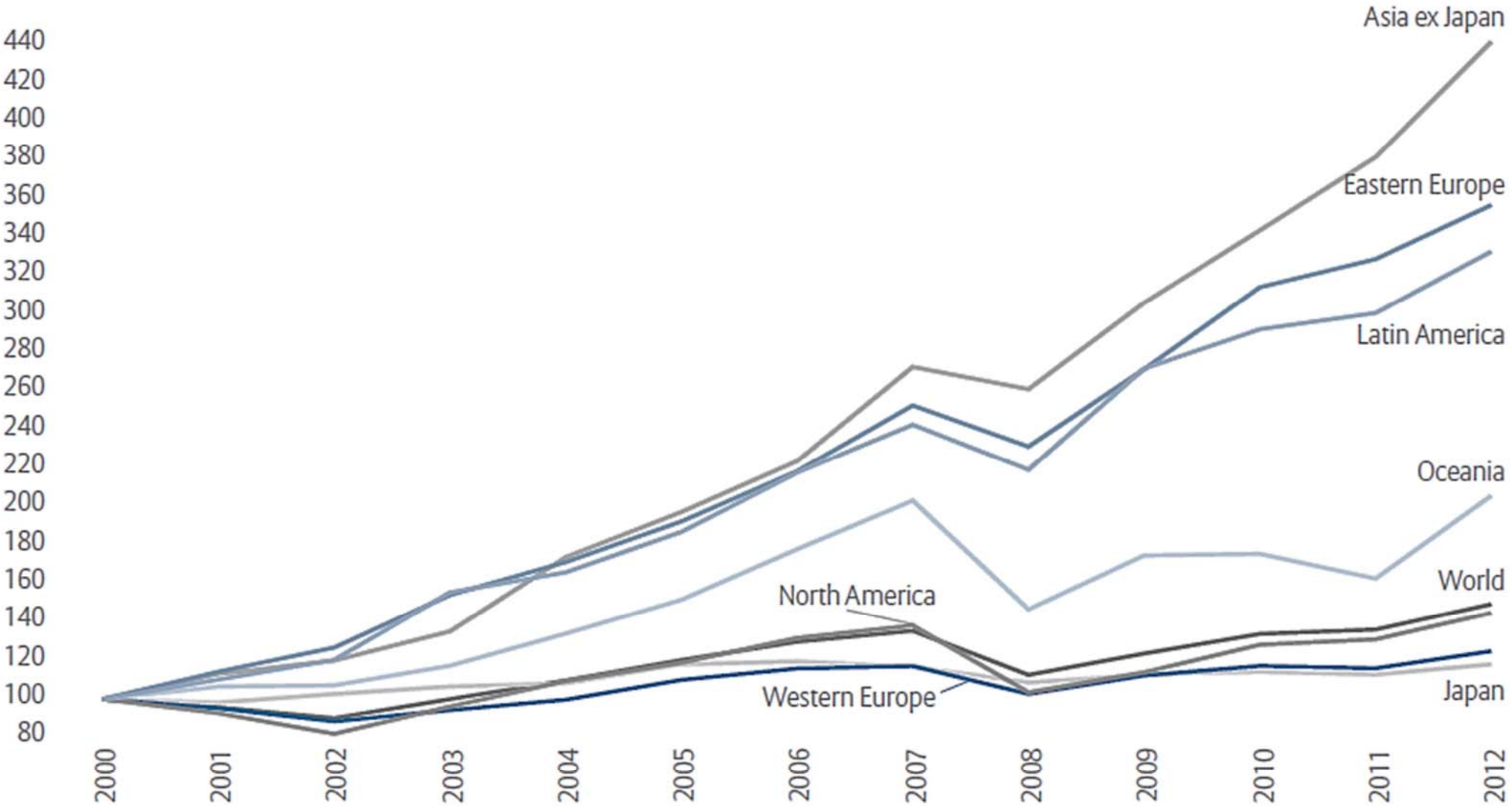
Liabilities per capita,
in EUR



Sources: National Central Banks and Statistical Offices, UN, Allianz SE.

In net terms Asia (ex Japan) becomes growth champion

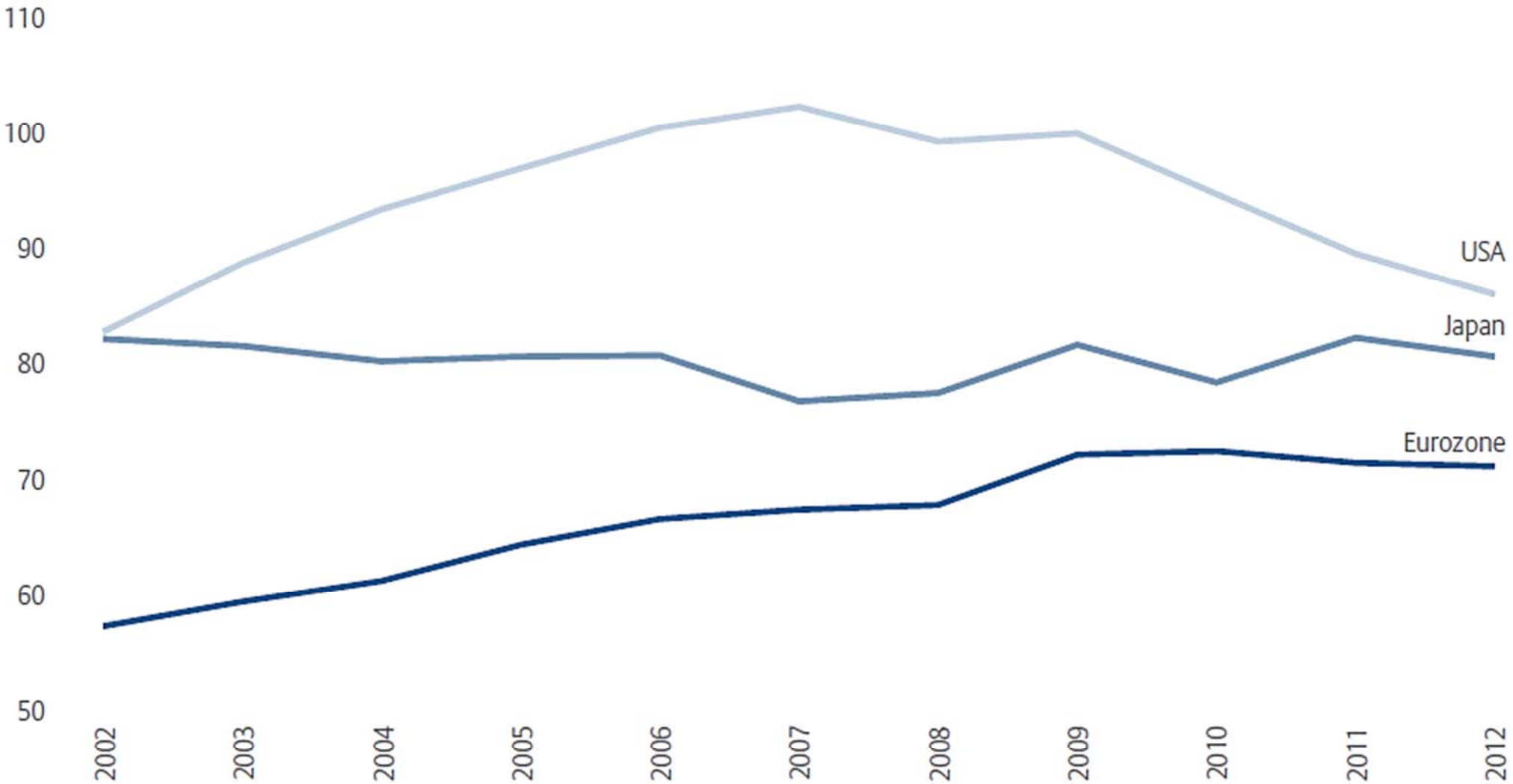
Development of net financial assets per capita by region, Index (2000=100)



Sources: National Central Banks and Statistical Offices, UN, Allianz SE.

Consolidation more important than new debt

Liabilities as % of GDP



Sources: EcoWin, National Central Banks and Statistical Offices, Allianz SE.

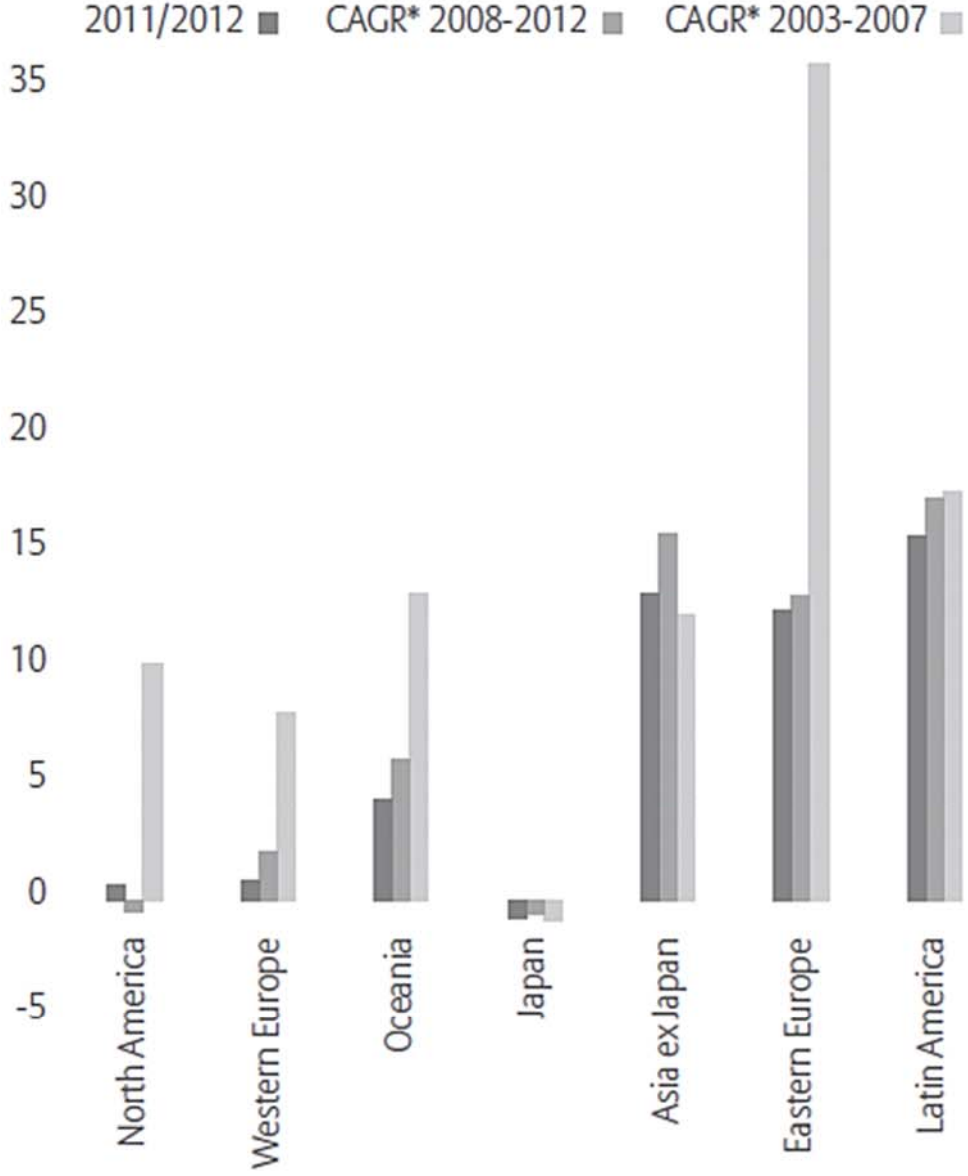
Financial crisis slows debt dynamic down

Development of global debt burden

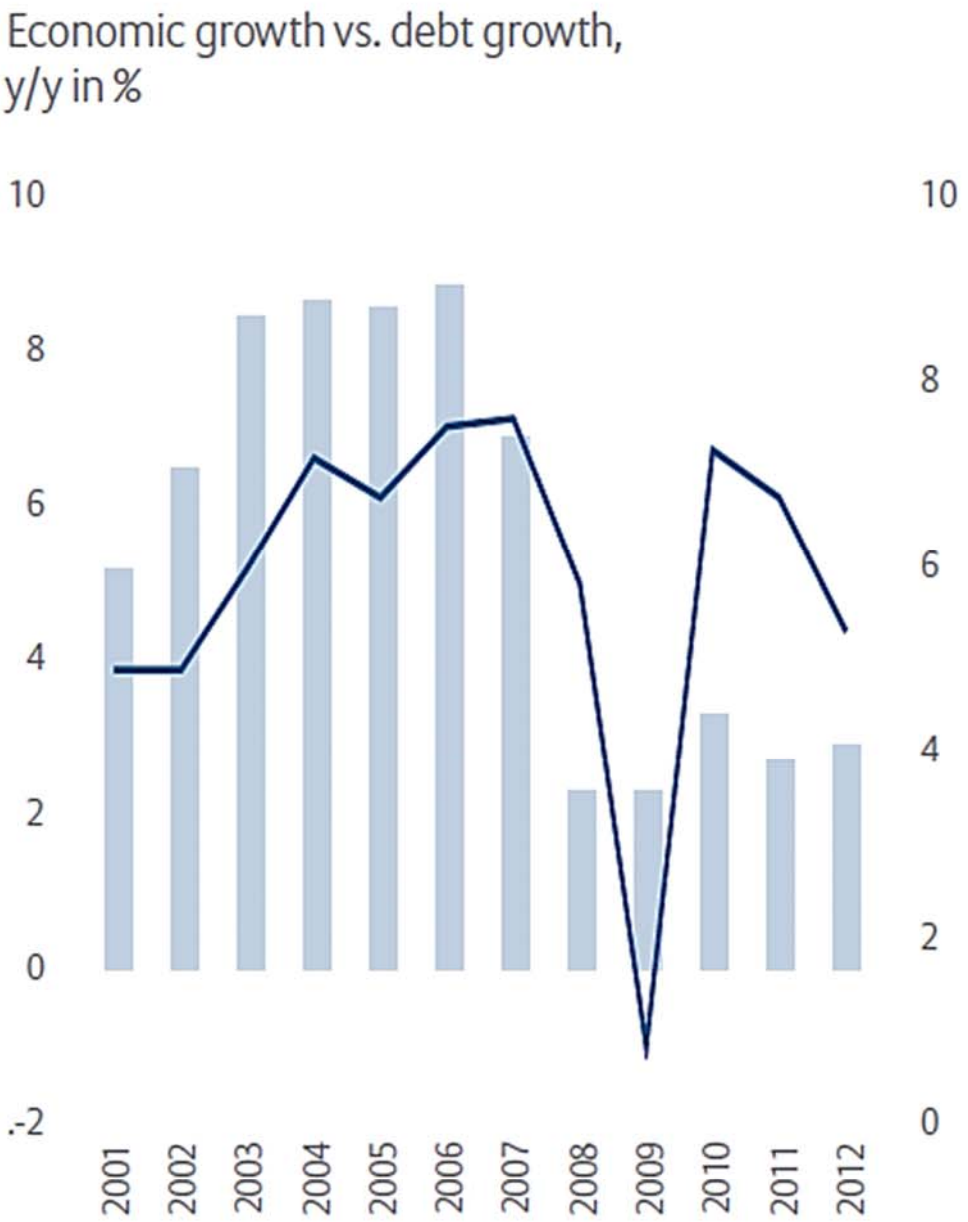
*CAGR = Compound Annual Growth Rate

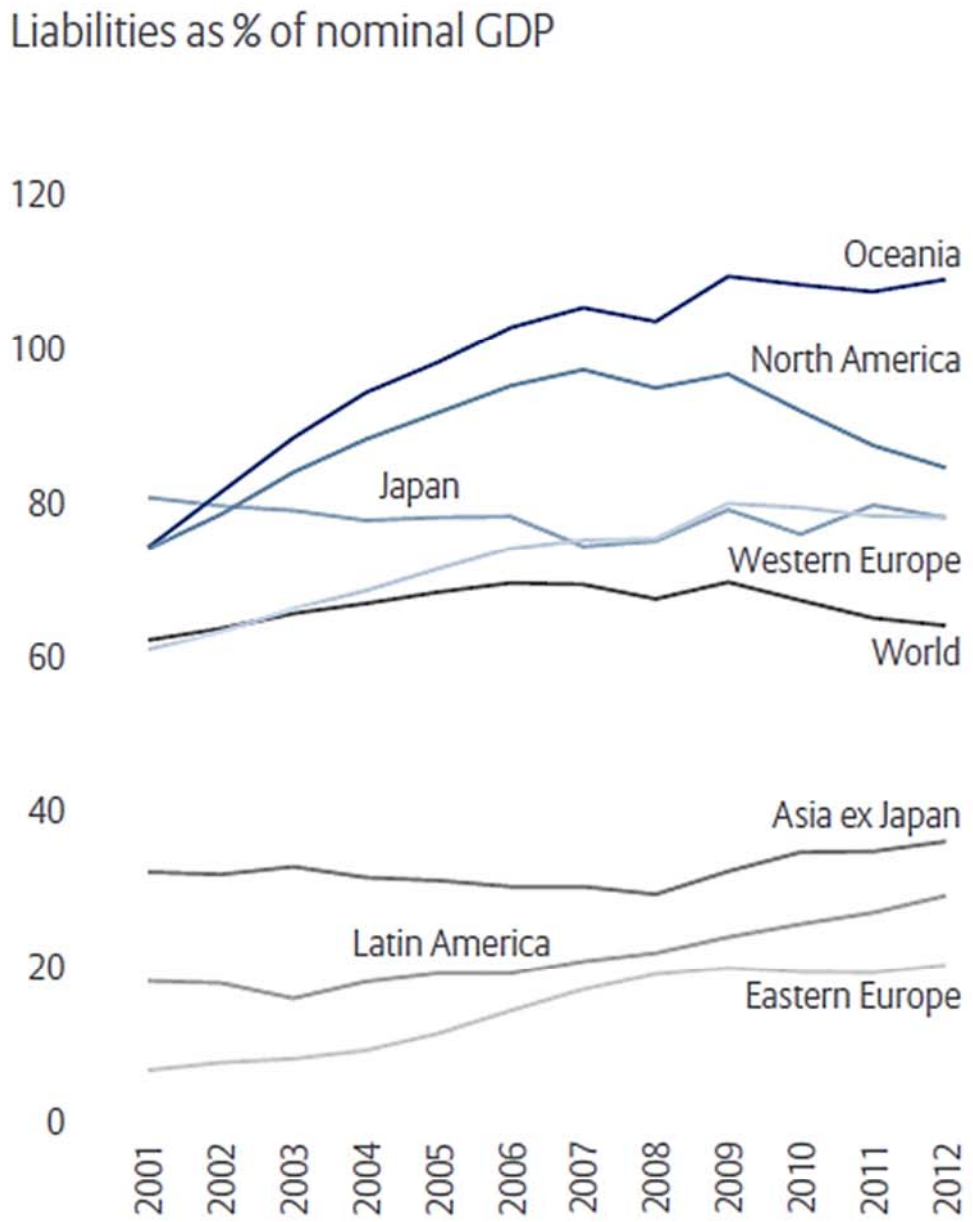
Sources: National Central Banks and Statistical Offices, Allianz SE.

Change in debt, in %



Economic growth overtakes debt growth – Global debt-to-GDP ratio shrinks

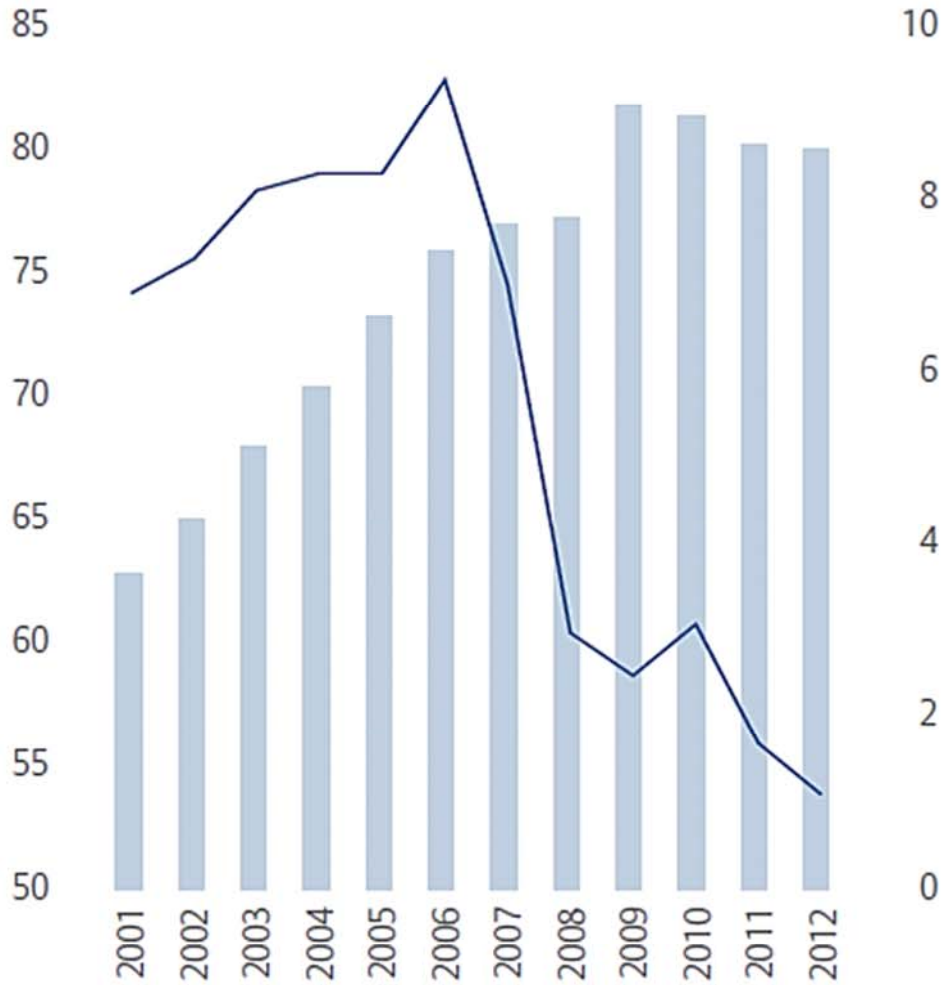




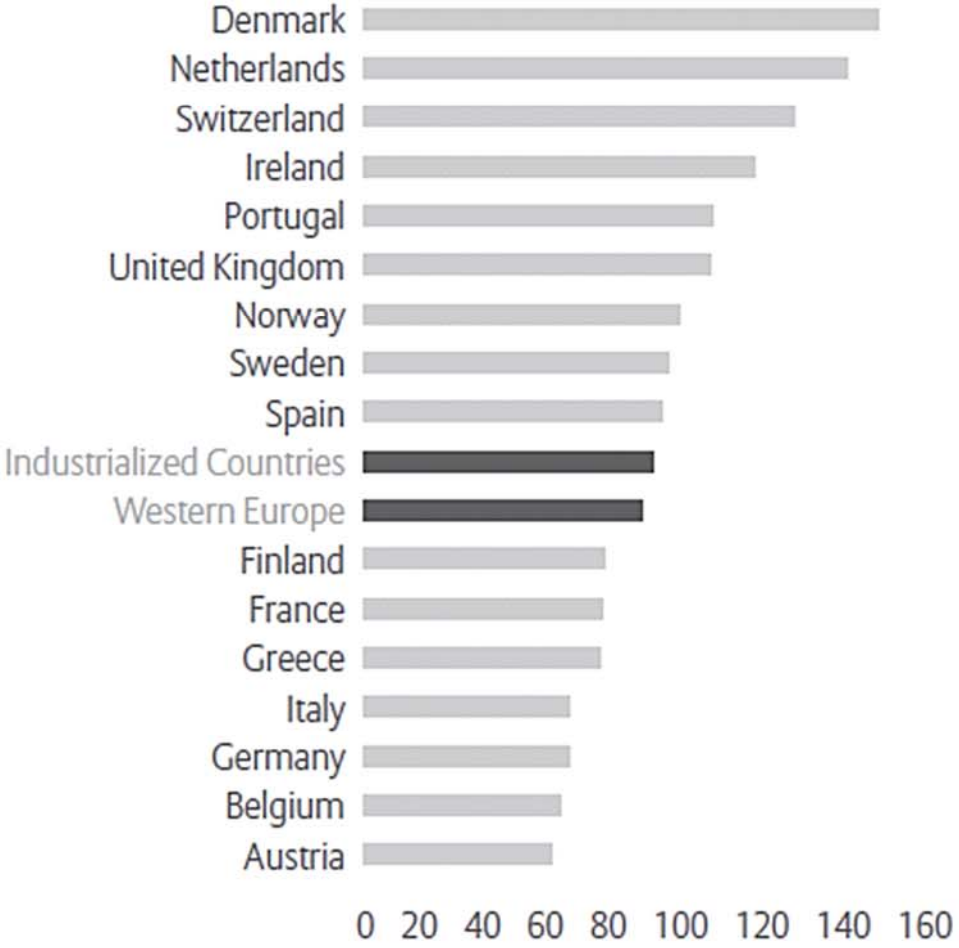
Sources: EcoWin, National Central Banks and Statistical Offices, Allianz SE.

Speed of debt accumulation slows down

Debt-to-GDP ratio and growth over time in Western Europe



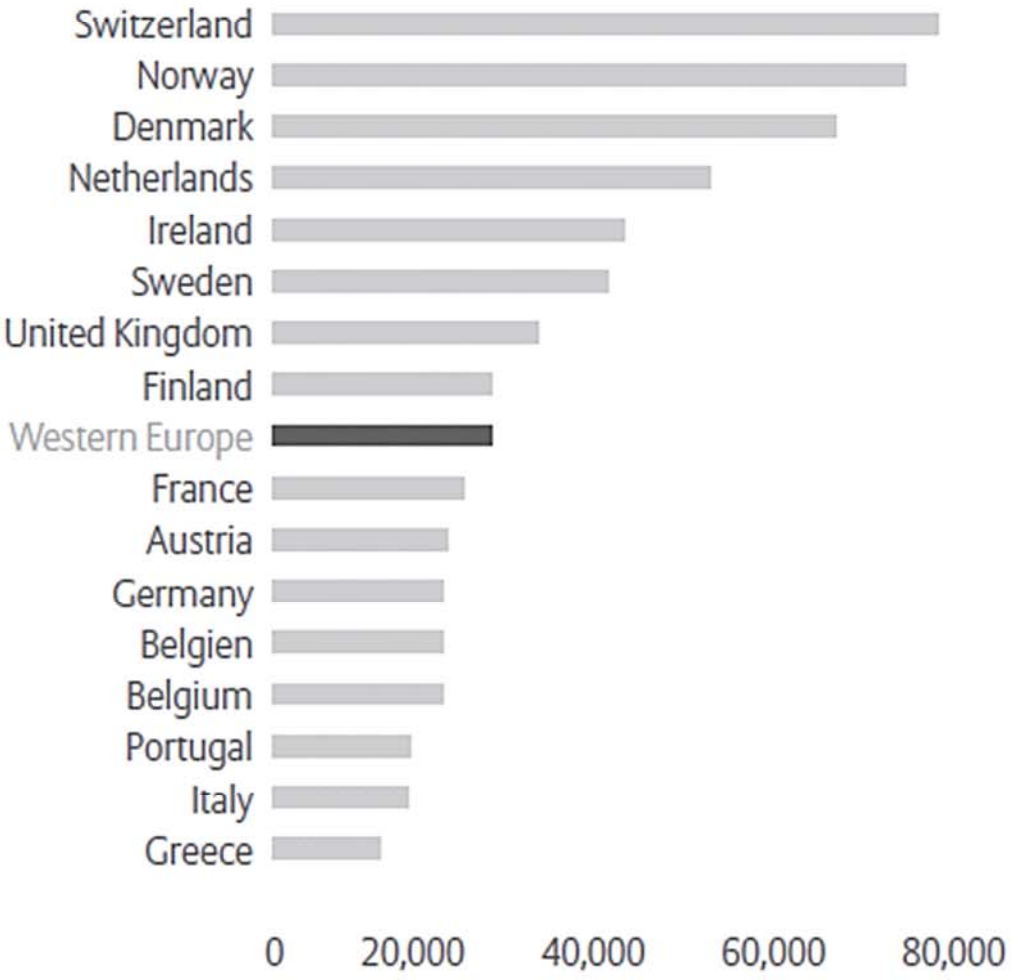
Debt-to-GDP ratio in the individual countries 2012, in % (private debt)



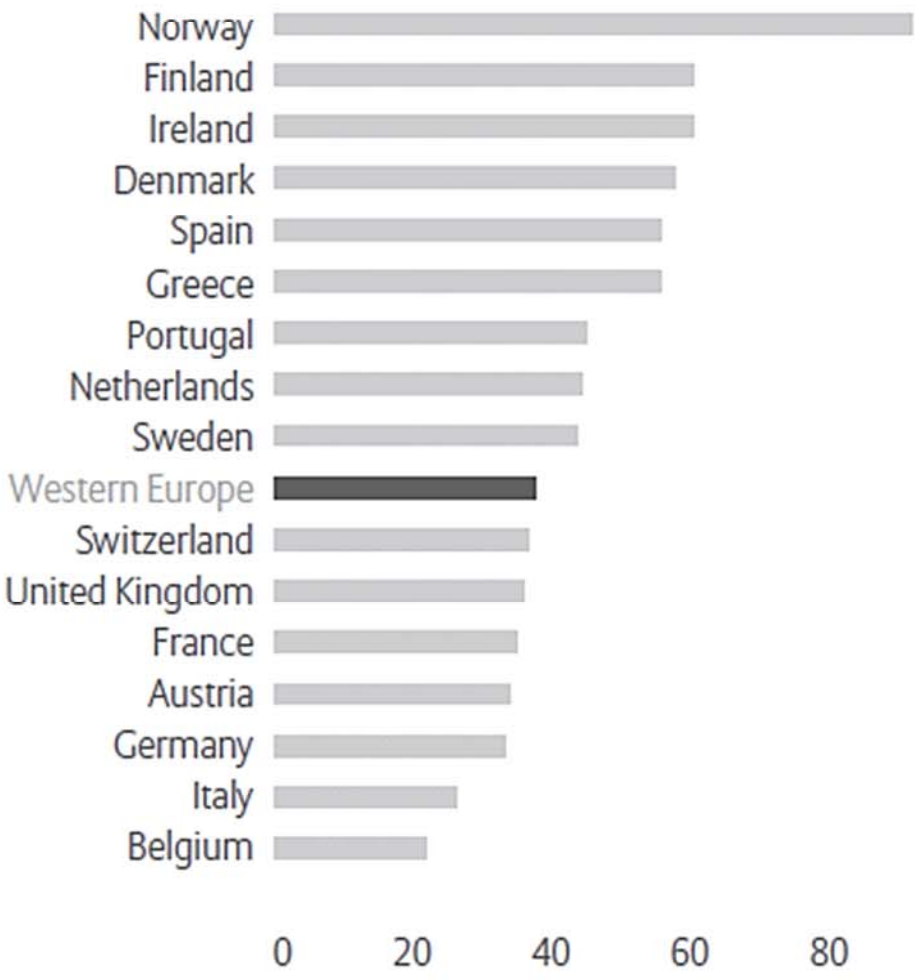
Sources: EcoWin, National Central Banks and Statistical Offices, Allianz SE.

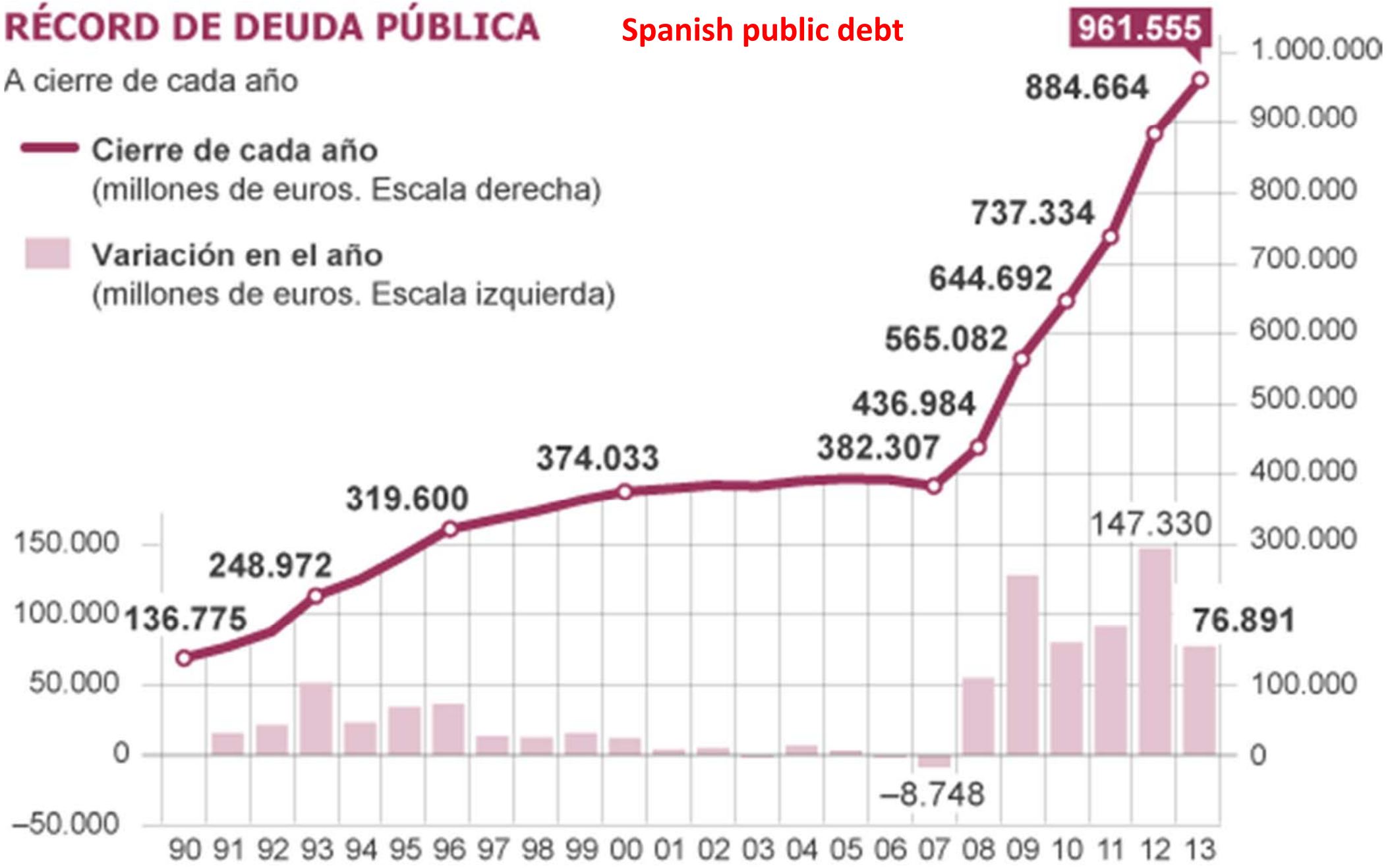
National differences in debt levels

Liabilities per capita, in EUR, 2012



Liabilities as % of gross financial assets, 2012





http://economia.elpais.com/economia/2014/02/17/actualidad/1392627220_817904.html

Securitization /1

- "Securitization is the financial practice of pooling various types of contractual debt such as residential mortgages, commercial mortgages, auto loans or credit card debt obligations and selling said consolidated debt as bonds, pass-through securities, or collateralized mortgage obligation to various investors.

- The principal and interest on the debt, underlying the security, is paid back to the various investors regularly."

http://en.wikipedia.org/wiki/Securitization

Securitization /2

- Securitization means transforming non-tradable financial assets (like bank loans) into securities by creating secondary markets for them.
- Method 1 of securitizing a loan: bundle together bank loans and sell partipations in the profits from the pool of loans to investors, who receive the payments from the borrowers that repay the loans.
- Hence, a new financial asset is created by combining existing financial assets and marketing different tiers of the repackaged assets to investors.

Securitization /3

- Problem: by packaging assets, relevant information about them (like risk) may be lost. Risky loans (like subprime mortgages) are easier to sell when pooling them with safer loans, but then investors may not know what they are actually buying.
- Method 2: issue debt (a bond, for instance) secured by the pool of loans (asset-backed security).
- Securitized assets typically constitute a large pool of illiquid assets (like loans). By selling the loans, the bank receives funds that otherwise would have come in the future as the loans were being repaid. The funds can be used to make additional loans.

Trade-off between properties

- Financial assets can be viewed as money imitators. But as they cannot have maximum liquidity, they must offer something in return to be attractive.
- Liquidity & profitability. If two assets differ only in liquidity and profitability, the more liquid must be the less profitable and vice versa (money vs bonds).
- Risk & profitability. If two assets differ only in risk and profitability, the riskier should be the more profitable and vice versa (shares vs deposits).

Inverse relationships

- Having more of the favourable properties is balanced by having more of the unfavourable ones.
- More profitability will in general be accompanied by less attractive qualities: more risk and/or less liquidity.
- More liquidity will be accompanied by less attractive qualities: more risk and/or less profitability.
- More risk will be accompanied by more attractive qualities: more profitability and/or more liquidity.

Shadow banking

- The term refers to non-bank financial intermediaries that act like banks, but are not subject to bank regulations (like legal reserves) and lack access to central bank funding and deposit insurance.
- Examples: securitization vehicles, mortgage companies, investment banks, asset-backed commercial paper, money market mutual funds, markets for repos (repurchase agreements), hedge funds…
- Estimated size of the shadow banking system in 2012: over $100 trillion. Nominal world GDP in 2012: $72 trillion (85 at purchasing power parity).

 http://en.wikipedia.org/wiki/Gross_world_product http://en.wikipedia.org/wiki/Shadow_banking_system

Shadow banking & financial crisis /1

- The 2007 – 12 financial crisis has been regarded as a "run" on the shadow banking system (see Paul Krugman, *The return of depression economics*). Moral: if it behaves like a bank, regulate it like a bank.
- Auction-rate security (ARS). Individuals lend money on a long-term basis to an institution. At some intervals, the institution holds an auction in which new investors bid for the right to replace old investors wanting to leave (does it sound familiar to the preferred shares scheme in Spain?). The interest rate of the auction determines what investors get until the next auction.

Shadow banking & financial crisis /2

- For investors, interest rates on ARS were higher than on bank deposits. For the issuers, the rates paid were lower than those on long-term bank loans. How could this be? Issuers were not subject to requirements of holding liquid reserves nor had to contribute to the deposit insurance system.
- The ARS system ($400 billion at its peak) collapsed in 2008. Not enough new investors were arriving to allow existing investors to get their money back. Fewer arrived after it was realized that the money was tied-up for decades. Without new investors, ARS turned iliquid: no one wanted to buy ARS .

Financial depth

- Financial depth captures the size of the financial sector relative to the economy. More specifically, it compares the size of financial institutions and markets in an economy with (some measure of) the economic output generated by the economy. It can be viewed as a measure of the financial development of an economy.

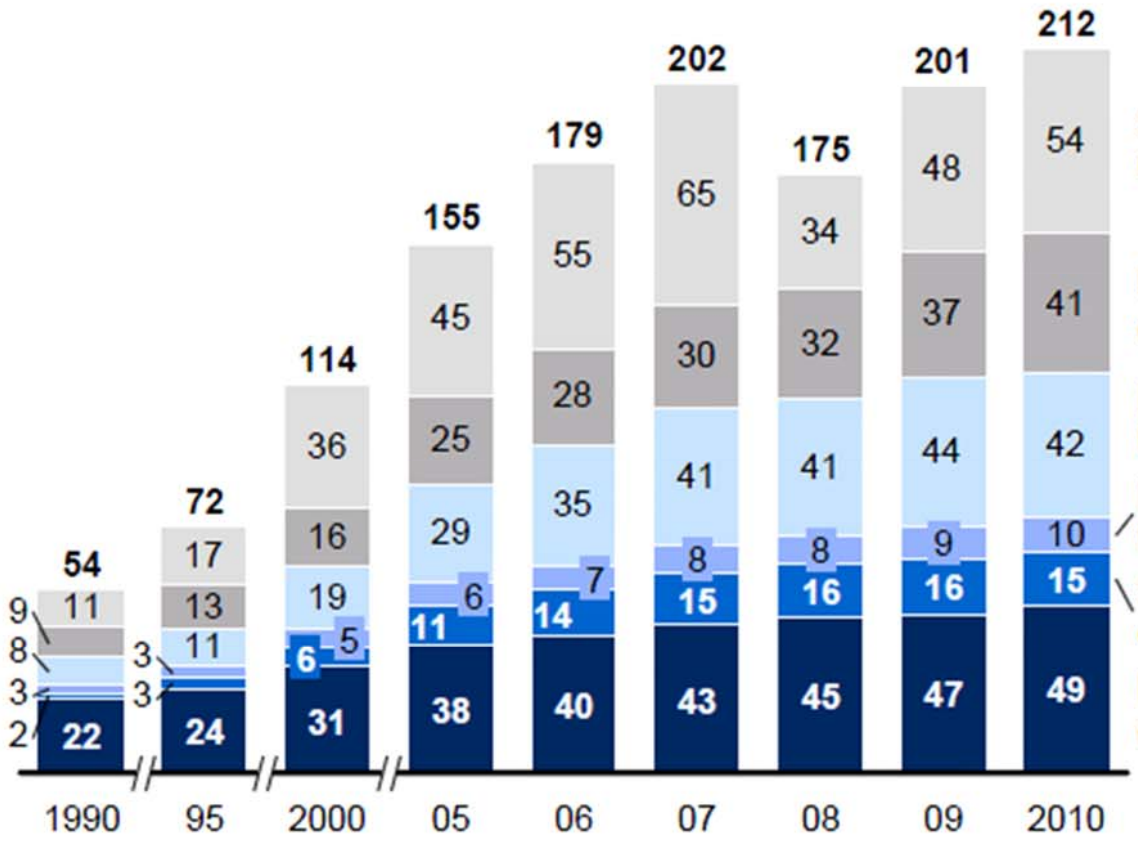
- There are many proxy variables to measure financial depth. Among them: private credit relative to GDP and total banking assets to GDP.

http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTGLOBALFINREPORT/0,,contentMDK:23268788~pagePK:64168182~piPK:64168060~theSitePK:8816097,00.html

Global financial stock has surpassed pre-crisis heights, totaling $212 trillion in 2010

Global stock of debt and equity outstanding[1]

$ trillion, end of period, constant 2010 exchange rates



Compound annual growth rate %	1990–09	2009–10
	7.2	5.6
Stock market capitalization	8.1	11.8
Public debt securities outstanding	7.8	11.9
Financial institution bonds outstanding	9.5	-3.3
Nonfinancial corporate bonds outstanding	6.7	9.7
Securitized loans outstanding	12.7	-5.6
Nonsecuritized loans outstanding	4.1	5.9

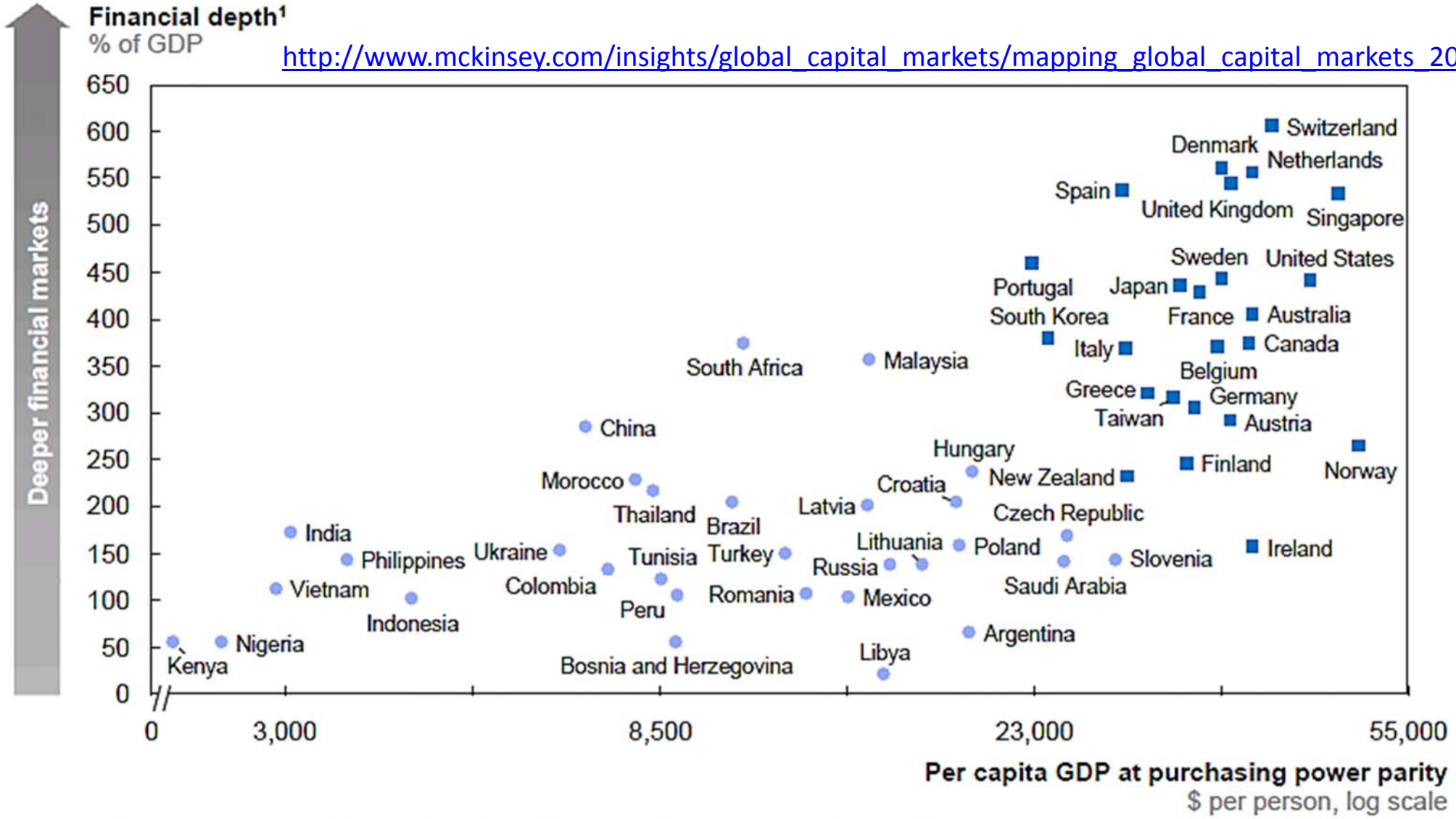
Financial depth[2] (%)	1990	95	2000	05	06	07	08	09	2010
	261	263	321	334	360	376	309	356	356

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011

1 Based on a sample of 79 countries.
2 Calculated as global debt and equity outstanding divided by global GDP.
NOTE: Numbers may not sum due to rounding.
SOURCE: Bank for International Settlements; Dealogic; SIFMA; Standard & Poor's; McKinsey Global Banking Pools; McKinsey Global Institute analysis

Financial markets in developing countries still have significant room for growth

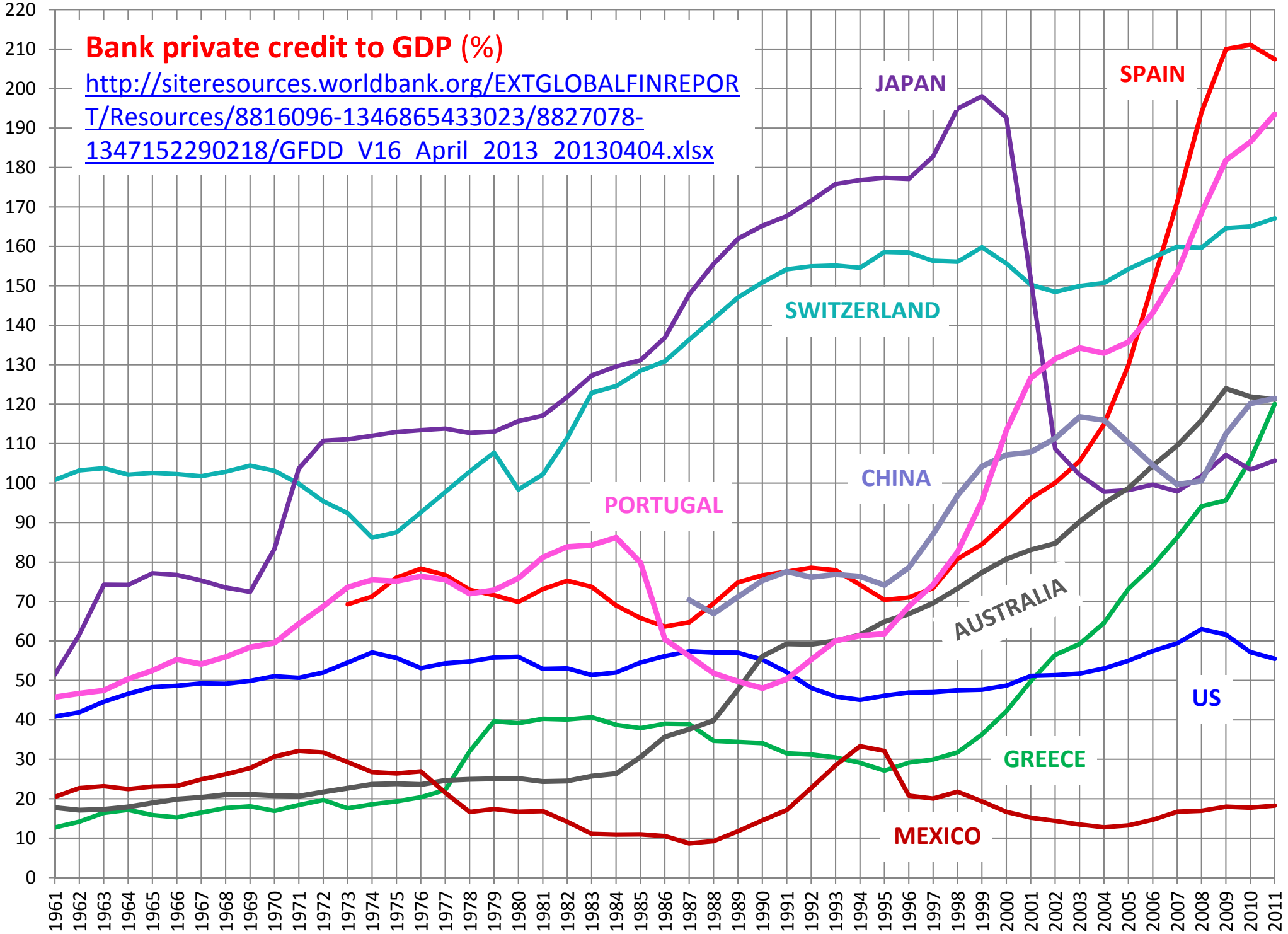
2010, end of period



http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011

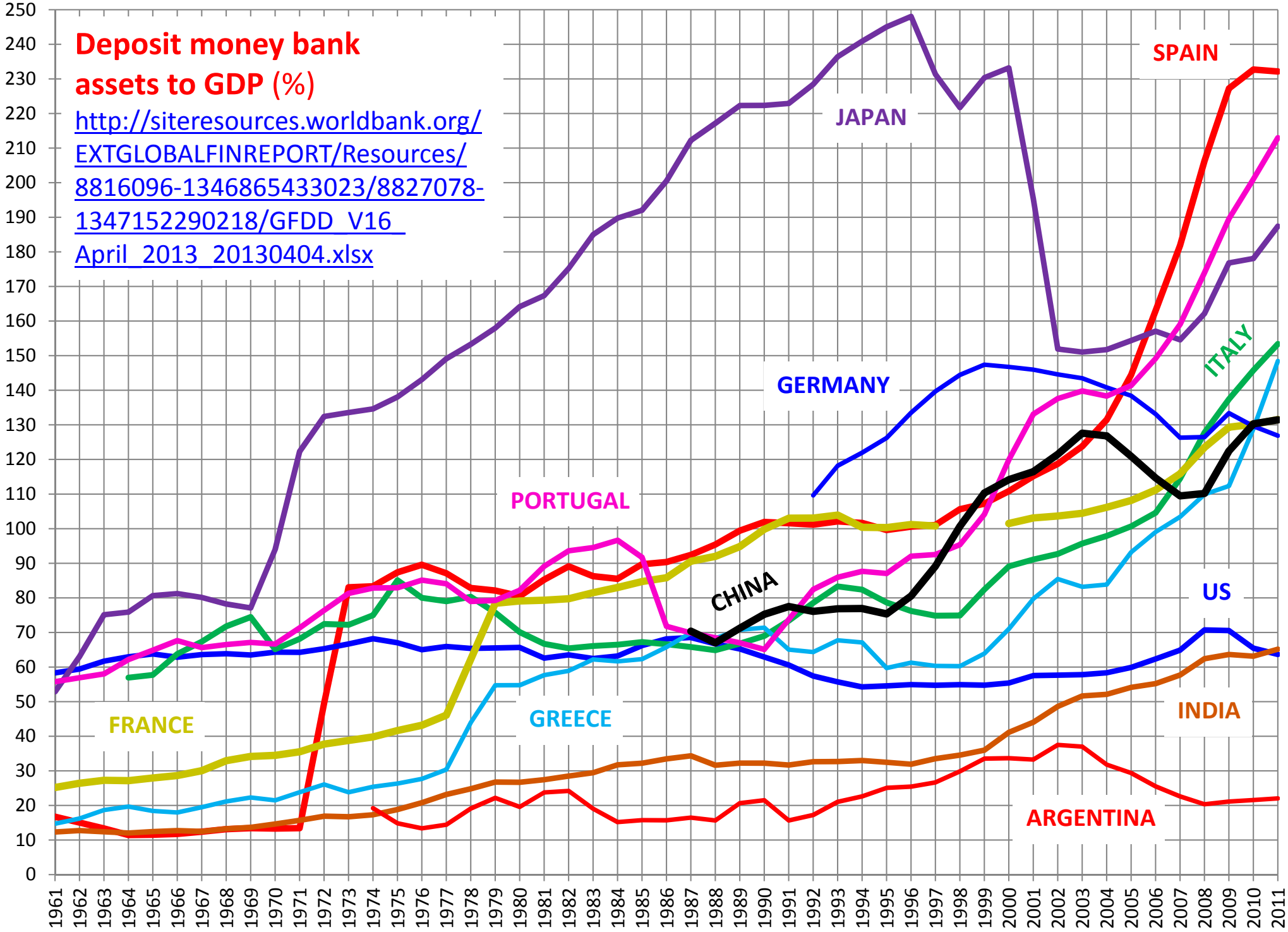
1 Calculated as a country's debt and equity outstanding divided by country's GDP.

SOURCE: Bank for International Settlements; Dealogic; SIFMA; Standard & Poor's; McKinsey Global Banking Pools; McKinsey Global Institute analysis


Bank private credit to GDP (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx
JAPAN
SPAIN
SWITZERLAND
CHINA
PORTUGAL
AUSTRALIA
US
GREECE
MEXICO
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

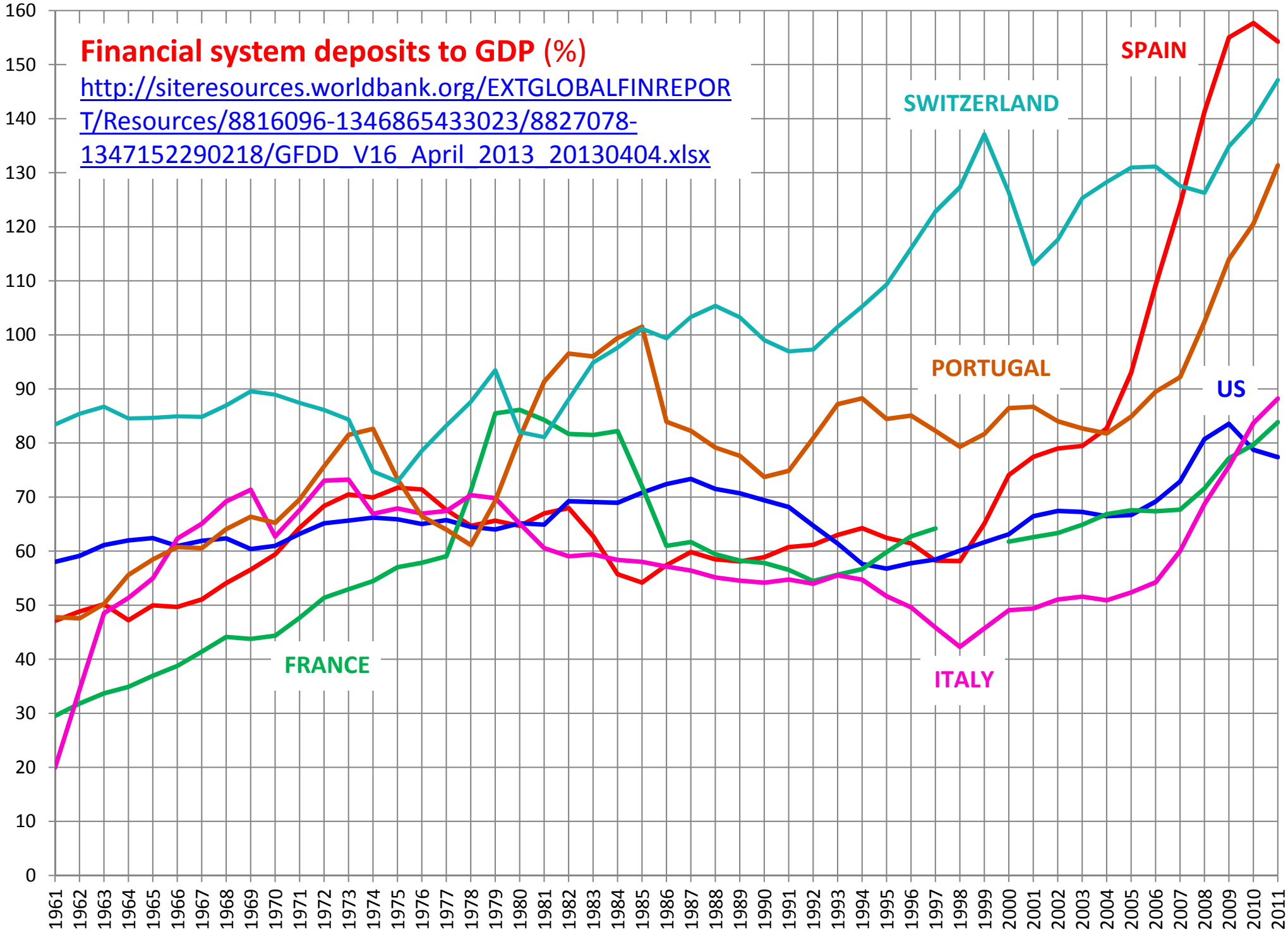
Private credit to GDP

- It differs across countries. It correlates strongly with income level: is 103% in high-income countries, more than four times the average ratio in low-income countries. It is closely linked to long-term economic growth and poverty reduction.
- High ratio: many European countries, Canada, Australia, South Africa, China (above Russia, Brazil, and India), and the US (below China).
- The eight countries with the highest ratio as of 2010 (CYP, IRE, SPA, NDL, POR, UK, LUX, and SWI) had a major crisis episode since 2008.


Deposit money bank assets to GDP (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx
JAPAN
SPAIN
GERMANY
ITALY
PORTUGAL
CHINA
US
FRANCE
GREECE
INDIA
ARGENTINA
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

Total banking assets to GDP

- According to the introduction to the Workd Bank's Global Financial Development Database, "it is arguably a more comprehensive measure of size, because it includes not only credit to private sector, but also credit to government as well as bank assets other than credit. However, it is available for a smaller number of economies and has been used less extensively [than private credit to GDP] in the literature on financial development. In any case, the two variables are rather closely correlated (with a correlation coefficient of about 0.9 over the whole sample). http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTGLOBALFINREPORT/0,,contentMDK:23268788~pagePK:64168182~piPK:64168060~theSitePK:8816097,00.html


Financial system deposits to GDP (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx
SPAIN
SWITZERLAND
PORTUGAL
US
FRANCE
ITALY
160
150
140
130
120
110
100
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50
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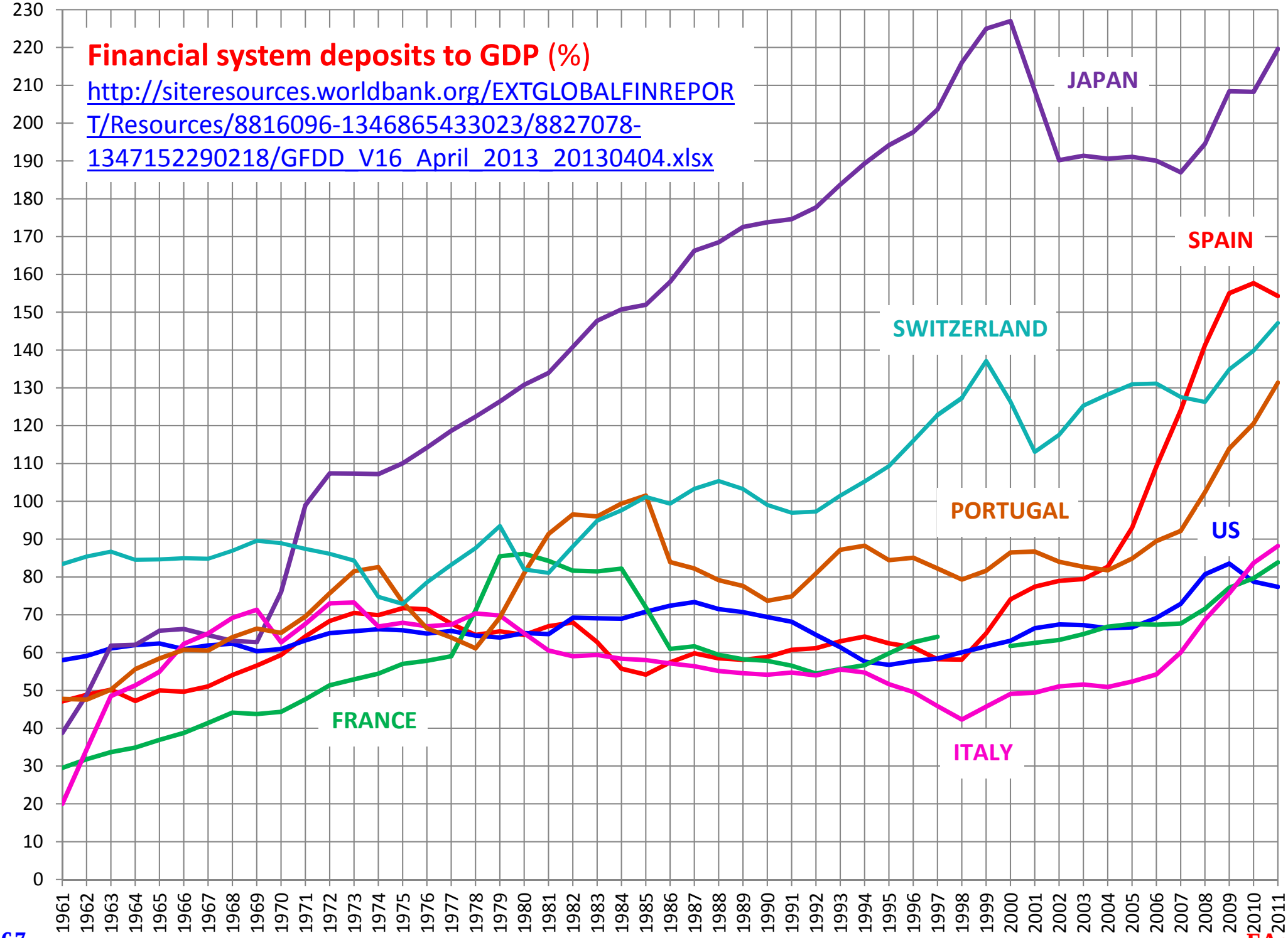
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011


Financial system deposits to GDP (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx
JAPAN
SPAIN
SWITZERLAND
PORTUGAL
US
FRANCE
ITALY
230
220
210
200
190
180
170
160
150
140
130
120
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90
80
70
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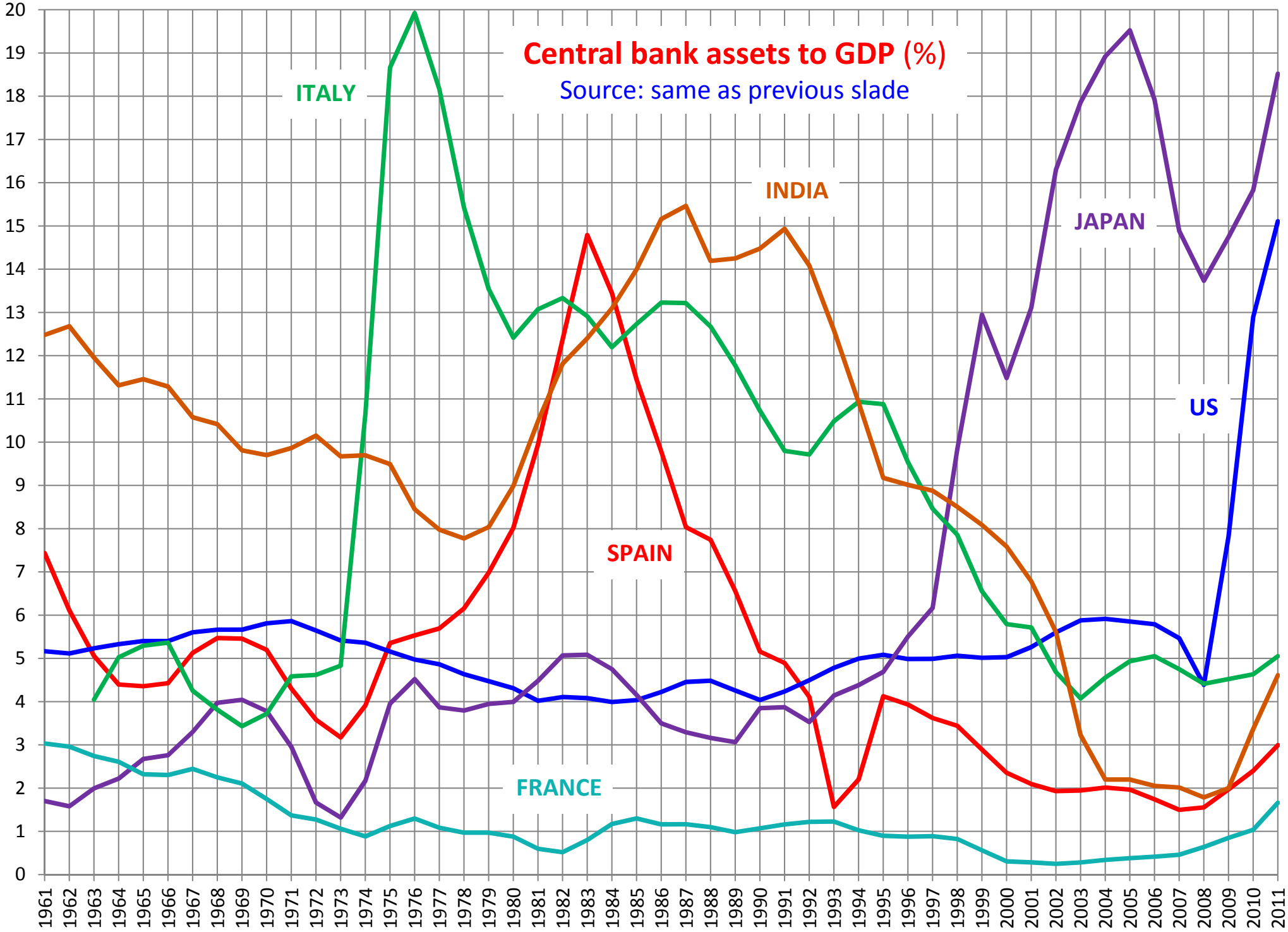
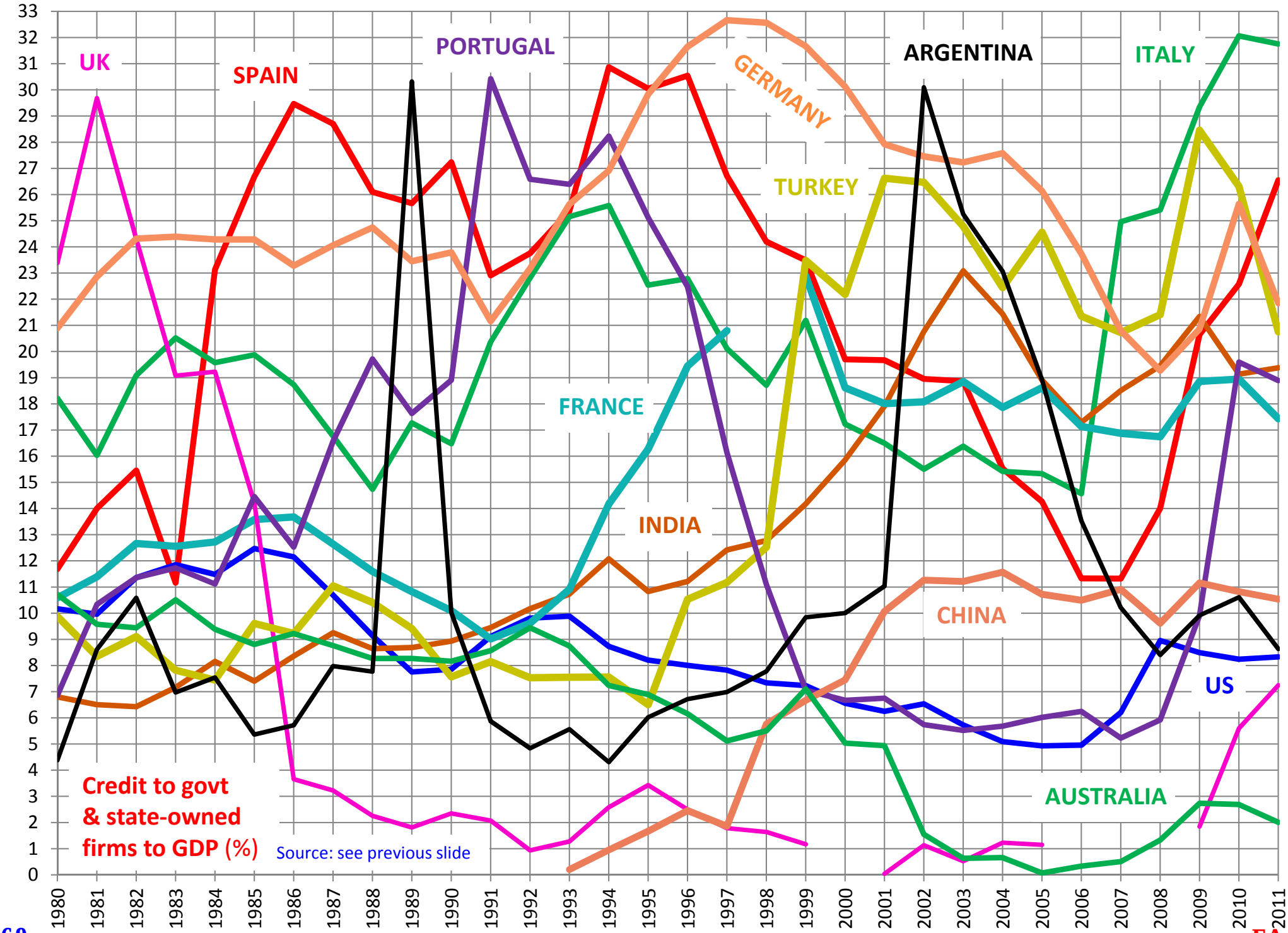
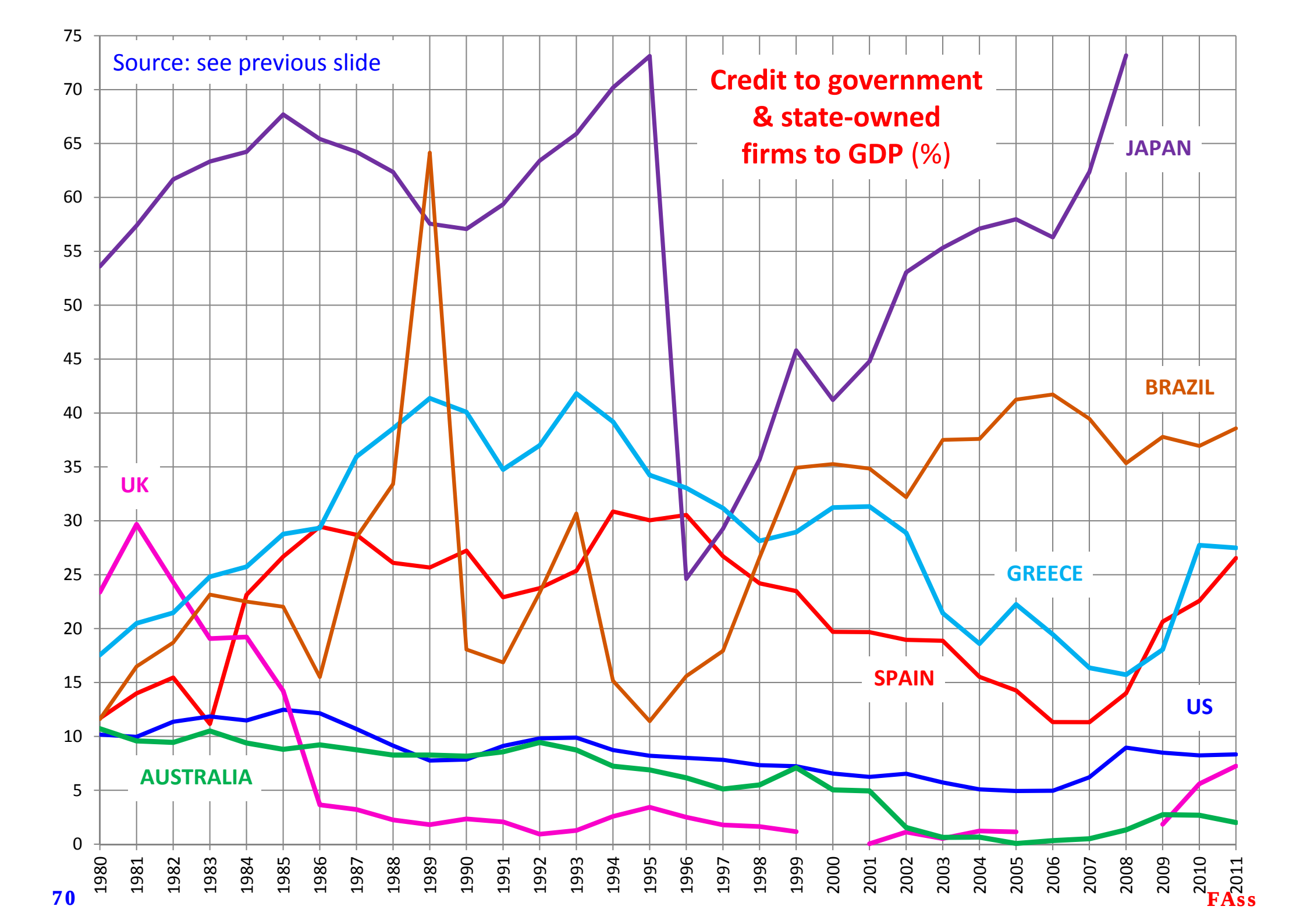
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011


Central bank assets to GDP (%)
Source: same as previous slade
ITALY
INDIA
JAPAN
US
SPAIN
FRANCE
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011


UK
SPAIN
PORTUGAL
GERMANY
ARGENTINA
ITALY
TURKEY
FRANCE
INDIA
CHINA
US
AUSTRALIA
Credit to govt & state-owned firms to GDP (%)
Source: see previous slide
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33
1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

FAss


Source: see previous slide
Credit to government & state-owned firms to GDP (%)
JAPAN
BRAZIL
UK
GREECE
SPAIN
US
AUSTRALIA
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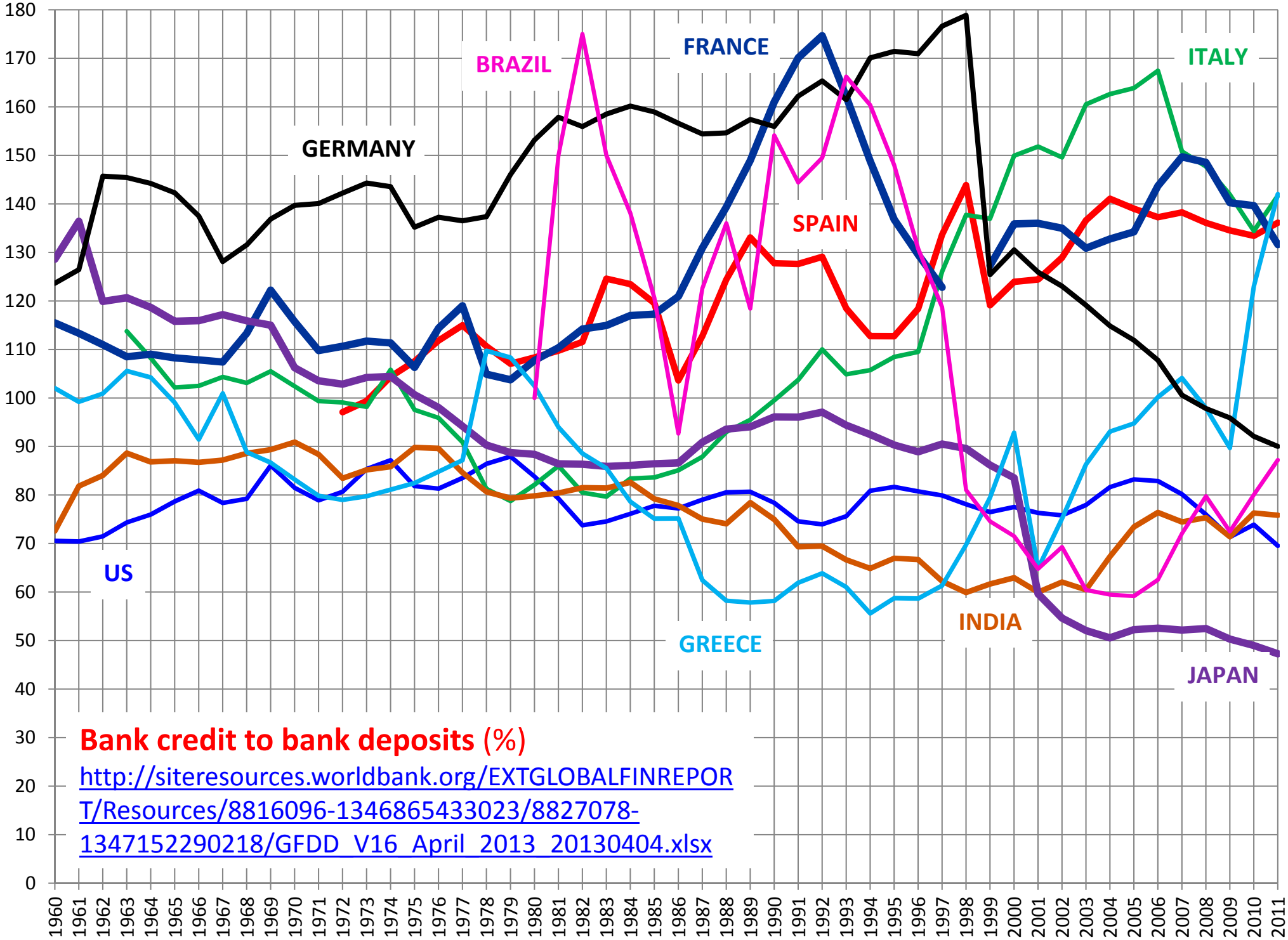
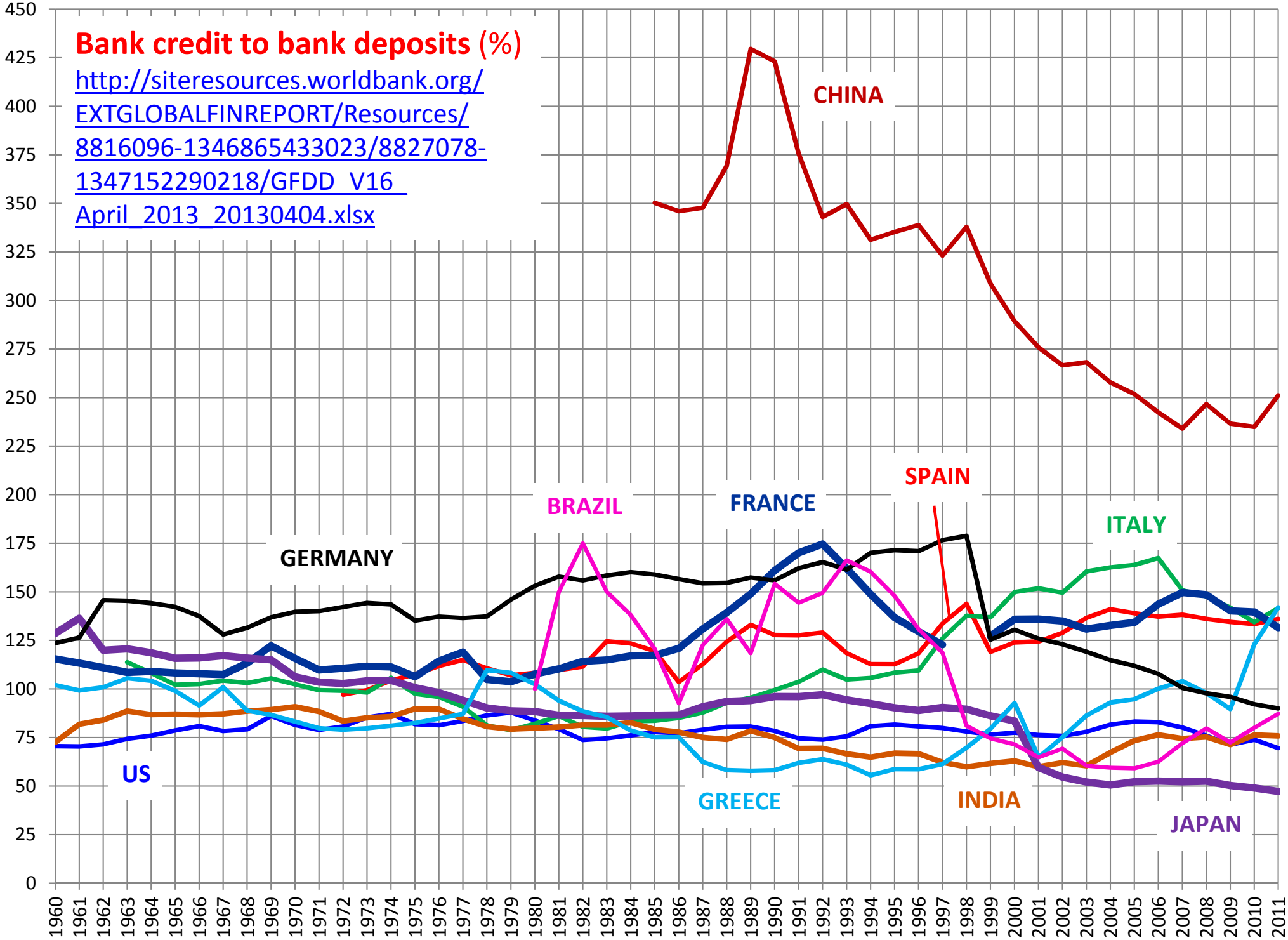

BRAZIL
FRANCE
ITALY
GERMANY
SPAIN
US
GREECE
INDIA
JAPAN
Bank credit to bank deposits (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx


Bank credit to bank deposits (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx
CHINA
SPAIN
BRAZIL
FRANCE
ITALY
GERMANY
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GREECE
INDIA
JAPAN
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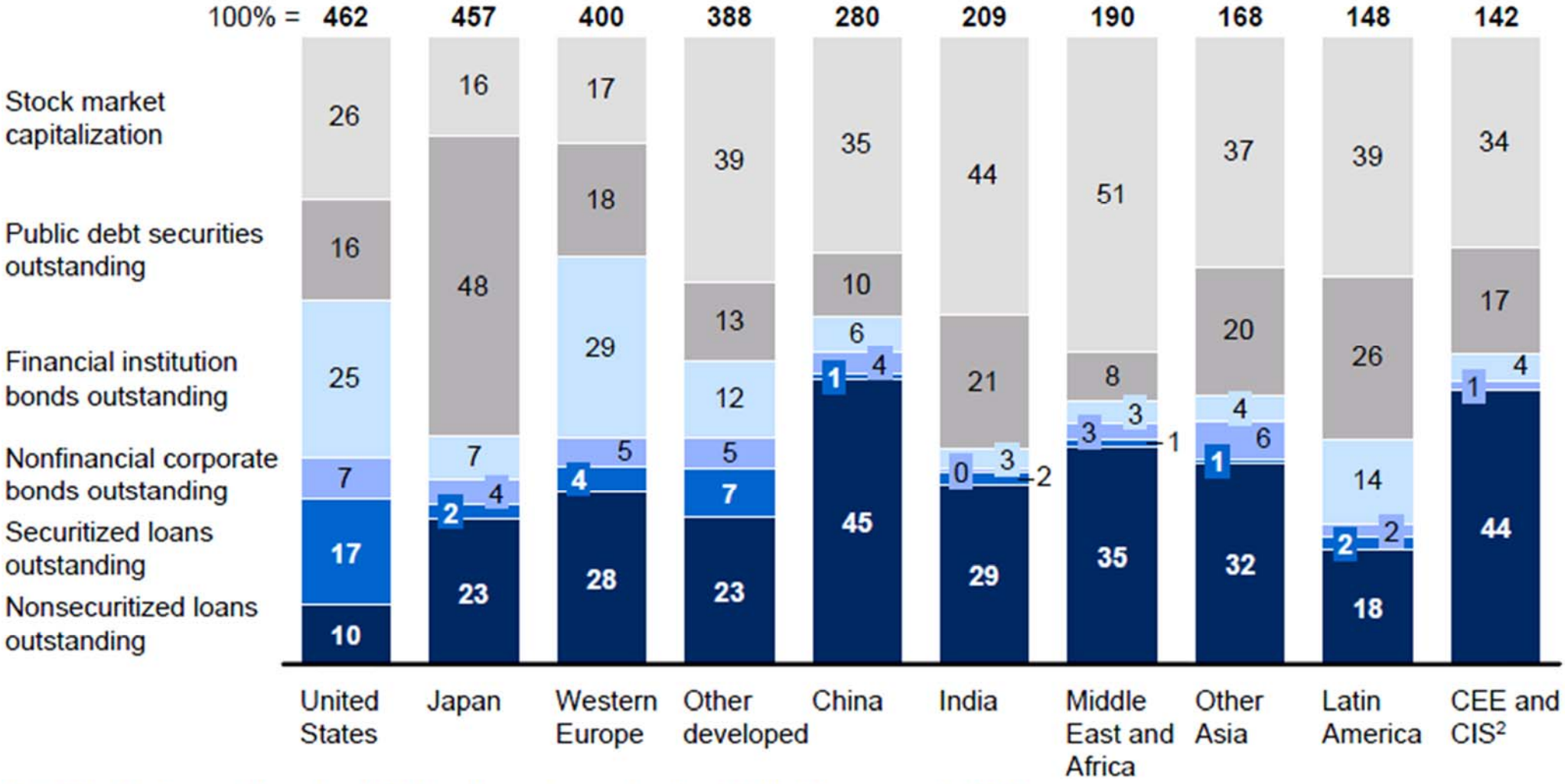
1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

The structure of capital and banking markets varies widely between countries

Financial depth, year end 2010[1]

Percent; % of regional GDP

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011



1 Calculated as total regional debt and equity outstanding divided by regional GDP.
2 Central and Eastern Europe and Commonwealth of Independent States.

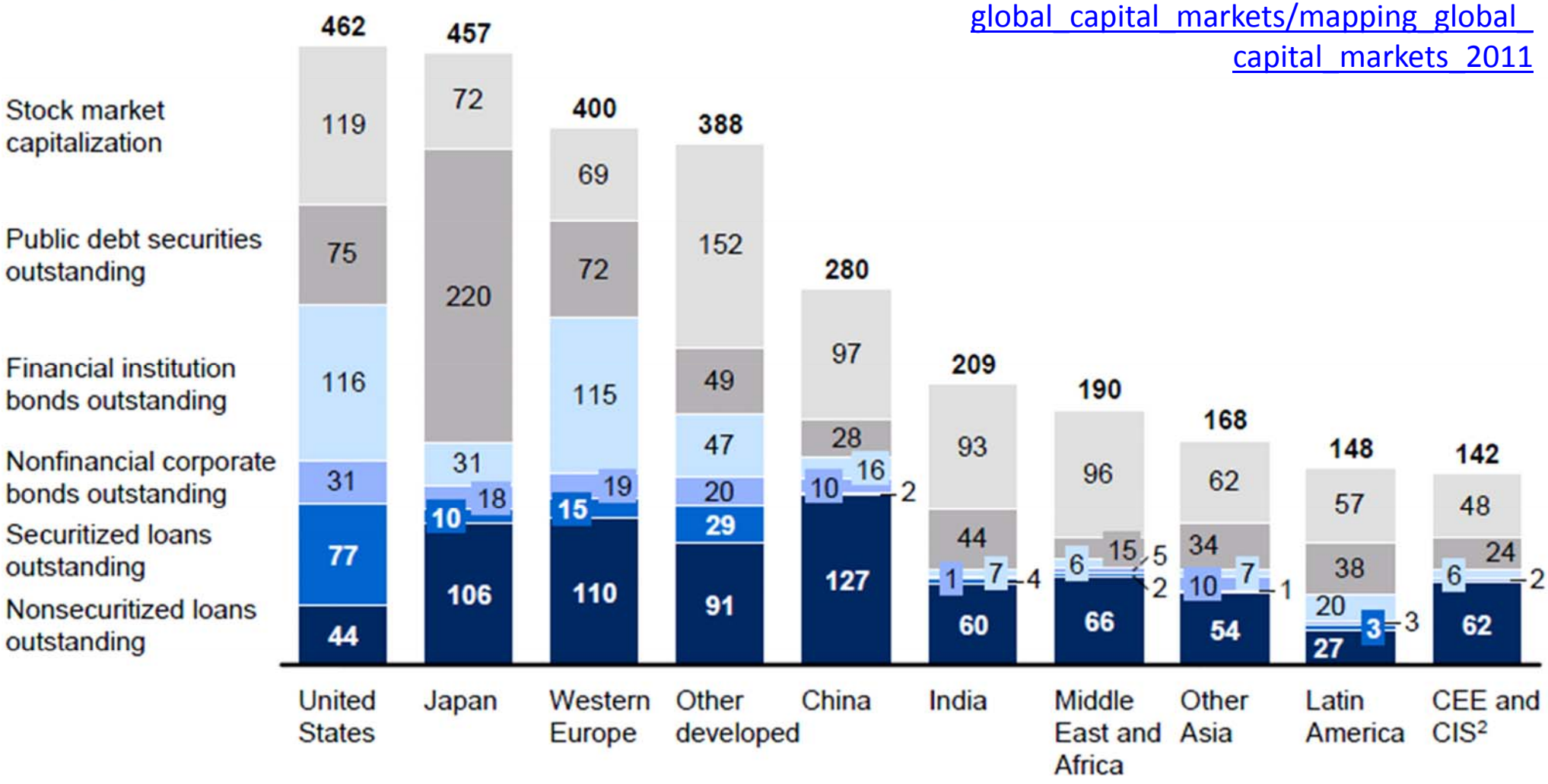
SOURCE: Bank for International Settlements; Dealogic; SIFMA; Standard & Poor's; McKinsey Global Banking Pools; McKinsey Global Institute analysis

Financial depth is lower in emerging markets, primarily because of the absence of corporate bond and securitization markets

Financial depth,[1] year end 2010

% of regional GDP

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011



1 Calculated as total regional debt and equity outstanding divided by regional GDP.
2 Central and Eastern Europe and Commonwealth of Independent States.

SOURCE: Bank for International Settlements; Dealogic; SIFMA; Standard & Poor's; McKinsey Global Banking Pools; McKinsey Global Institute analysis

Fragility of the financial sector /1

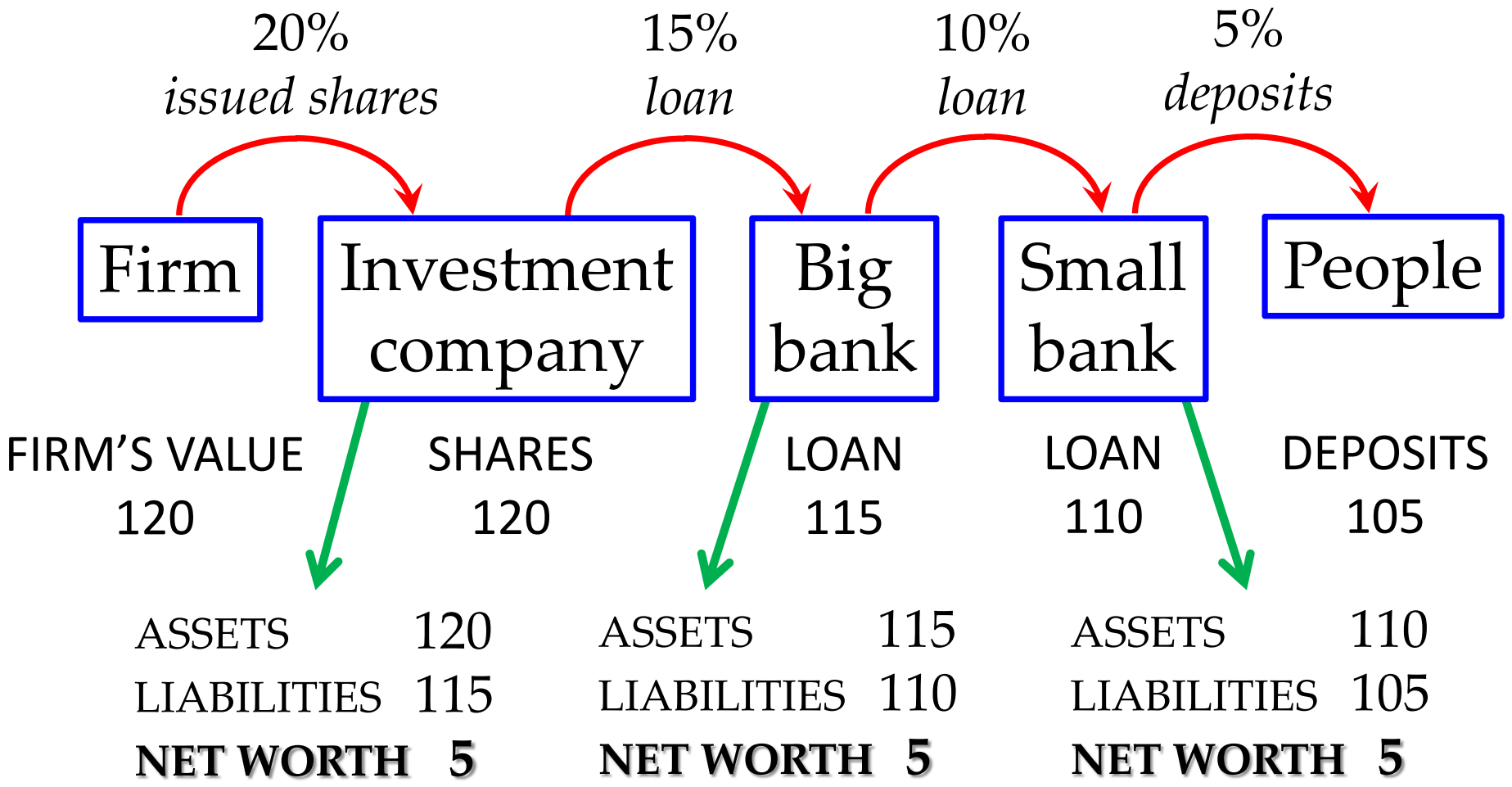
- The next example illustrates the fragility of the financial sector and its power to magnify (in either direction) the outcomes the real sector generates.
- There is a firm worth €120 million that plans to carry out an investment project to enhance its productive capacity. To raise the necessary funds, shares for the 100% value of the firm are issued.
- To attract investors, the price 100 of the shares is set below the value 120 of the firm. An investment company buys all the shares.

Fragility of the financial sector /2

- The investors obtain a 20% rate of return: they pay 100 for something whose actual value is 120. Yet, investors run short of cash and ask a big bank for a loan. The bank grants a loan of 100 at a 15%.
- But the bank is also short of liquidity and obtains from a small bank a loan of 100 at a 10%.
- The small bank's vault is empty. The bank offers prefential clients a 5% reward for new deposits. The bank succeeds and collects 100, which are lent to the big bank, which are lent to investors, which are paid to the firm in return for the shares.

Fragility of the financial sector /3

- The sketch summarizes all the transactions made and the net worth effect on investors and banks.



Fragility of the financial sector /4

- Everybody gets a profit in the process: the firm funds the project, and investors, banks, and depositors earn 5 each. Thanks to the financial sector, the firm's expansion generates a profit for investors, banks, and depositors.

- The example also shows the leverage effect of the financial sector. There are assets in the economy worth 450: shares, 120; loans from the big bank, 115; loans from the small bank, 110; and deposits by clients, 105. But those assets are all backed by the firm's value, which is merely 120.

Fragility of the financial sector /5

- Therefore, financial wealth (*paper wealth*) worth 450 is lifted by real wealth (wealth created by the real sector, that is, goods) worth 120.
- This is the positive magnifying effect of the financial sector: real assets worth 120 sustain financial assets worth 450.
- The magnifying effect also works in the reverse. For instance, imagine that the investment project fails because the customers that would have bought the goods produced thanks to the project are those depositing money on the small bank.

Fragility of the financial sector /6

- Given that depositors put their money on the small bank, they cannot buy the new goods the firm produces using the expanded productive capacity. Let us assume that, as a result, the firm goes bankrupt and closes down.
- Shares become worthless. Investors cannot settle their debt with the big bank, which cannot repay the loan to the small bank, which cannot give back the money to depositors. In sum: everybody loses.
- Where have the depositors' funds gone? The firm made use of them to finance an unsuccessful project.

Savings and financial assets

- Lending money and purchasing financial assets are both the expression of a saving decision: they are ways of using the disposable income that is left once consumption decisions have been made.
- The textbook view of the financial sector is as a set of intermediaries that channel savings from savers to investors.
- In this view, the origin of the financial activity lies in the real sector and, in particular, in those individuals having a surplus: an excess of current income with respect to planned expenditure.

Expenditure categories

- National income accounting assigns each good produced to one of four categories according to the type of agent that has received the good.
  - Personal consumption expenditures or, for short, consumption (**C**).
  - Gross private domestic investment or investment (**I**).
  - Government consumption and gross investment or government purchases (**G**).
  - Exports of goods & services (**EX**) minus imports of goods & services (**IM**) or net exports (**NX**).

Consumption and investment

- Consumption: value of the purchases of new goods (durable and non-durable) and services by households (no matter where the goods have been produced).
- Investment. Consists of the value of:
  - fixed investment (on new factories, office buildings, and machinery to produce goods);
  - residential investment (spending by households or firms on new homes);
  - and changes in the firms' inventories (goods that have been produced but not sold yet).

Government purchases

- Government purchases: spending by all levels of government (local, regional, national) on newly produced goods and services. Includes consumption (salaries to civil servants) and investment spendings (university buildings, new submarines).

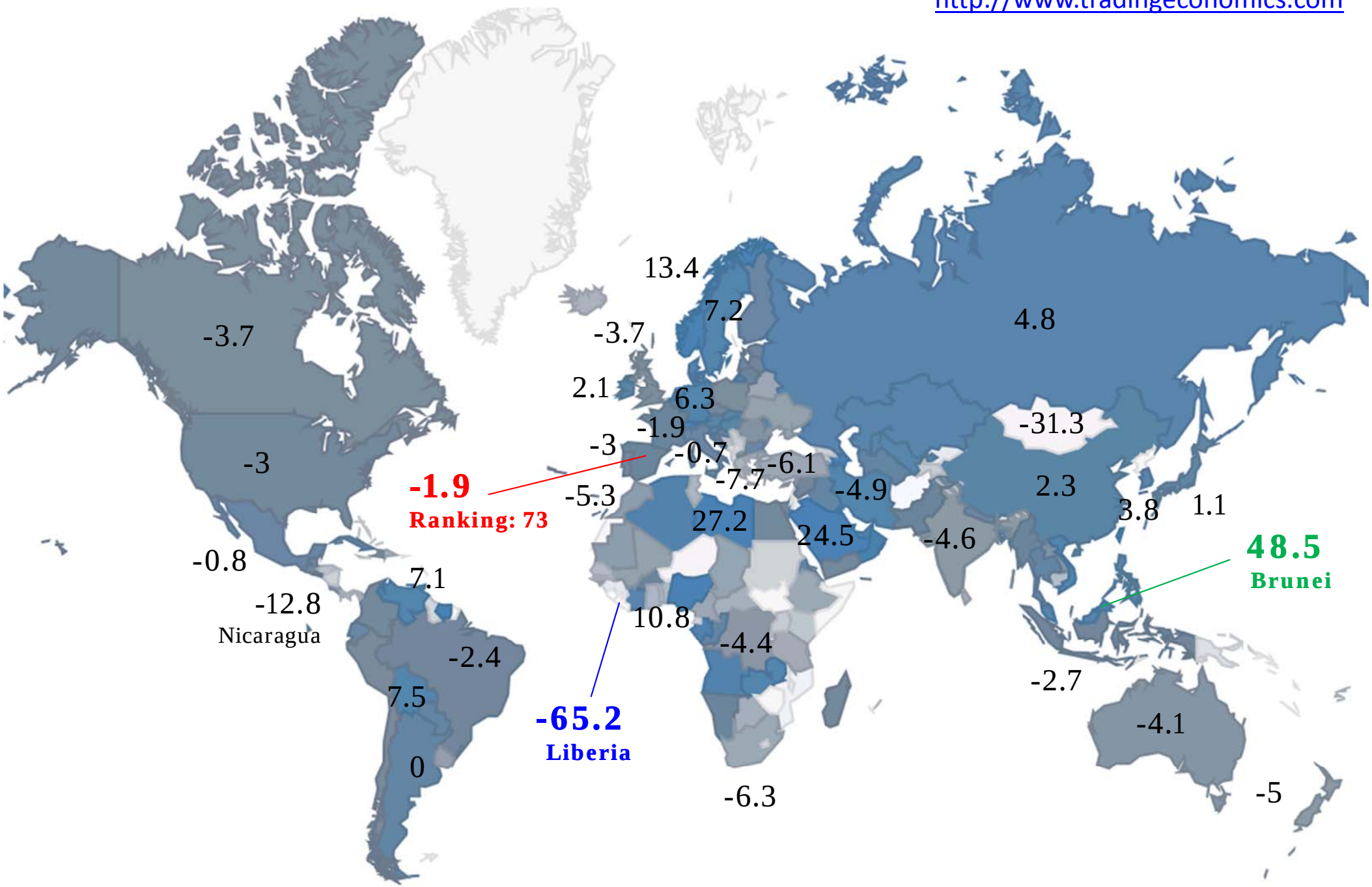
- Transfer payments (**TR**) are excluded. These are payments by the government without receiving anything in return. Typical transfer payments are Social Security payments to retired and disabled people and unemployment insurance to unemployed people.

Net exports

- Net exports: value of the exports of goods and services minus the value of the imports of goods and services (those imports have been already included in **C**, **I**, or **G**).
- A trade surplus occurs when exports are greater than imports (net exports are positive). A trade deficit is run when imports are greater than exports (net exports are negative). When exports equal imports, the trade deficit (or surplus) is zero.
- The difference "exports minus imports" is known as "trade balance".

Current account to GDP (%) · 7 February 2014

http://www.tradingeconomics.com

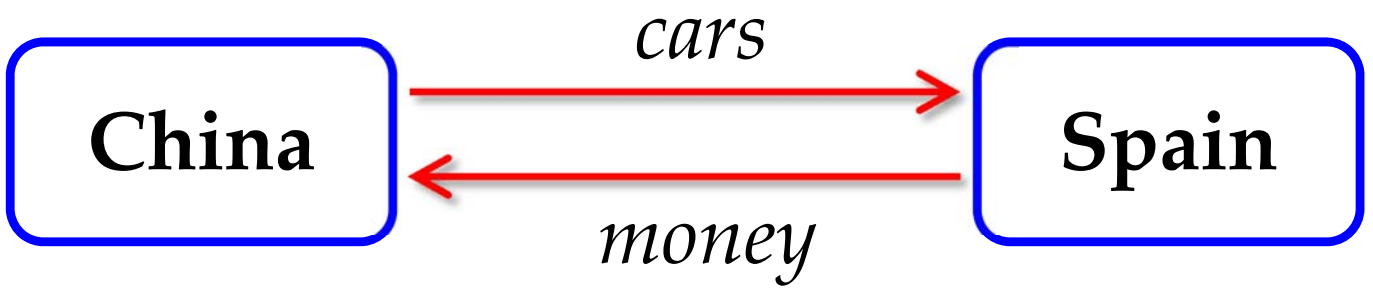


	GDP BILLION USD	GDP YOY	GDP QOQ	INTEREST RATE	INFLATION RATE	JOBLESS RATE	GOV. BUDGET	DEBT/GDP	CURRENT ACCOUNT
LIBERIA	2	8.30%		13.53%	8.50%	3.70%	-0.70%	44.90%	-65.20
SIERRA LEONE	4	6.20%		12.00%	9.38%	3.40%	-2.90%	37.90%	-55.70
AFGHANISTAN	20	11.80%		15.00%	6.65%	15.00%	-17.90%	8.00%	-40.00
SAO TOME AND PRINCIPE	0	4.00%		14.00%	6.80%	14.00%	-9.40%	75.80%	-38.00
ZIMBABWE	11	4.40%		13.95%	0.33%	10.70%	-4.00%	150.90%	-35.30
MONGOLIA	10	11.50%	11.50%	10.50%	12.50%	3.60%	-2.00%	51.70%	-31.30
NIGER	7	3.60%		3.50%	1.10%	2.25%	0.10%	20.20%	-28.20
MALDIVES	2	3.40%		7.00%	3.60%	11.70%	-4.70%	68.44%	-27.10
MOZAMBIQUE	15	8.10%	1.40%	8.25%	3.54%	17.00%	-6.80%	39.90%	-25.50
BHUTAN	2	4.60%		6.00%	9.12%	3.10%	0.90%	89.40%	-25.00
SEYCHELLES	1	4.00%		9.64%	3.40%	1.70%	2.50%	42.00%	-24.60
PALESTINE	7	2.60%			2.71%	23.70%	-0.80%	24.20%	-21.40
JORDAN	31	2.80%		4.25%	3.30%	14.00%	-6.40%	71.90%	-20.90
KYRGYZSTAN	6	9.20%		4.16%	4.00%	7.70%	-6.60%	51.10%	-20.80
MALAWI	4	5.00%		25.00%	23.50%	3.00%	-7.20%	16.30%	-18.50
KOSOVO	6	2.50%			0.50%	30.90%	-1.86%		-18.31
GUINEA	7	3.90%		16.00%	10.30%	22.30%	-1.40%	64.12%	-18.28
CAYMAN ISLANDS	3	1.20%			2.80%	6.20%	-1.10%	24.90%	-18.10
BURUNDI	2	4.20%		11.45%	9.00%	35.00%	-7.90%	17.40%	-18.10
MONTENEGRO	4	4.00%			0.30%	14.88%	-5.90%	48.90%	-17.65
PAPUA NEW GUINEA	16	9.20%		6.25%	3.20%	1.90%	-1.50%	72.90%	-17.50
GAMBIA	1	6.30%		20.00%	5.88%	6.00%	-3.80%	31.40%	-17.50
LESOTHO	2	4.00%		10.12%	5.25%	25.30%	-0.30%	44.60%	-17.30
EQUATORIAL GUINEA	18	4.00%		3.25%	3.10%	22.30%	-3.00%	5.80%	-16.40
LEBANON	43	0.60%		10.00%	1.10%	5.83%	-9.50%	139.50%	-16.10
BAHAMAS	8	1.80%		4.50%	-0.36%	14.00%	-5.60%	49.90%	-14.10
CAPE VERDE	2	1.00%		9.75%	0.10%	16.80%	-14.00%	57.00%	-14.10
COMOROS	1	3.00%		1.67%	4.20%	13.50%	3.10%	39.30%	-14.10
ALBANIA	13	-2.30%	-2.00%	3.00%	1.90%	12.80%	-3.50%	60.60%	-13.24
GUYANA	3	3.90%		5.00%	1.80%	21.00%	-3.38%	63.30%	-13.20
DJIBOUTI	1	4.50%		10.61%	4.88%	59.50%	-2.00%	52.80%	-12.90

	GDP BILLION USD	GDP YOY	GDP QOQ	INTEREST RATE	INFLATION RATE	JOBLESS RATE	GOV. BUDGET	DEBT/GDP	CURRENT ACCOUNT
BRUNEI	17	-3.90%		5.50%	0.20%	1.10%	23.98%	0.00%	48.50
KUWAIT	177	6.10%		2.00%	2.70%	2.72%	33.00%	6.20%	45.00
MACAO	44	10.50%		0.50%	5.72%	1.90%			44.27
EAST TIMOR	1	10.60%			4.00%	3.60%	3.61%		41.58
QATAR	183	6.20%	4.30%	4.50%	2.70%	0.50%	13.40%	29.50%	29.50
LIBYA	82	95.50%		3.00%	1.70%	19.50%	-42.80%	7.80%	27.20
SAUDI ARABIA	577	3.10%	3.10%	2.00%	3.00%	5.60%	14.20%	3.60%	24.50
AZERBAIJAN	67	5.40%		4.75%	2.40%	5.20%	0.30%	11.20%	20.30
SINGAPORE	275	4.40%	-2.70%	0.01%	1.50%	1.80%	1.30%	97.90%	18.60
BAHRAIN	27	4.60%	-0.30%	2.25%	4.00%	3.80%	-2.00%	31.60%	15.40
SURINAME	5	4.50%		11.74%	0.60%	8.00%	-2.80%	19.70%	15.01
SWITZERLAND	632	1.90%	0.50%	0.00%	0.10%	3.50%	0.30%	35.30%	13.50
NORWAY	500	2.10%	0.70%	1.50%	2.00%	3.50%	13.90%	28.30%	13.40
TRINIDAD AND TOBAGO	24	-0.50%		2.75%	5.60%	4.80%	-1.20%	37.30%	12.10
NIGERIA	263	7.67%	7.67%	12.00%	8.00%	23.90%	0.30%	18.30%	10.80
TAIWAN	474	2.92%	2.43%	1.88%	0.76%	4.12%	-1.60%	42.40%	10.50
OMAN	76	5.00%		1.00%	1.70%	15.00%	1.70%	4.50%	10.40
ALGERIA	208	3.10%	3.10%	4.00%	1.15%	9.80%	-3.30%	8.80%	9.90
ANGOLA	114	7.40%	7.40%	9.25%	7.69%	25.00%	7.80%	29.29%	9.60
GABON	19	6.10%		3.25%	3.65%	16.00%	8.50%	13.80%	9.60
UNITED ARAB EMIRATES	360	4.40%	4.40%	1.00%	1.44%	4.20%	8.80%	14.60%	8.60
NETHERLANDS	772	-0.40%	0.20%	0.25%	1.67%	8.50%	-4.10%	71.30%	8.30
MALAYSIA	304	5.00%	1.70%	3.00%	3.20%	3.40%	-4.50%	53.10%	7.90
BOLIVIA	27	6.83%	3.33%	2.06%	6.50%	7.50%	1.80%	31.40%	7.50
VIETNAM	142	6.04%	5.54%	7.00%	5.45%	2.22%	-6.90%	37.30%	7.40
SWEDEN	526	0.30%	0.10%	0.75%	0.10%	7.50%	-0.20%	38.20%	7.20
VENEZUELA	382	1.10%	1.19%	15.36%	56.10%	5.60%	-8.50%	49.00%	7.10
MOLDOVA	7	12.90%	0.91%	3.50%	5.20%	3.90%	-2.10%	22.55%	7.00
GERMANY	3400	1.10%	0.25%	0.25%	1.34%	5.10%	-0.10%	81.00%	6.30
LUXEMBOURG	57	2.70%	0.20%	0.25%	1.50%	7.10%	-0.60%	21.70%	6.30
ZAMBIA	21	6.50%		9.75%	7.30%	15.00%	-6.70%	31.20%	5.40
IRAN	549	-5.50%		15.00%	35.50%	10.30%	-0.17%	10.30%	4.90
RUSSIA	2015	1.20%	-0.26%	5.50%	6.10%	5.60%	-0.50%	8.40%	4.80

Why IM − EX (or −NX) is foreign saving

- Imagine that China exports only cars to Spain and that China imports nothing from Spain.

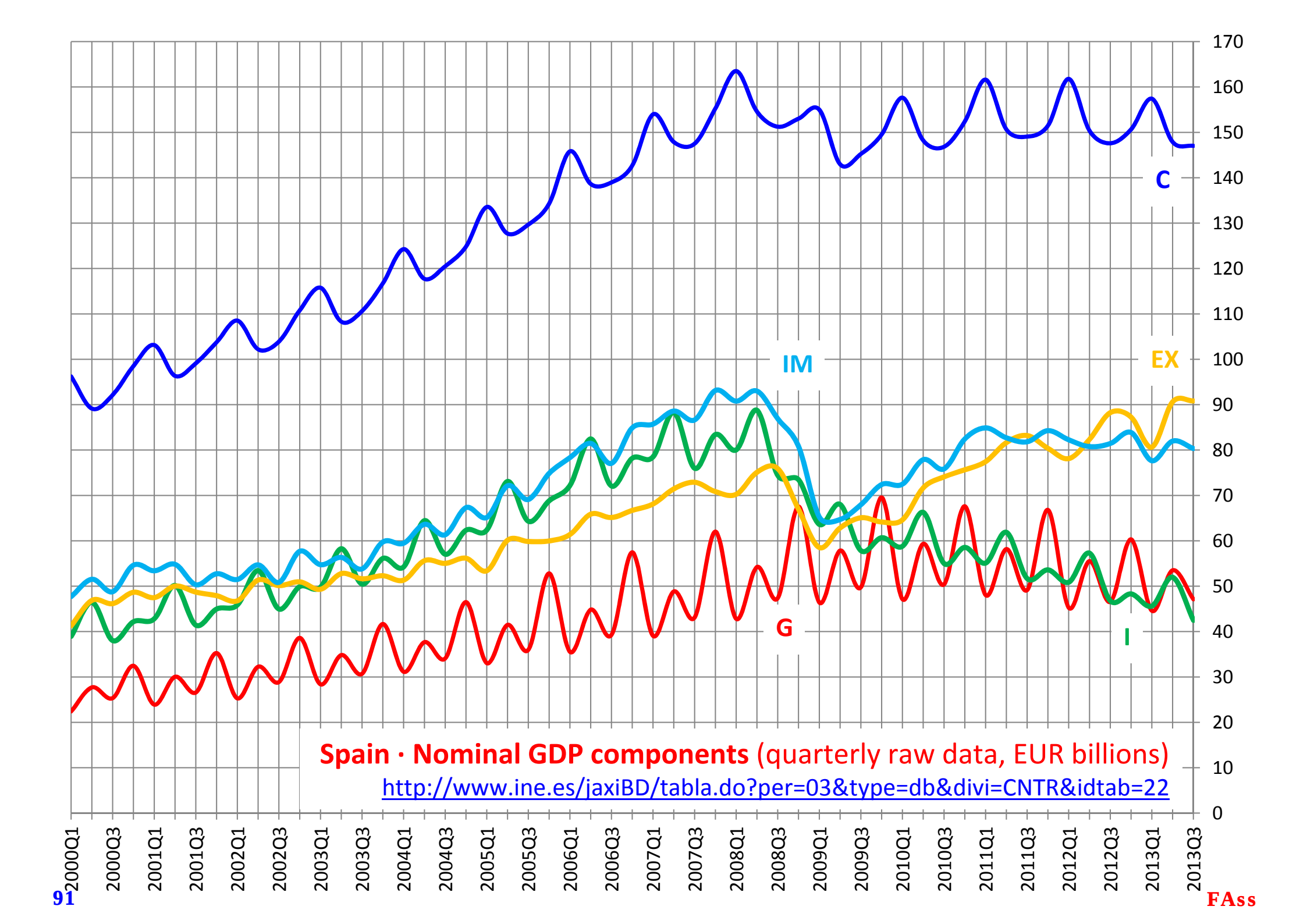


- China runs a trade surplus (with Spain) and Spain a trade deficit (with China).
- China delivers goods and receives in exchange money. Thus, China is saving and has lending capacity: has money (in general, financial assets) to lend. Trade surplus implies lending capacity. Trade deficit implies financial need.

Fundamental macroeconomic identity

- The expression below is an identity (always true) as the values of the variables are established ex-post (once all spending decisions have been made).
- The supply and demand model provides an analogy: quantity demanded may be different quantity supplied, but quantity sold is always equal to quantity bought (someone sells because someone buys and vice versa).

$$\underbrace{C + I + G + NX}_{\text{ex-post demand for output}} \equiv \underbrace{Y}_{\substack{\text{ex-post supply} \\ \text{of output} = \text{GDP}}}$$


C
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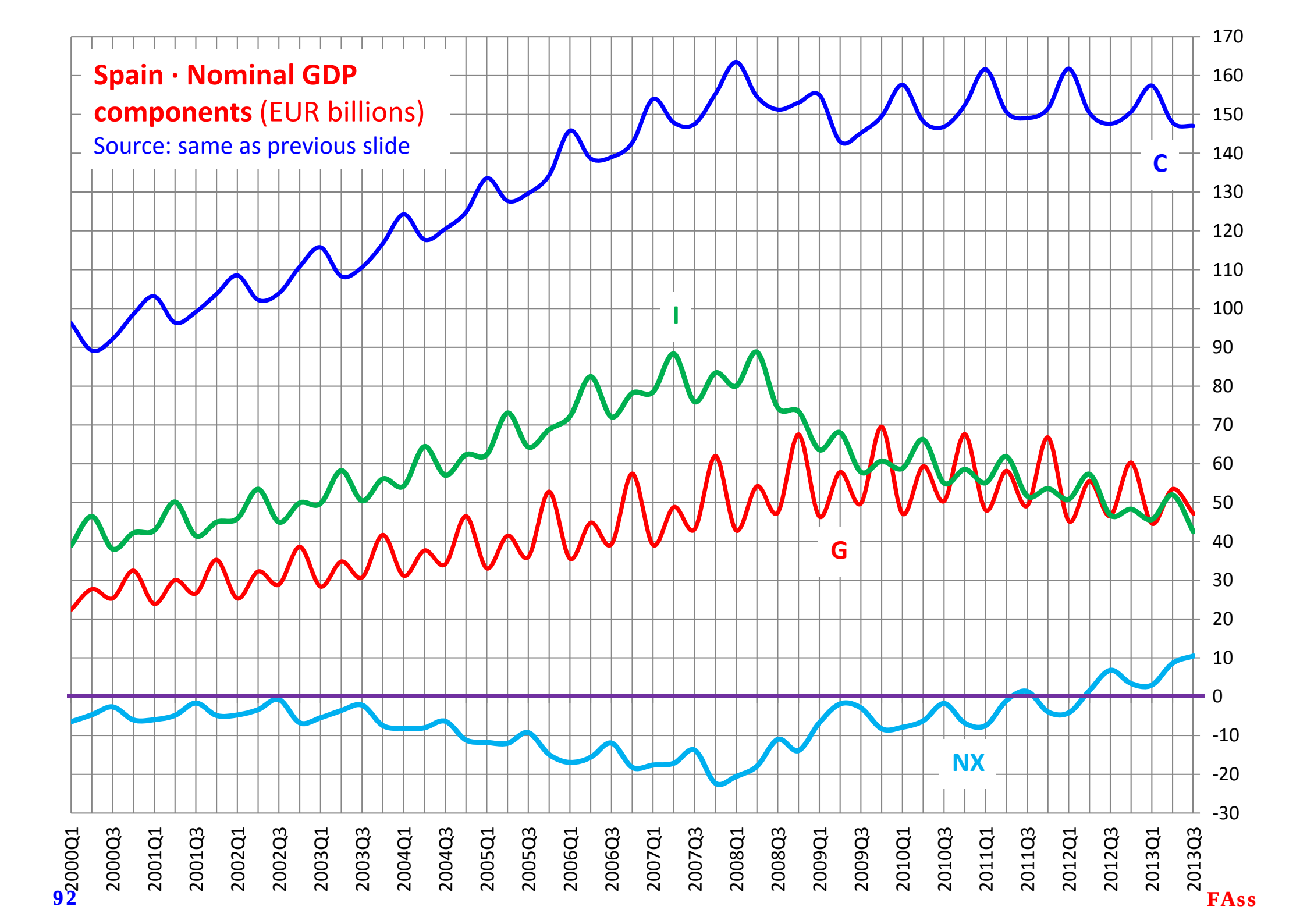
2012Q3
2013Q1
2013Q3
Spain · Nominal GDP components (quarterly raw data, EUR billions)
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22

FAss


Spain · Nominal GDP
components (EUR billions)
Source: same as previous slide
C
I
G
NX
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
2000Q1
2000Q3
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
2004Q1
2004Q3
2005Q1
2005Q3
2006Q1
2006Q3
2007Q1
2007Q3
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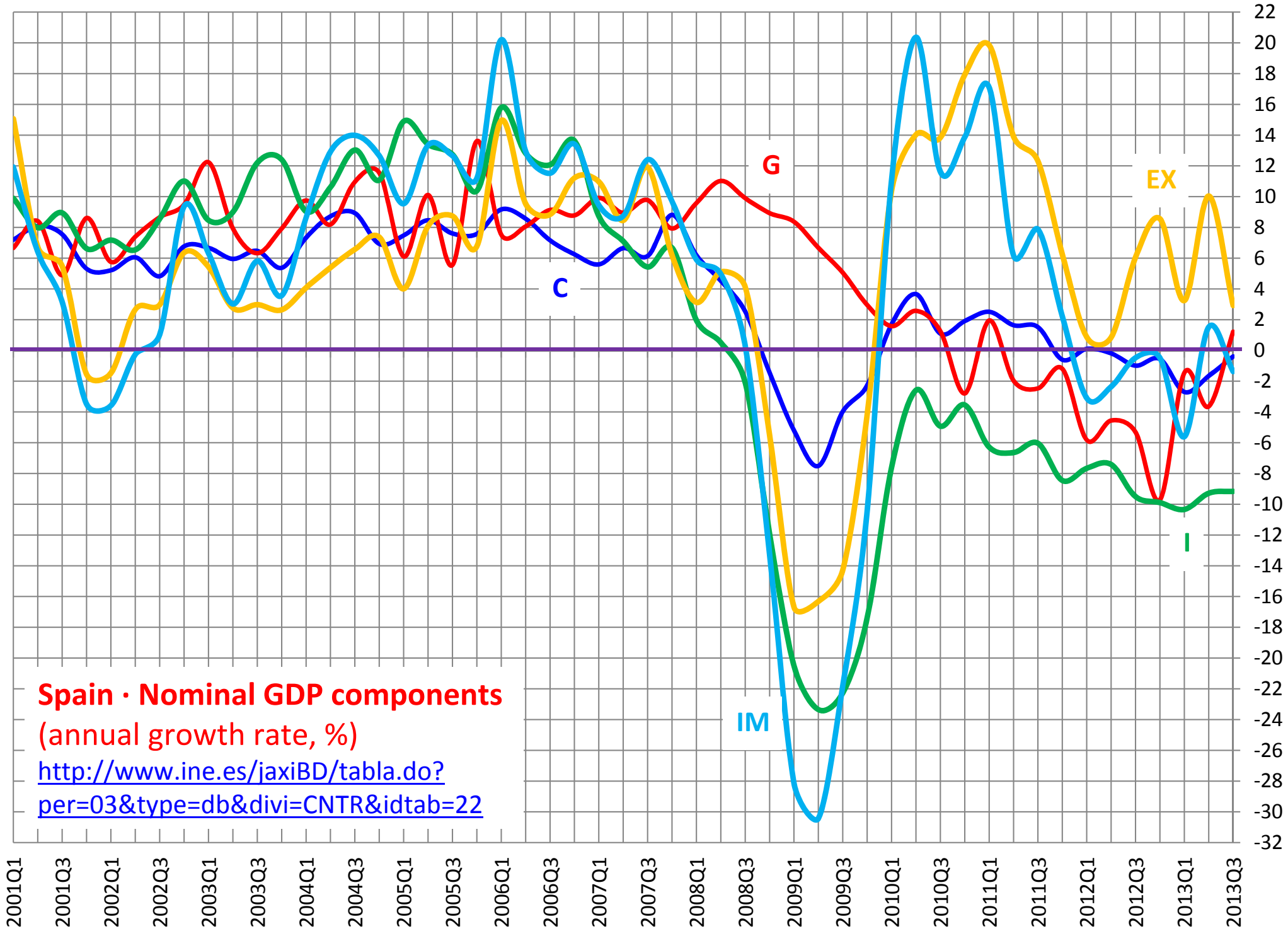
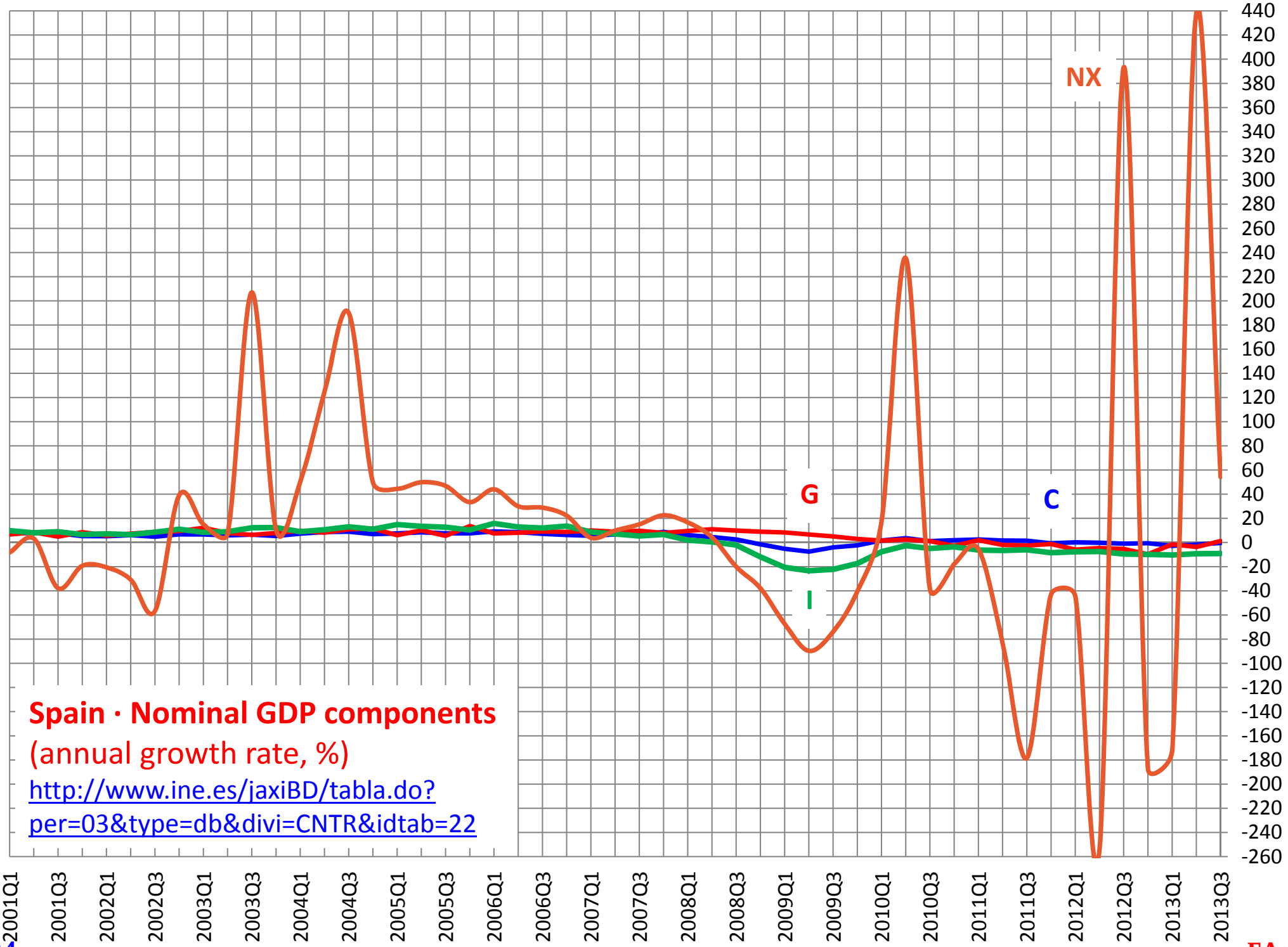
2010Q3
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3

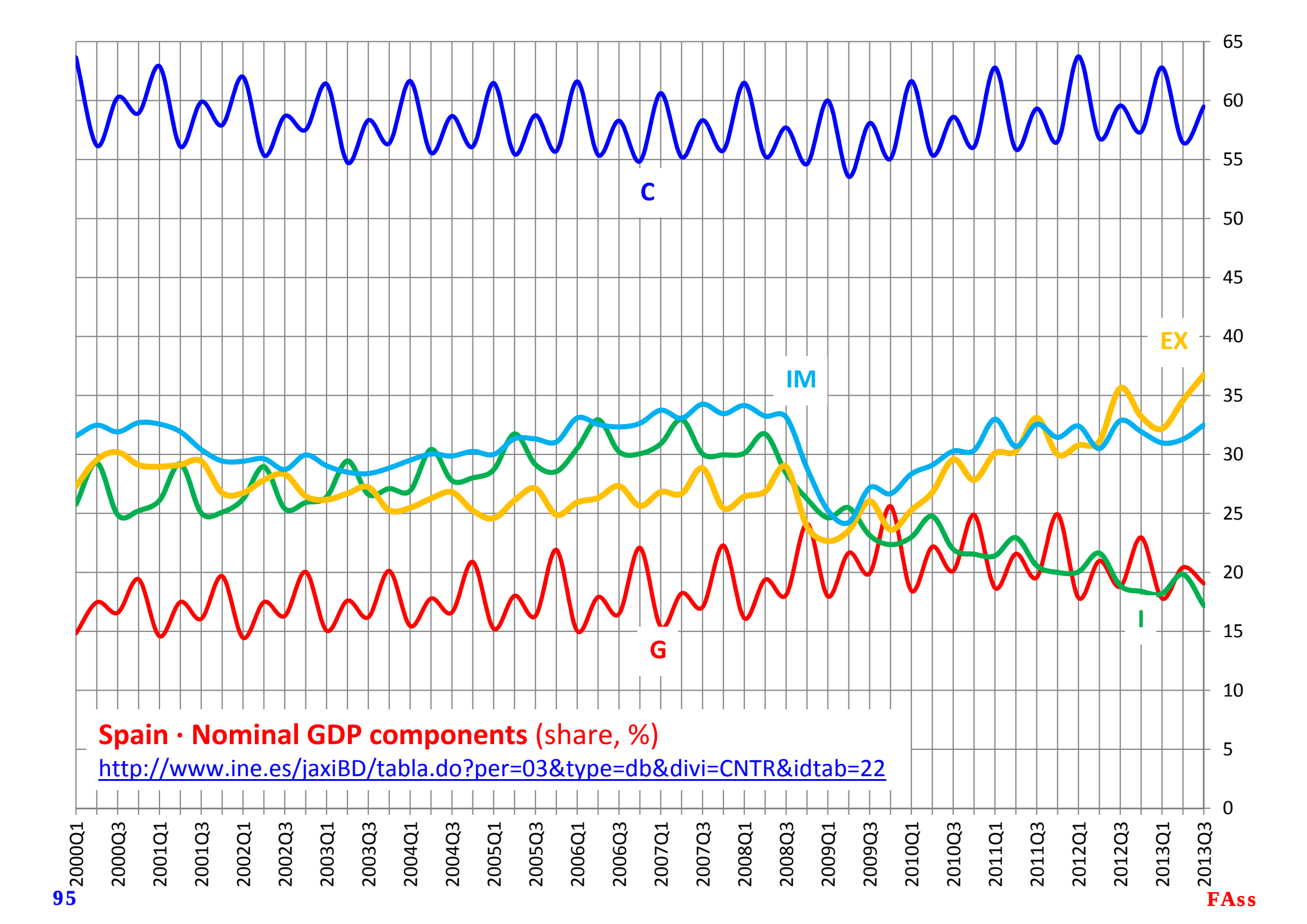


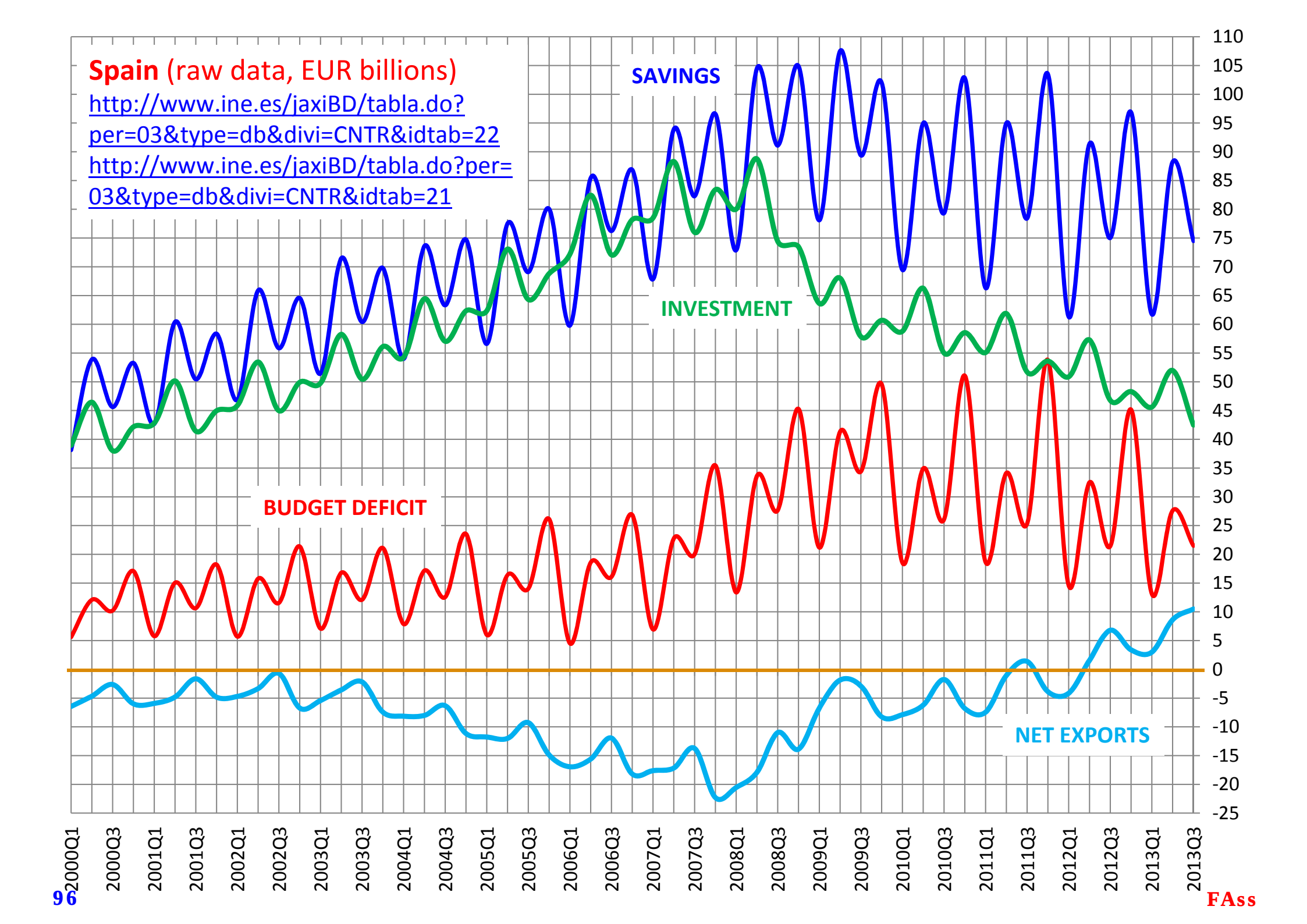
Spain · Nominal GDP components

(annual growth rate, %)

http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22


NX
G
C
I
440
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
-260
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
2004Q1
2004Q3
2005Q1
2005Q3
2006Q1
2006Q3
2007Q1
2007Q3
2008Q1
2008Q3
2009Q1
2009Q3
2010Q1
2010Q3
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3
Spain · Nominal GDP components
(annual growth rate, %)
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22


C
IM
EX
G
I
65
60
55
50
45
40
35
30
25
20
15
10
5
0
2000Q1
2000Q3
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
2004Q1
2004Q3
2005Q1
2005Q3
2006Q1
2006Q3
2007Q1
2007Q3
2008Q1
2008Q3
2009Q1
2009Q3
2010Q1
2010Q3
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3
Spain · Nominal GDP components (share, %)
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22


Spain (raw data, EUR billions)
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=21
SAVINGS
INVESTMENT
BUDGET DEFICIT
NET EXPORTS
110
105
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
2000Q1
2000Q3
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
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2004Q1
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2006Q3
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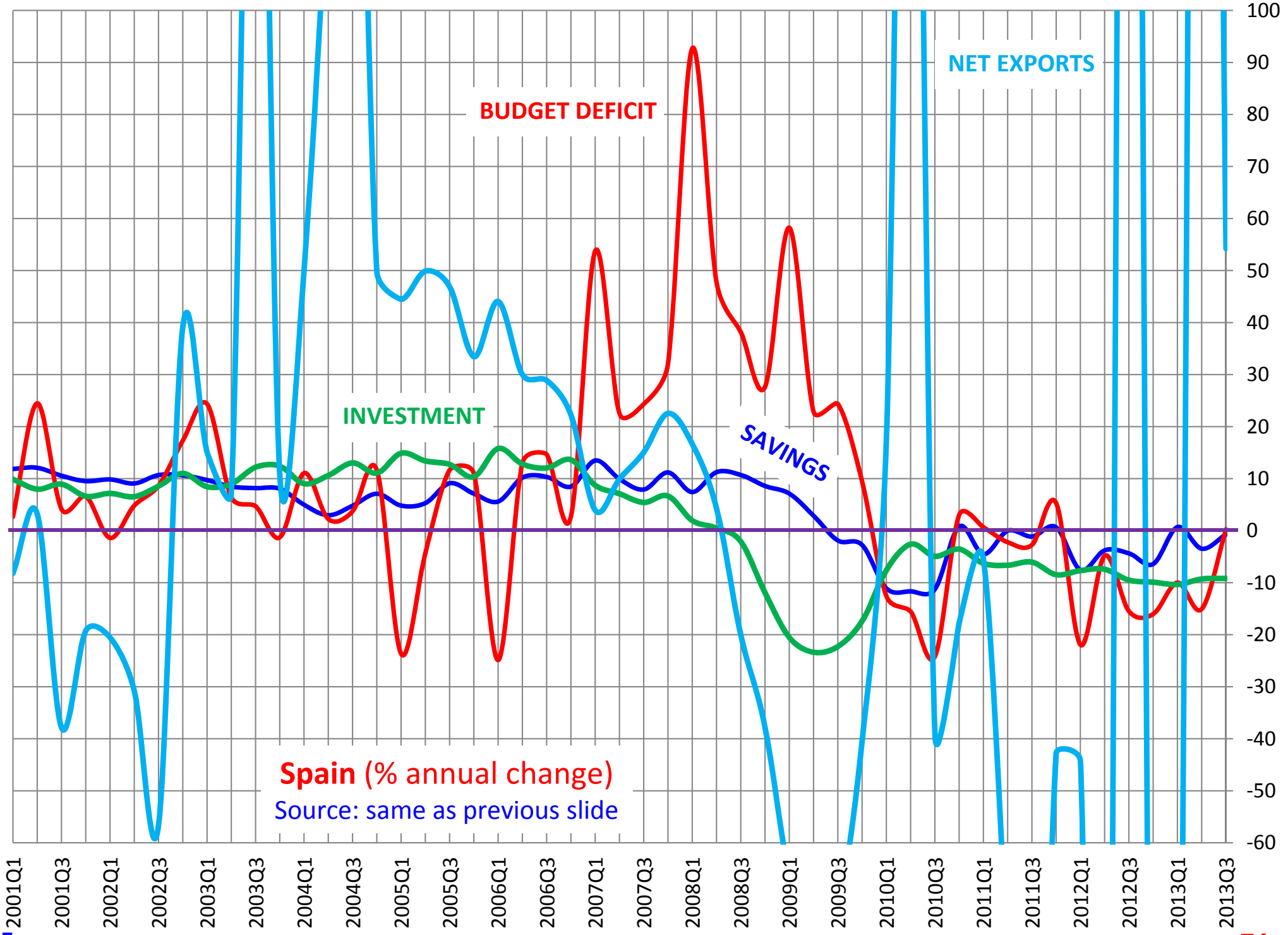
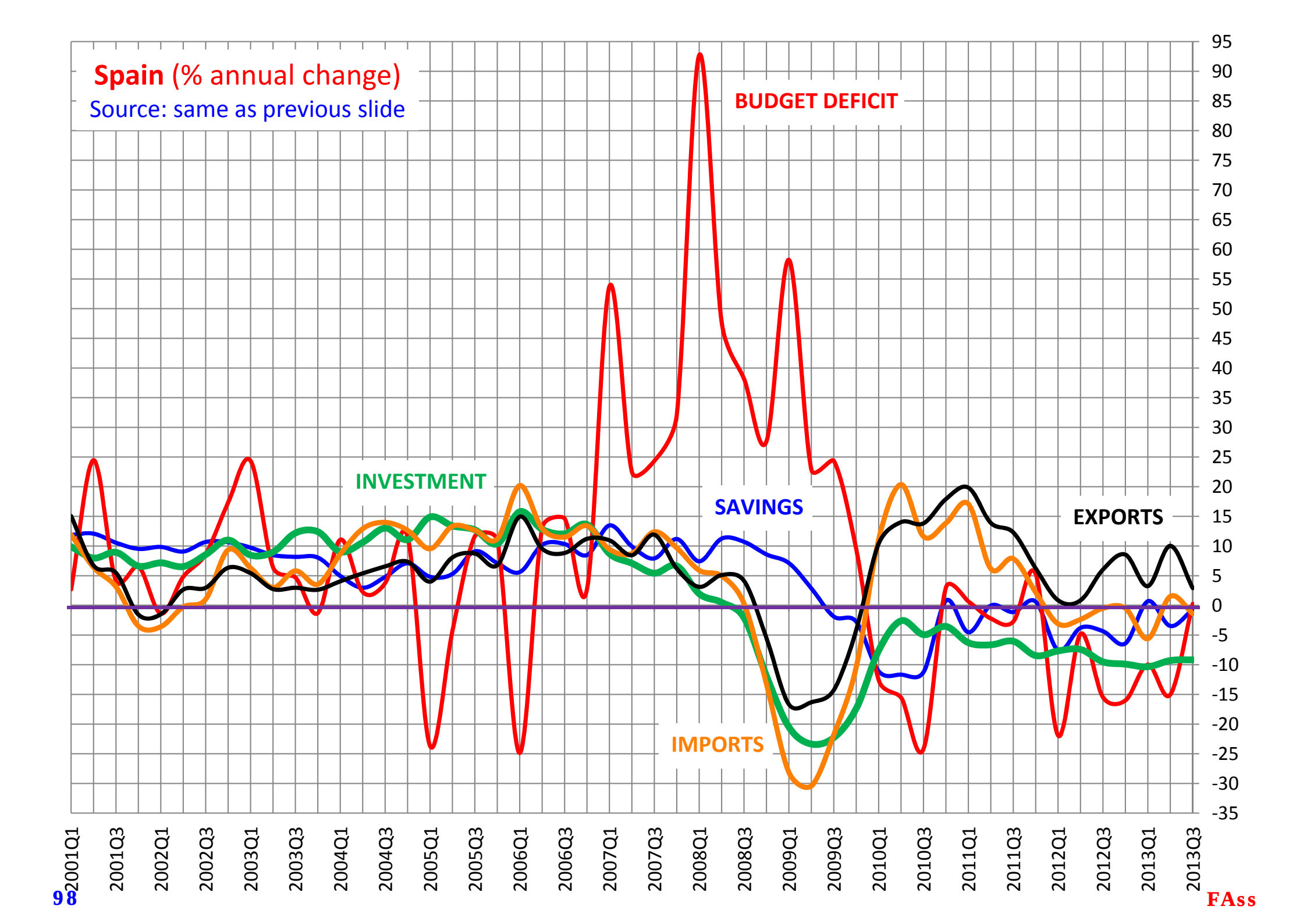
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3

FAss



Spain (% annual change)

Source: same as previous slide


Spain (% annual change)
Source: same as previous slide
BUDGET DEFICIT
INVESTMENT
SAVINGS
EXPORTS
IMPORTS
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
2004Q1
2004Q3
2005Q1
2005Q3
2006Q1
2006Q3
2007Q1
2007Q3
2008Q1
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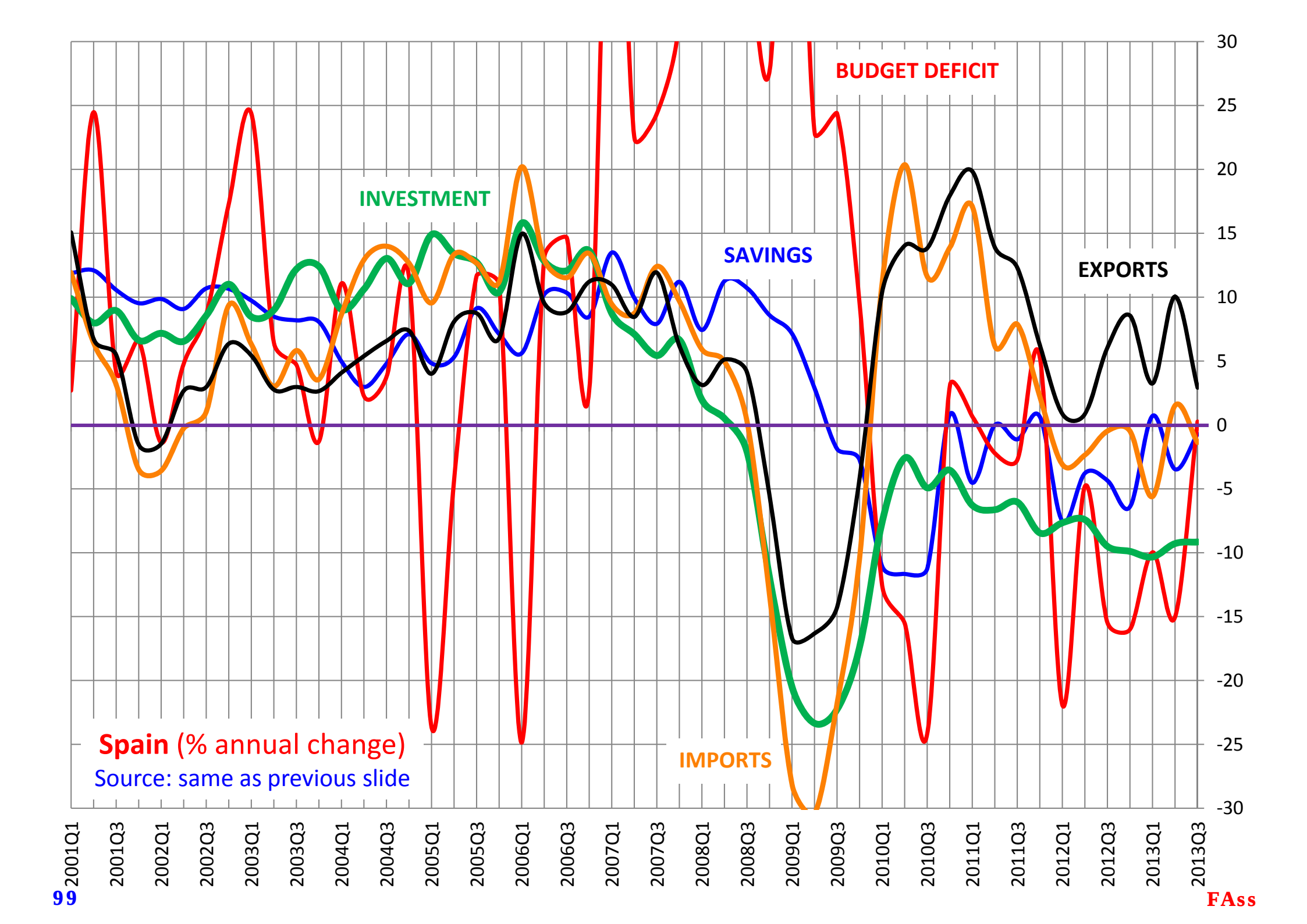
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3


BUDGET DEFICIT
INVESTMENT
SAVINGS
EXPORTS
IMPORTS
Spain (% annual change)
Source: same as previous slide
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
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2007Q1
2007Q3
2008Q1
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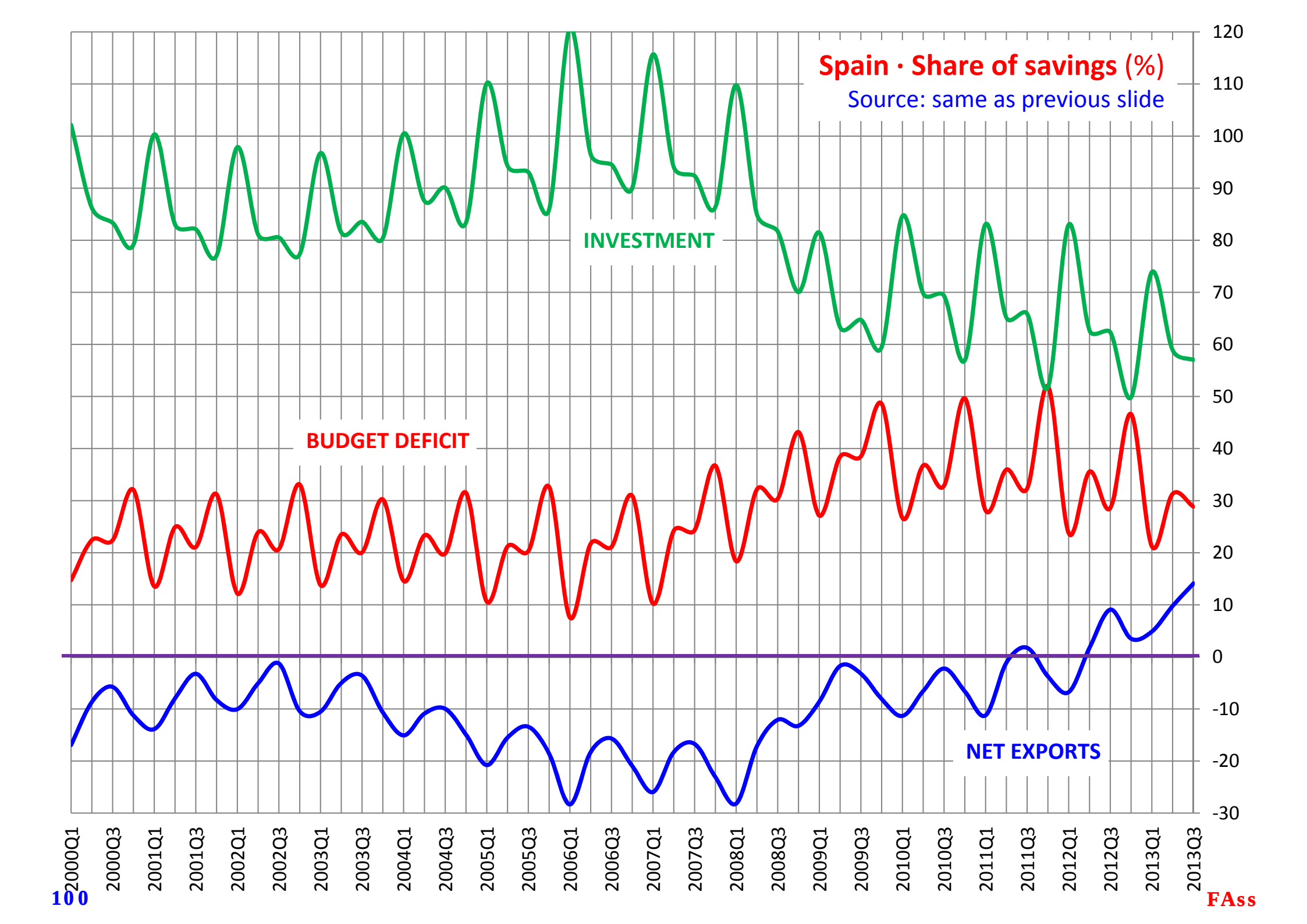
2010Q1
2010Q3
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3

FAss


Spain · Share of savings (%)
Source: same as previous slide
INVESTMENT
BUDGET DEFICIT
NET EXPORTS
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
2000Q1
2000Q3
2001Q1
2001Q3
2002Q1
2002Q3
2003Q1
2003Q3
2004Q1
2004Q3
2005Q1
2005Q3
2006Q1
2006Q3
2007Q1
2007Q3
2008Q1
2008Q3
2009Q1
2009Q3
2010Q1
2010Q3
2011Q1
2011Q3
2012Q1
2012Q3
2013Q1
2013Q3

FAss

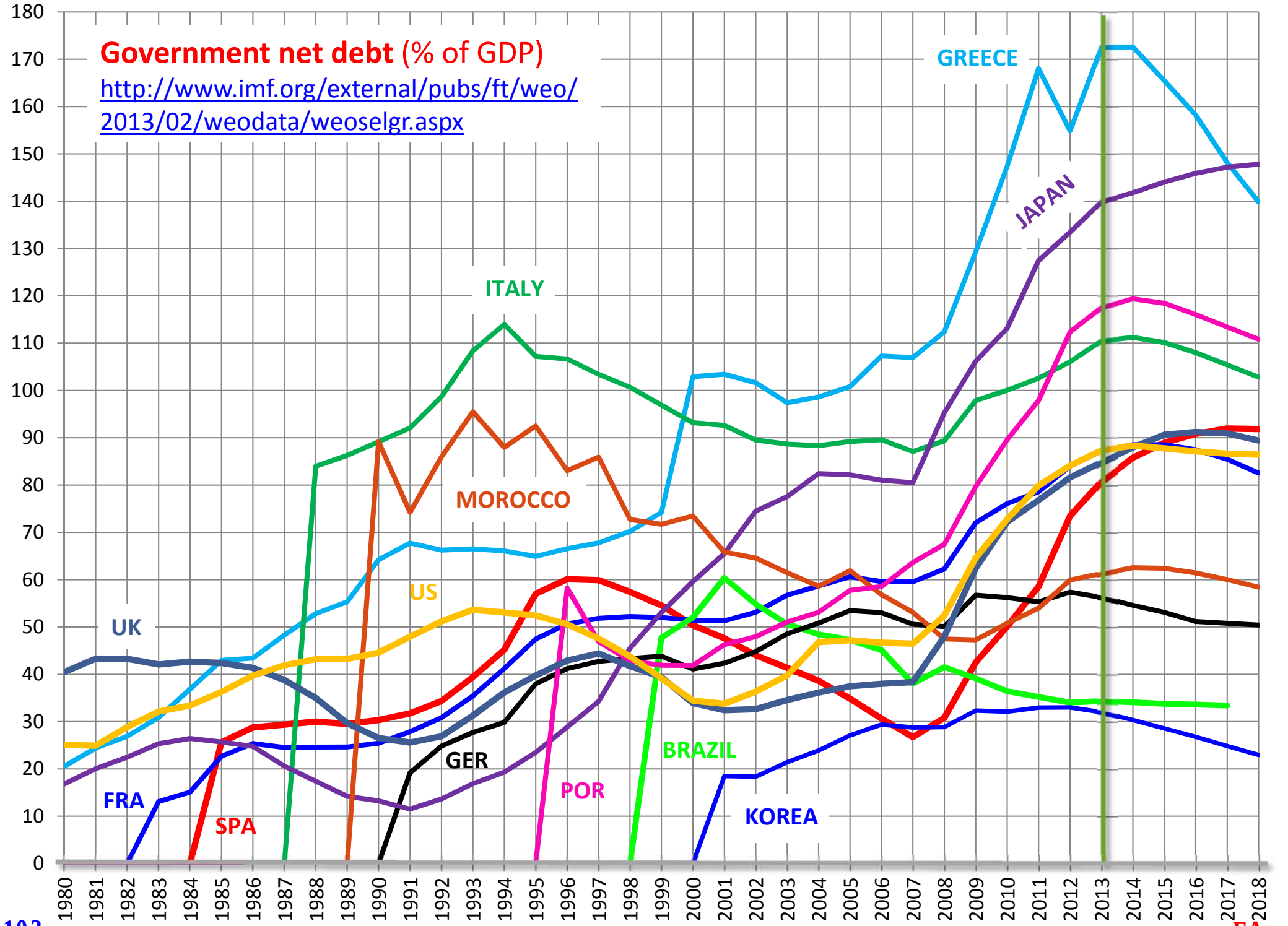
Government budget

- Designating by **T** the taxes paid by households and firms to the government, the government budget (or government saving) is defined as

$$\mathbf{GB} \equiv \mathbf{T} - \mathbf{G} - \mathbf{TR} .$$

- The government budget equals the government's tax receipts minus its spending on goods and services minus transfer payments.

- A budget deficit occurs if $\mathbf{GB} < 0$ (spending larger than receipts). A budget surplus occurs if $\mathbf{GB} > 0$. Public debt is the accumulation of past deficits.


Government net debt (% of GDP)
http://www.imf.org/external/pubs/ft/weo/2013/02/weodata/weoselgr.aspx
GREECE
JAPAN
ITALY
MOROCCO
US
UK
GER
BRAZIL
POR
FRA
SPA
KOREA
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
1980
1981
1982
1983
1984
1985
1986
1987
1988
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1990
1991
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1994
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1997
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1999
2000
2001
2002
2003
2004
2005
2006
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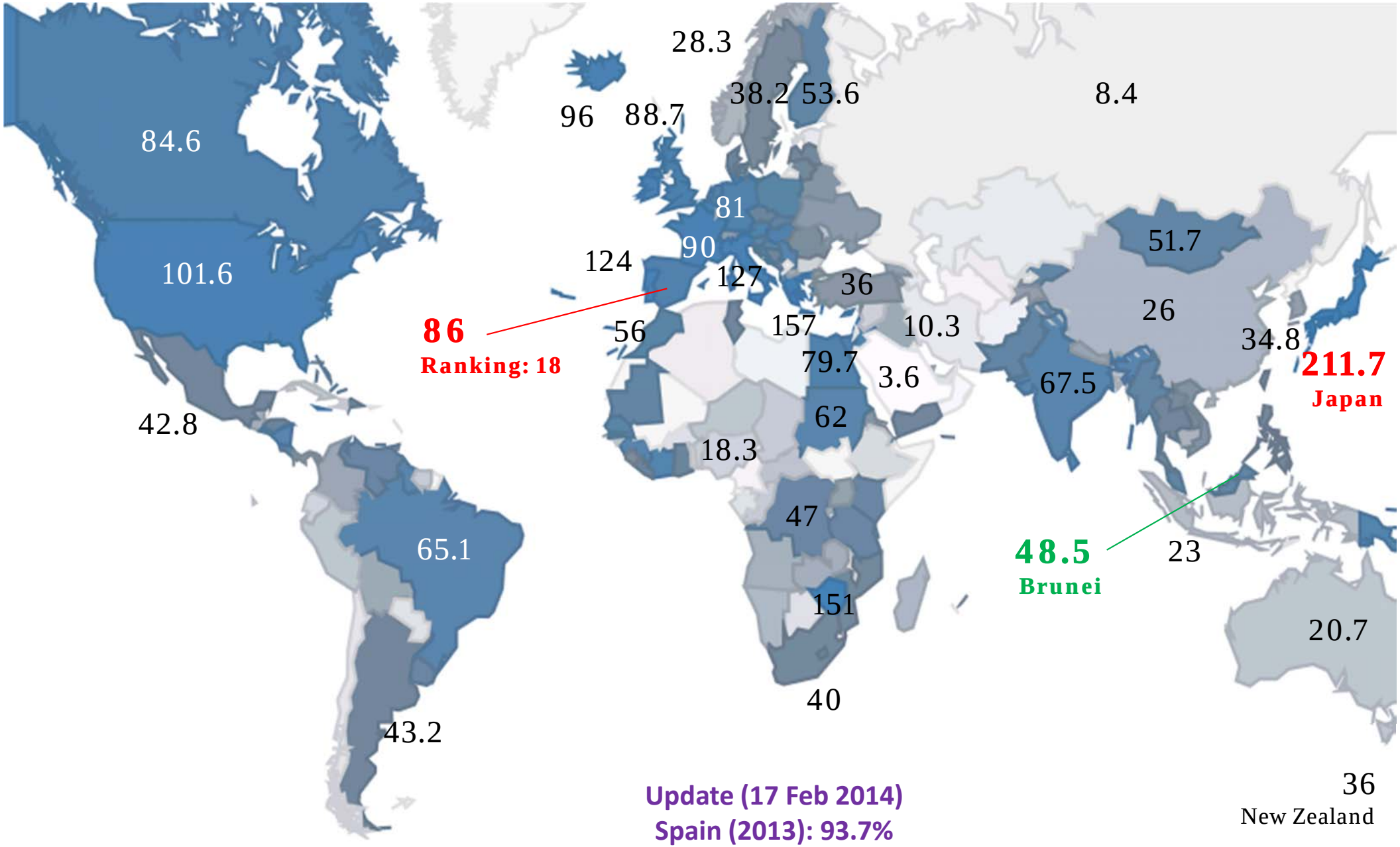
2010
2011
2012
2013
2014
2015
2016
2017
2018

Public debt to GDP (%) · 7 February 2014

http://www.tradingeconomics.com



Update (17 Feb 2014)
Spain (2013): 93.7%

	GDP BILLION USD	GDP YOY	GDP QOQ	INTEREST RATE	INFLATION RATE	JOBLESS RATE	GOV. BUDGET	DEBT/GDP
BRUNEI	17	-3.90%		5.50%	0.20%	1.10%	23.98%	0.00%
SAUDI ARABIA	577	3.10%	3.10%	2.00%	3.00%	5.60%	14.20%	3.60%
OMAN	76	5.00%		1.00%	1.70%	15.00%	1.70%	4.50%
EQUATORIAL GUINEA	18	4.00%		3.25%	3.10%	22.30%	-3.00%	5.80%
KUWAIT	177	6.10%		2.00%	2.70%	2.72%	33.00%	6.20%
CAMEROON	25	3.80%	1.20%	3.25%	2.00%	3.80%	-3.50%	6.50%
TURKMENISTAN	34	11.10%			6.00%	2.60%	6.80%	7.28%
LIBYA	82	95.50%		3.00%	1.70%	19.50%	-42.80%	7.80%
AFGHANISTAN	20	11.80%		15.00%	6.65%	15.00%	-17.90%	8.00%
SWAZILAND	4	0.21%		5.00%	4.40%	28.20%	-1.00%	8.38%
RUSSIA	2015	1.20%	-0.26%	5.50%	6.10%	5.60%	-0.50%	8.40%
UZBEKISTAN	51	8.10%		12.00%	7.00%	4.80%	0.43%	8.70%
ALGERIA	208	3.10%	3.10%	4.00%	1.15%	9.80%	-3.30%	8.80%
KAZAKHSTAN	202	6.00%	8.60%	5.50%	4.50%	5.20%	-2.90%	9.60%
ESTONIA	22	0.70%	0.60%	0.25%	1.10%	8.00%	-0.20%	9.80%
IRAN	549	-5.50%		15.00%	35.50%	10.30%	-0.17%	10.30%
AZERBAIJAN	67	5.40%		4.75%	2.40%	5.20%	0.30%	11.20%
CHILE	268	4.70%	1.30%	4.50%	3.00%	5.67%	-0.70%	12.20%
PARAGUAY	26	12.90%	1.40%	6.50%	3.90%	7.70%	-1.50%	12.50%
GABON	19	6.10%		3.25%	3.65%	16.00%	8.50%	13.80%
UNITED ARAB EMIRATES	360	4.40%	4.40%	1.00%	1.44%	4.20%	8.80%	14.60%
BOTSWANA	14	7.10%	0.40%	7.50%	4.10%	17.80%	0.70%	16.10%
BURKINA FASO	10	8.00%		3.50%	0.10%	3.30%	-0.50%	16.20%
HAITI	8	2.80%		7.00%	3.40%	40.60%	-0.15%	16.20%
MALAWI	4	5.00%		25.00%	23.50%	3.00%	-7.20%	16.30%
ETHIOPIA	43	8.50%		5.00%	7.80%	17.50%	0.20%	17.00%
BURUNDI	2	4.20%		11.45%	9.00%	35.00%	-7.90%	17.40%

http://www.tradingeconomics.com · 7 February 2014

FAss

	GDP BILLION USD	GDP YOY	GDP QOQ	INTEREST RATE	INFLATION RATE	JOBLESS RATE	GOV. BUDGET	DEBT/GDP
JAPAN	5960	2.40%	0.30%	0.00%	1.60%	3.70%	-9.20%	211.70%
GREECE	249	-3.00%	0.20%	0.25%	-1.70%	27.80%	-9.00%	156.90%
ZIMBABWE	11	4.40%		13.95%	0.33%	10.70%	-4.00%	150.90%
JAMAICA	15	0.50%	1.50%	5.75%	9.70%	15.40%	-1.90%	145.80%
LEBANON	43	0.60%		10.00%	1.10%	5.83%	-9.50%	139.50%
ITALY	2013	-1.80%	0.00%	0.25%	0.70%	12.70%	-3.00%	127.00%
PORTUGAL	212	-1.00%	0.20%	0.25%	0.20%	15.30%	-6.40%	124.10%
IRELAND	210	1.70%	1.50%	0.25%	0.20%	12.30%	-8.20%	117.40%
UNITED STATES	15685	2.70%	3.20%	0.25%	1.50%	6.70%	-4.10%	101.60%
BELGIUM	484	0.90%	0.40%	0.25%	0.97%	8.40%	-4.00%	99.80%
SINGAPORE	275	4.40%	-2.70%	0.01%	1.50%	1.80%	1.30%	97.90%
ICELAND	14	4.90%	6.10%	6.00%	3.10%	4.60%	-1.50%	96.20%
EURO AREA	12195	-0.30%	0.10%	0.25%	0.70%	12.00%	-3.70%	90.60%
FRANCE	2613	0.20%	-0.10%	0.25%	0.70%	10.90%	-4.80%	90.20%
BHUTAN	2	4.60%		6.00%	9.12%	3.10%	0.90%	89.40%
UNITED KINGDOM	2440	2.80%	0.70%	0.50%	2.00%	7.10%	-6.10%	88.70%
CYPRUS	23	-5.50%	-0.80%	0.25%	-2.89%	17.50%	-6.40%	86.60%
SPAIN	1349	-0.10%	0.30%	0.25%	0.20%	26.03%	-10.60%	86.00%
CANADA	1821	1.91%	0.70%	1.00%	1.20%	7.20%	-1.50%	84.60%
GERMANY	3400	1.10%	0.25%	0.25%	1.34%	5.10%	-0.10%	81.00%
HUNGARY	126	1.80%	0.90%	2.85%	0.40%	9.10%	-2.00%	79.80%
EGYPT	257	1.04%	1.04%	8.25%	11.70%	13.40%	-13.80%	79.70%
ISRAEL	244	3.20%	0.58%	1.00%	1.80%	5.80%	-4.20%	79.50%
SRI LANKA	59	7.80%	7.80%	6.50%	4.40%	4.40%	-6.40%	79.10%
IVORY COAST	25	9.80%		3.50%	0.40%	15.70%	-2.50%	78.80%
SAO TOME AND PRINCIPE	0	4.00%		14.00%	6.80%	14.00%	-9.40%	75.80%
AUSTRIA	400	0.70%	0.20%	0.25%	1.90%	9.80%	-2.50%	74.00%

http://www.tradingeconomics.com · 7 February 2014

FAss

How income is used

- Interpreting GDP ($\mathbf{Y}$) as aggregate income (GDP as net incomes earned by factors of production), then income can be used to consume, to save, and to pay taxes (net of transfers)

$$\mathbf{Y} \equiv \mathbf{C} + \mathbf{S} + (\mathbf{T} - \mathbf{TR}) .$$

- Defining disposable income $\mathbf{Y_d}$ as

$$\mathbf{Y_d} \equiv \mathbf{Y} - \mathbf{T} + \mathbf{TR}$$

it follows that

$$\mathbf{Y_d} \equiv \mathbf{C} + \mathbf{S} .$$

Savings accounting identity

- From the fundamental accounting identity

$$\mathbf{Y} - \mathbf{C} \equiv \mathbf{I} + \mathbf{G} + \mathbf{NX}.$$

- From the income accounting identity

$$\mathbf{Y} - \mathbf{C} \equiv \mathbf{S} + \mathbf{T} - \mathbf{TR}.$$

- The combination of the two leads to $\mathbf{I} + \mathbf{G} + \mathbf{NX} = \mathbf{S} + \mathbf{T} - \mathbf{TR}$. Rearranging,

$$\underbrace{\mathbf{S}}_{\text{private saving}} \equiv \underbrace{\mathbf{I}}_{\text{investment}} + \underbrace{(\mathbf{G} + \mathbf{TR} - \mathbf{T})}_{\text{government budget deficit (if } > 0)} + \underbrace{\mathbf{NX}}_{\text{trade balance}}.$$

Where do savings go?

- The savings identity

$$\mathbf{S} \equiv \mathbf{I} + (\mathbf{G} + \mathbf{TR} - \mathbf{T}) + \mathbf{NX}$$

  says that there are three ways of disposing of the savings of an economy.

- Savings can go to firms to finance investment…
- … to the government to finance a budget deficit…
- … or to foreigners, when they buy more from the economy than the economy buys from them (trade surplus).

Investment accounting identity

- The savings identity

$$\mathbf{S} \equiv \mathbf{I} + (\mathbf{G} + \mathbf{TR} - \mathbf{T}) + \mathbf{NX}$$

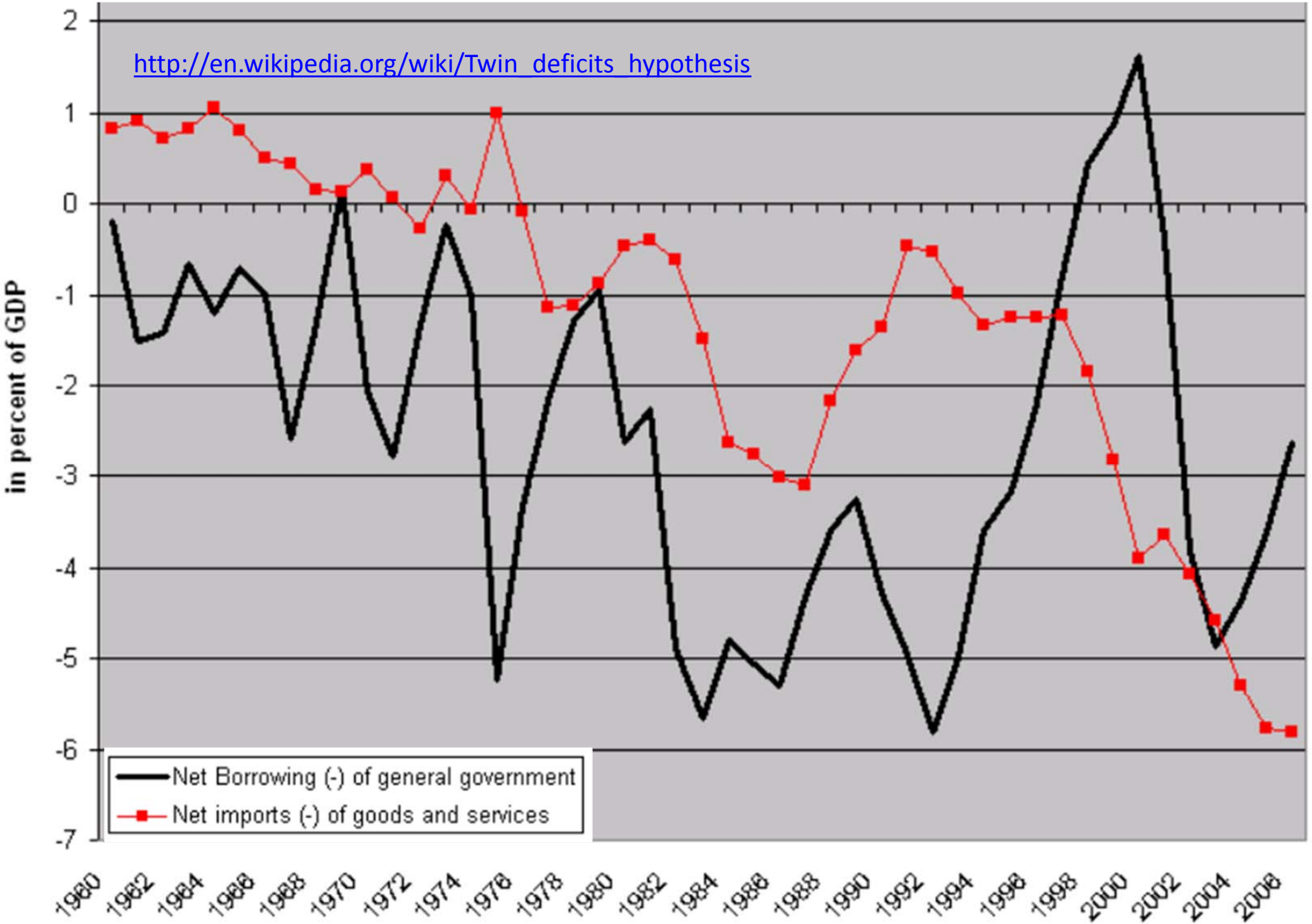
can be equivalently formulated as

$$\underbrace{\mathbf{I}}_{\text{investment}} \equiv \underbrace{\mathbf{S}}_{\text{private saving}} + \underbrace{(\mathbf{T} - \mathbf{G} - \mathbf{TR})}_{\text{government saving}} + \underbrace{(-\mathbf{NX})}_{\text{foreign saving}}.$$

- Accordingly, domestic investment is financed by private saving, public saving, or foreign saving.

Twin (or double) deficits: twice the fun

- If investment equals savings, so $\mathbf{I} = \mathbf{S}$, the savings identity implies that the government budget deficit equals the trade balance.
- This means that <u>if the government runs a budget deficit, then it must be financed by foreigners</u>: if $\mathbf{I} = \mathbf{S}$, then $\mathbf{G} + \mathbf{TR} - \mathbf{T} > 0$ implies $\mathbf{NX} < 0$.
- In sum, the government spends more without having to increase taxes, and households and firms buy from abroad more goods than they sell. Are all of them living beyond their possibilities?


http://en.wikipedia.org/wiki/Twin_deficits_hypothesis
in percent of GDP
2
1
0
-1
-2
-3
-4
-5
-6
-7
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978
1980
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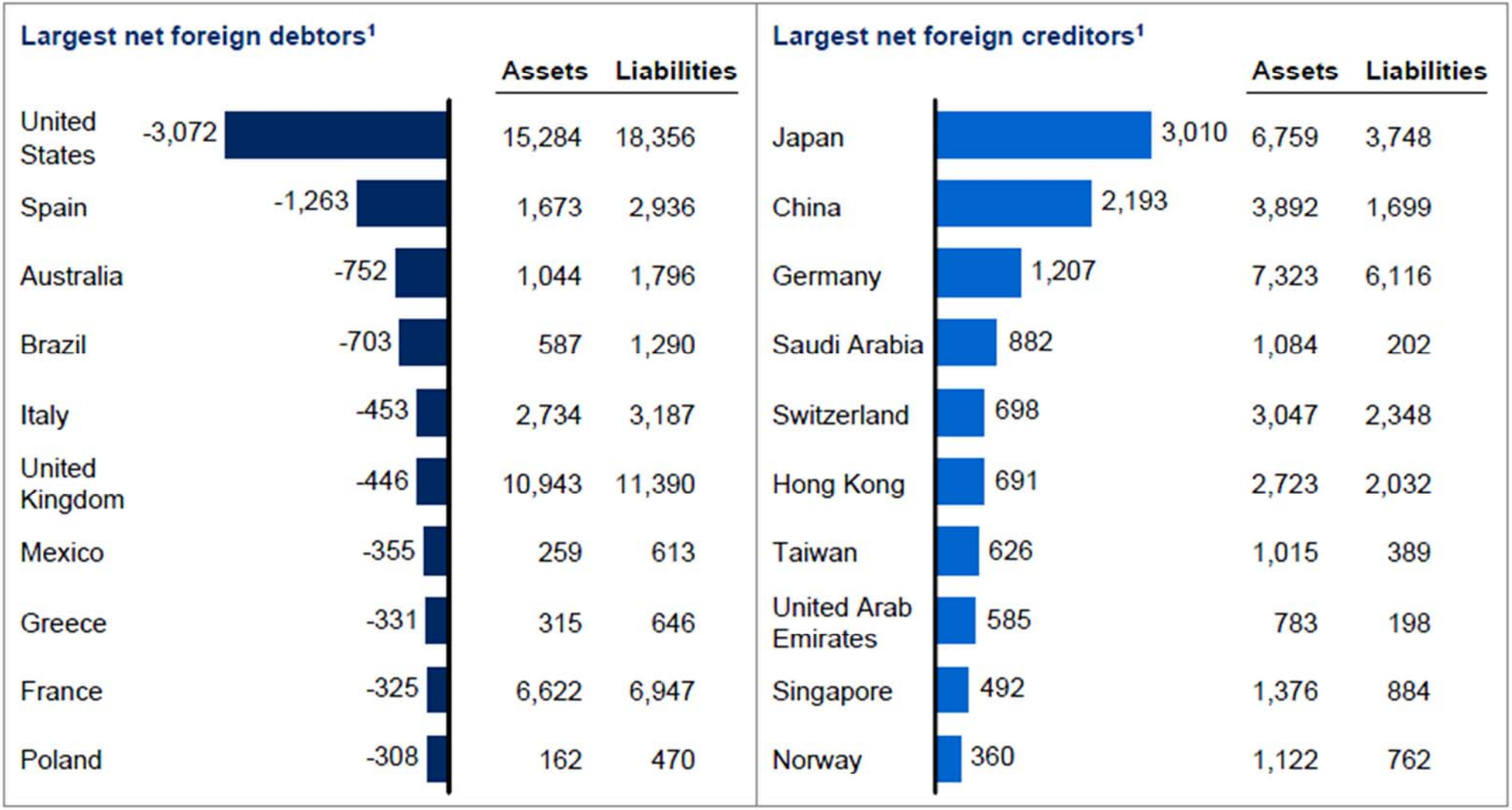
2004
2006
Net Borrowing (-) of general government
Net imports (-) of goods and services

In 2010, the United States was the world's largest foreign debtor and Japan the globe's largest foreign creditor

Net position, 2010[1]

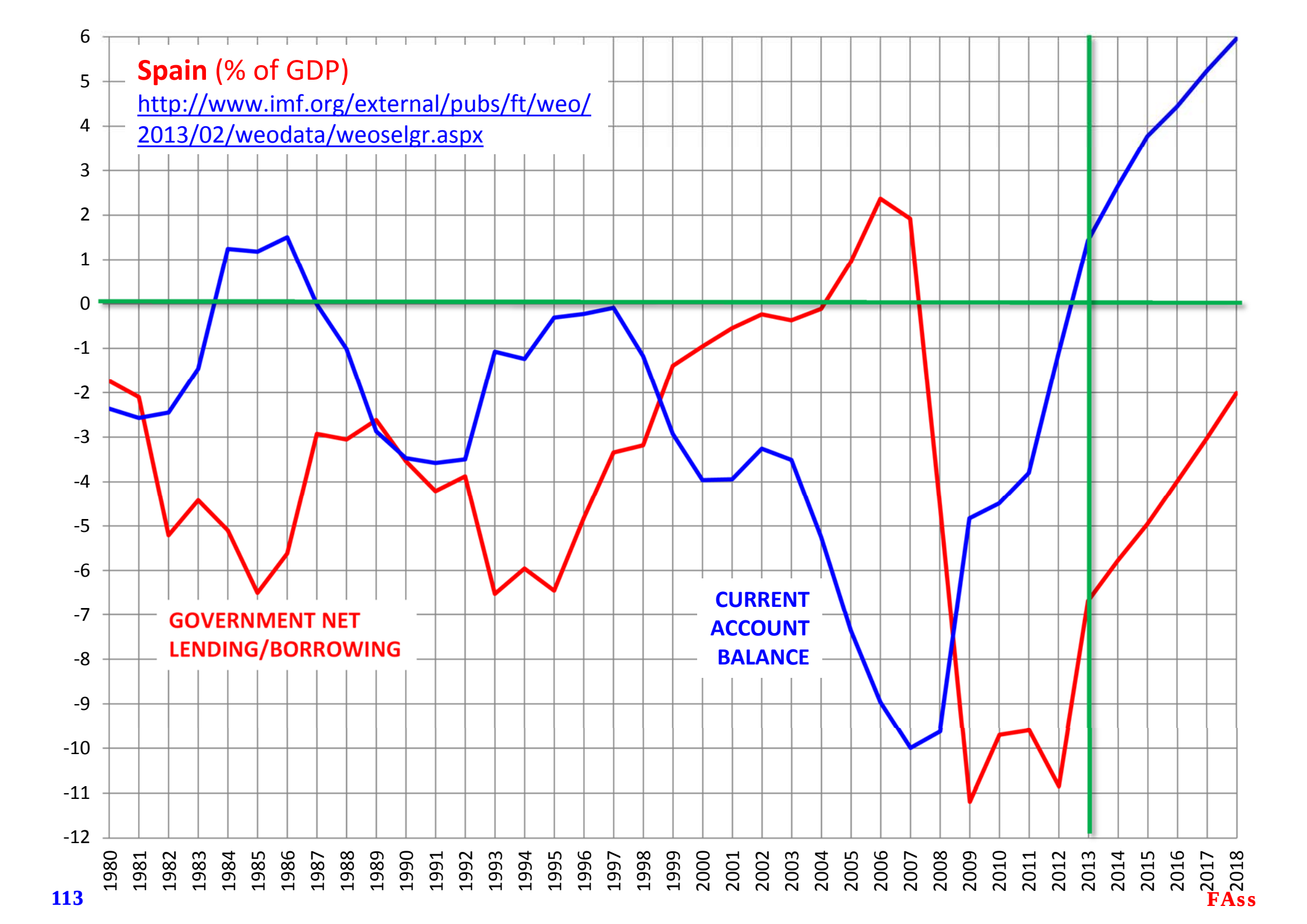
$ billion

http://www.mckinsey.com/insights/global_capital_markets/mapping_global_capital_markets_2011



1 Calculated as foreign investment assets less foreign investment liabilities.

SOURCE: International Monetary Fund; McKinsey Global Institute analysis


Spain (% of GDP)
http://www.imf.org/external/pubs/ft/weo/2013/02/weodata/weoselgr.aspx
GOVERNMENT NET LENDING/BORROWING
CURRENT ACCOUNT BALANCE
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
1980
1981
1982
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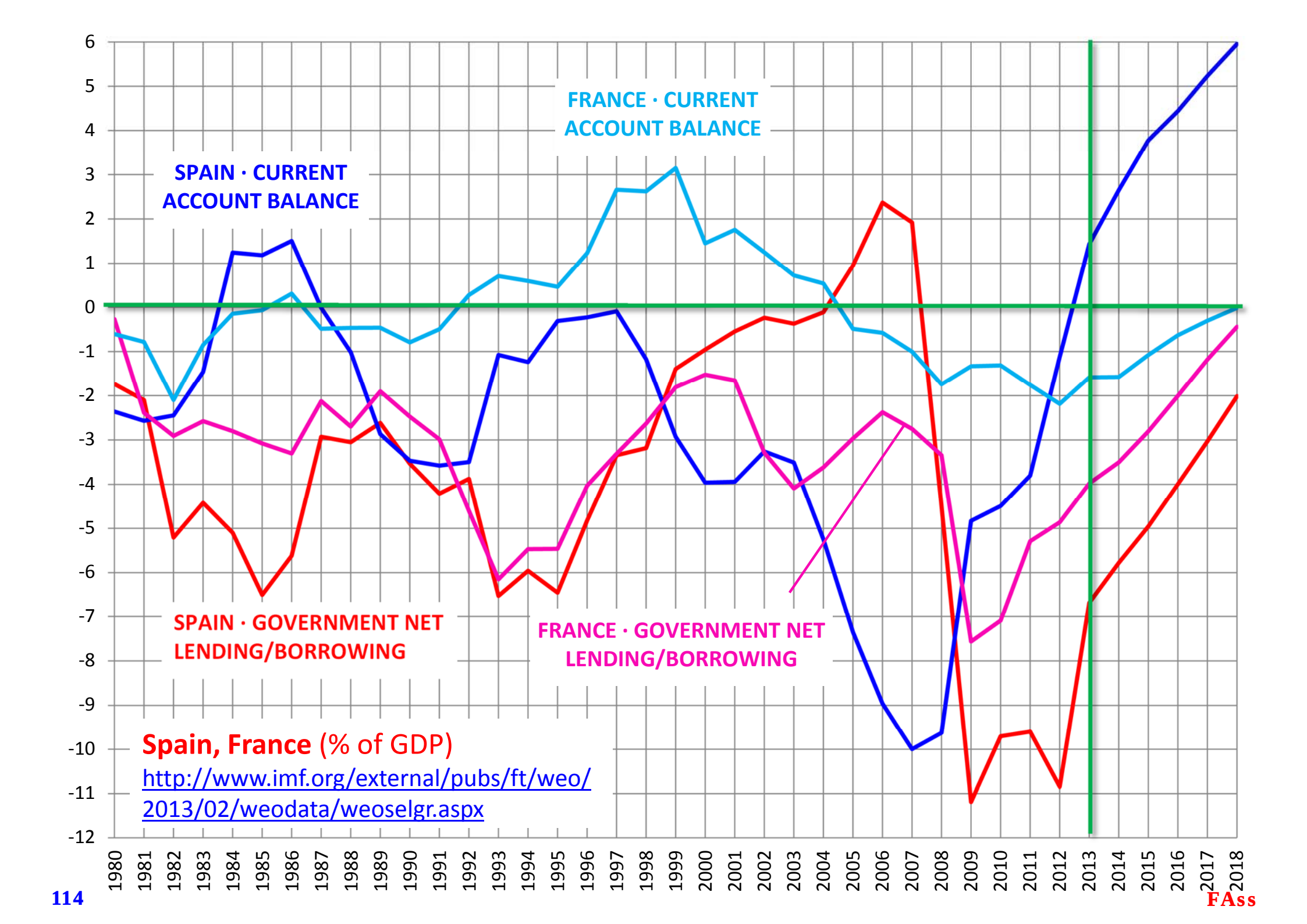
2018


FRANCE · CURRENT ACCOUNT BALANCE
SPAIN · CURRENT ACCOUNT BALANCE
SPAIN · GOVERNMENT NET LENDING/BORROWING
FRANCE · GOVERNMENT NET LENDING/BORROWING
Spain, France (% of GDP)
http://www.imf.org/external/pubs/ft/weo/2013/02/weodata/weoselgr.aspx
6
5
4
3
2
1
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Identities vs theories

- The previous identities do not establish causal connections between variables: for that, a theory is needed (a theory establishes causal relationships). Identities are not theories, but mere descriptions of what is necessarily true (theories may be false).
- By way of illustration, one cannot infer from slide 113 that a growing budget deficit caused, between 2000 and 2007, a worsening of the trade balance. That is, from $\mathbf{S - I \equiv (G + TR - T) + NX}$ and a rise in $\mathbf{(G + TR - T)}$, it cannot be concluded that **NX** falls: may be **NX** declines because $\mathbf{S - I}$ diminishes.

The *cum hoc ergo propter hoc* fallacy

- The *cum hoc ergo propter hoc* (= "with this, therefore because of this") fallacy consists in inferring causality from the proximity of events.
- One commits the CHEPH fallacy when the presence of a statistical association between two variables is considered enough to declare a causal connection between them. Statitiscal correlation does not imply (proves) causality.
- Example: observing low inflation rates under an independent central bank is not enough to conclude that the bank's independence caused low inflation.

The *post hoc ergo propter hoc* fallacy

- The *post hoc ergo propter hoc* (= "after this, therefore because of this") fallacy is also known as the false causality fallacy.
- The PHEPH fallacy consists in attributing causality to the order of events. That is, in presuming that, if event A precedes event B, then A causes B. To sustain the causal claim, one needs to explain which is the connection leading from A to B.
- For instance, an increase in the inflation rate following a rise in M1 does not entitle to jump to the conclusion that more M1 caused more inflation.

Money and inflation

- Let M be the money stock, V the velocity of circulation of money (how many times an euro is used to purchase goods), P a general price index and Y real GDP. The quantity equation $M \cdot V = P \cdot Y$ is often invoked no connect money with inflation.
- Connection: if V and Y are fixed, higher M implies higher P. But this presumes that the new money is spent in domestic goods. If the money is spent in foreign goods and/or financial assets, P is unaffected. For instance, banks use funds from the central bank to buy bonds, the bond sellers use the proceeds to buy other financial assets, and so on.

The *petitio principii* fallacy

- The *petitio principii* (= "begging the question" or "assuming the initial point") fallacy is committed when a proposition that has to be proved is (implicitly or explicitly) assumed without proof.
- For example, in standard textbooks demand side policies turn out to be ineffective in the medium run to increase GDP.
- But this conclusion has actually been assumed in the model because one of the premises of the model is that medium run GDP is constant.

Simpson's paradox: an example

- The paradox: something true for different groups is false for the combined group. The tax rate of each group diminishes from $t = 1$ to $t = 2$, but, in the aggregate, the tax rate rises from $t = 1$ to $t = 2$.

taxes/income	*period* $t = 1$	*period* $t = 2$
group 1	5/100 **5%**	2/50 4%
group 2	150/1,000 **15%**	63/450 14%
group 3	40/200 **20%**	255/1,500 17%
all groups	195/1,300 15%	320/2,000 **16%**