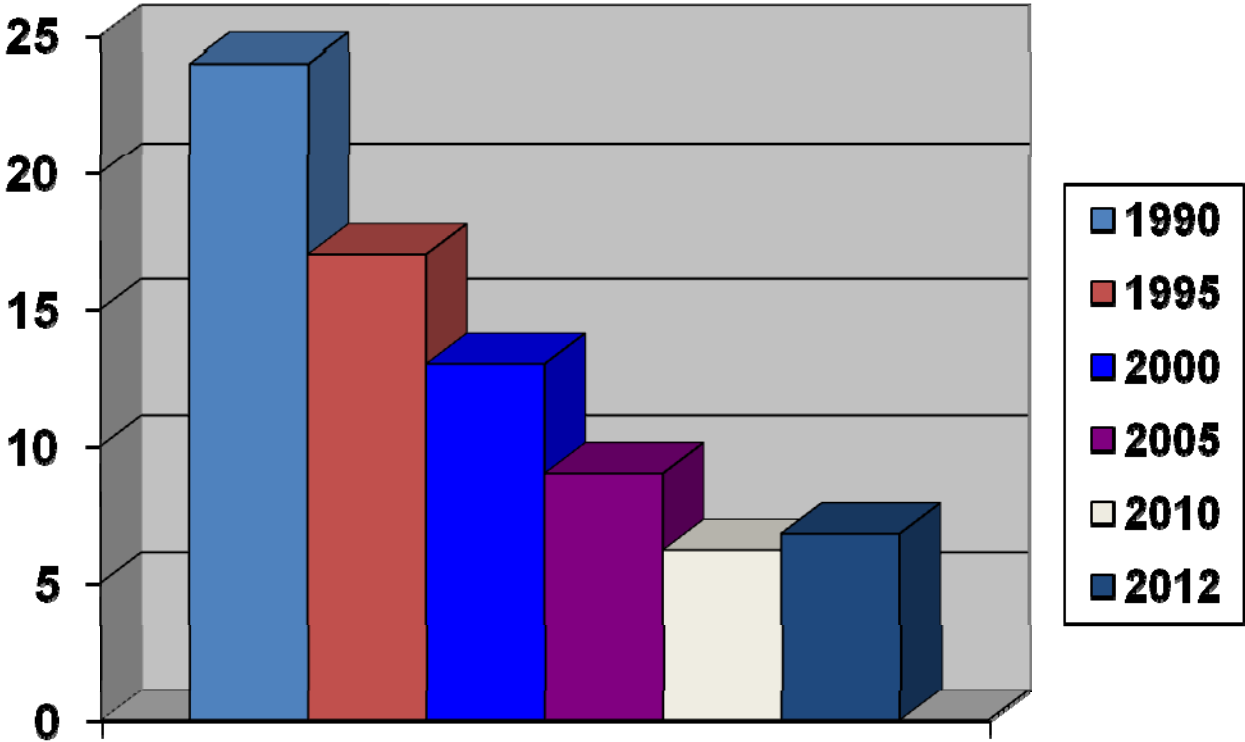


Megaeconomics

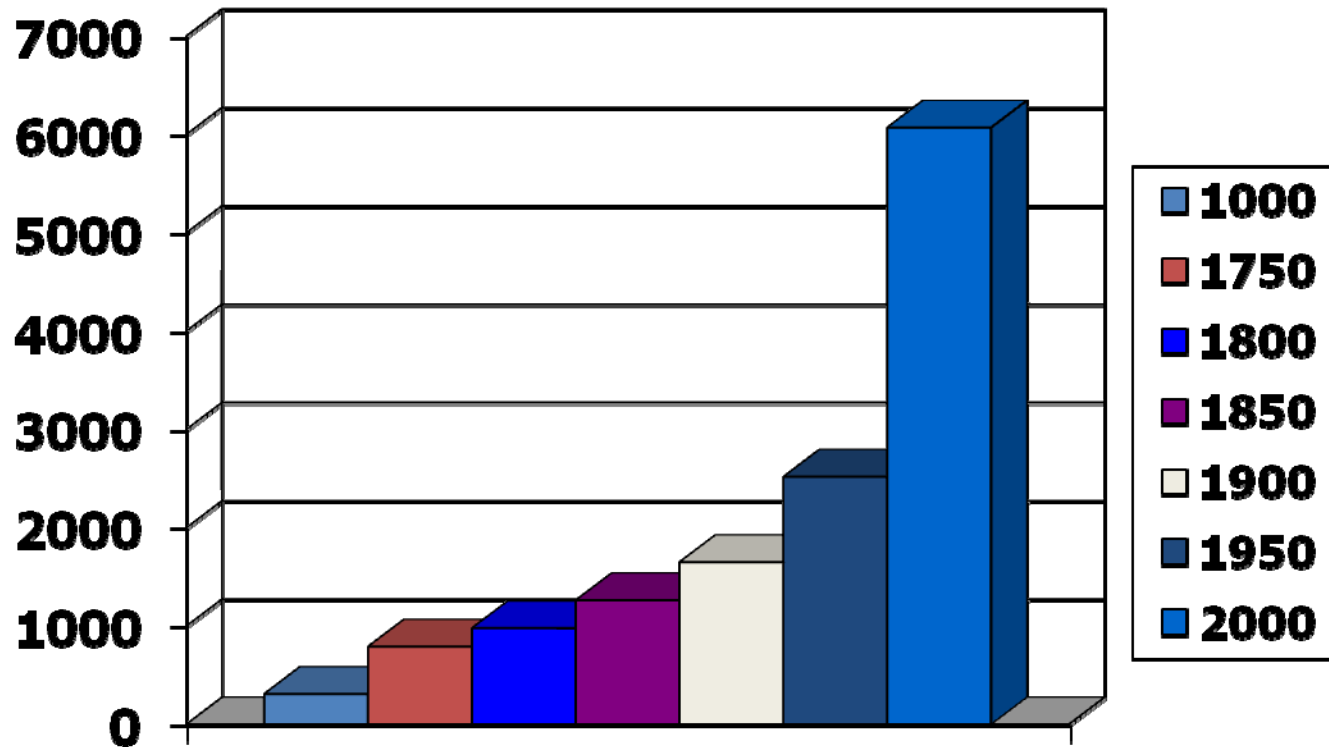
Hrant Bagratyan

2. Golden years, world trade volume, World GDP and average tariff applied, 1990=100, (tariffs level, %). <http://data.worldbank.org/indicator/TM.TAX.MRCH.SM.AR.ZS>



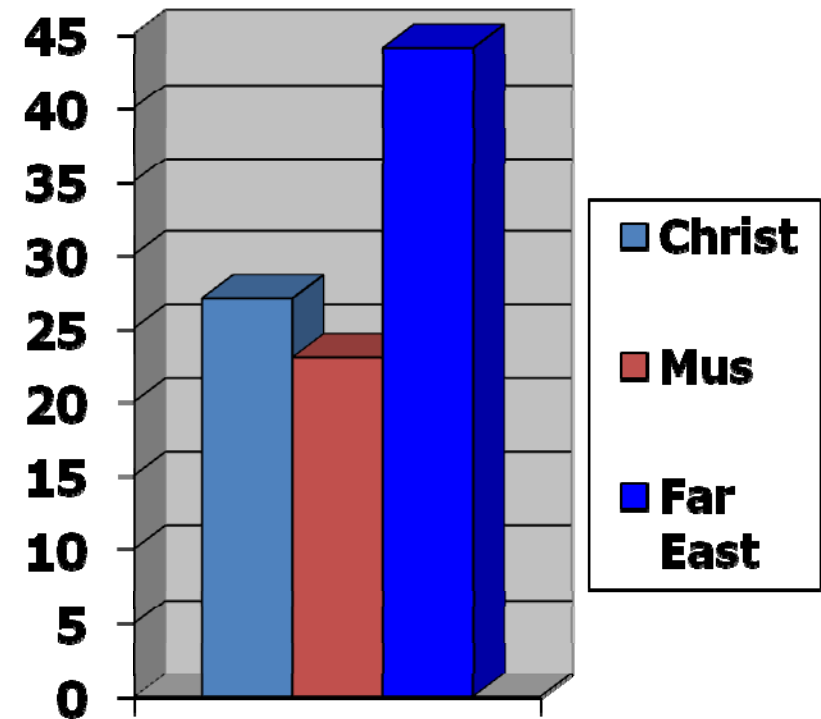
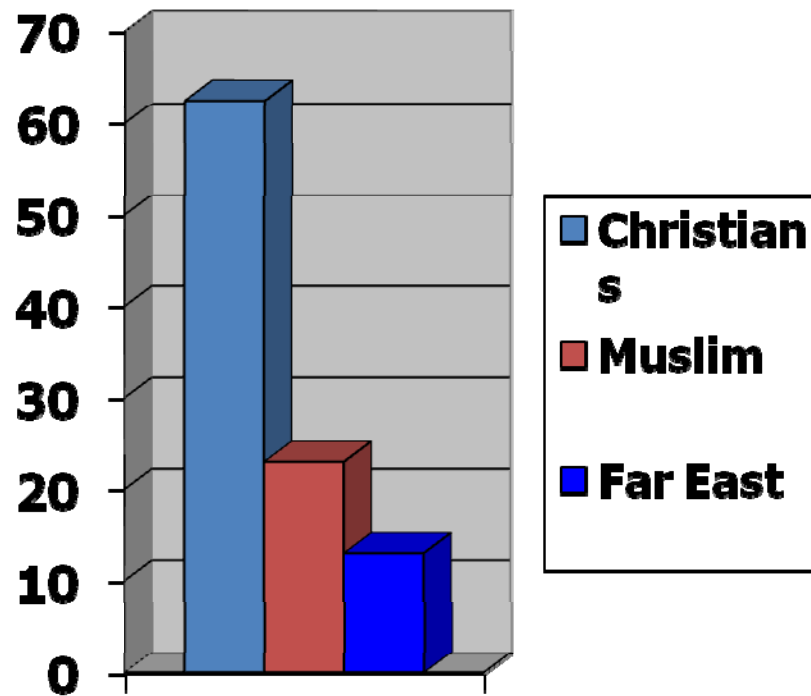
The Economist, 2008, December 20th – January 2nd, p. 113

3. Mega-economics: distribution of population and land (population)



<http://www.k12science.org/curriculum/popgrowthproj/worldpop.html>, historical estimates of world population, Source: US Census Bureau.

4. Mega-economics: distribution of population and land



<http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>, GDP (current US\$).

http://www.economist.com/node/16645990?story_id=16645990, Output, prices and Jobs, July 22nd 2010.

<http://data.worldbank.org/indicator/SP.POP.TOTL>, population, total.

- **5. Scarcity of resources – st-ts**

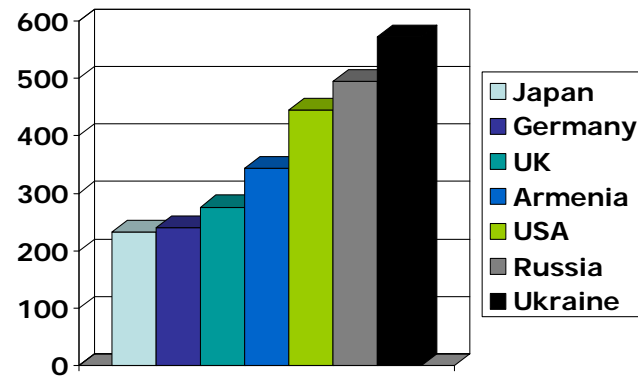
- According to scientists, during the existence of the mankind more than 200 billion tons of coal, more than 100 billion tons of oil, 50 billion tonnes of iron ore, 300 billion tons of copper ore, over 100 thousand tons of gold were extracted. It is estimated that one person during his life "plagues" about 200 trees - for shelter, furniture, toys, exercise books, newspapers, books, etc. World population annually burns 1.5 million m³ of wood.



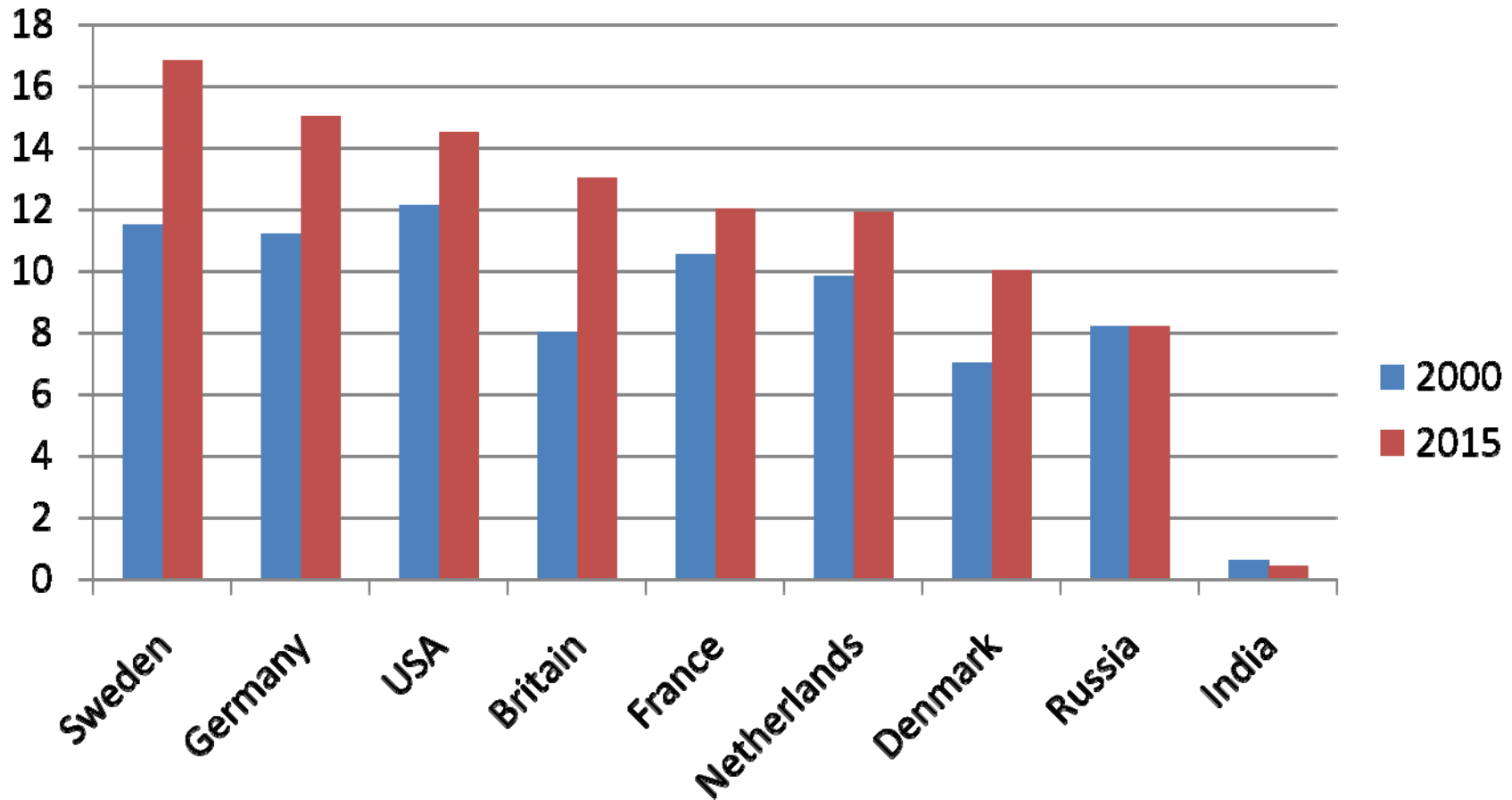
World coal reserves "enough" for about 600 years, oil - 90, natural gas - 50 and uranium - 27 years. In other words, all fuels in all categories can be exhausted in 800 years. But if the production of various types of energy **grows** at its current pace, all types of fuel used now will be spent **in** over 130 years, that is, **by** the beginning of XXII century.

6. Migration (education, number of students per 10000 people),

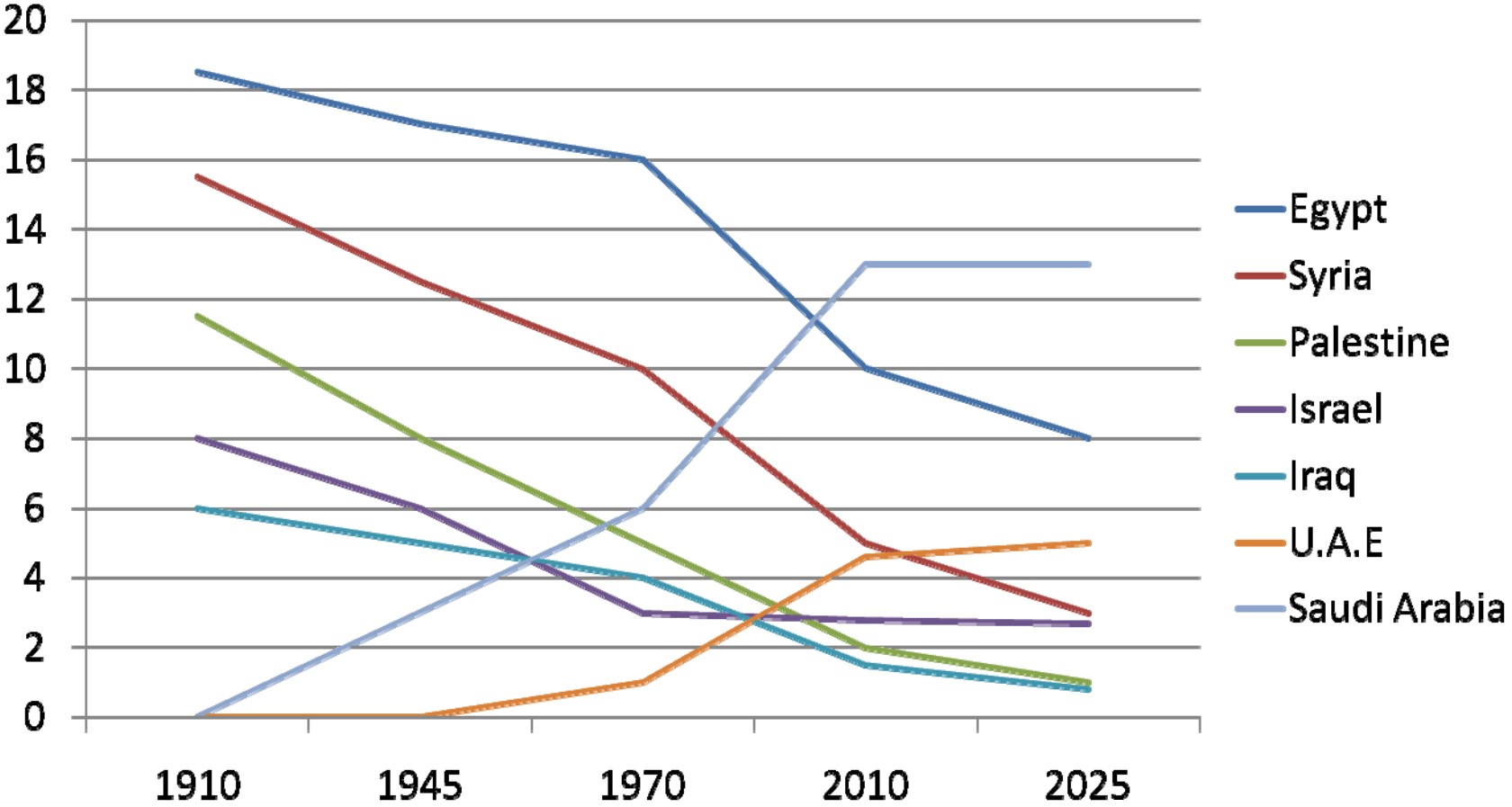
Russian education: tendencies and challenges. 2009. Moscow: Delo, ANE, pp.6-12; *Statistical Yearbook of Armenia*. 2009. Yerevan , p.106



7. Foreign-born population as % of total, The Economist, November 19th – 25th, 2016, p. 51.



8. Christians as % of population, The Economist, January 2nd – 8th, 2016, p.25



9. Equilibrium in the worlds economy and Mega-economy

- In order to further develop the world economy, more equal distribution of resources is required. The suggested permanent redistribution of resources (land, capital, labour, innovation, raw materials) is the only opportunity for the world economy to develop. Mega-economy assumes permanent tendency of factors (resources) of the economy towards the following equation:
- $MPL/PC = MPC / Cf = MPR/Rex = MPI / Iv$, where (1)
- MPL is the marginal product of labour force in the world;
- PC is the private consumption;
- MPC is the marginal product of capital;
- Cf is the efficiency (revenue) from capital;
- MPR is the marginal product of resources;
- Rex is the revenue from sales of resources;
- MPI is the marginal product of innovations and
- Iv is revenue from innovation.

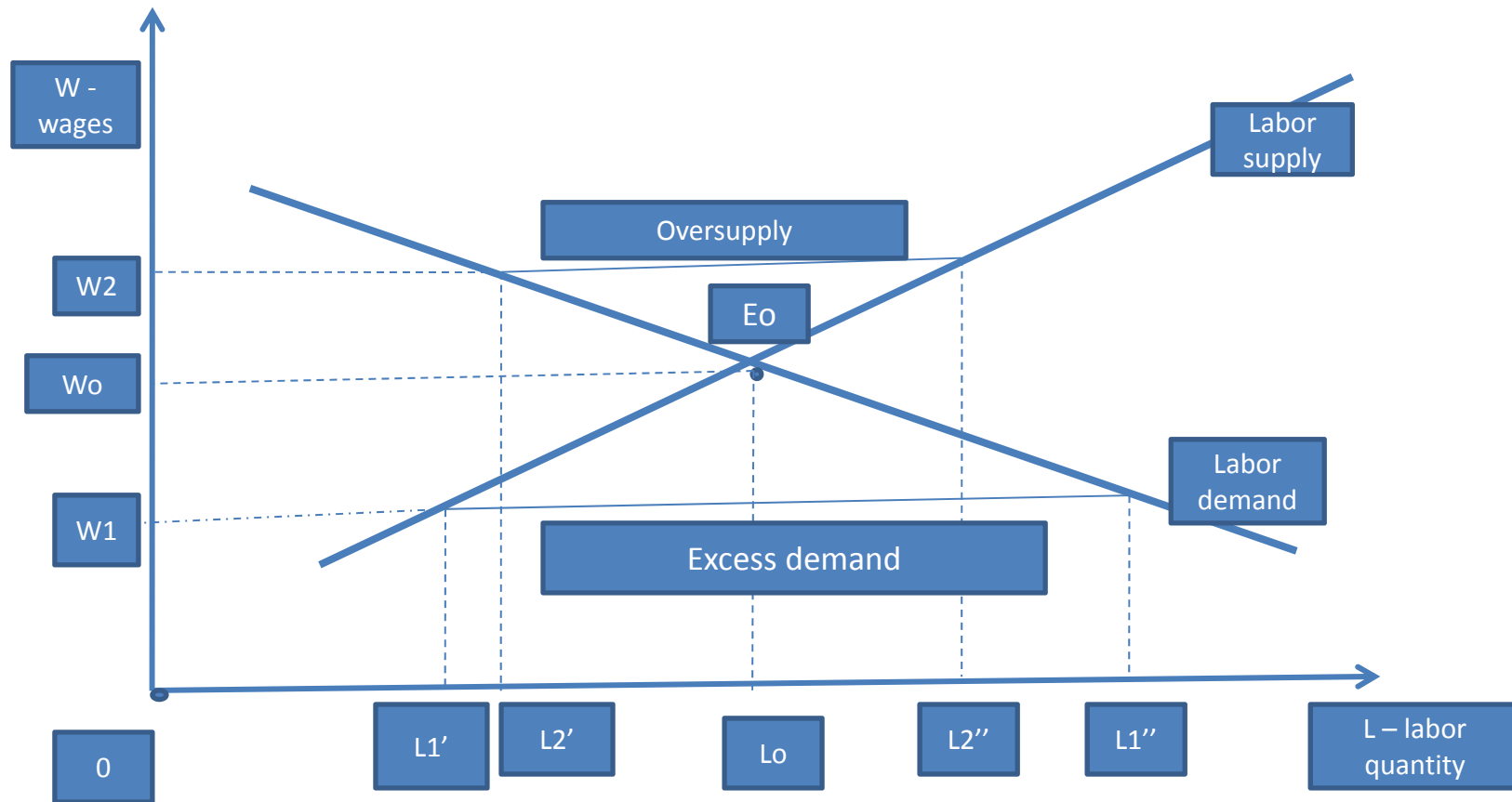
9.1 ВВП на единицу энергии, 2008, <http://data.worldbank.org/topic/energy-and-mining>

N	Страна	ВВП на единицу энергии	Потребление энергии, в кг эквивалента нефти
1	Панама	13.8	853
2	Калифорния	12	684
3	Швейцария	10.6	3482
4	ВБ (2009)	9.87	3195
5	Италия	9.6	2942
6	Турция (2009)	8.74	1232
7	Норвегия	7.9	5492
8	Германия (2009)	8.3	3894
9	Япония	8.1	3883
10	Латвия	7.9	1979
11	Франция	7.4	4041
12	Грузия (2007)	6.6	694
13.	Азербайджан	5.3	1540
14	Армения	5.8	974
15	США (2009)	5.9	7075
16	Бразилия	7.4	1295
17	Китай	3.6	1598
18	Индия	5.1	595
19	Россия	3.1	4734
20	Украина	2.3	2943
21	Замбия	2.1	583
22	Того	1.9	397
23	Туркменистан	1.7	3730
24	Иран	3.7	2808
	Мир	6,9	1835

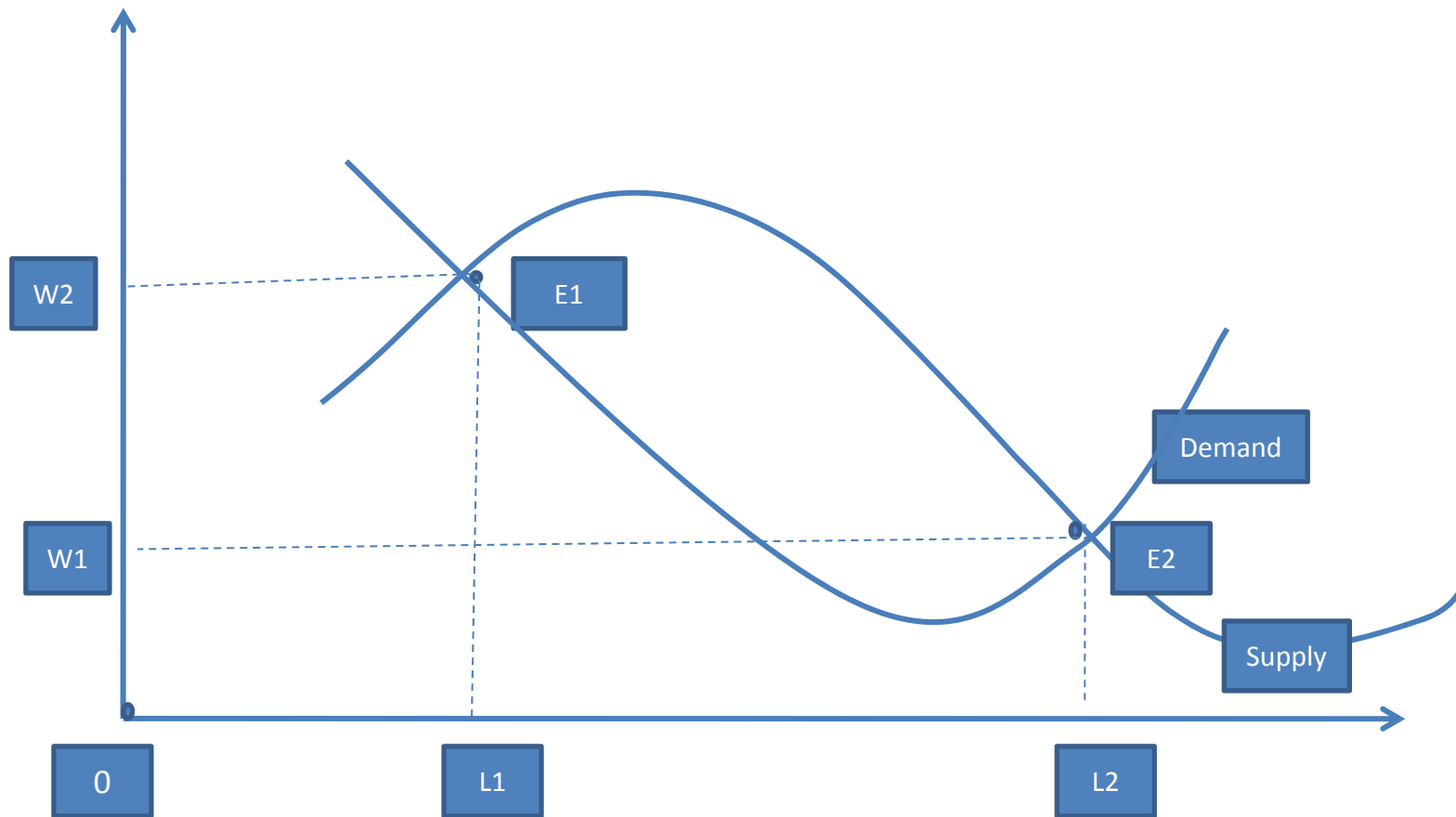
9.2. Best way to measure economics volumes

- In fact in macroeconomics you can have GDP growth due to the rise of intermediary consumption
- When you increase energy intensity in one of the sectors of the economy in the next chain of economy it could bring added value growth because. By example the gasoline price increase could bring to some car price increase including labor costs increase in car industry
- In megaeconomics any increase of national income welcomed

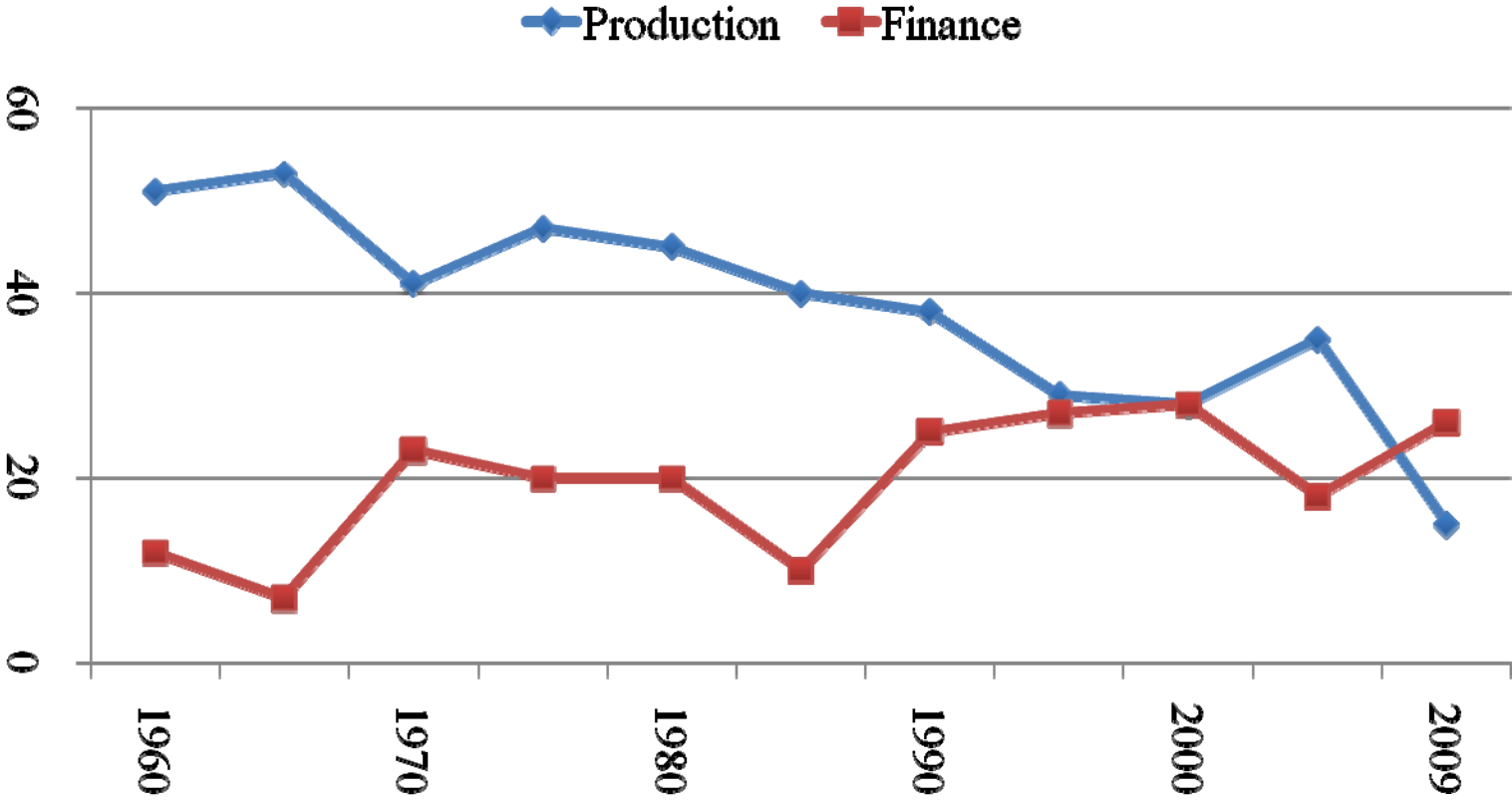
10. Labor demand, macroeconomics



11. Labor demand, megaeconomy



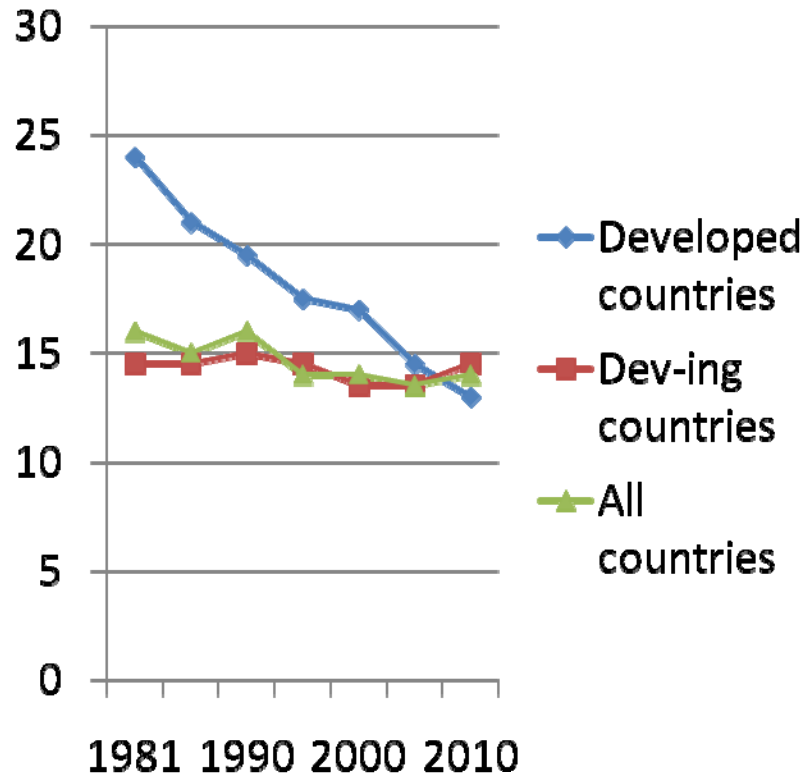
13. Profits of the production sector and financial sector in the USA, 1960-2009, in percentage to the total profit



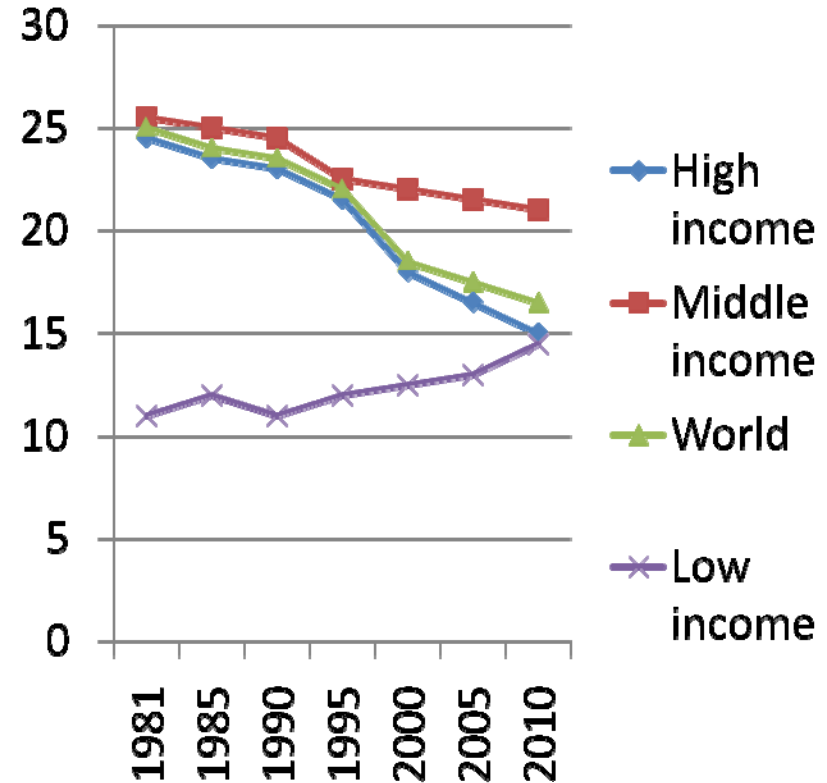
Maniere de voir, Le Monde diplomatique, N 119, Octobre-Novembre 2011, p.81

14. Manufacturing employment and manufacturing value added, The economist, January 14th – 20th , p.18

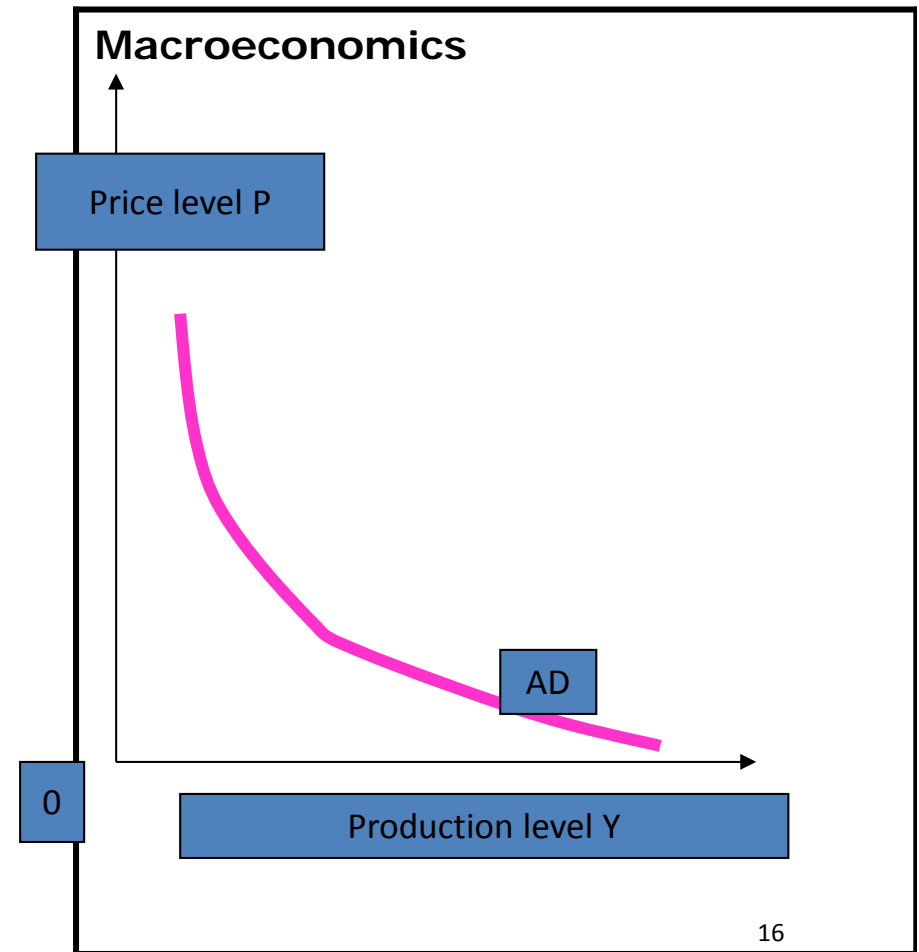
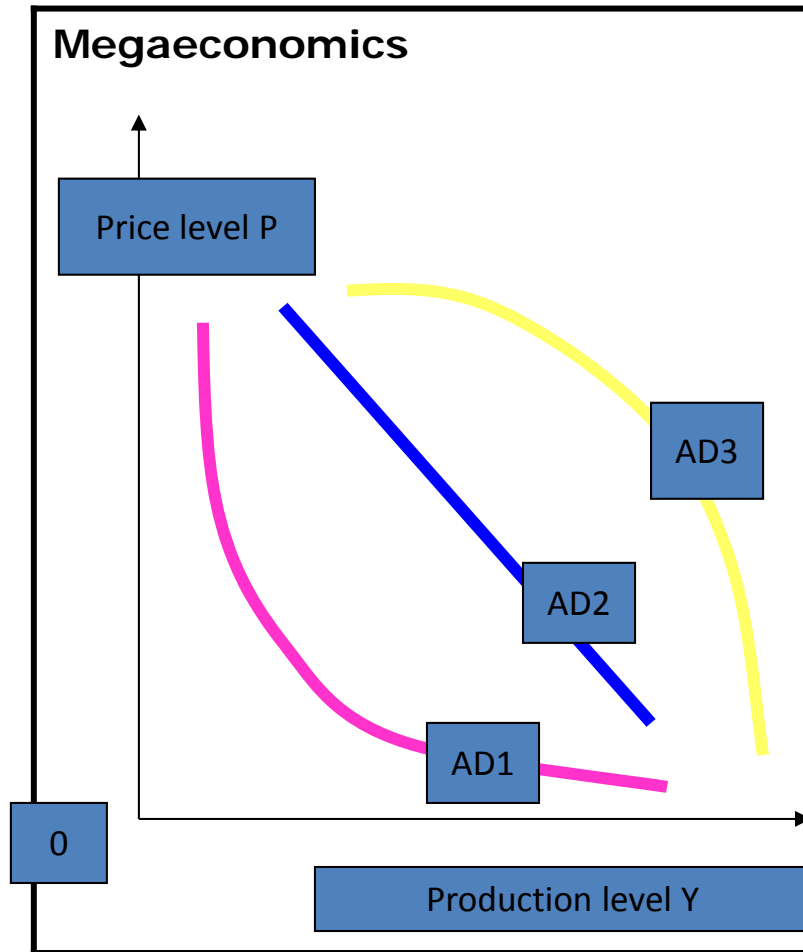
Man emp-nt as % of total emp-t



Man value added as % of GDP



15. Aggregate demand curves



16. Character of the demand curve in megaeconomy

- In macroeconomics, the demand curve is **convex**. It has:
 - Jensen's inequality
 - Differentiability
 - Continuity
 - Negative slope
- In megaeconomy, the demand curve is **concave** (logarithm, parabola)
 - Differentiability
 - Positive and negative slopes
 - Polysomy

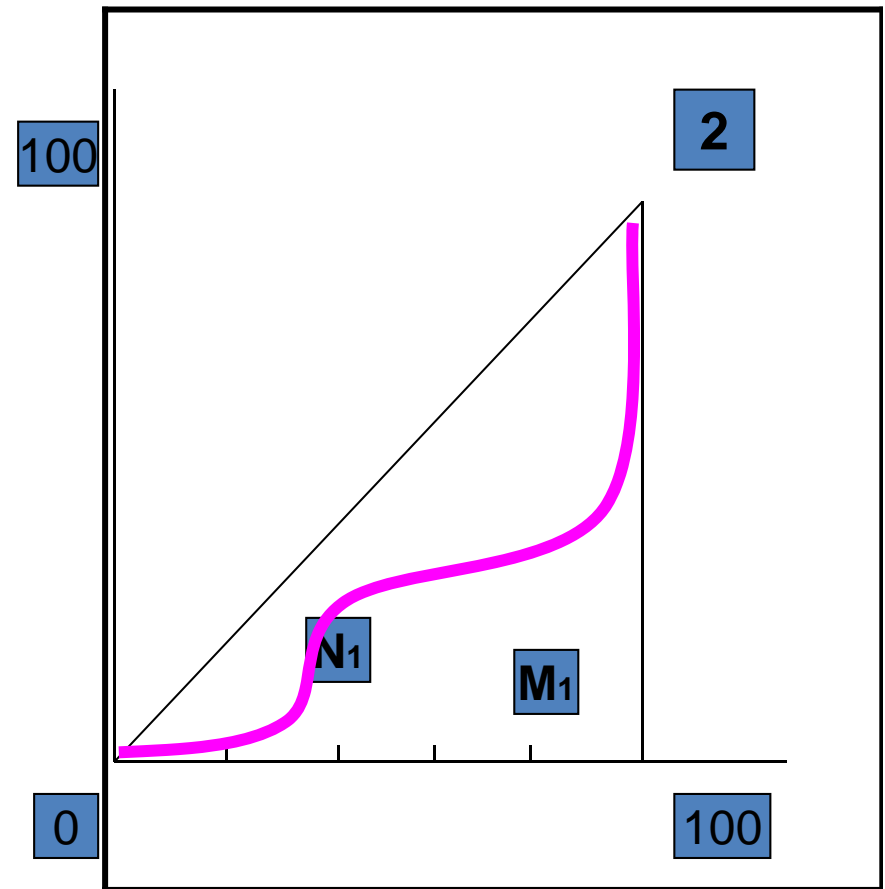
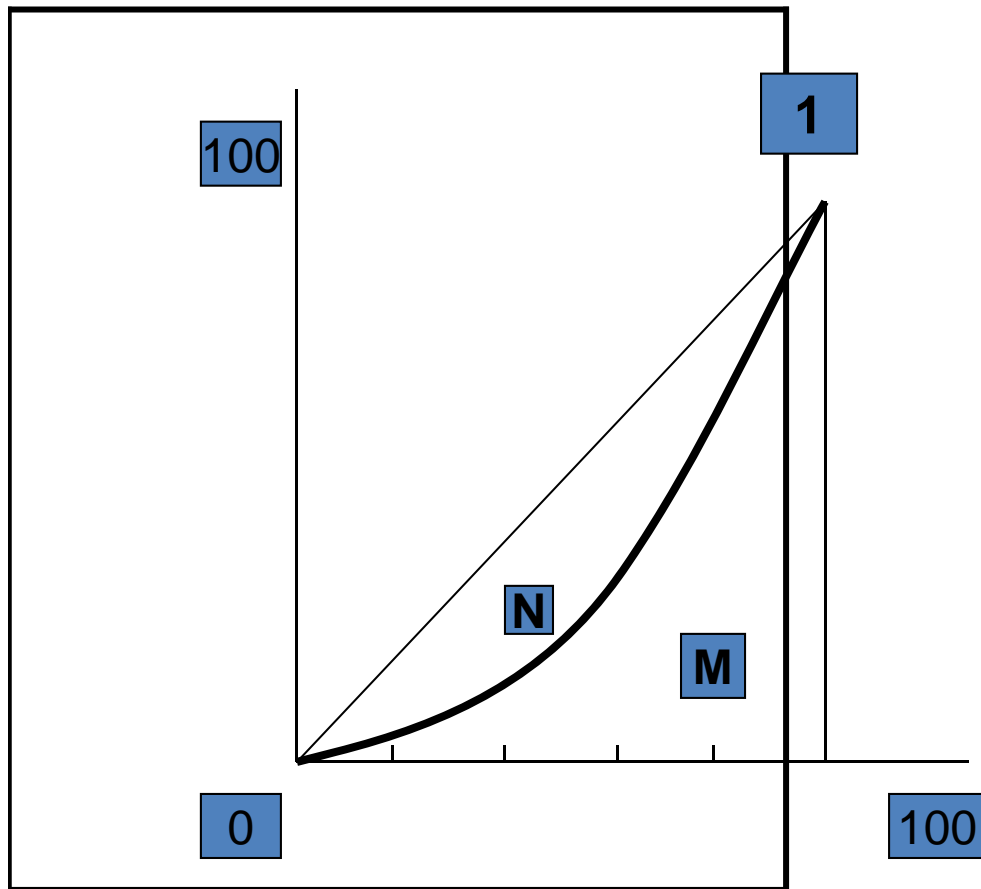
17. Aggregate demand curve in macroeconomics

- 3. The negative slope of the curve due to market demand "effects" income and substitution. In the case of AD, this negative slope is due to three macro-economic effects: the interest rate, real wealth and import purchases. In this case: the effect of interest rates - with higher price interest rate increases, which reduces aggregate demand, the effect of real wealth - the wealth with higher price depreciates, which leads to a reduction in aggregate demand and the effect of foreign purchases - with higher price domestically produced goods become more expensive and imports cheaper, which again reduces the demand for domestic goods.

18. Mega-economy and social polarization controversies of Lorenz curve.

- In mega-economy the Lorenz curve has the shape of “W”: very often the poor in rich countries are richer than the rich in poor countries.

19. Mega-economy and social polarization controversies of Lorenz curve. The classical curve (1) and curve (2) under the pressure of the population growth



Hrant Bagratyan

20. “Бедное население богатых стран богаче богатого населения бедных стран.”

Багратян Г.А.,
Ереван, 13/02/16 где-то около 2-х часов

Counties classification	Rich countries		Poor countries	
When using quantiles	Australia	Israel	Bangladesh	Malawi
	Austria	Italy	Benin	Nepal
	Belgium	Luxembourg	Cambodia	Niger
	Canada	Netherlands	Chad	Pakistan
	Cyprus	Norway	Congo, Dem. Rep.	Rwanda
	Czech Republic	Portugal	Congo, Rep.	Senegal
	Denmark	Slovak Republic	Ethiopia	Sierra Leone
	Finland	Slovenia	Guinea	Tanzania
	France	Spain	Guinea-Bissau	Togo
	Germany	Sweden	Haiti	Uganda
	Greece	Switzerland	Kyrgyz Republic	
	Iceland	United Kingdom	Lao PDR	
	Ireland	United States	Madagascar	
Additional countries when using deciles	Croatia	Latvia	Sao Tome and Principe	
	Estonia	Lithuania	Vietnam	
	Hungary	Poland		

При проверке данной гипотезы выяснилось, что в 32-х странах из 100 низший слой населения жил лучше, чем высший слой населения в 25 других странах. Следовательно, можно считать гипотезу доказанной.

21. Mega-economics and L.Walras's general equilibrium

- In the case of different speeds of growth of resources there aren't possibilities of functioning Walras's permanent coefficients. It shows also that the megamacroeconomic policy should be cyclically changed!

22. Mega-economics and V.Pareto efficiency, new equilibrium axiom

- Pareto's efficiency (the efficiency of a system which cannot produce more of any product from the same level of inputs without reducing the output of another product or by changing techniques) no longer couldn't be considered as sustainable equilibrium for geo-economics: always possible to increase the production of a commodity without reducing the production volumes of other product. In fact it shows the following **axiom**: in the time of intensive changes of resources (human and mineral) there couldn't be two instantaneous, fragmentary equilibriums alike.
-

23. Mega-economy and measurement of the economic output:

- the required size and the required indicator that reflect the countries “contribution” of one society into the world economy (so called contributed national income) is equal to $C_{ni} = NI \times \beta \times \gamma \times \eta - A$, where
(3)
- NI – national income,
- β – correction of NI depending on material (energy) intensity (capacity);
- γ – correction of NI depending on state size and its export percentage of GDP (including high-tech industry exports);
- η – financial limiter coefficient,
- A – absorptions (mergers, acquisitions) volume.
- That’s why we propose to measure countries economies size by ***Produced National Income or consumed National income***

24. Mega-economy and measurement of the economic output:

- **Thus, in the context of globalization at least one of factors (resources) of the economy is able qualitatively to change conditions of economic equilibrium. It is necessary to measure the contribution of any state in the world economy that radically redefines the concept of assessment of economic growth.**

25. Types of civilizations

- 4 main civilizations by the ways of life
- 1. Far east – domination of social institutions and structures over the state, individuals and religion
- 2. East (Islam) – domination of the religion over the state, individuals and social institutions
- 3. Orthodox – domination of the state over the religion, individuals and social institutions
- 4. Western civilization - Domination of the individuals over the state, religion and social institutions

26. Traditional macroeconomic policy and megamacroeconomics

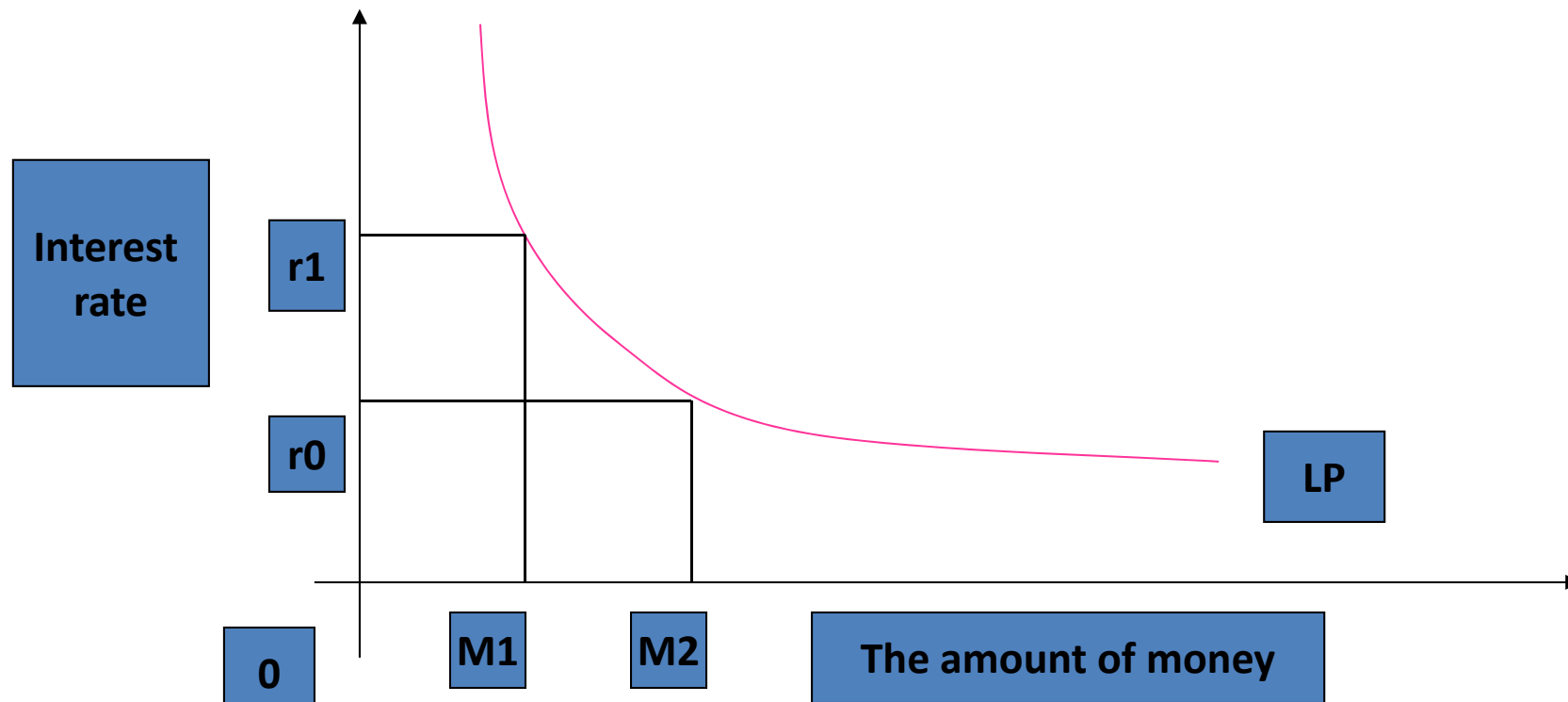
- Neoclassical economics or neoclassical economic theory based on the stimulation of supply. Equilibrium in commodity markets create an equilibrium in the markets of factors of production.
- Keynesian economic theory based on stimulation of demand. The equilibrium isn't considered as a key issue for the economic dynamics.
- Monetarism is back to neoclassical theory. Money supply is a key issue for the equilibrium both markets: goods and services and production factors.
- Megamacroeconomic policy uses the equilibrium on factors markets as a key issue to achieve an equilibrium on commodities markets. Megaeconomics stimulates supply in poor countries, where marginal products on resources are high, and tend to stimulate demand in rich countries, where marginal products on resources are low.

27. Fiscal policy in megamacroeconomics

- With the WTO organization and megaeconomical factors reinforcement governments aren't able to get a comparative advantage. That's why exchange rate dumping and borrowing institutions (debt) developments getting key importance.
- Megaeconomy requires precise management of the total consolidated budget of the society (and not only the state budget). Internal (domestic) debt exceeds over the external and the total debt started to play more important role than the public one.
- In megaeconomics at the beginning of the 21st century societies and the states love to go into debt at the expense of expected income of future generations. This trend is likely to continue for as long as the world's institutions on economic regulation will start to work (other than the WTO). So, in megaeconomy borrowing from future generations also becomes an important part of fiscal policy.

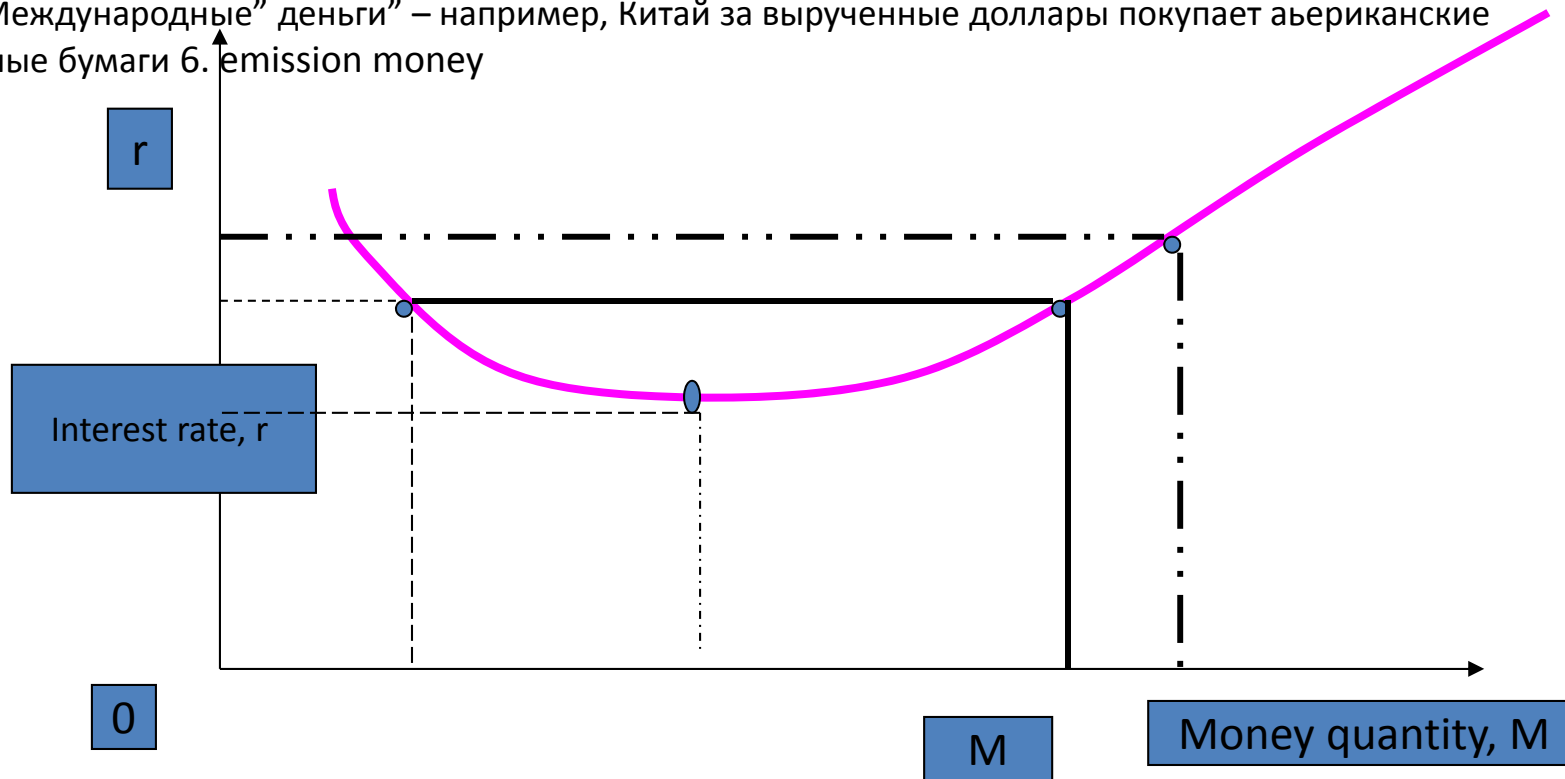
28. Monetary policy. The money demand and supply. The policy of expensive and cheap money. Macroeconomics

Money demand, liquidity preference curve: interest rate is a key to reach the equilibrium between demand and supply (so called LM curve)

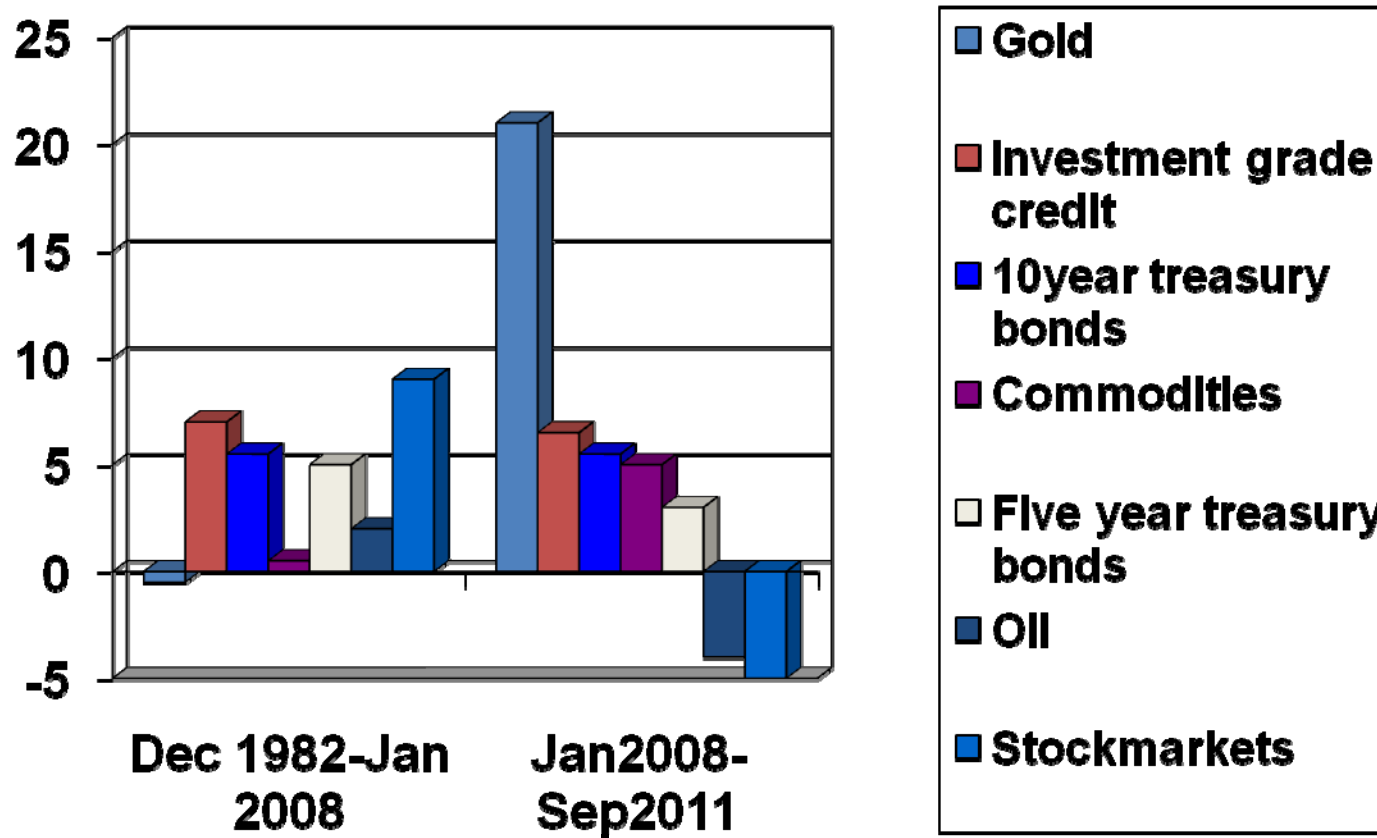


29. Monetary policy. The money demand and supply. Megaeconomics

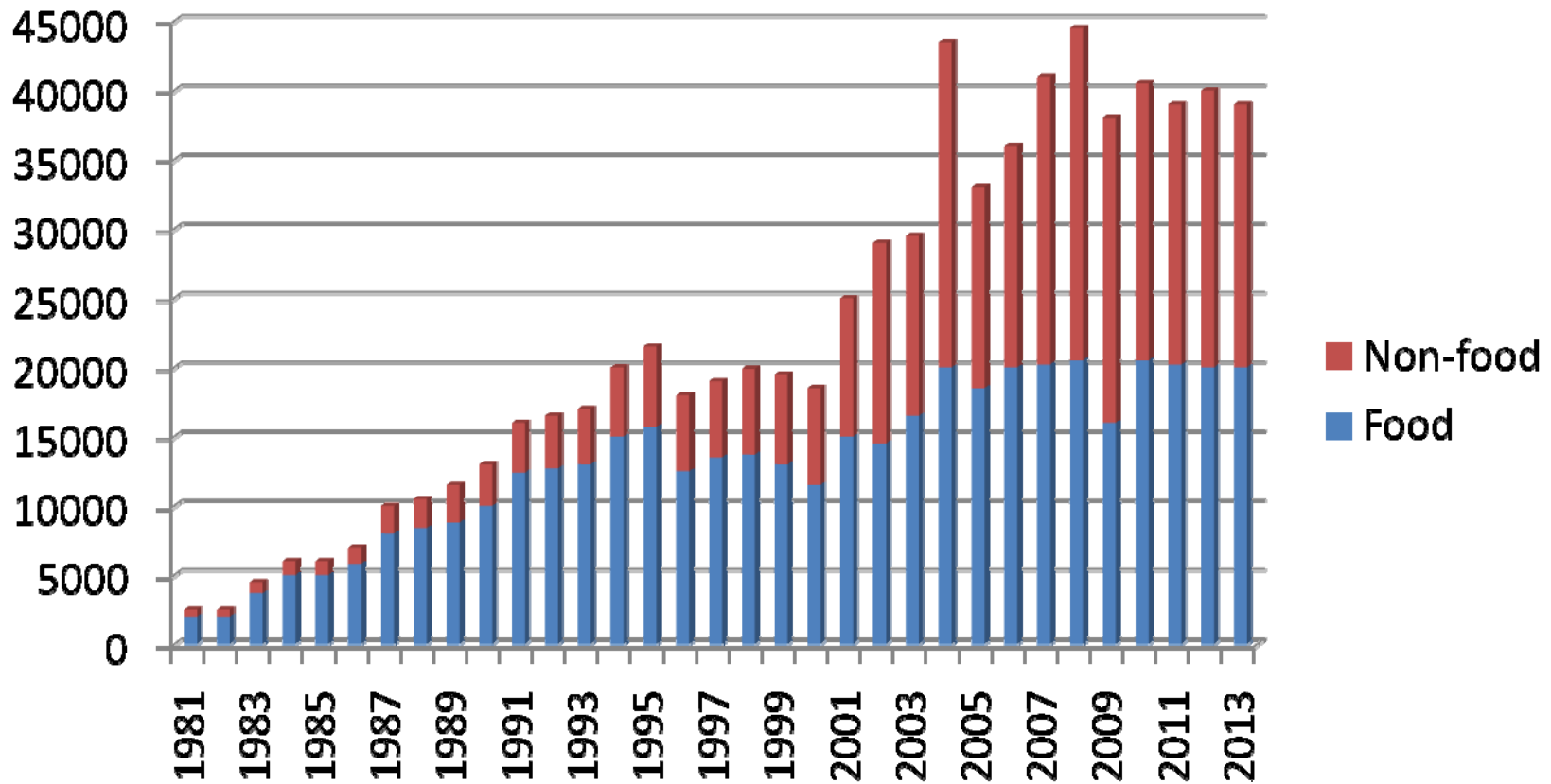
- In megaeconomics M could be increased (in addition to the interest rate) when: 1. prices on resources are going up faster than average inflation; 2. state bonds interest rate is high (public debt increase); 3. financial markets concentrated (case with USA); 4. world's economy out of equilibrium; 5. “Международные” деньги – например, Китай за вырученные доллары покупает аьериканские ценные бумаги 6. emission money



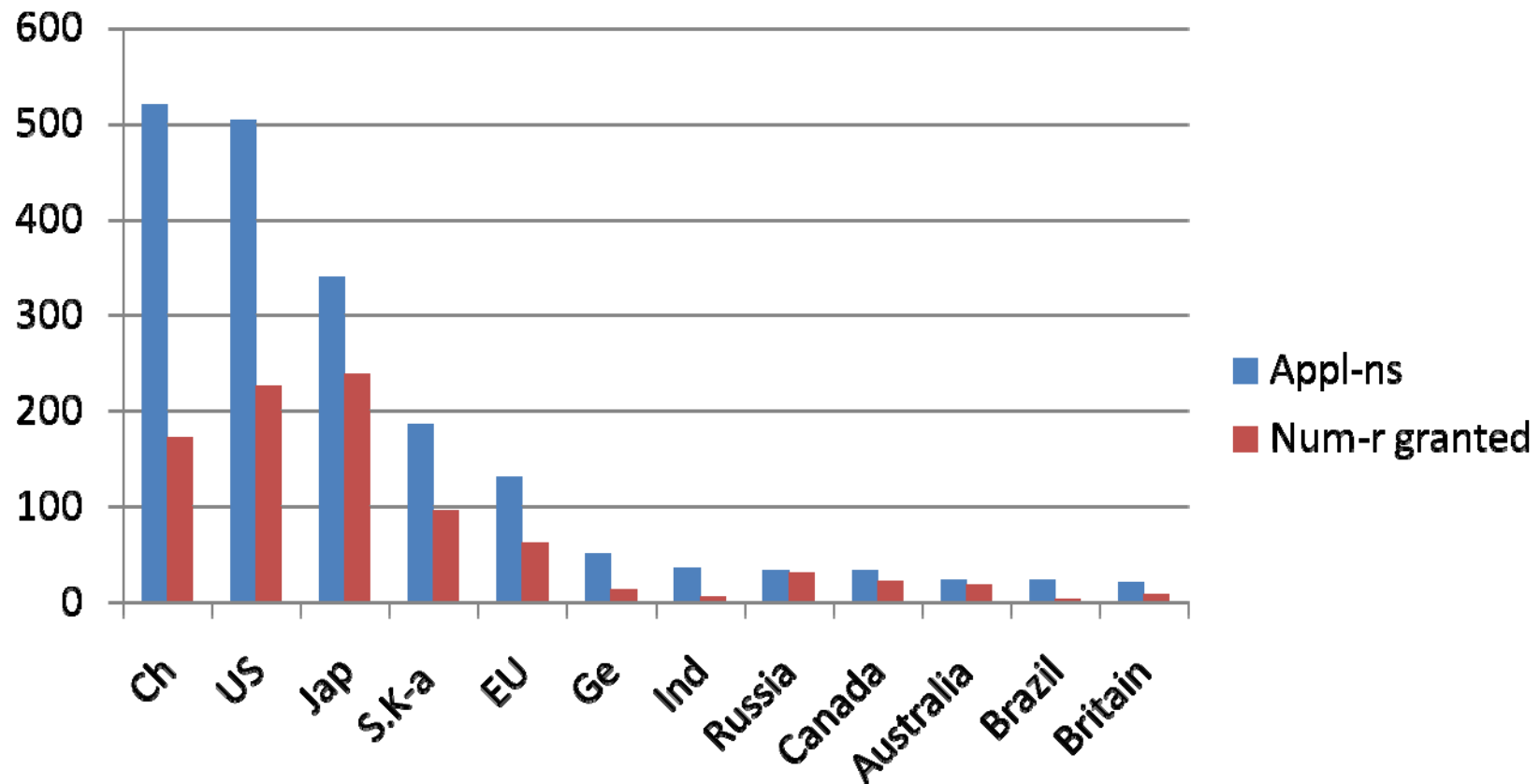
30. US real asset returns, annual average,, %, the Economist, October 15th – 21st, 2011, p.68.



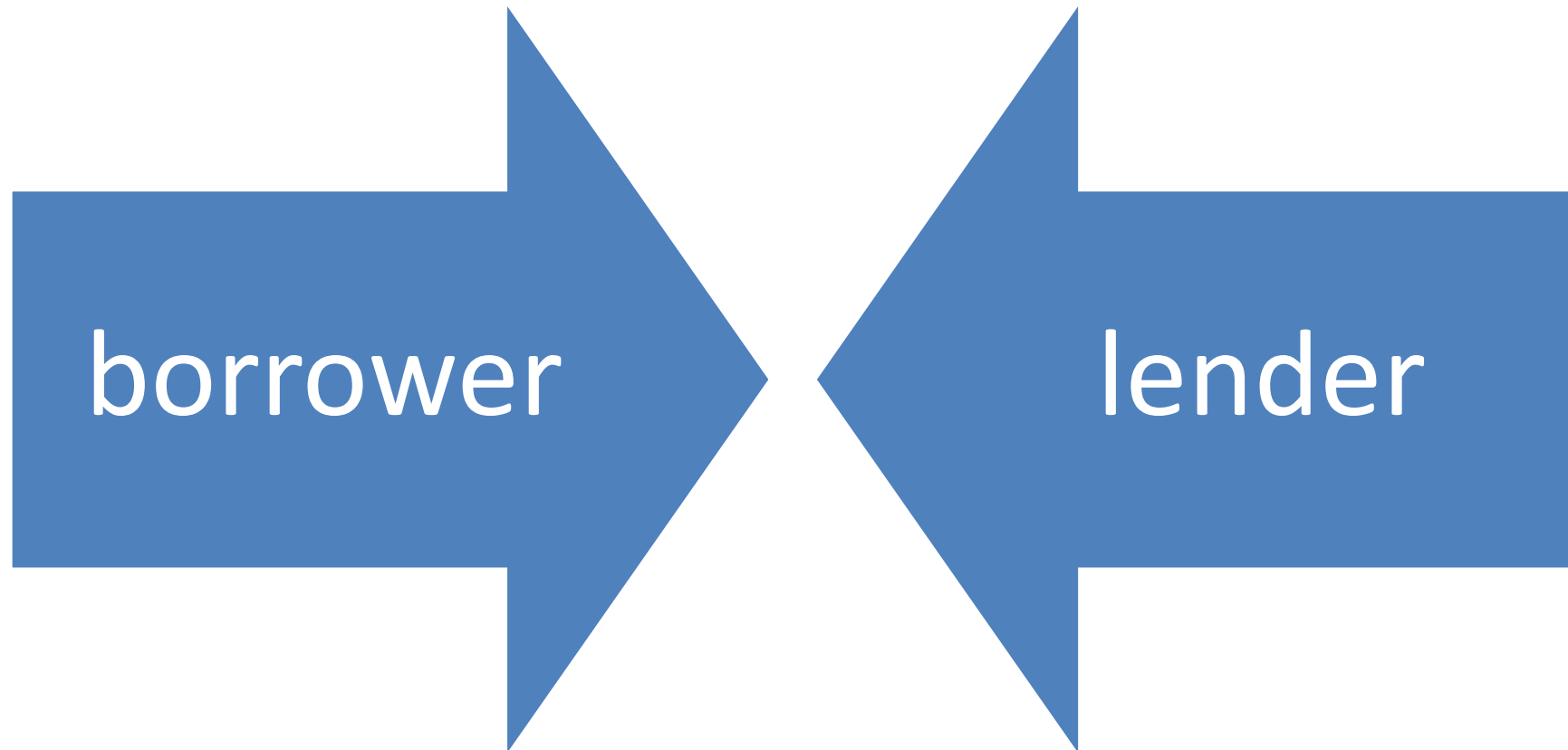
31. USA, new consumer products, '000, The Economist, July 9th – 15th, 2016, p.51



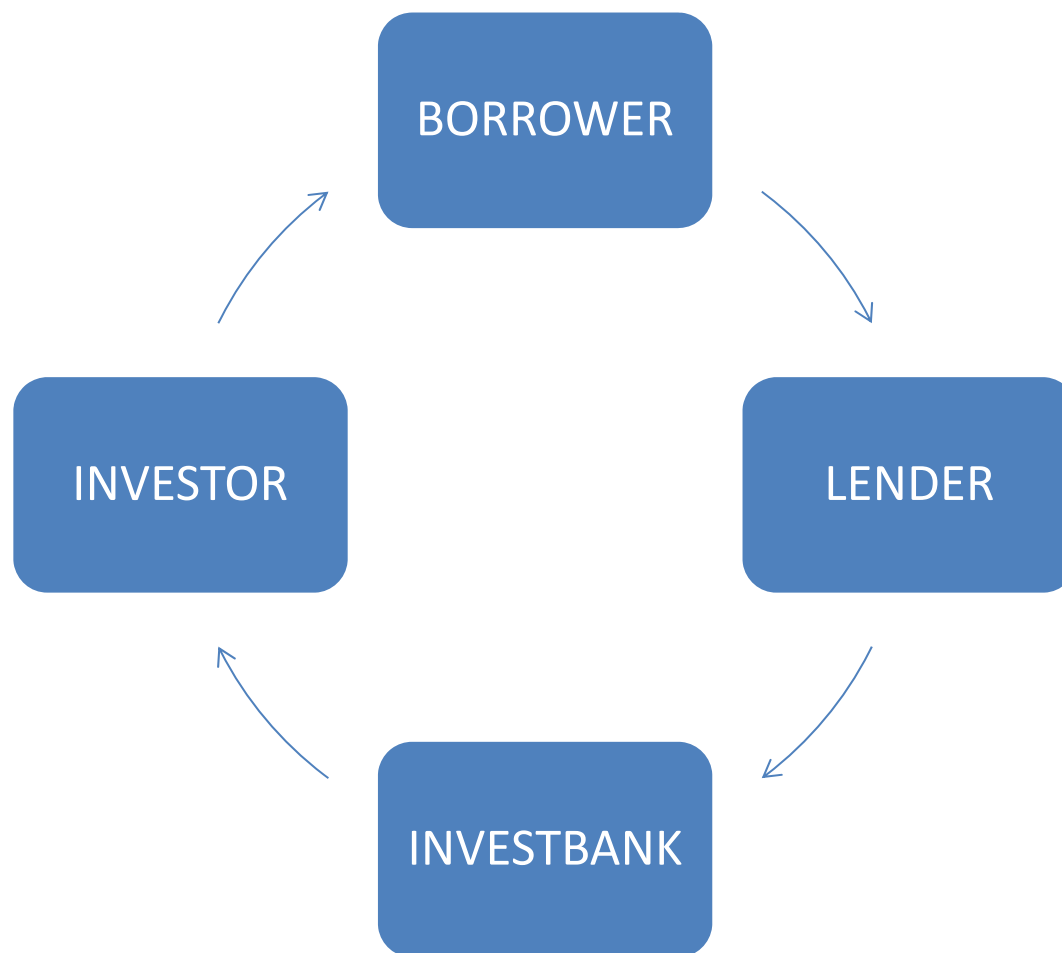
32. Patent applications 2011, '000, the economist, December 15th – 21st, 2012, p.81.



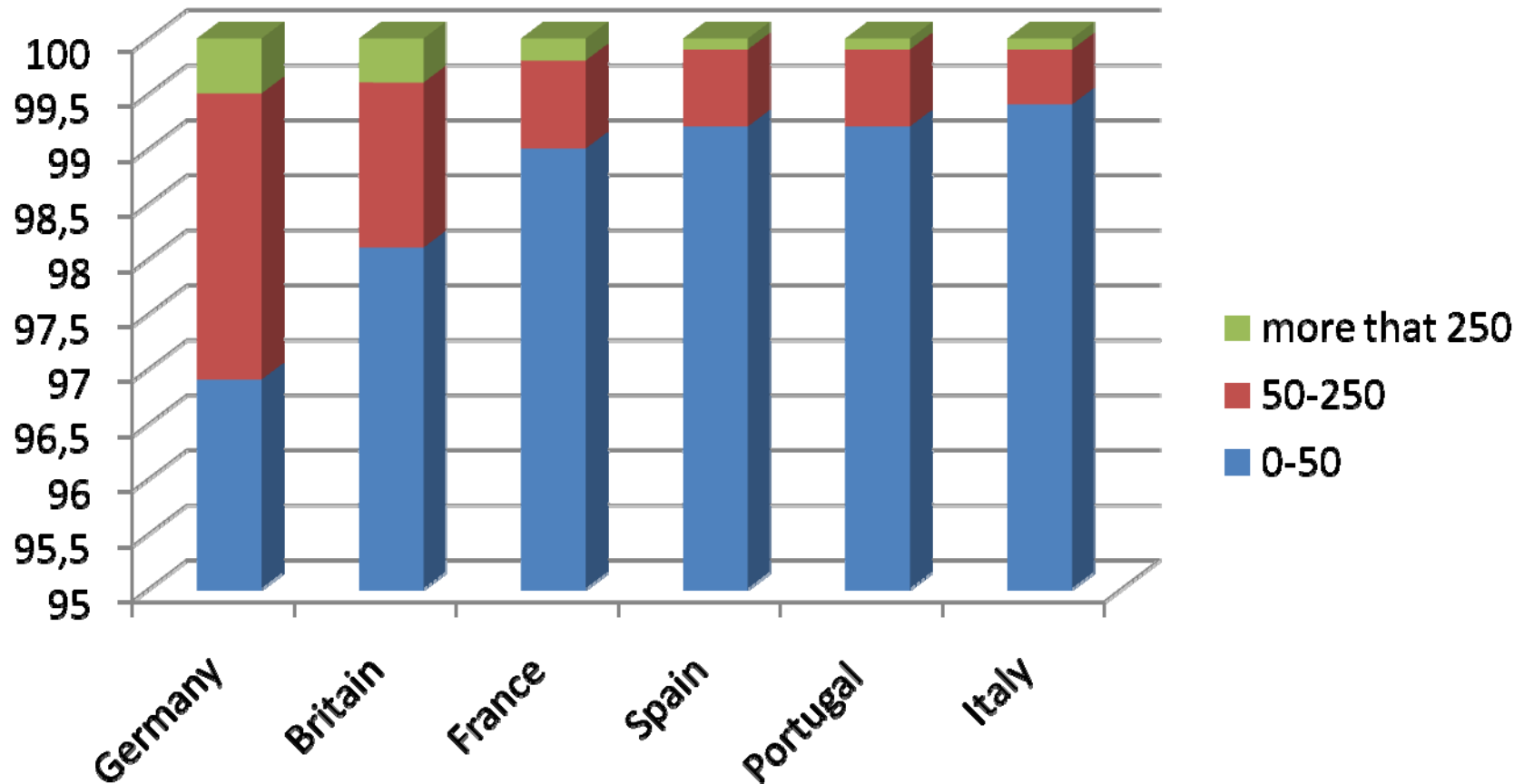
33. Ипотечное кредитование до введения новых правил
Ларри Саммерсом и Аланом Гринспином



34. Ипотечное кредитование после введения новых правил Ларри Саммерсом и Аланом Гринспином



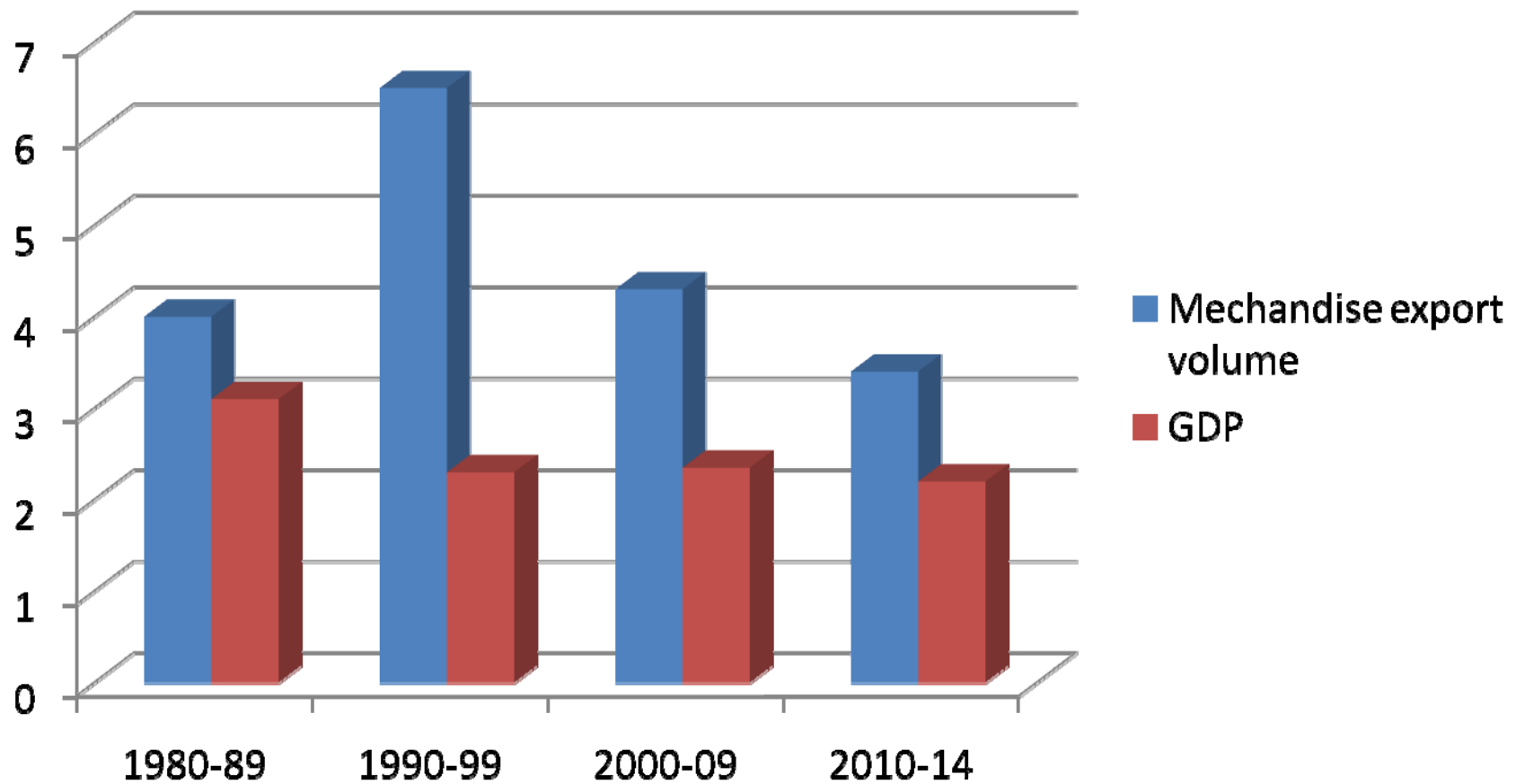
35. Economies by the size of companies: there should be balance between the number of SME-s and big companies: The Economist, February 21st – 27th, 2015, p.59, % of total companies, 2014, estimate



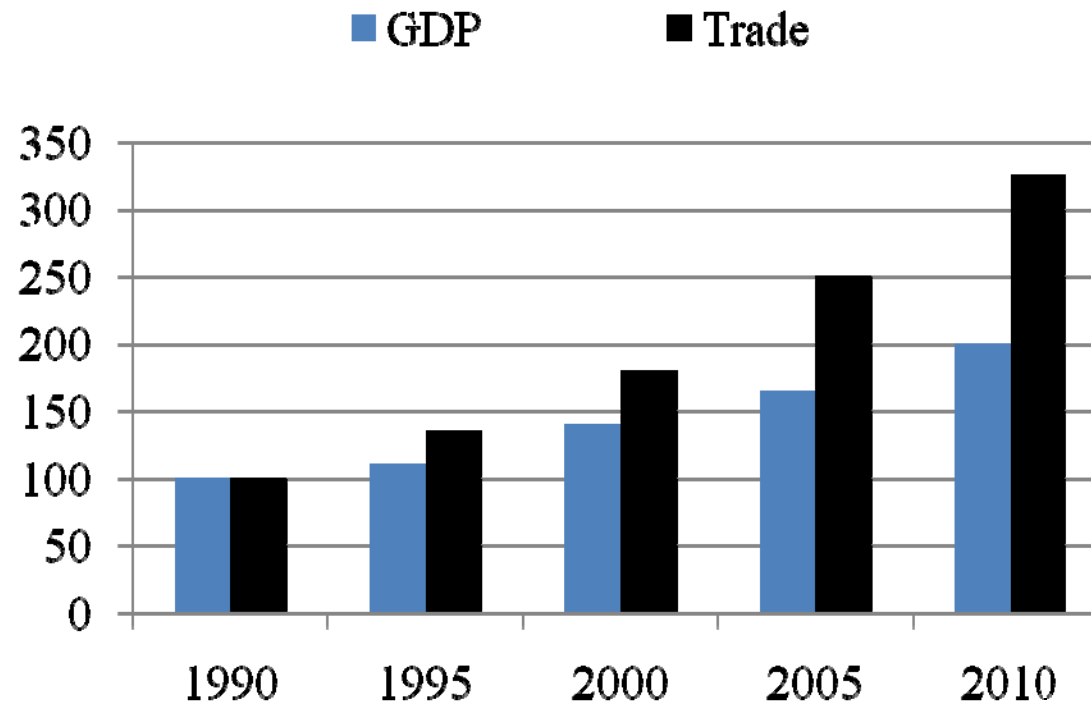
36. A megaeconomic view

- In global markets, effective economic growth is possible only when there is a balance (equilibrium) of factors of the economy in the world. Otherwise, any growth is more expensive than resources spent. The only question is how to measure these resources! Of the variety of opportunities for growth triggered only one that allows us to make more intensive exchange of goods and services and do not create barriers to the growth of other states.

37. Trading down, World, average growth by decade, %, The Economist, December 13th – 19th, 2014, p.65.



38. International trade. Golden years, world trade volume and World GDP, 1990=100



<http://data.worldbank.org>

39. Megaeconomics and regional economic unions

- There are more than 20 regional economic unions (EU, NAFTA, MERCOSUR, EAEU etc.)
- In the megaeconomic era regional economic unions just slow down the integration

40. Dynamics of macroeconomic figures in EAEU and EU associates countries in 2013-2017, GDP, <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>;

http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/econstat/Documents/Indicators201606.pdf ;

<http://ukrstat.gov.ua/> ; http://www.geostat.ge/index.php?action=page&p_id=119&lang=eng ;

http://geostat.ge/index.php?action=page&p_id=116&lang=eng

Countries	2013	2014	2015	2016	2017 (January – June)
EAEU					
Russia	1.3	0.6	-3.7	-0.2	0.5
Kazakhstan	6.0	4.4	1.2	1.4	3.6
Belarus	1.1	1.6	-3.8	-2.6	0.4
Armenia	3.3	3.5	3.5	0.2	6.5
Kyrgyz Republic	10.9	3.6	5.9	3.8	7.8
EUA					
Ukraine	0	-6.6	-9.9	2.3	2.5 (1 st quarter)
Moldova	9.4	4.8	0.5	4.1	5.1 (1 st quarter)
Georgia	3.4	4.6	2.8	2.7	3.1 (1 st quarter)

41. EAEU and EUAC, foreign trade, bln. dollars

http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/tradestat/tables/extra/Pages/2016/01.aspx;

<http://www.statistica.md/category.php?l=ru&idc=336&>;

http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/tradestat/tables/intra/Pages/2013_180.aspx ;

http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/tradestat/tables/extra/Pages/2016/06.aspx

<http://ukrstat.gov.ua/> ; http://www.geostat.ge/cms/site_images/_files/english/bop/FTrade_07__2016_ENG-with%20cover.pdf ; <http://www.cisstat.com/>

;

http://statbank.statistica.md/pxweb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica__21%20EXT__EXT010__serii%20anuale/E

Countries	2013	2014	2015	2016	2017 (Jan-June)
EAEU					
Russia	848.11	788.29	528.84	471,2	220,3
Kazakhstan	133.5	120.75	76.52	62,2	29,9
Belarus	80.0	76.58	56.96	51,2	23,6
Armenia	5.87	5.96	4.74	4,95	2,24
Kyrgyz Republic		7.66	5.58	5,54	2,27
EUA					
Ukraine	162.75	126.22	90.86	75,5	35,7 (Jan-May)
Moldova	7.91	7.64	6.1	6.5	3,2
Georgia	10,9	11,4	9,5	9,4	4,8
none					

42. Банковская система

FRS – consolidated balance in 1989 (bln \$)

Assets

- Gold and other liquidity 11.1
- **Bonds and securities the USA government 237.3**
- Loans to the commercial banks 1.6
- Other assets 44

Total 294

Liabilities

Outstanding papers of FRS 230 (money)

- Deposits of the commercial banks - participants 41.1
- Deposits of USA treasury 5.8
- Other liabilities 17.1

Total 294

43. Банковская система
Консолидированный баланс ФРС в 2010 (млн. долларов) -

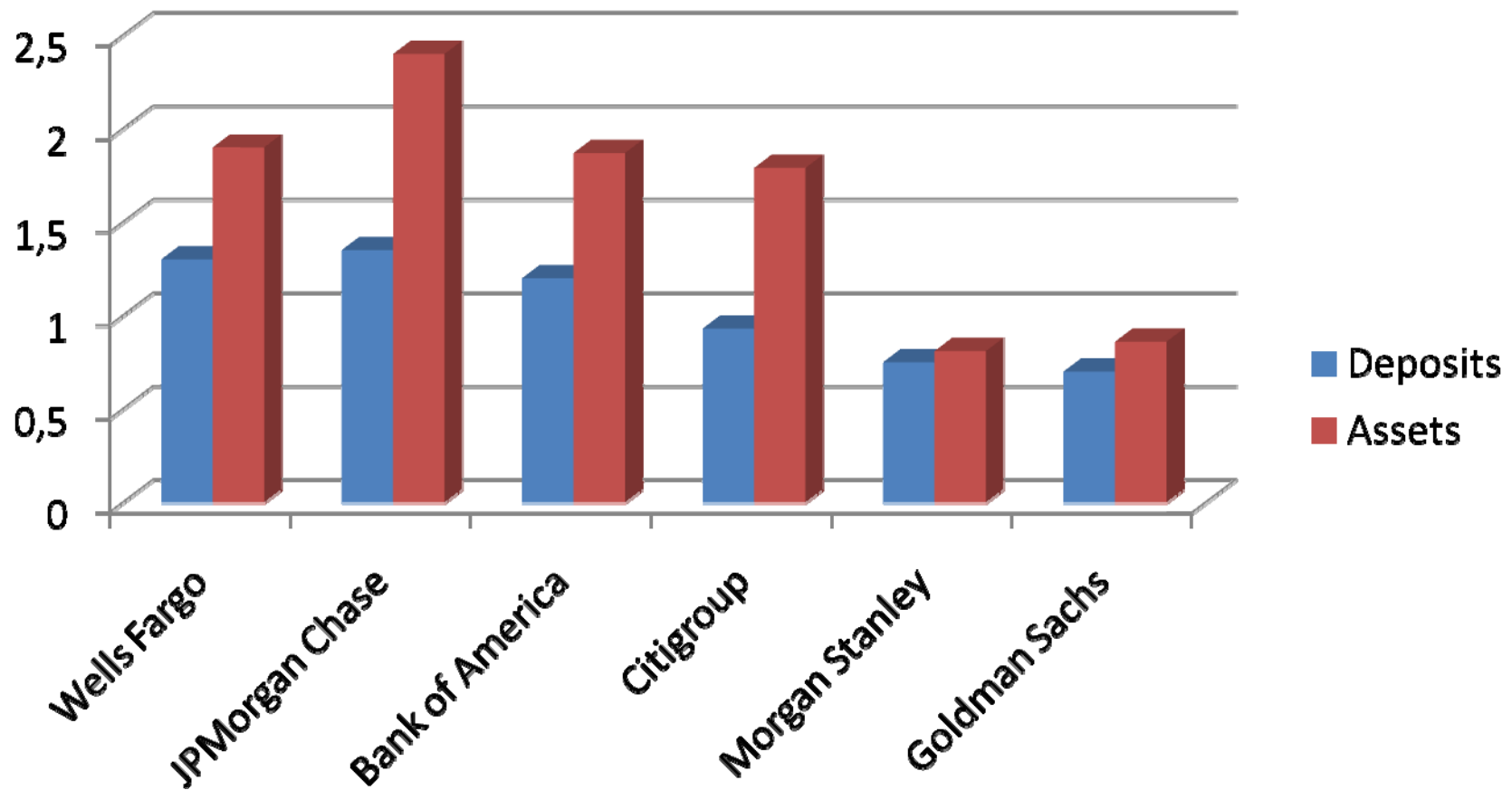
Assets	2010	Liabilities	2010
Gold certificates	11 037	Fed. Reserve notes outstanding, money, net	941 561
Special drawing right certificates	5 200	Securities sold under agreements to repurchase	59 703
Coin	2 180	Consolidated variable interest entities	10 972
Items in process of collection	374	Deposits:	
Loans	45 677	Depository institutions	968 052
Treasury securities	1 066 952	Treasury, general account	140 773
Government-sponsored enterprise debt securities, net	152 972	Treasury, supplementary financing account	199 964
Fed. agency and government-sponsored enterprise mortgage-backed securities, net	1004695	Other deposits	16 967
Foreign currency denominated assets, net	26049	Funds from American International Group, Inc. asset dispositions, held as agent	26 896
Central bank liquidity swap	75	Interest payable to depository institutions	113
Consolidated variable interest entities	68 666	Accrued benefit costs	2 597
Preferred interests	26 385	Deferred credit items	1 794
Accrued interest receivable	14 231	Accrued interest on Federal Reserve notes	5 124
Bank premises and equipment, net	2 613	Other	280
Other	738	Total liabilities	2 374 796

44. Deposits vs assets in the American banks, The Economist, September 17th – 23rd, 2016, p.68, \$trn,

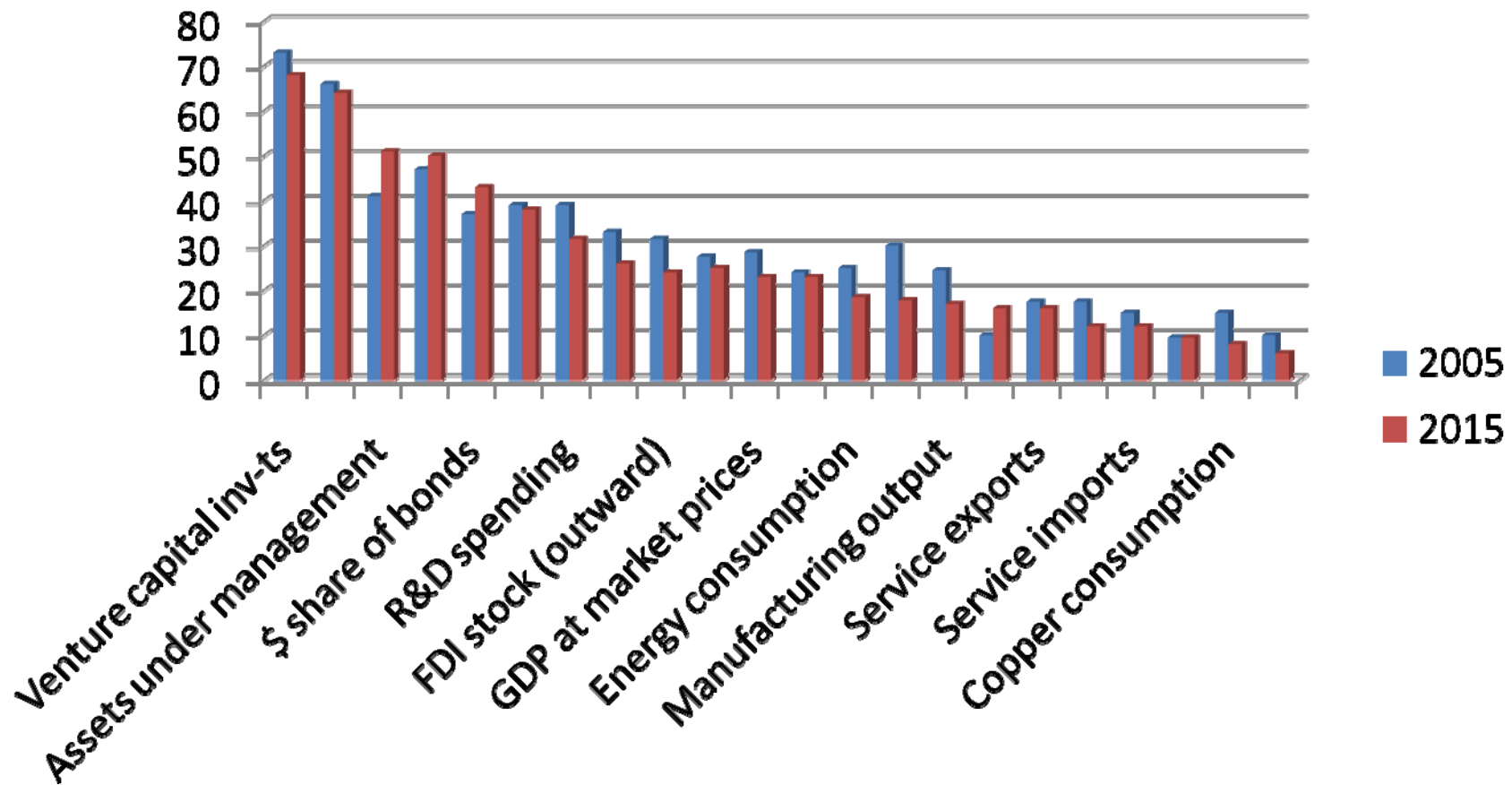
<https://www.wellsfargo.com/about/investor-relations/investment-profile/>;

<https://www.jpmorganchase.com/corporate/annual-report/2015/>; https://en.wikipedia.org/wiki/Bank_of_America;

https://en.wikipedia.org/wiki/Morgan_Stanley;



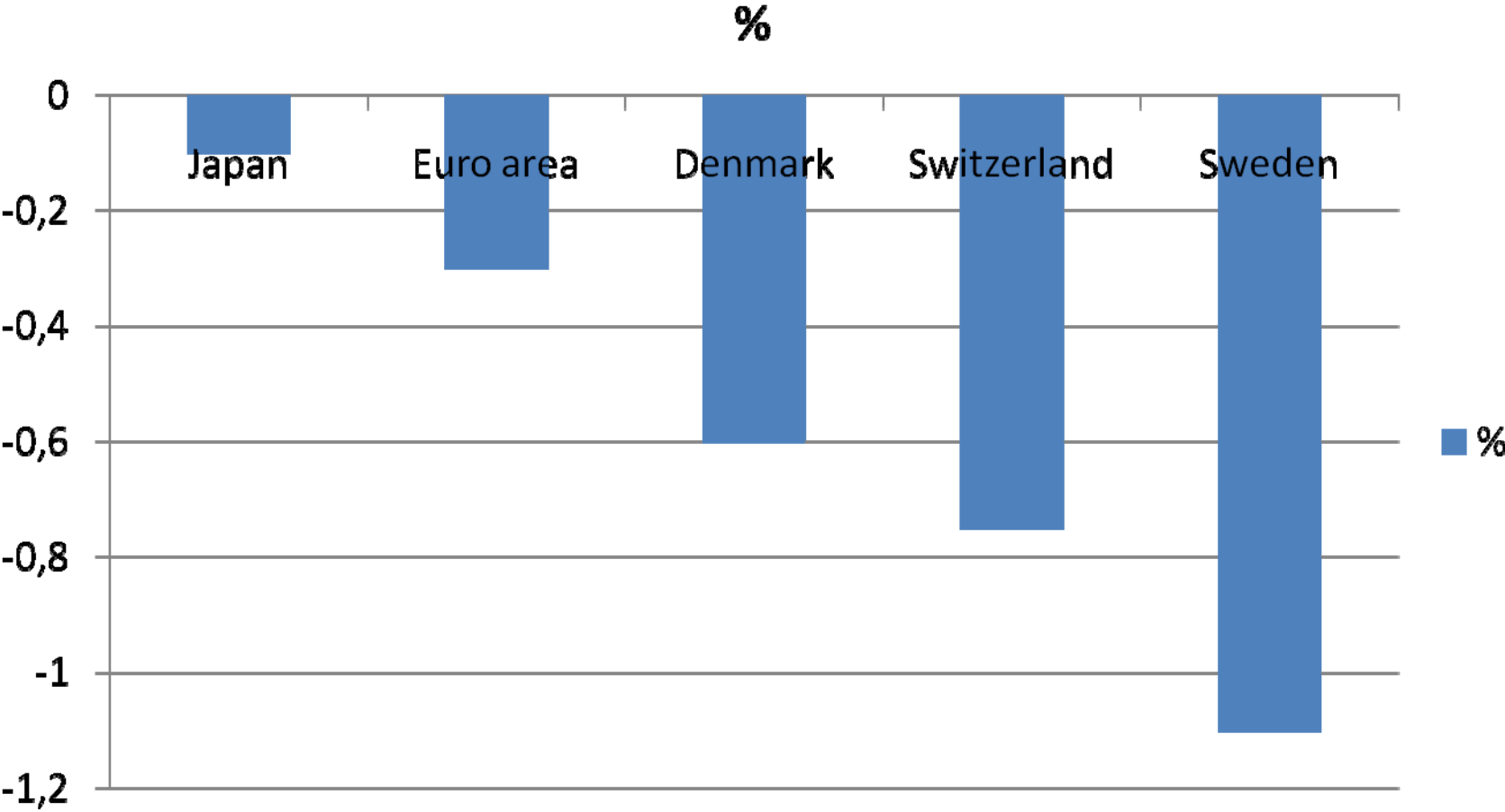
45. Dollar, the only thing, which increases its share in bonds within 2005-2015, The Economist, October 3rd – 9th, 2015, special report, The sticky superpower



46. Доллар - бог

- По данным МВФ, из обследованных 192 стран в 66 странах доллар используется в качестве якоря, привязки курса национальной валюты.

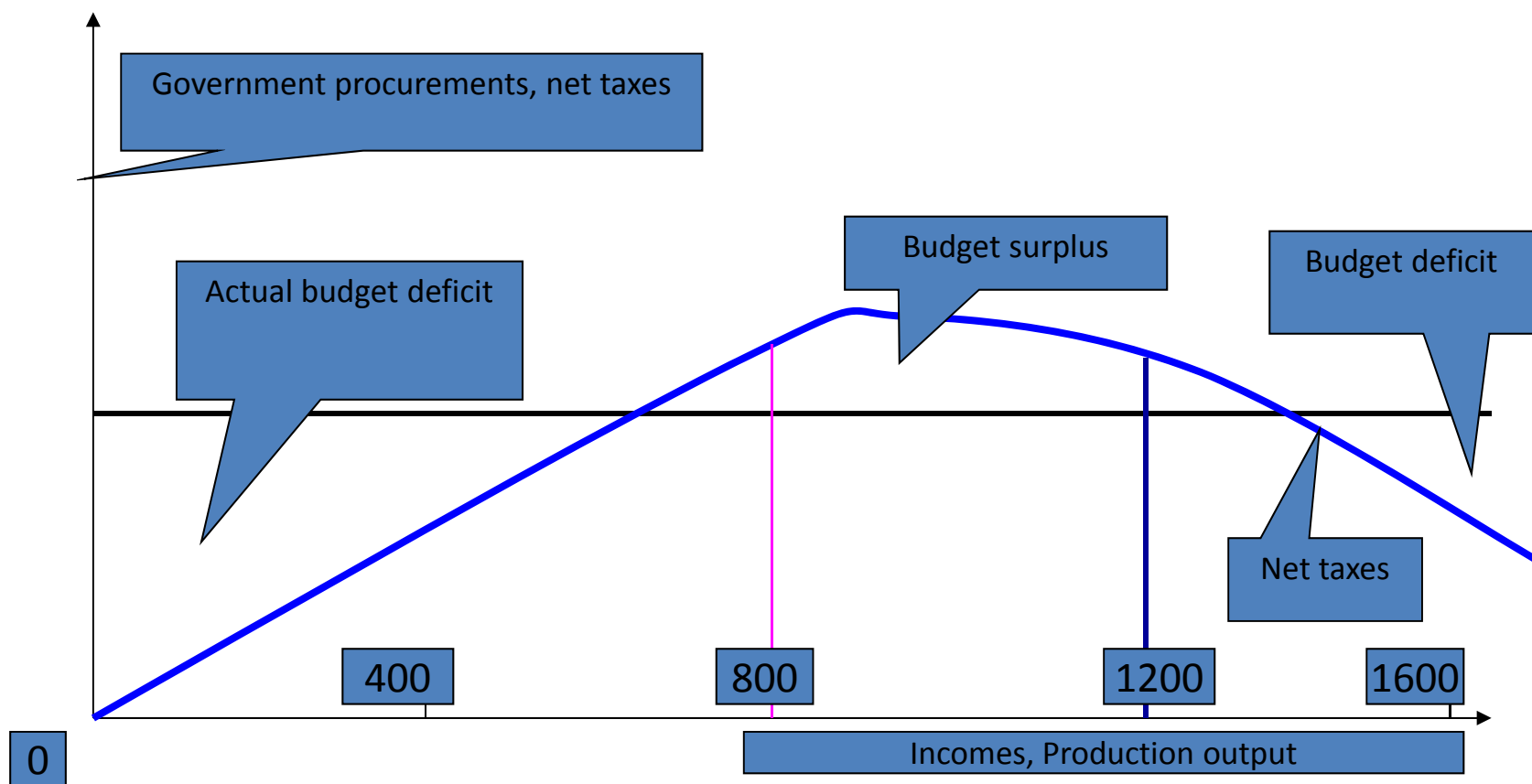
47. Negative creep, deposit or interest rates of CB's, The Economist, February 6th – 12th, 2016, p.8



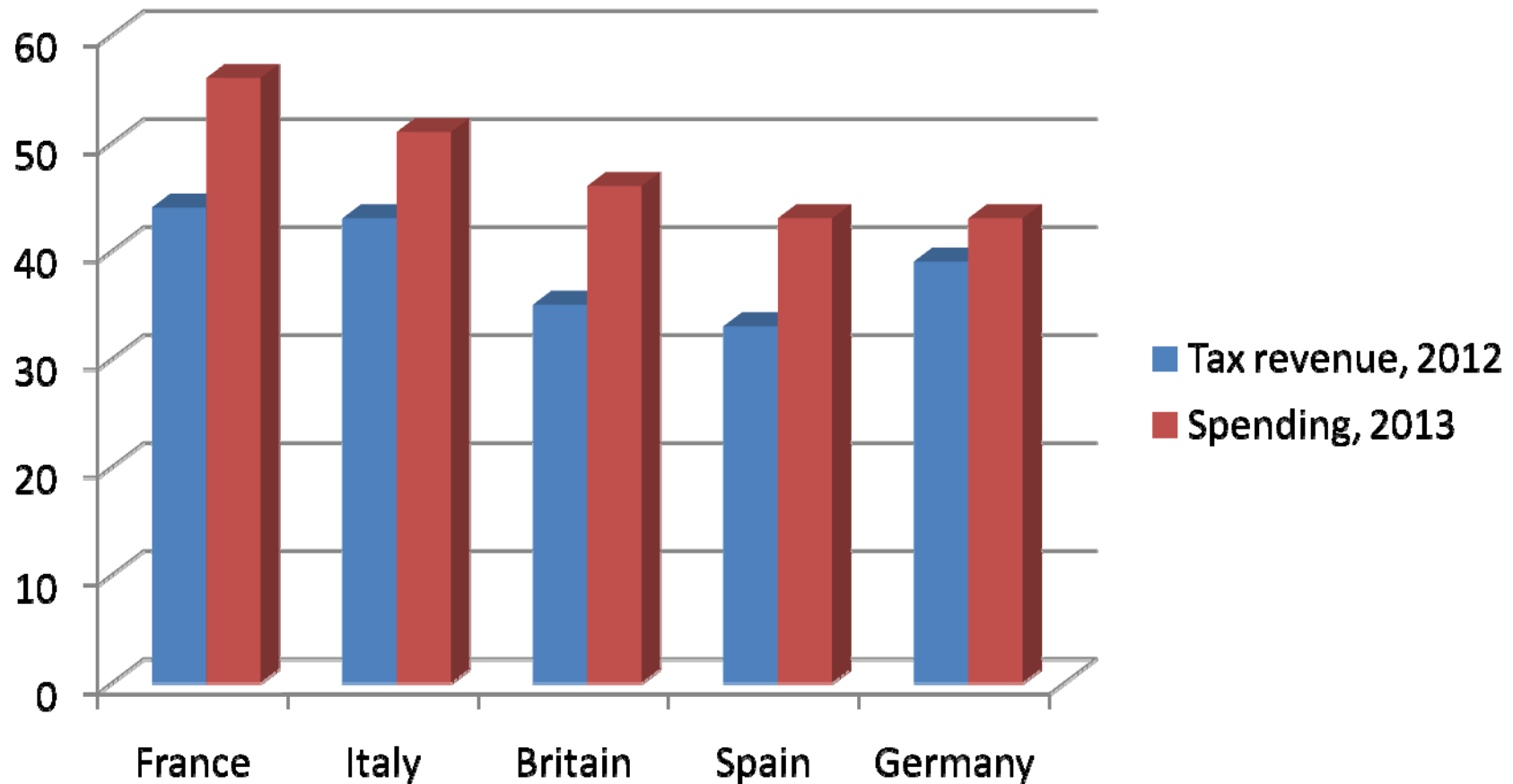
48. Trilemma is allowed

- 1. До эры мегаэкономике триединая задача (а) низкой инфляции, (б) стабильного валютного курса и (с) положительного торгового сальдо считалась неразрешимой!
- 2. В мегаэкономике это возможно! Sweden
- 3. В мегаэкономике мировые валюты оказываются в режиме одностороннего и автономного измерения экономического пространства!

49. Бюджетный дефицит в мегаэкономике: никакого смысла в профиците нет, умеренный дефицит наиболее эффективное состояние национальной экономики



50. Government taxation and spending, % of GDP, The Economist, October 4th – 10th, 2014, p. 26.



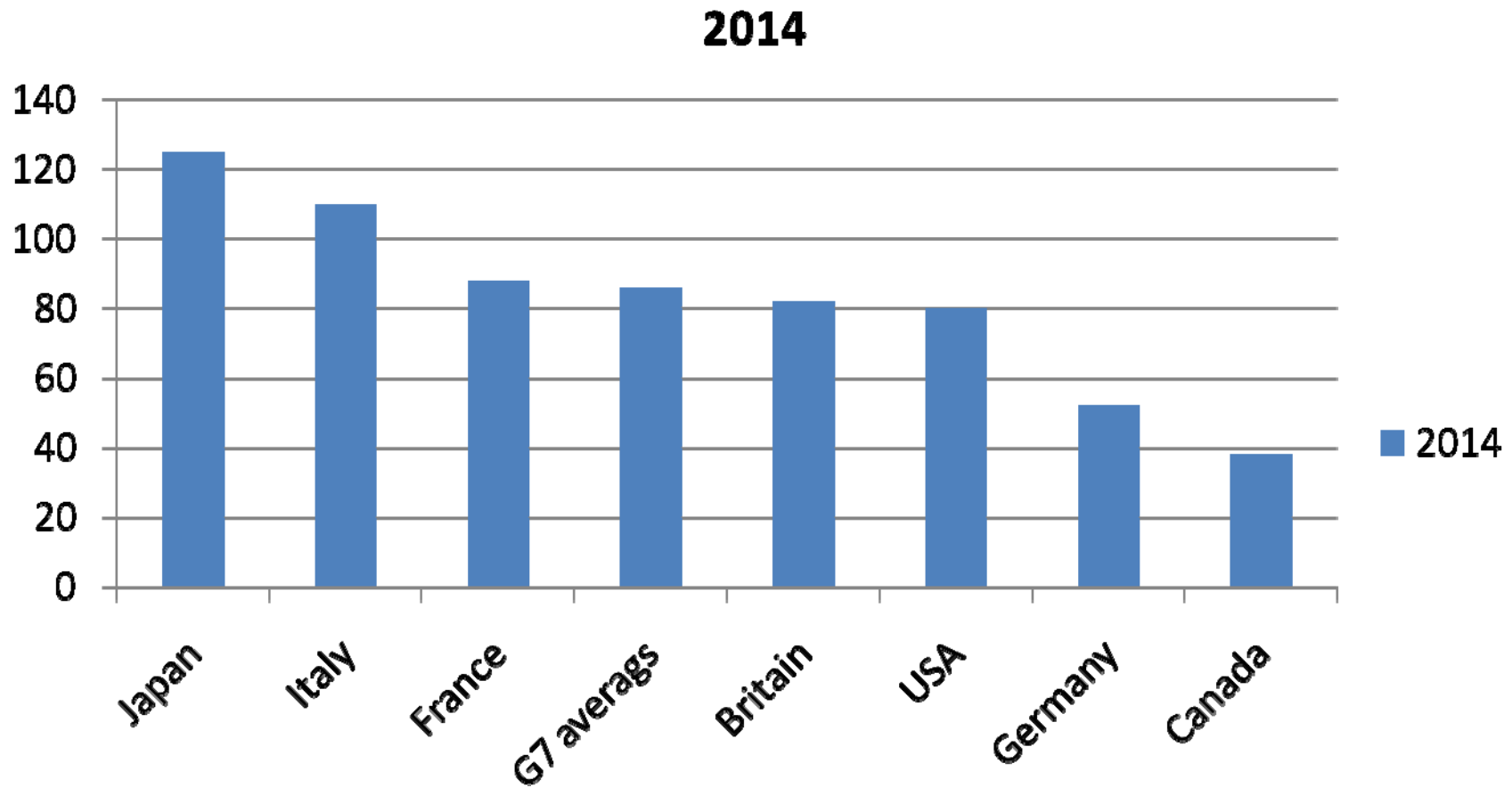
51. Budget deficit transfer in Megaeconomy

- В мегаэкономике страны, производящие резервные валюты, зачастую в состоянии трансформировать (экспортировать) свои бюджетные дефициты. Так, они выпускают ценные бумаги под свой бюджетный дефицит, продают их другим странам, но потом опускают проценты под эти ценные бумаги и тем самым перекладывают свои бюджетные проблемы на плечи других государств.

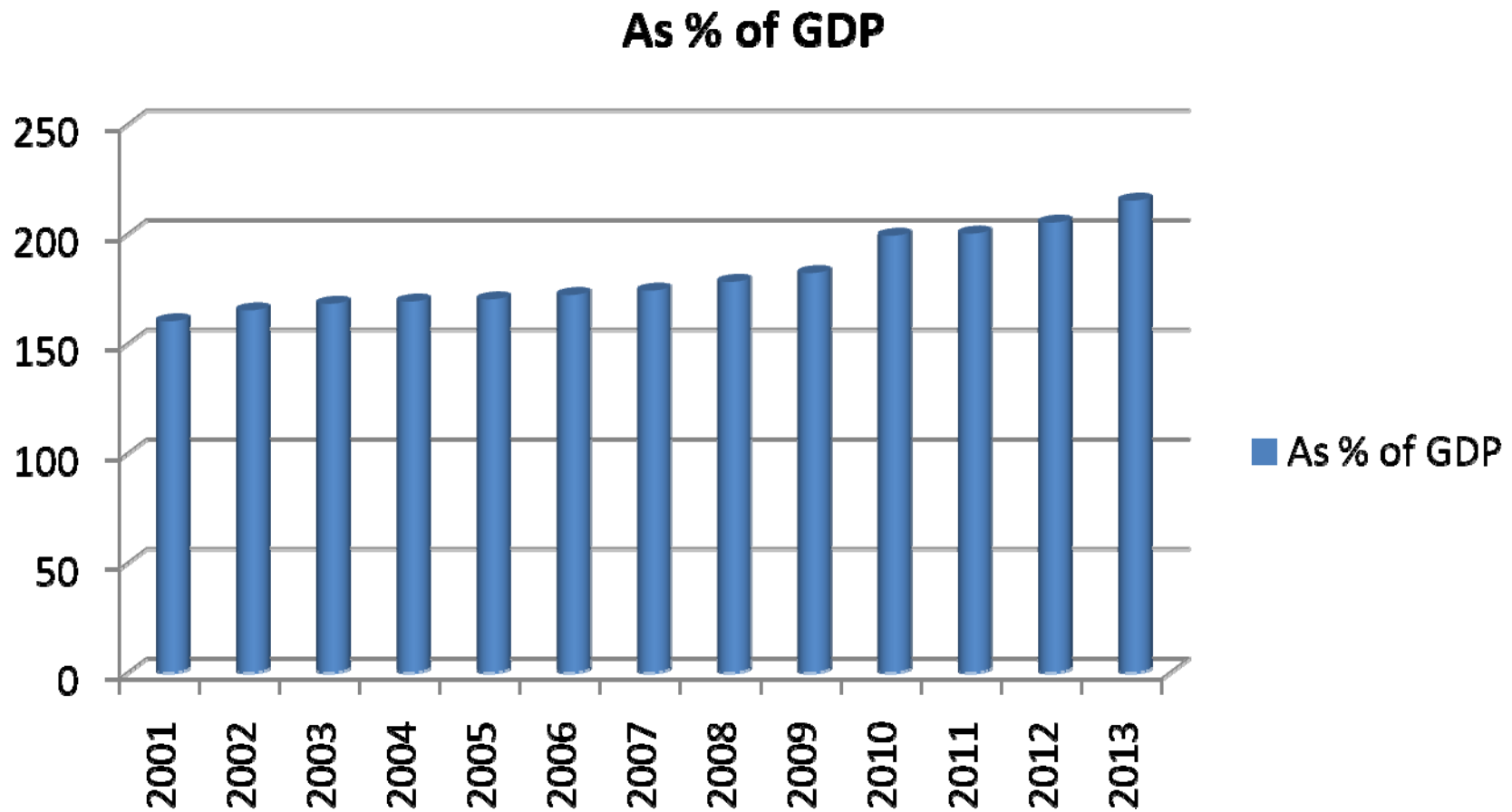
52. The budget deficit and the state debt. A megaeconomic view

- Total and public debts are mechanisms used by some developed states to transform the international savings (other states savings on top of internal savings) into the tool of financing of some privileged states. Like this in megaeconomics era, financial streams are from developing countries to developed once.

53. Net Government debt as % of GDP, The Economist, March 26th – April 1st, 2016, p.45



54. The total debt excluding financial, worldwide, as % of GDP,
The Economist, January 10th – 16th, 2015, p.60



55. Interim conclusions

- Acceleration of the internal debt in some countries (international currency issuers) allows them furthermore to export its in to the debt of other countries. Especially painful is the transmission of domestic debt in some countries in to external debt of other countries.
- In an era megaeconomcs blurred the line between external and domestic debt.