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, <u>the first activity in which people must engage is raising money</u>.

- One way of raising money consists of <u>selling goods</u> others want. Thus, one may sell his/her time for a <u>wage</u> or a good he/she can produce for a <u>price</u>.

- What if one has no good others may want? Then one can raise money by issuing a <u>financial asset</u>, which is essentially a <u>promise to pay money</u>.

1   FAss

Financial assets

- A financial asset is basically an IOU: a paper where someone <u>acknowledges a debt</u> ("I owe you").

- A financial asset is a <u>substitute for money</u>, as it represents a promise today to pay money <u>in the future</u>. It is a way of <u>capitalizing future revenues</u>.

- Suppose you do not have money today, but expect you will have in the future. <u>A financial asset is like a time machine allowing you to take your money back from the future</u>: you issue an IOU and sell it today for money. Problem: part of your future money is lost while going back to the present.

2   FAss

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. <u>The interest rate of the asset is its implicit rate of return</u>.

3   FAss

Rate of return of a simple asset /1

- Let V the <u>nominal (face) value</u> of the asset: how much it promises to pay in the future.

- Let P be the <u>price</u> at which the asset is sold.

- Then the (implicit) rate of return i_R (or <u>rate of profit</u>) 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):

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

4   FAss

The role of financial assets /1

- From the perspective of the purchaser, the financial asset is a way of <u>saving purchasing power</u> (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 <u>acquiring purchasing power</u> (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, <u>a financial asset is (like) a loan of money</u>.

5   FAss

The role of financial assets /2

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

- Those wishing to <u>borrow</u> have a deficit: <u>planned expenditure larger than current income</u>. 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.

6   FAss

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.
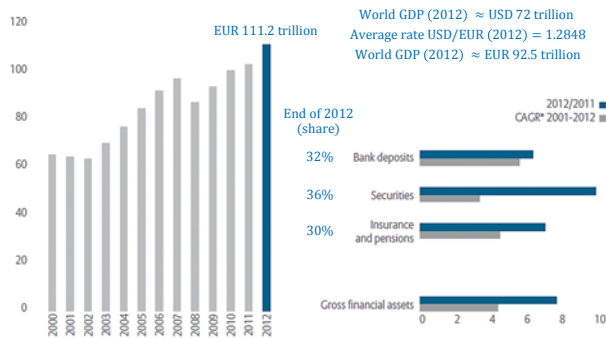
Wealth and growth by region

Allianz Global Wealth Report 2013

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

Fewer rich, more poor people

Allianz Global Wealth Report 2013

Population by wealth classes, in mn people
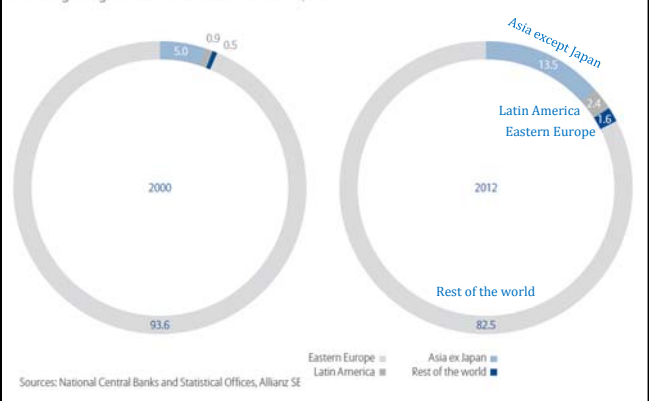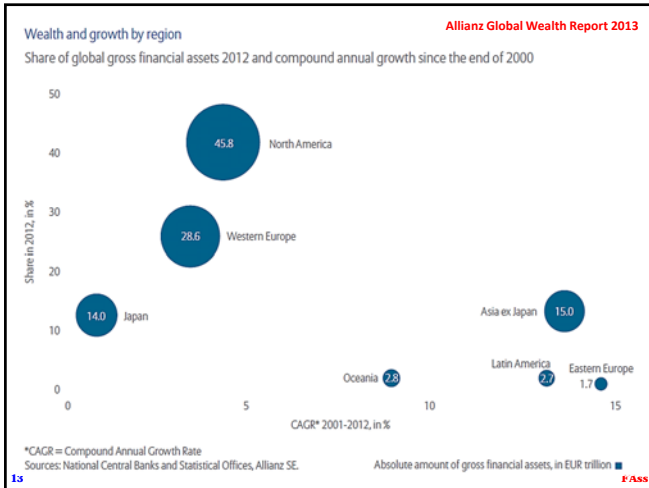
Tradable financial assets: bonds

- <u>Bond</u>. 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.

- <u>Bonds issued at discount</u>. That is, they are sold for <u>less than the face value</u>. Examples: Treasure bills (or, for short, <u>T-bills</u>) and <u>commercial paper</u>, 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).

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

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

IBEX-35 (wekly volume · EUR millions)
28 July 2000 – 7 February 2014
http://stooq.com/q/d/?s=^ibex&c=0

Last: 1,939

19
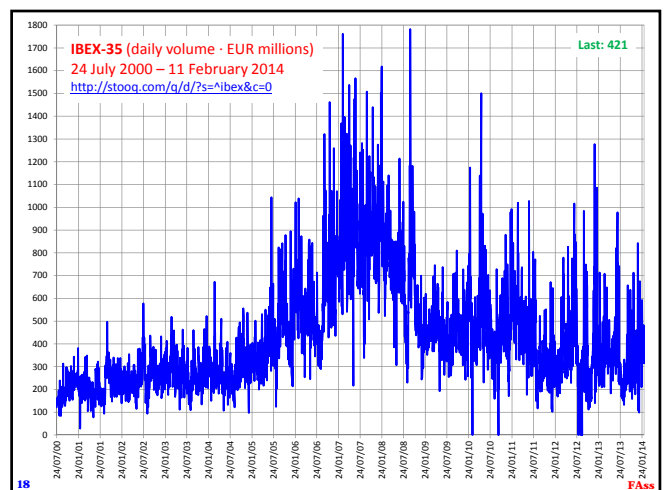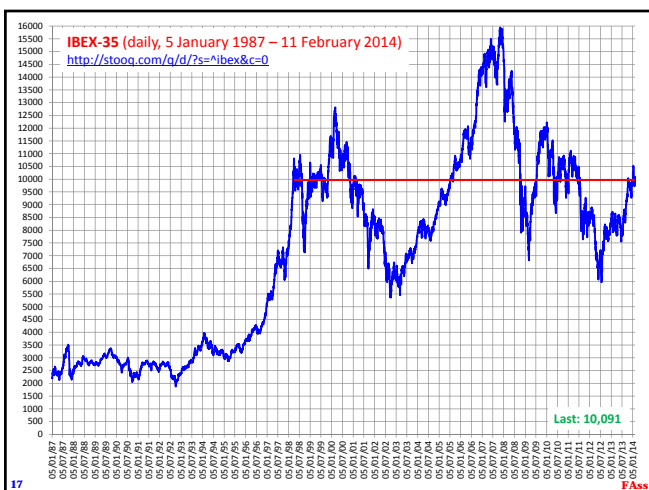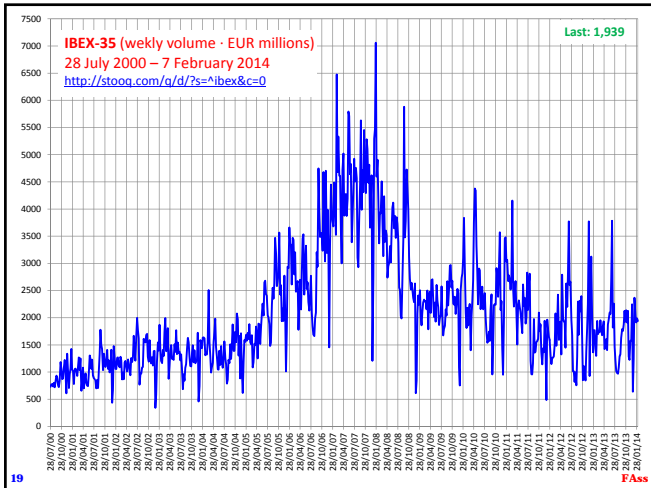
Goods behaving like financial assets

• 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…

20

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.

21

Flight into 'safe haven' bank deposits
Asset classes as % of gross financial assets

Allianz Global Wealth Report 2013

Growth of the three big asset classes since 2007
Index (2007=100)

+34.8%
Bank deposits

+18.6%
Insurance and pensions

-0.6%
Securities

Other — Securities
Insurance and pensions — Bank deposits

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

22

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

23

Asset structure and growth by region
Asset classes as % of gross financial assets, 2012

Allianz Global Wealth Report 2013

Rate of change of gross financial assets, in %

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

Other — Securities — 2012/2011
Insurance and pensions — Bank deposits — CAGR* 2001-2012

24

Slide 25

Europe comes closer to Japan

Allianz Global Wealth Report 2013

Asset classes as % of gross financial assets

Eurozone | USA | Japan

Eurozone: 2000 (24, 43, 30); 2007 (28, 37, 32); 2008 (29, 32, 36); 2009 (30, 32, 35); 2010 (31, 31, 35); 2011 (32, 29, 36); 2012 (32, 29, 36)

USA: 2000 (30, 59, 10); 2007 (27, 60, 12); 2008 (27, 57, 15); 2009 (28, 56, 15); 2010 (29, 56, 14); 2011 (29, 55, 15); 2012 (28, 56, 14)

Japan: 2000 (26, 16, 55); 2007 (26, 16, 52); 2008 (28, 14, 55); 2009 (27, 15, 55); 2010 (27, 15, 55); 2011 (27, 13, 56); 2012 (27, 14, 57)

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

Other · Securities · Insurance and Pensions · Bank deposits

25   FAss

Slide 26

Different preferences across countries

Allianz Global Wealth Report 2013

Asset classes as % of gross financial assets, 2012

Greece (4, 15, 73); Spain (16, 30, 50); Austria (19, 34, 45); Germany (36, 23, 41); Portugal (16, 33, 40); Ireland (44, 15, 39); Finland (41, 38); Switzerland (42, 26, 33); Norway (38, 15, 33); Italy (19, 47, 32); Belgium (25, 42, 32); France (37, 25, 30); United Kingdom (54, 14, 29); Netherlands (64, 13, 22); Denmark (53, 27, 19); Sweden (43, 37, 19)

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

Other · Securities · Insurance and pensions · Bank deposits

26   FAss

Slide 27

A large share of household wealth comes from real estate holdings

Household wealth by source, 2012[1]

%; $ trillion

100% =   79   43   14

United States: Other 7, Fixed income 2, Equity 23, Currency and deposits 11, Mutual funds 7, Life insurance and pensions 24, Real estate 25

Eurozone: 4, 2, 8, 21, 4, 19, 43

United Kingdom: 5, 0, 2, 15, 2, 27, 50

Other · Fixed income · Equity · Currency and deposits · Mutual funds · Life insurance and pensions · Real estate

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

27   FAss

Slide 28

LOANS (TOTAL)

LENDING FOR HOUSE PURCHASE

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)

CREDIT FOR CONSUMPTION

28   FAss

Slide 29

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

29   FAss

Slide 30

LENDING FOR HOUSE PURCHASE

Spain (annual change, %)
http://sdw.ecb.europa.eu/browse.do?node=2116074

LOANS (TOTAL)

CREDIT FOR CONSUMPTION

30   FAss

LENDING FOR HOUSE PURCHASE

Eurozone (annual change, %)
http://sdw.ecb.europa.eu/browse.do?node=2116074

LOANS (TOTAL)

CREDIT FOR CONSUMPTION

Spain (EUR billions
amounts at the end of the period)
http://sdw.ecb.europa.eu/browse.do?node=2116075

LOANS TO GOVERNMENT

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

The composition of debt varies widely across countries

Total debt,[1] Q2 2011
% of GDP

10 largest mature economies

- Households
- Nonfinancial corporations
- Financial institutions
- Government

Japan	67	99	120	226	512
United Kingdom	98	109	219	81	507
Spain	82	134	76	71	363
France	48	111	97	90	346
Italy[2]	45	82	76	111	314
South Korea	81	107	93	33	314
United States	87	72	40	80	279
Germany	60	49	87	83	278
Australia	105	59	91	21	277
Canada	91	53	63	69	276

Eurozone-crisis countries

Ireland[2]	124	194	259	85	663
Spain	82	134	76	71	363
Portugal[2]	94	128	55	79	356
Italy[2]	45	82	76	111	314
Greece	62	65	132	267	

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

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

- Government
- Financial institutions
- Nonfinancial corporations
- Households

Change
Percentage points

	Q4 2000–Q4 2008	Q4 2008–Q2 2011
363	145	26
71	-16	24
68	58	8
137	64	-4
85	40	-3

337
47
76
82
192
63
10
74
131
40
12
49
30
45
134

Q4 1990	Q4 2000	Q4 2008	Q2 2011

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

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

37
FAss

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

38
FAss

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

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

Growth (percentage points)

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

39
FAss

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

Gross public debt outstanding[1] per region

■ Developed
■ Emerging

| | % of regional GDP, end of period | | | $ trillion (constant 2010 exchange rates) | Compound annual growth rate, 2009–10 (%) |
	2000	2009	2010		
Japan	78	191	220	11.6	15.1
United States	42	67	76	11.1	13.4
Western Europe	48	63	72	10.4	14.2
Other developed	39	50	49	2.3	-2.0
India	24	44	43	0.7	-2.3
Latin America	37	42	38	1.5	-9.5
Other Asia	28	32	34	0.5	6.3
Middle East and Africa	22	25	29	0.3	16.0
CEE and CIS[2]	22	25	28	1.0	12.0
China	10	29	29	1.6	0.0

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

40
FAss

Deleveraging has only just begun in the ten largest developed economies

Total debt,[1] 1990–Q2 2011
% of GDP

▲ Significant increase in leverage[2]
▼ Deleveraging

The burden of debt

| | 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

41
FAss

Liabilities and growth by region

Allianz Global Wealth Report 2013

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 ■

42
FAss

Regional differences in debt per capita

Liabilities per capita, in EUR

Allianz Global Wealth Report 2013

2003 ■ 2008 ■ 2012 ■

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

43   FAss

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.

44   FAss

Consolidation more important than new debt

Liabilities as % of GDP

Allianz Global Wealth Report 2013

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

45   FAss

Financial crisis slows debt dynamic down

Development of global debt burden

Change in debt, in %

Allianz Global Wealth Report 2013

Global liabilities, in EUR tn (lhs) ■
Rate of change y/y, in % (rhs) ■

2011/2012 ■   CAGR* 2008-2012 ■   CAGR* 2003-2007 ■

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

46   FAss

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

Economic growth vs. debt growth, y/y in %

Liabilities as % of nominal GDP

Allianz Global Wealth Report 2013

■ Global liabilities
■ Global nominal GDP

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

47   FAss

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)

Allianz Global Wealth Report 2013

■ Liabilities as % of GDP (lhs)
■ Debt growth y/y, in % (rhs)

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

48   FAss

Securitization /1

- "Securitization is the financial practice of <u>pooling various types of contractual debt</u> such as residential mortgages, commercial mortgages, auto loans or credit card debt obligations <u>and selling said consolidated debt as</u> bonds, pass-through <u>securities</u>, 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 <u>transforming non-tradable financial assets</u> (like bank loans) <u>into securities</u> by creating secondary markets for them.

- Method 1 of securitizing a loan: bundle together bank loans and sell <u>partipations in the profits from the pool of loans</u> to investors, who receive the payments from the borrowers that repay the loans.

- Hence, a new financial asset is created by <u>combining existing financial assets and marketing different tiers of the repackaged assets to investors</u>.

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: <u>issue debt</u> (a bond, for instance) <u>secured by the pool of loans</u> (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

- <u>Financial assets can be viewed as money imitators</u>. But as they cannot have maximum liquidity, they must offer something in return to be attractive.

- <u>Liquidity & profitability</u>. If two assets differ only in liquidity and profitability, the more liquid must be the less profitable and vice versa (money vs bonds).

- <u>Risk & profitability</u>. If two assets differ only in risk and profitability, the riskier should be the more profitable and vice versa (shares vs deposits).

Inverse relationships

- <u>Having more of the favourable properties is balanced by having more of the unfavourable ones</u>.

- 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.

55   FAss

Shadow banking

- The term refers to <u>non-bank financial intermediaries that act like banks, but are not subject to bank regulations</u> (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 <u>size of the shadow banking system</u> in 2012: over $100 trillion. Nominal world GDP in 2012: $72 trillion (85 at purchasing power parity).

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

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: <u>if it behaves like a bank, regulate it like a bank</u>.

- <u>Auction-rate security</u> (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.

57   FAss

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. <u>Not enough new investors were arriving to allow existing investors to get their money back</u>. 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 .

58   FAss

Financial depth

- <u>Financial depth</u> 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 <u>financial development of an economy</u>.

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

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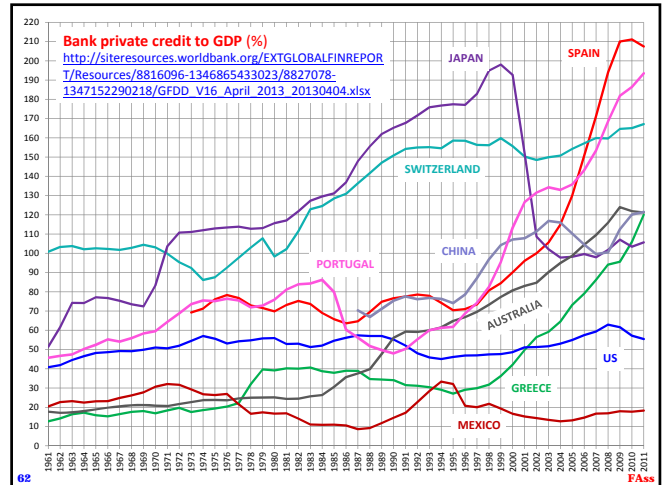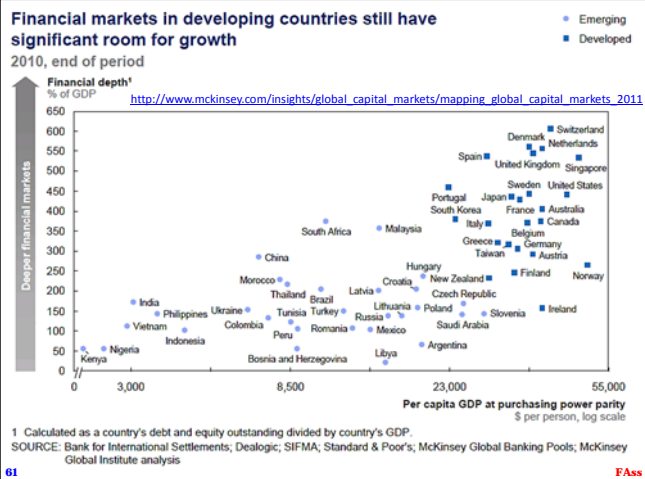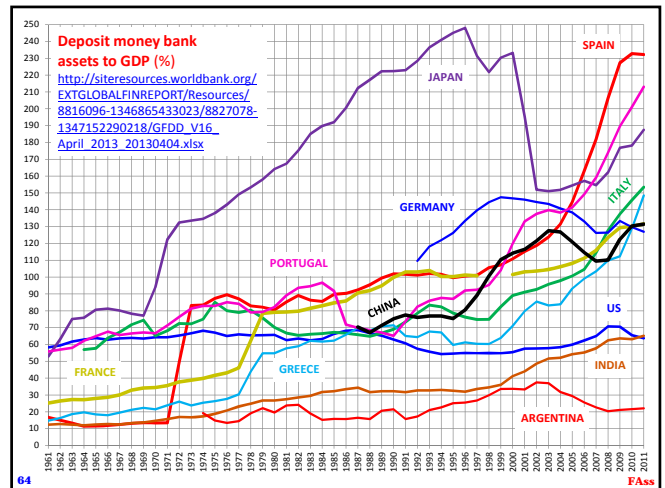
59   FAss

60   FAss

Financial markets in developing countries still have significant room for growth

Emerging
Developed

2010, end of period

Financial depth¹
% of GDP

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

Per capita GDP at purchasing power parity
$ per person, log scale

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

61

FAss

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

62

FAss

Private credit to GDP

- It differs across countries. It <u>correlates strongly with income level</u>: is 103% in high-income countries, more than four times the average ratio in low-income countries. It is closely linked to <u>long-term economic growth</u> 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 <u>major crisis episode since 2008</u>.

63

FAss

Deposit money bank assets to GDP (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPORT/Resources/8816096-1346865433023/8827078-1347152290218/GFDD_V16_April_2013_20130404.xlsx

SPAIN
JAPAN
GERMANY
ITALY
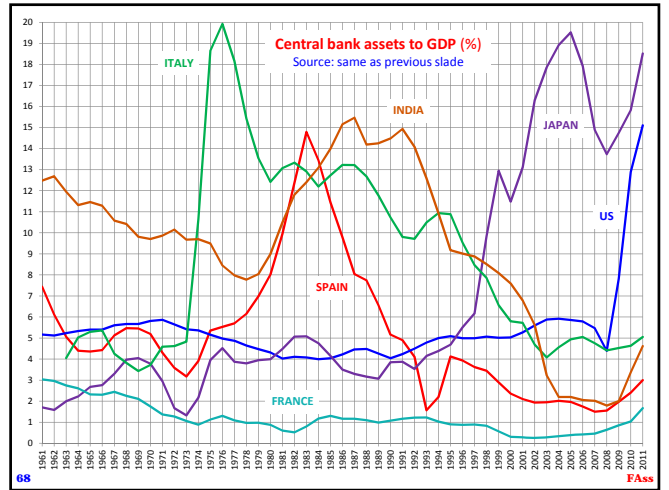PORTUGAL
CHINA
US
FRANCE
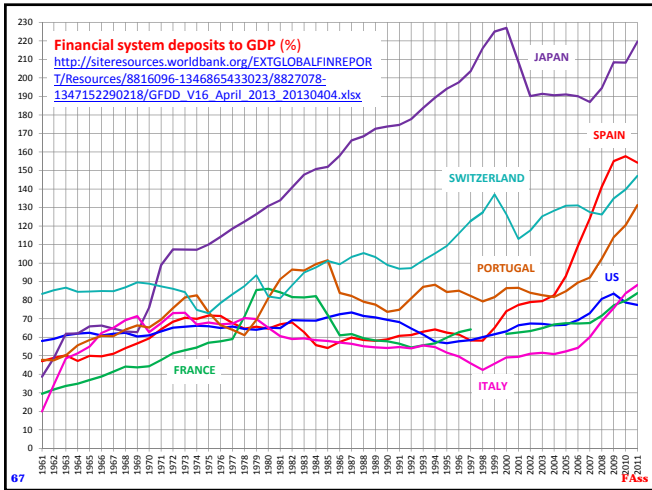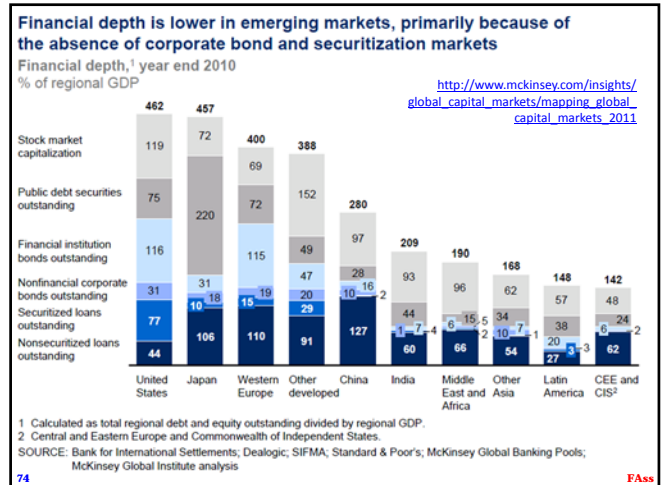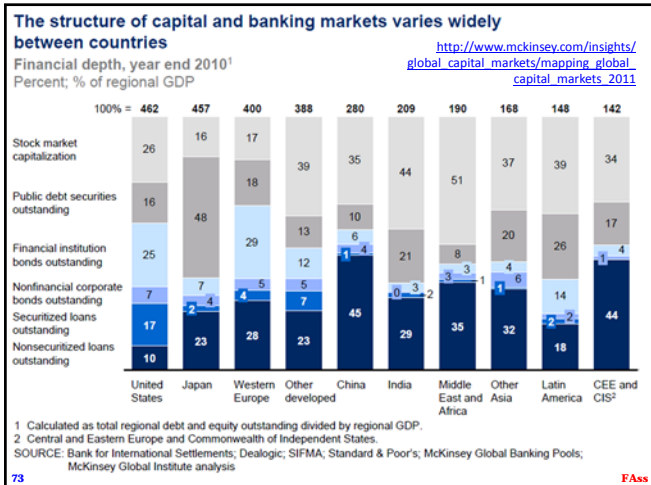GREECE
INDIA
ARGENTINA

64

FAss

Total banking assets to GDP

- According to the introduction to the Workd Bank's Global Financial Development Database, "it is arguably a <u>more comprehensive measure of size</u>, 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
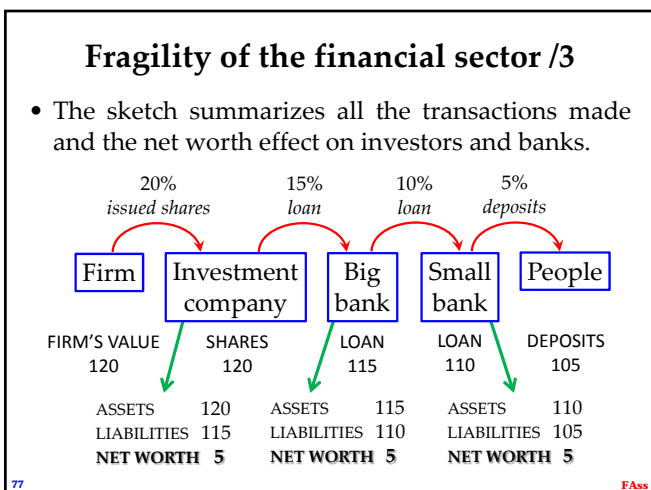
65

FAss

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

66

FAss

Financial system deposits to GDP (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPOR
T/Resources/8816096-1346865433023/8827078-
1347152290218/GFDD_V16_April_2013_20130404.xlsx

JAPAN
SPAIN
SWITZERLAND
PORTUGAL
US
FRANCE
ITALY

Central bank assets to GDP (%)
Source: same as previous slade

ITALY
INDIA
JAPAN
US
SPAIN
FRANCE

**Credit to govt
& state-owned
firms to GDP** (%) Source: see previous slide

UK
SPAIN
PORTUGAL
GERMANY
ARGENTINA
ITALY
TURKEY
FRANCE
INDIA
CHINA
US
AUSTRALIA

Source: see previous slide
**Credit to government
& state-owned
firms to GDP** (%)

JAPAN
BRAZIL
UK
GREECE
SPAIN
AUSTRALIA
US

BRAZIL
FRANCE
ITALY
GERMANY
SPAIN
US
GREECE
INDIA
JAPAN

Bank credit to bank deposits (%)
http://siteresources.worldbank.org/EXTGLOBALFINREPOR
T/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
BRAZIL
FRANCE
SPAIN
GERMANY
ITALY
US
GREECE
INDIA
JAPAN

The structure of capital and banking markets varies widely between countries

Financial depth, year end 2010[1]
Percent; % of regional GDP

100% = 462   457   400   388   280   209   190   168   148   142

Row categories (bottom to top):
- Nonsecuritized loans outstanding
- Securitized loans outstanding
- Nonfinancial corporate bonds outstanding
- Financial institution bonds outstanding
- Public debt securities outstanding
- Stock market capitalization

Columns: United States, Japan, Western Europe, Other developed, China, India, Middle East and Africa, Other Asia, Latin America, CEE and CIS[2]

Category	US	Japan	W. Europe	Other dev.	China	India	M.E. & Africa	Other Asia	Latin America	CEE & CIS
Stock market capitalization	26	16	17	39	35	44	51	37	39	34
Public debt securities	16	48	18	12	10	21	8	20	26	17
Financial institution bonds	25		29	13	6		3	4	14	4
Nonfin. corporate bonds	7	2, 4	5, 4	7	1, 4	0, 3, 2	3, 1	6, 1		1, 2
Securitized loans	17									
Nonsecuritized loans	10	23	28	23	45	29	35	32	18	44

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

73   FAss

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

462   457   400   388   280   209   190   168   148   142

Category	US	Japan	W. Europe	Other dev.	China	India	M.E. & Africa	Other Asia	Latin America	CEE & CIS
Stock market capitalization	119	72	69	152	97	93		96	57	48
Public debt securities	75	220	72	49				62	38	24
Financial institution bonds	116		115	47	10, 16, 2	1, 7, 4	44	6, 15, 5	20, 3	6, 2
Nonfin. corporate bonds	31	10, 18	15, 19	20				2, 10, 7, 1		
Securitized loans	77			29		60	66		27	
Nonsecuritized loans	44	106	110	91	127			54		62

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

74   FAss

Fragility of the financial sector /1

- The next example illustrates the fragility of the financial sector and its power to 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.

75   FAss

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.

76   FAss

Fragility of the financial sector /3

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

	20% issued shares	15% loan	10% loan	5% deposits
	Firm → Investment company	→ Big bank	→ Small bank	→ People

FIRM'S VALUE	SHARES	LOAN	LOAN	DEPOSITS
120	120	115	110	105

	ASSETS	LIABILITIES	NET WORTH
Investment company	120	115	**5**
Big bank	115	110	**5**
Small bank	110	105	**5**

77   FAss

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.

78   FAss

Fragility of the financial sector /5

- Therefore, <u>financial wealth</u> (*paper wealth*) <u>worth 450 is lifted by real wealth</u> (wealth created by the real sector, that is, goods) <u>worth 120</u>.

- This is the <u>positive magnifying effect</u> of the financial sector: real assets worth 120 sustain financial assets worth 450.

- <u>The magnifying effect also works in the reverse</u>. 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.

FAss

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: <u>everybody loses</u>.

- <u>Where have the depositors' funds gone? The firm made use of them to finance an unsuccessful project</u>.

FAss

Savings and financial assets

- Lending money and purchasing financial assets are both the expression of a <u>saving decision</u>: 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.

FAss

Expenditure categories

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

FAss

Consumption and investment

- <u>Consumption</u>: value of the purchases of new goods (durable and non-durable) and services by households (no matter where the goods have been produced).

- <u>Investment</u>. 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).

FAss

Government purchases

- <u>Government purchases</u>: 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).

- <u>Transfer payments</u> (**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.

FAss

Net exports

- <u>Net exports</u>: 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 <u>trade surplus</u> occurs when exports are greater than imports (net exports are positive). A <u>trade deficit</u> 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 "<u>trade balance</u>".

Current account to GDP (%) · 7 February 2014
http://www.tradingeconomics.com
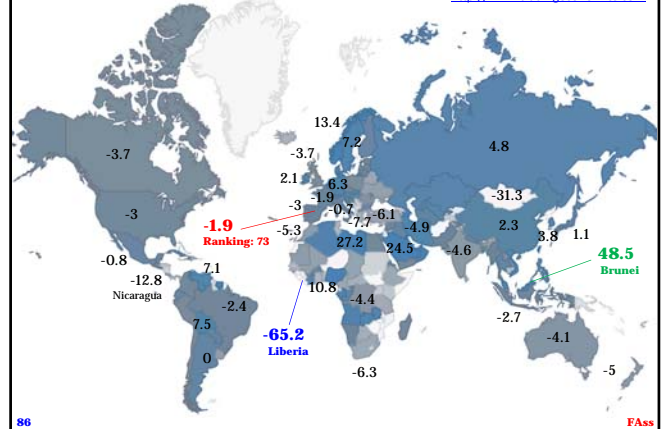
	GDP BILLION USD	GDP YOY	GDP QOQ	INTEREST RATE	INFLATION RATE	JOBLESS RATE	GOV. BUDGET	DEBT/GDP	CURRENT ACCOUNT
LIBERIA	2	8.30%		13.53%	8.50%	3.70%	-0.70%	44.90%	-65.20
SIERRA LEONE	4	6.20%		12.00%	9.38%	3.40%	-2.90%	37.90%	-55.70
AFGHANISTAN	20	11.80%		15.00%	6.65%	15.00%	-17.90%	8.00%	-40.00
SAO TOME 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%	8.00%	-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%	58.50%	-2.00%	52.80%	-12.90

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

	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	4.20%	-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

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

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

- Imagine that China exports only cars to Spain and that China imports nothing from Spain.
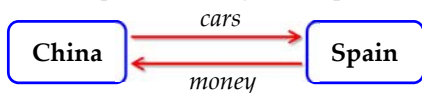
- China runs a <u>trade surplus</u> (with Spain) and Spain a trade deficit (with China).

- China delivers goods and receives in exchange money. Thus, <u>China is saving and has lending capacity</u>: has money (in general, financial assets) to lend. <u>Trade surplus implies lending capacity</u>. Trade deficit implies financial need.
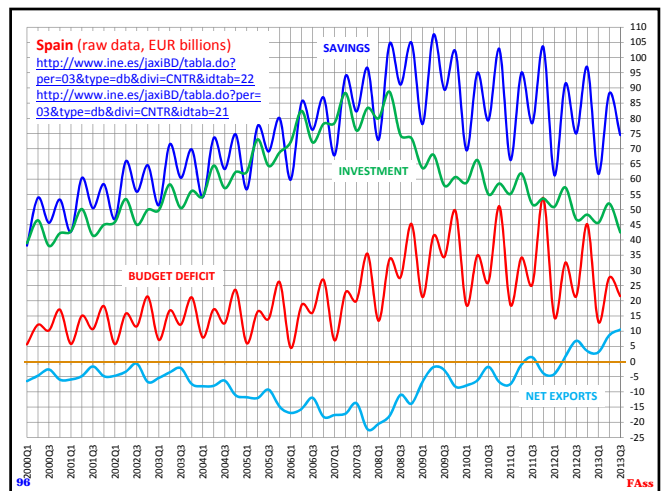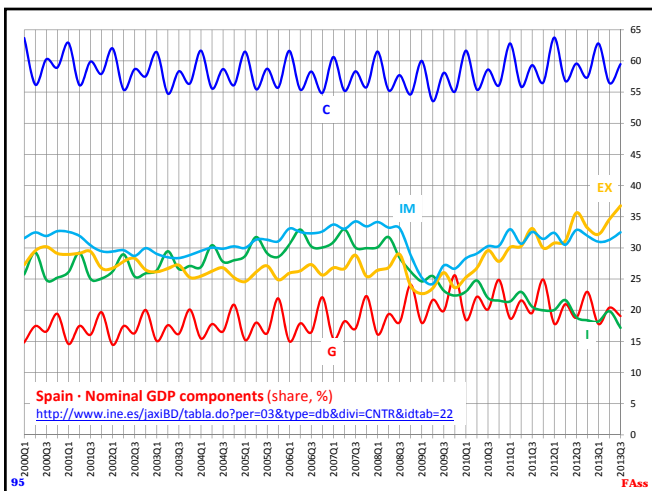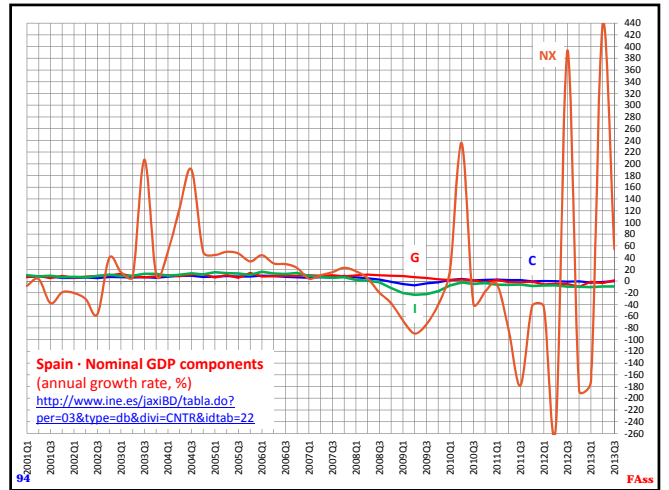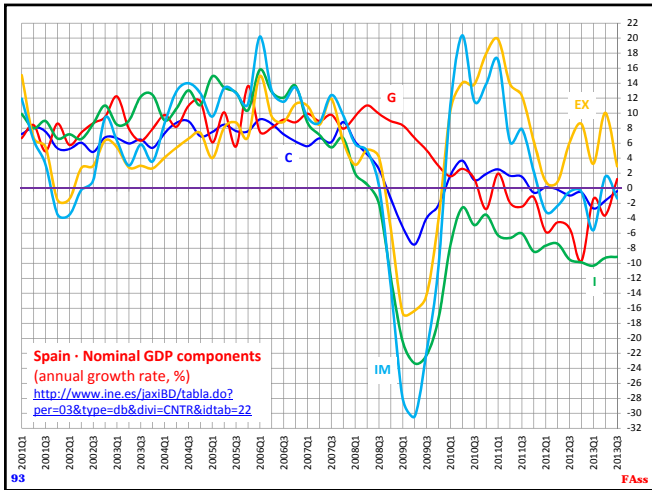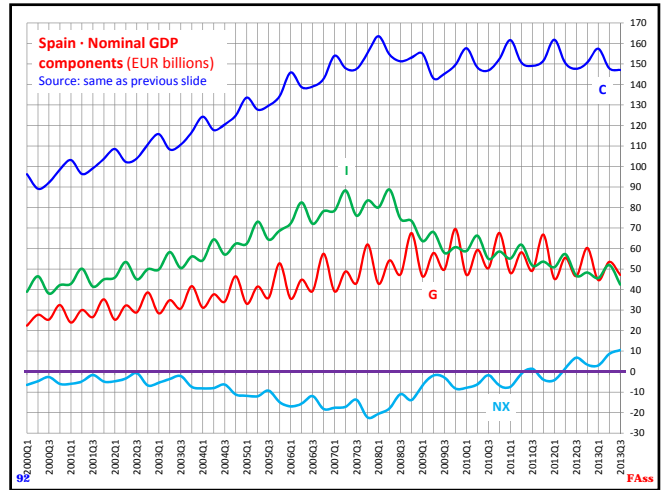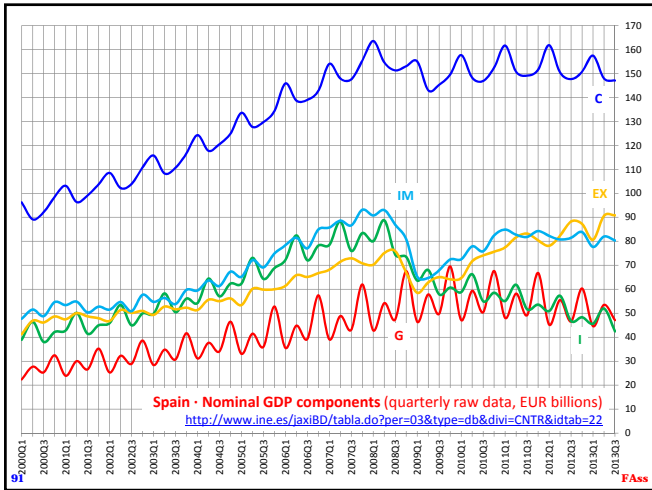
Fundamental macroeconomic identity

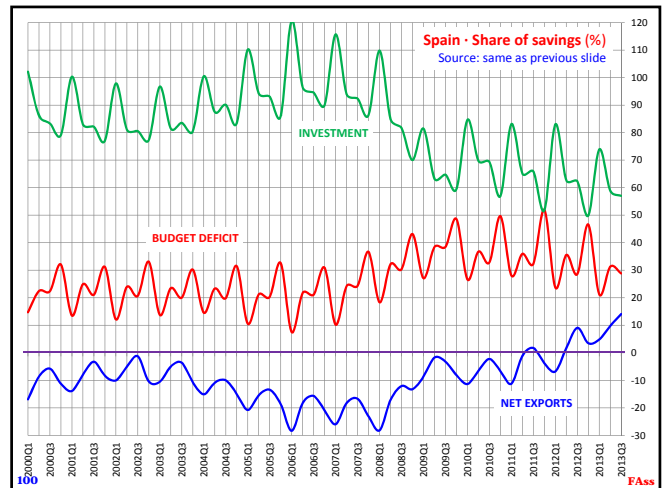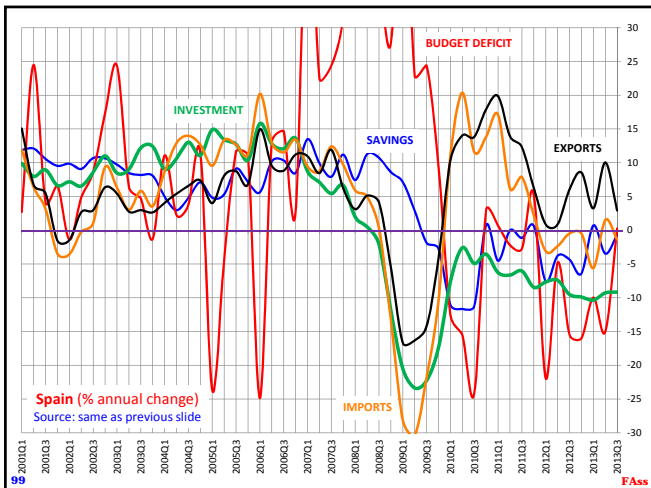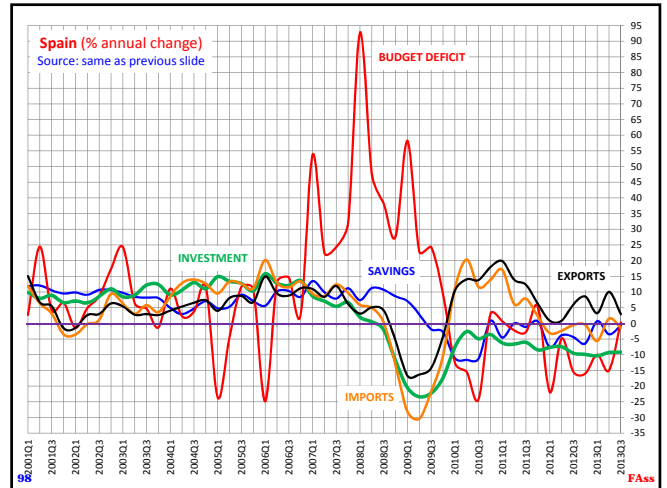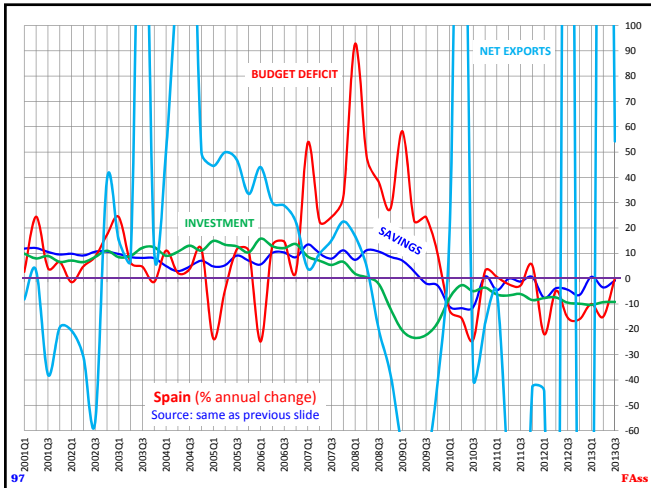- The expression below is an <u>identity</u> (always true) as the values of the variables are established <u>ex-post</u> (<u>once all spending decisions have been made</u>).

- The supply and demand model provides an analogy: quantity demanded may be different quantity supplied, but <u>quantity sold is always equal to quantity bought</u> (someone sells because someone buys and vice versa).

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

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

Spain · Nominal GDP components (EUR billions)
Source: same as previous slide

Spain · Nominal GDP components (annual growth rate, %)
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22

Spain · Nominal GDP components (annual growth rate, %)
http://www.ine.es/jaxiBD/tabla.do?per=03&type=db&divi=CNTR&idtab=22

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

Government budget

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

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

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

- A <u>budget deficit</u> occurs if **GB** < 0 (spending larger than receipts). A <u>budget surplus</u> occurs if **GB** > 0. <u>Public debt</u> is the accumulation of past deficits.
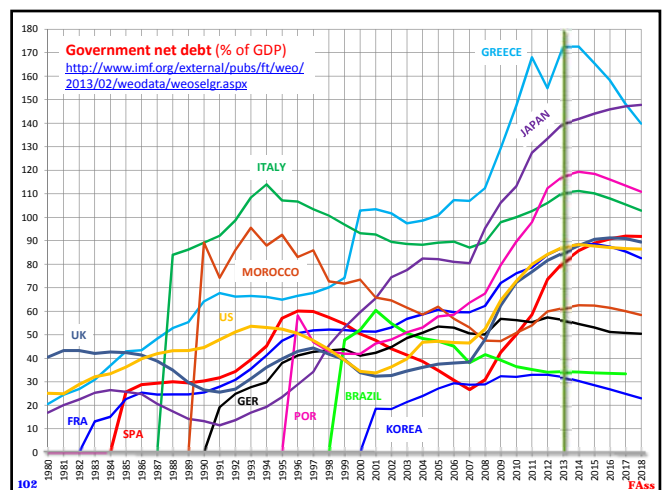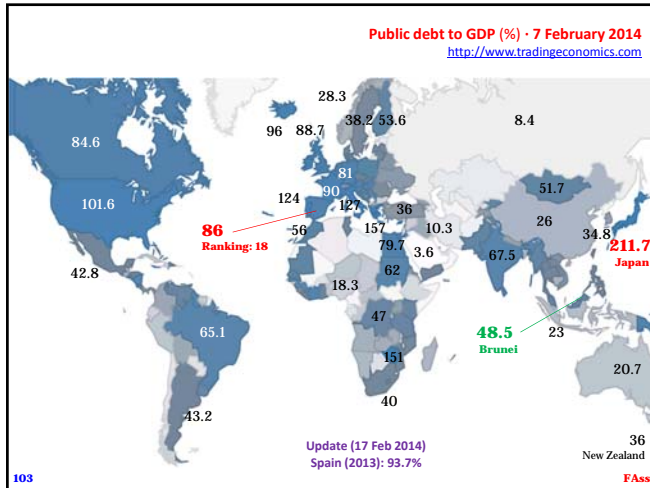
Public debt to GDP (%) · 7 February 2014
http://www.tradingeconomics.com

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

FAss

	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%		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 (**Y**) as <u>aggregate income</u> (GDP as net incomes earned by factors of production), then income can be used to <u>consume</u>, to <u>save</u>, and to <u>pay taxes</u> (net of transfers)

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

- Defining <u>disposable income</u> $\mathbf{Y}_d$ as

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

it follows that

$$\mathbf{Y}_d \ \equiv \ \mathbf{C} + \mathbf{S}.$$

106

FAss

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,

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

107

FAss

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 <u>to firms</u> to finance investment…

- … <u>to the government</u> to finance a budget deficit…

- … or <u>to foreigners</u>, when they buy more from the economy than the economy buys from them (trade surplus).

108

FAss

Investment accounting identity

- The savings identity

$$S \;\equiv\; I + (\,G + TR - T\,) + NX$$

can be equivalently formulated as

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

<div style="text-align:center">

investment   private saving   government saving   foreign saving

</div>

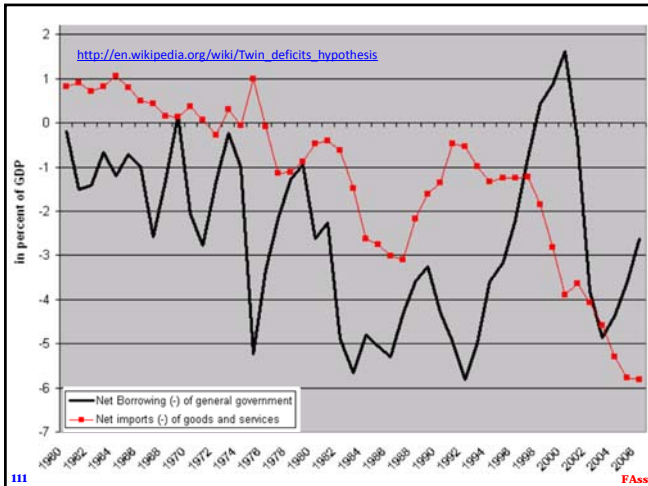- Accordingly, <u>domestic investment is financed by private saving, public saving, or foreign saving</u>.

109   FAss

Twin (or double) deficits: twice the fun

- If investment equals savings, so $I = S$, 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 $I = S$, then $G + TR - T > 0$ implies $NX < 0$.

- 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?
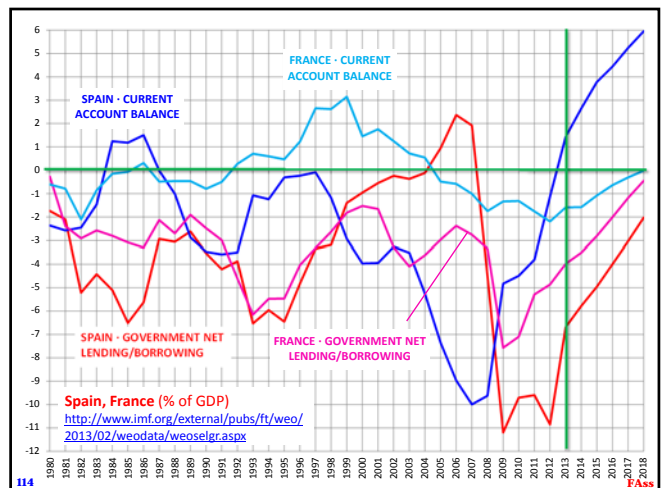
110   FAss

111   FAss

112   FAss

113   FAss

114   FAss

Identities vs theories

- The previous <u>identities do not establish causal connections</u> 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 $S - I \equiv (G + TR - T) + NX$ and a rise in $(G + TR - T)$, it cannot be concluded that NX falls: may be NX declines because $S - I$ diminishes.

The *cum hoc ergo propter hoc* fallacy

- The *cum hoc ergo propter hoc* (= "with this, therefore because of this") fallacy consists in <u>inferring causality from the proximity of events</u>.

- 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. <u>Statitiscal correlation does not imply (proves) causality</u>.

- 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 <u>false causality fallacy</u>.

- The PHEPH fallacy consists in <u>attributing causality to the order of events</u>. 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 <u>quantity equation</u> $M \cdot V = P \cdot Y$ is often invoked no connect money with inflation.

- Connection: <u>if V and Y are fixed, higher M implies higher P</u>. 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: <u>something true for different groups is false for the combined group</u>. The tax rate of each group <u>diminishes</u> from $t = 1$ to $t = 2$, but, <u>in the aggregate, the tax rate rises</u> 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%**