# The limits to Russia's economy growth: lack of labor force, labor productivity and trade balance

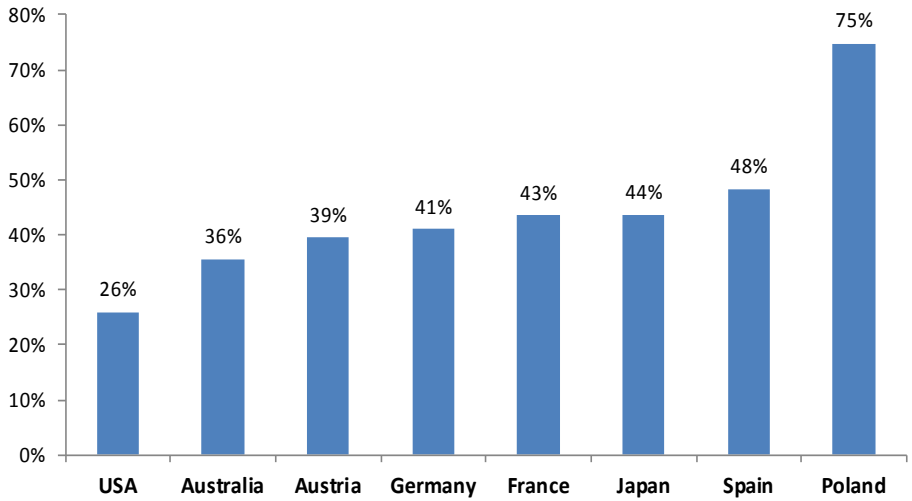
South Africa
august, 2011

# Goals of Economic Development

1. Social aspect. To provide sustainable extension of household consumption – household consumption per capita in Russia four times less than in USA and more than two times less compared to other developed countries

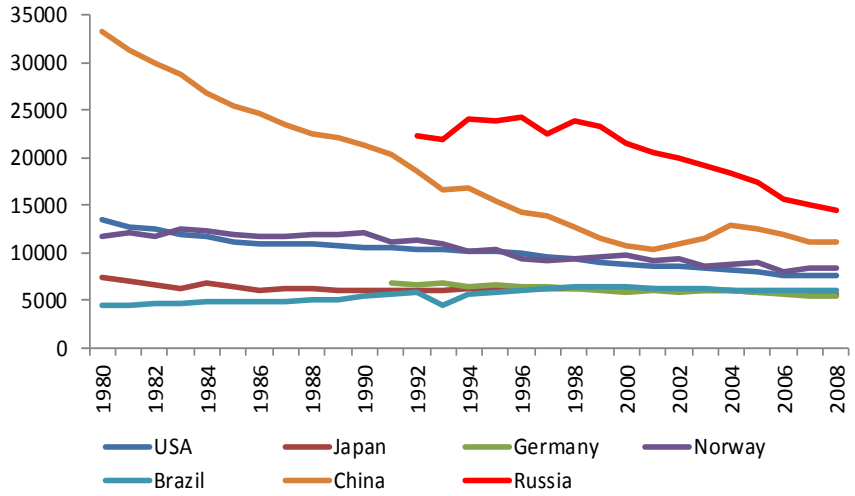
2. Global competitiveness. To provide Infrastructure and Fixed capital modernization – to produce 1 dollar of GDP Russia consumes three times more energy than Japan and Germany, two times more energy than USA and Norway and 30% more than China

**Russian Household Consumption Expenditure per capita compared to other countries (at current prices - PPP US Dollars)**




*Source: UN, IMF*

**Energy Intensity - Total Primary Energy Consumption per Dollar of GDP, Btu per Year 2005 U.S. Dollars (PPP)**




*Source: EIA*





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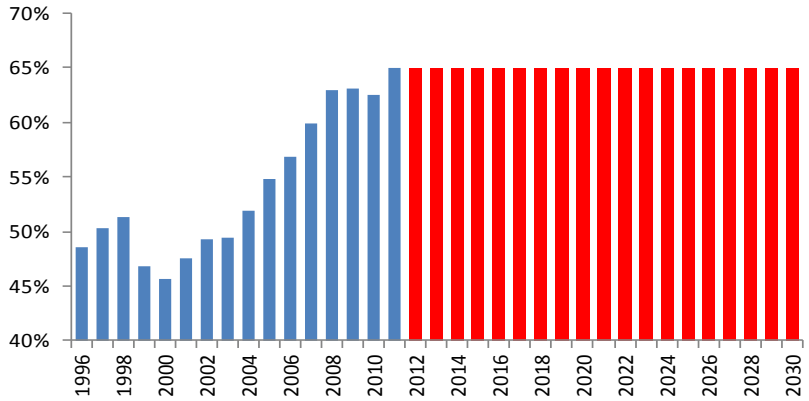
# Key assumptions for long-term macroeconomic scenario determined by goals of economic development

1. Growth rate of the Russian Economy should outpace the World GDP growth – only in this case Russian economy will be attractive for investors (foreign and also domestic) which provides the desirable investment flow into development of modern technologies. It means that Russian GDP should grow by **5%** in a year.

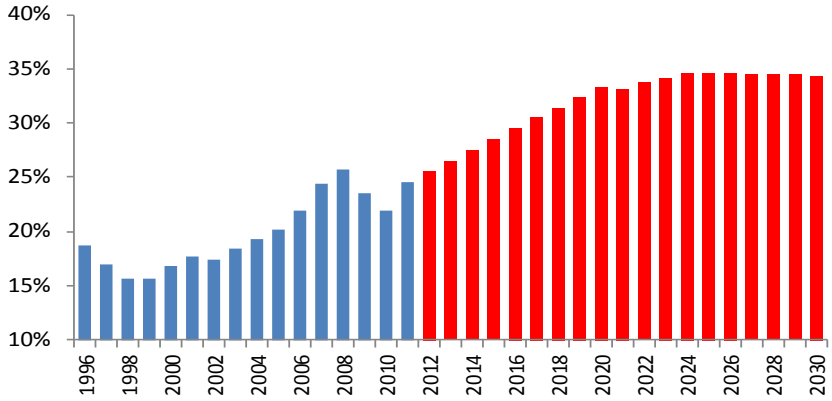
2. Share of household consumption in GDP at least shouldn't decline – this will diminish the income gap between Russia and developed world

3. To meet the requirement of 5% annual GDP growth and active replacement of inefficient fixed assets the investment rate should grow from current 20% to 35%.

**Share of Household Consumption in GDP, %**




**Share of Household Consumption in GDP, %**




*Source: Russian Federal Service of state statistics, IEF estimations*





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# Three problems

Problems

1. Demographics
   - according to existing demographic trends during 2011-2020 Russia will lose **1 million** of working age population per year and 0.3 million per year during 2021-2030

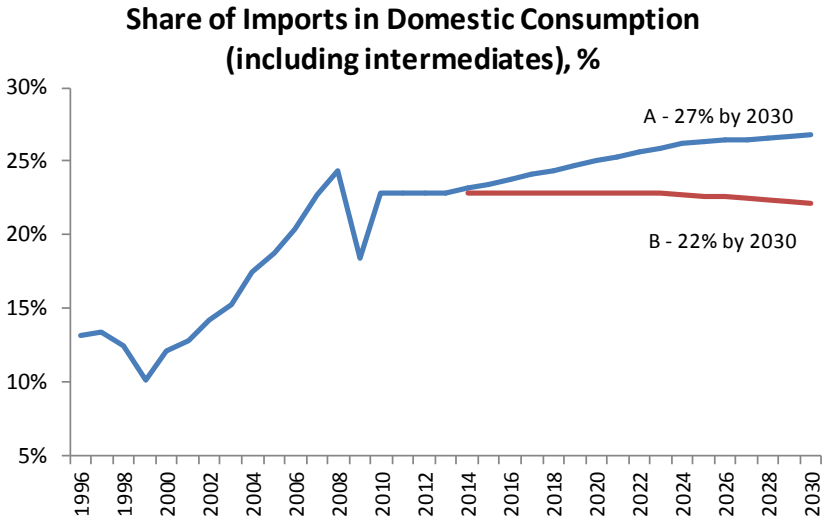
2. Exports structure
   - energy and other primary commodities account for more than **80%** of Russian exports. It means that due to growing efficiency of the world economy (declining energy intensity and increasing output per unit of input of primary resources) volume of Russian exports can't grow faster than the world economy. The upper limit for the Russian exports growth from the demand side is **4%** in a year.

3. Instability of world crude oil and commodity prices - world economic crisis in 2008-2009 highlighted high enough level of dependency of the Russian economy from oil price movements. Since that a lot of announcements were made where Russian officials called on to decrease the dependency from exports of energy commodities. For our calculations it means that economic growth in Russia can't be based on growing world commodity prices. In other words crude **oil price supposed to stay unchanged compared to 2011**.

# Two alternatives

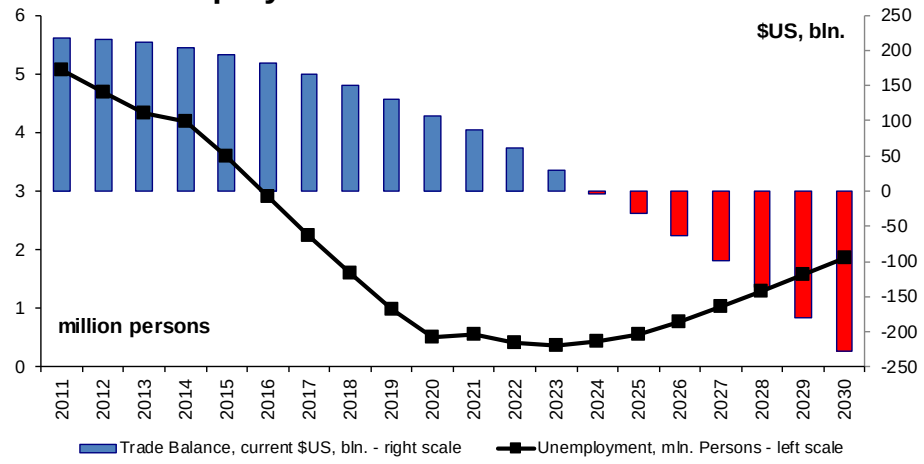
## Variant A

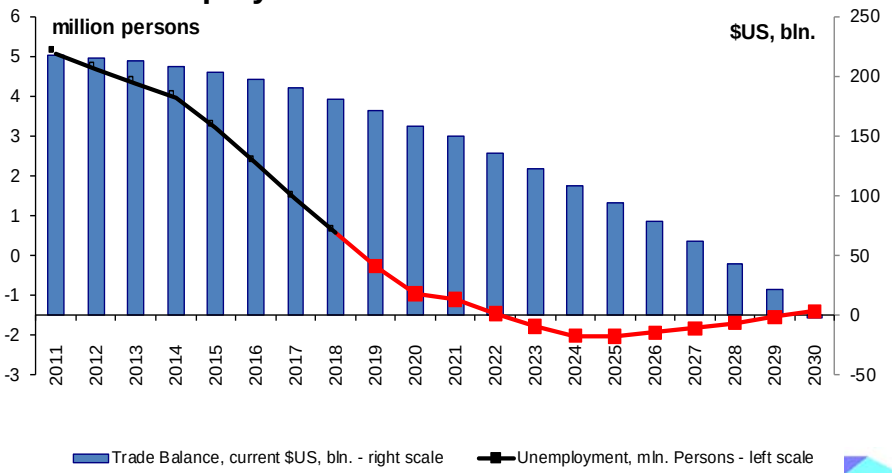
- given that growth of labor productivity is equal to GDP growth, **balance at labor market is possible due to negative trade balance**




## Variant B

- given that growth of labor productivity is equal to GDP growth, **positive trade balance is possible due to lack of labor force**




*Source: IEF estimations*





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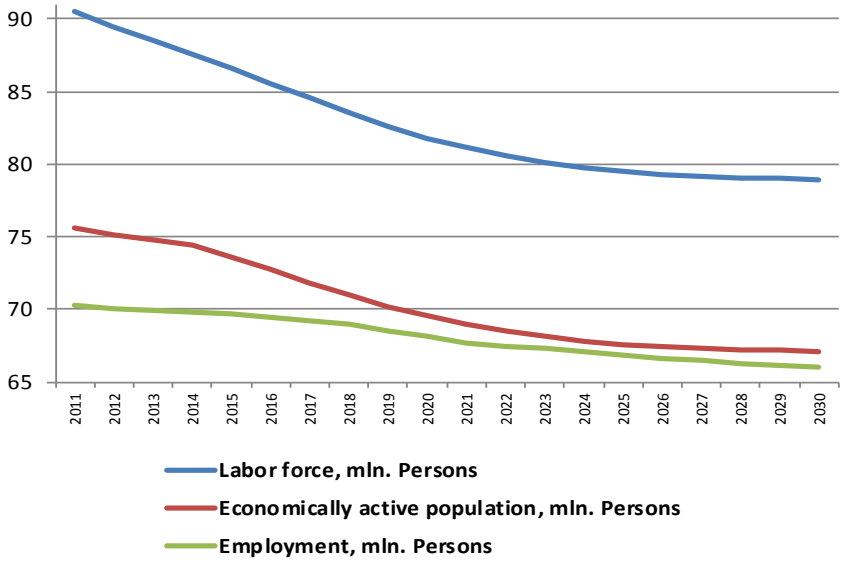
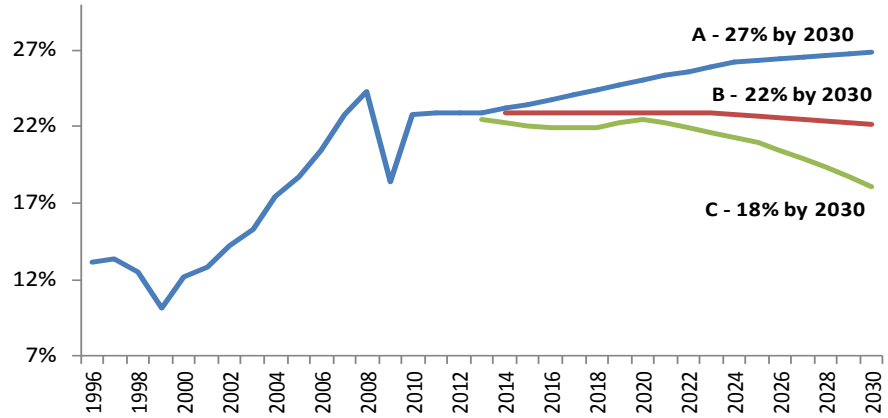
# Growth rates adjustment

**Labor force and employment, mln. persons**

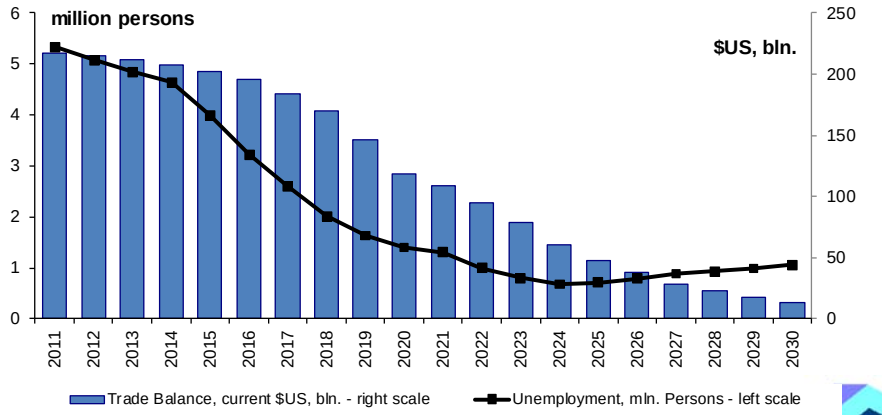



- In case the enrolment rate will stay unchanged at a level of 85% during 2011-2030, Russian employment will likely decrease from 70 million in 2011 to 66 million in 2030
- It means that labor productivity growth will outpace GDP growth nearly by 0.4 percentage points
- To provide 5% of annual GDP growth, labor productivity should increase by 5.4% in year.

**Share of Imports in Domestic Consumption (including intermediates), %**




**Unemployment and trade balance - variant C**





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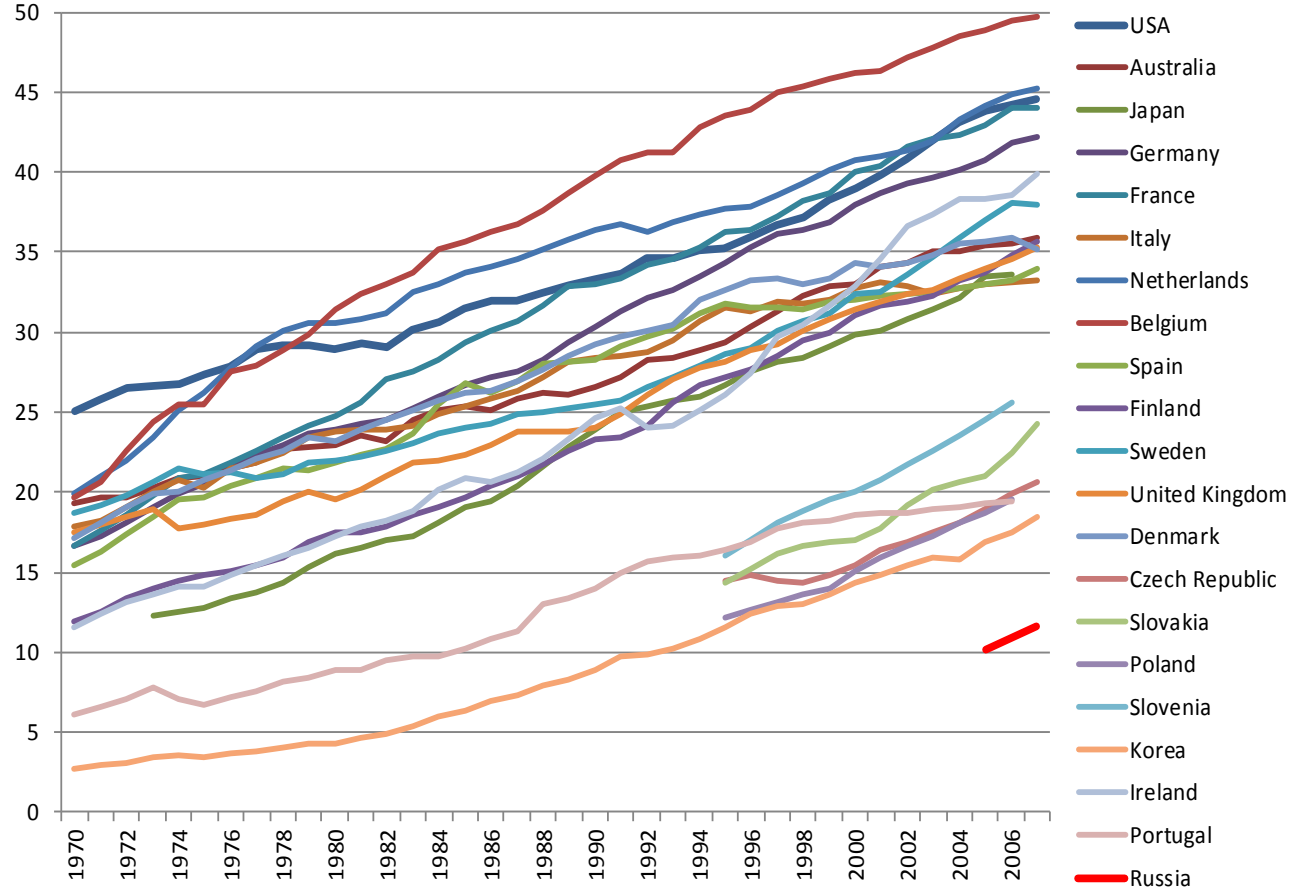
# Labor productivity in Russia and selected countries

## Value added per hour worked, constatnt 2005 PPP $US




## Labor productivity compared to USA, USA = 100

| | 2005 | 2006 | 2007 |
|---|---|---|---|
| USA | 100 | 100 | 100 |
| Australia | 81 | 80 | 80 |
| Japan | 76 | 76 | |
| Germany | 93 | 95 | 95 |
| France | 98 | 100 | 99 |
| Italy | 75 | 75 | 74 |
| Netherlands | 101 | 101 | 101 |
| Belgium | 112 | 112 | 111 |
| Spain | 75 | 75 | 76 |
| Finland | 77 | 79 | 80 |
| Sweden | 84 | 86 | 85 |
| United Kingdom | 77 | 78 | 79 |
| Denmark | 81 | 81 | 79 |
| Czech Republic | 43 | 45 | 46 |
| Slovakia | 48 | 51 | 54 |
| Poland | 43 | 44 | |
| Slovenia | 56 | 58 | |
| Korea | 39 | 40 | 41 |
| Ireland | 87 | 87 | 89 |
| Portugal | 44 | 44 | |
| **Russia** | **23** | **25** | **26** |

*Source: EU KLEMS; Russian Federal Service of state statistics*





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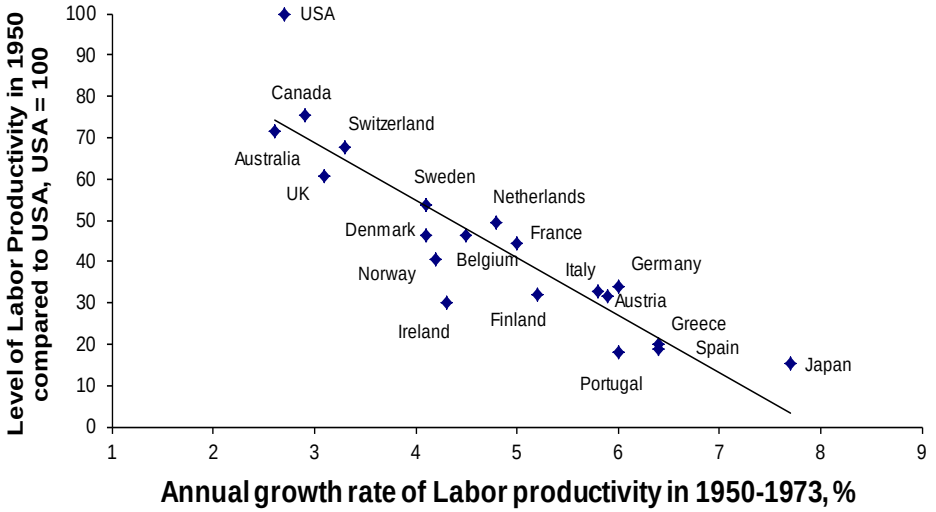
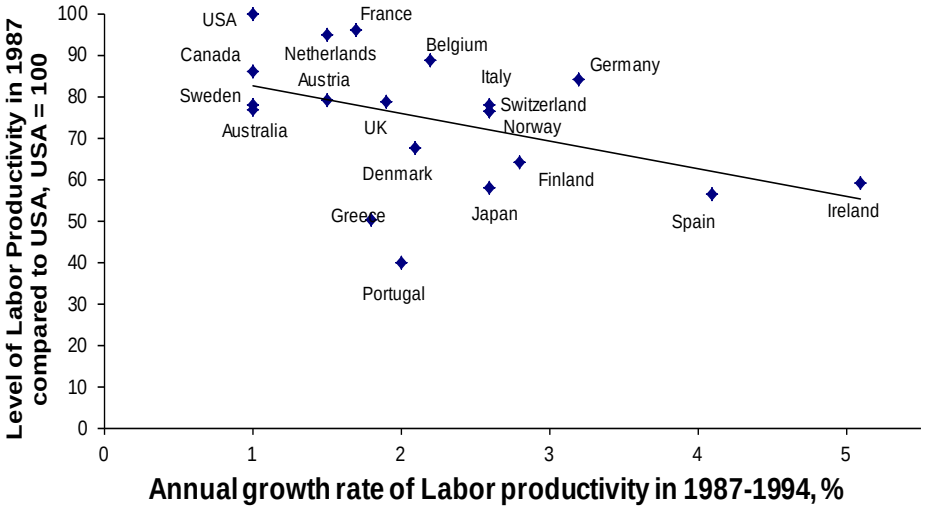
# Growth rates and gaps: cross country comparison

## Labor Productivity: growth rates and gaps 1950-1973



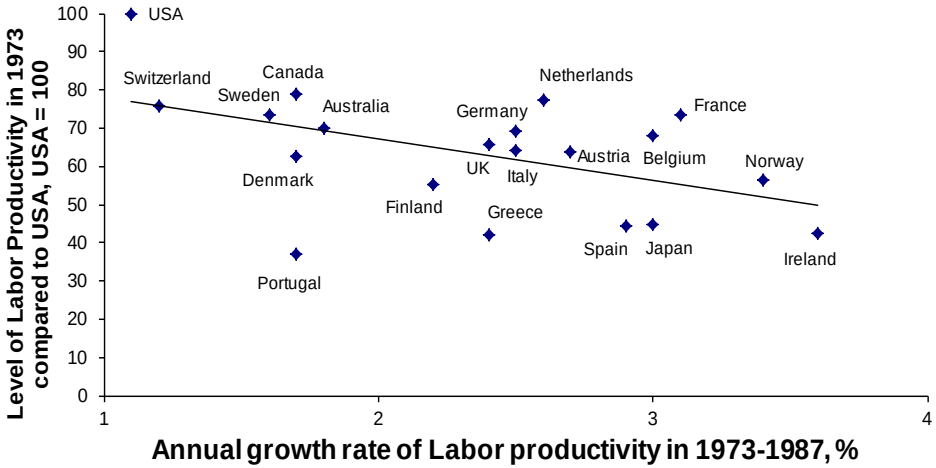

*Source: Bart Van Ark, 1996*

## Labor Productivity: growth rates and gaps 1987-1994



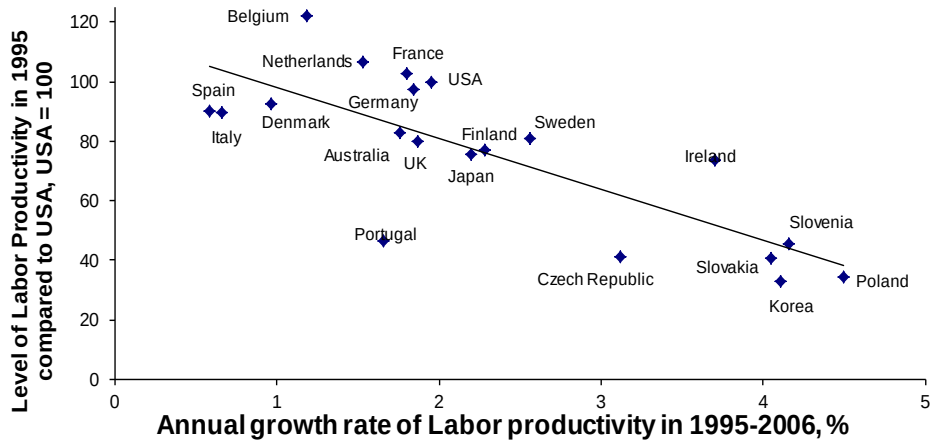

*Source: Bart Van Ark, 1996*

## Labor Productivity: growth rates and gaps 1973-1987




*Source: Bart Van Ark, 1996*

## Labor Productivity: growth rates and gaps 1995-2006




*Source: EU KLEMS*





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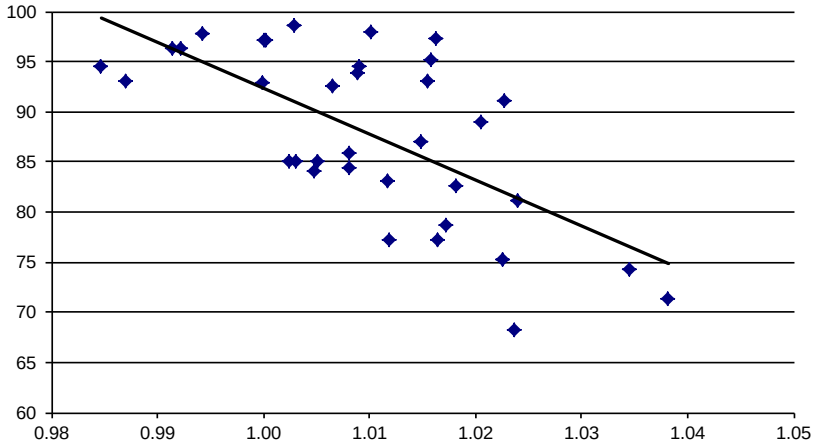
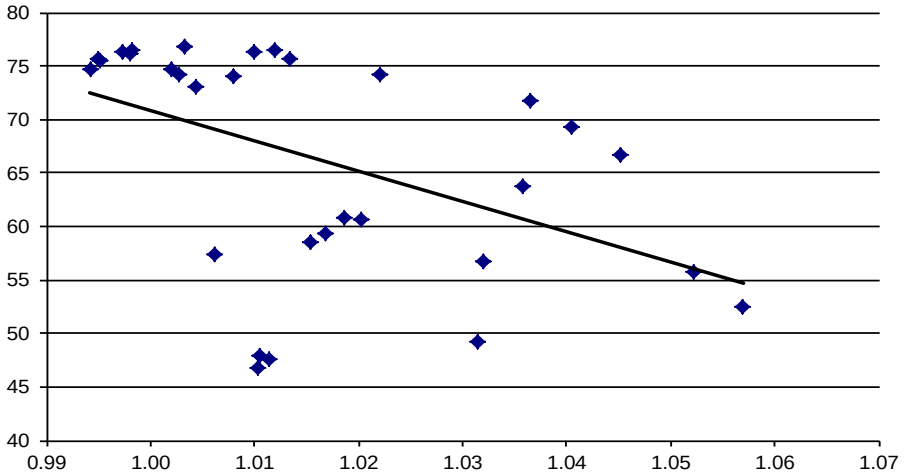
# Relative growth rates and gaps: selected countries

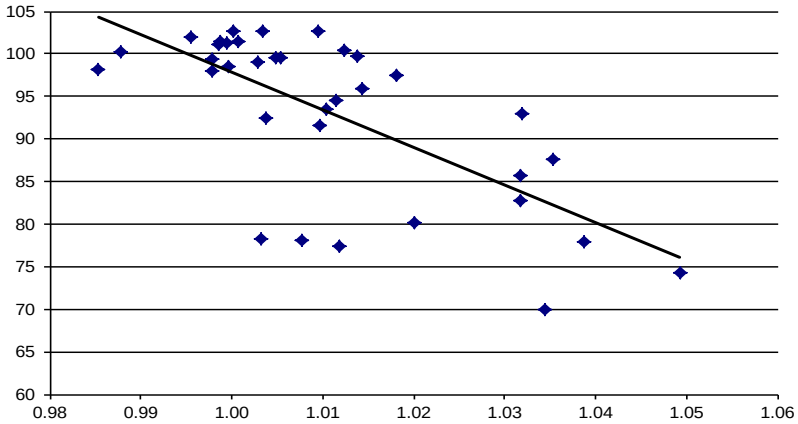
**Germany 1972-2006**



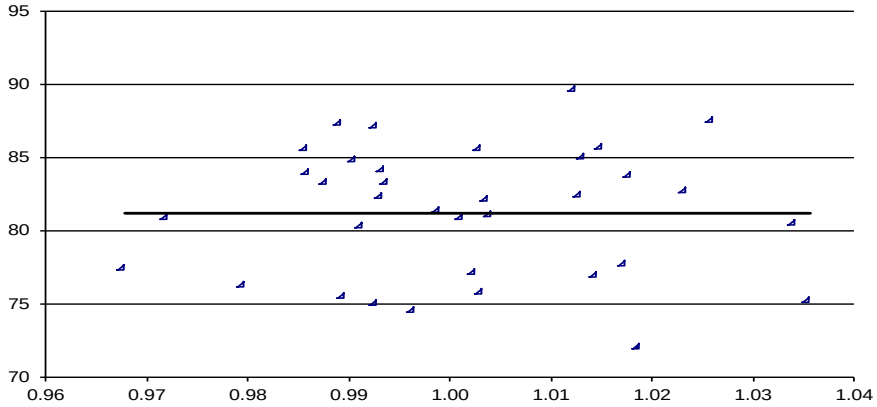

**Japan 1975-2005**




**France 1972-2006**




**Italy 1972-2006**




axis Y – level of labor productivity, USA = 100

axis X – ratio of labor productivity growth rates (country x / USA)

*Source: EU KLEMS*





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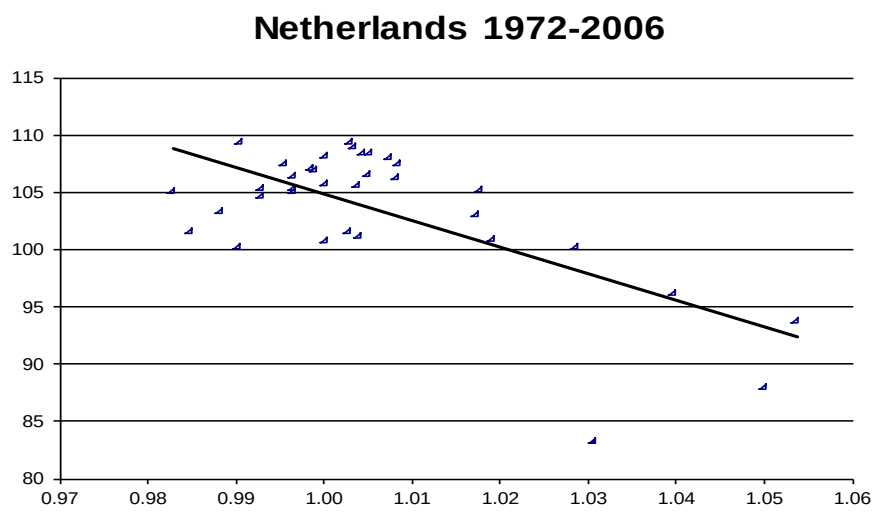
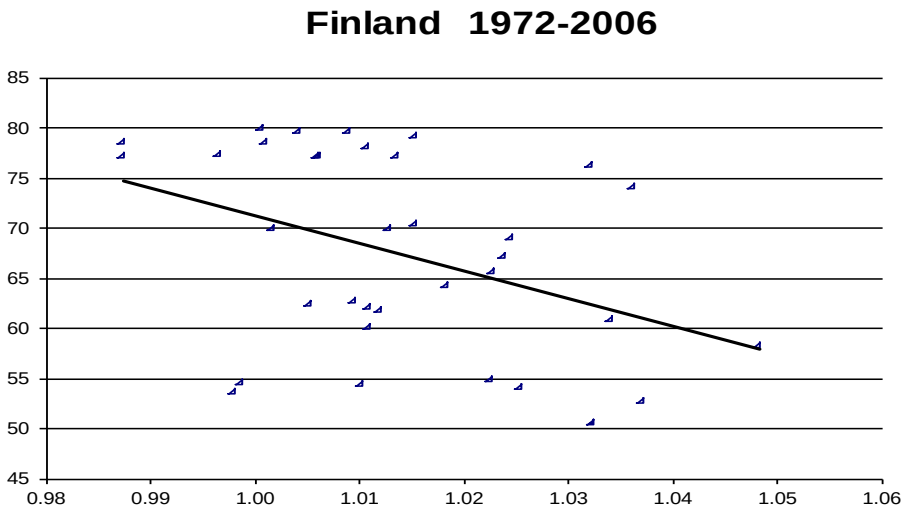
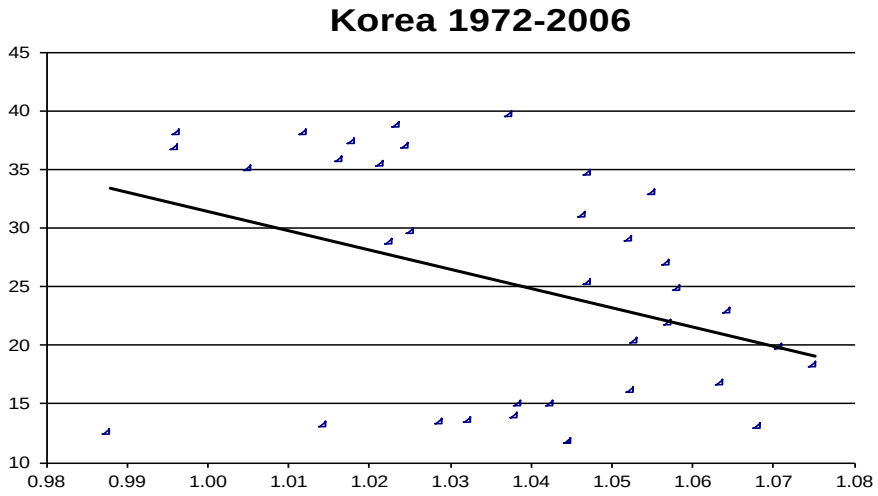
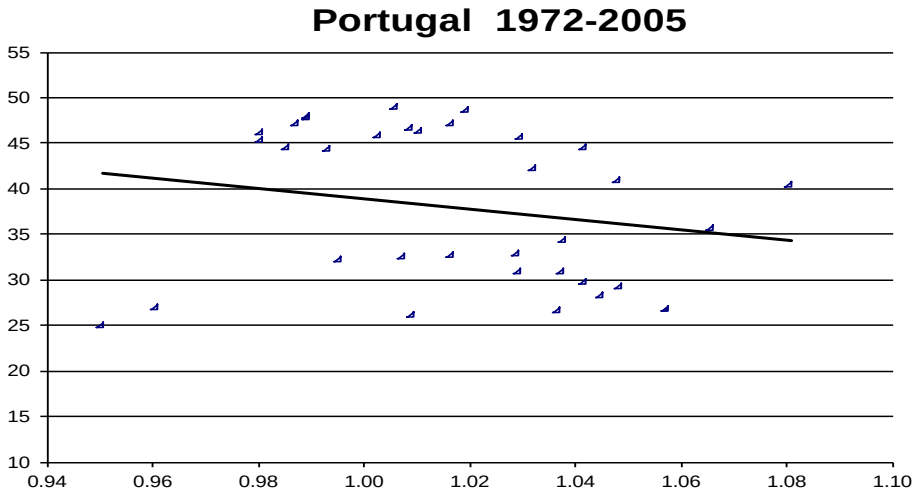
# Relative growth rates and gaps: selected countries




axis Y – level of labor productivity, USA = 100

axis X – ratio of labor productivity growth rates (country x / USA)

*Source: EU KLEMS*





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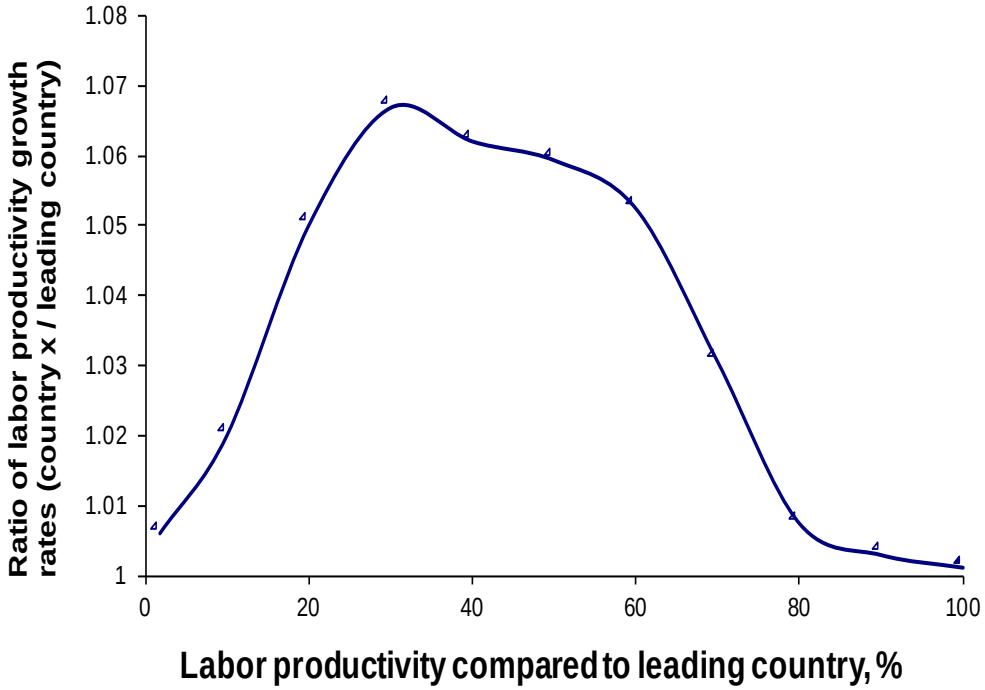
# Hypothesis: Curve of catching-up growth

Time period of labor productivity growth from 25 to 33 $US per hour

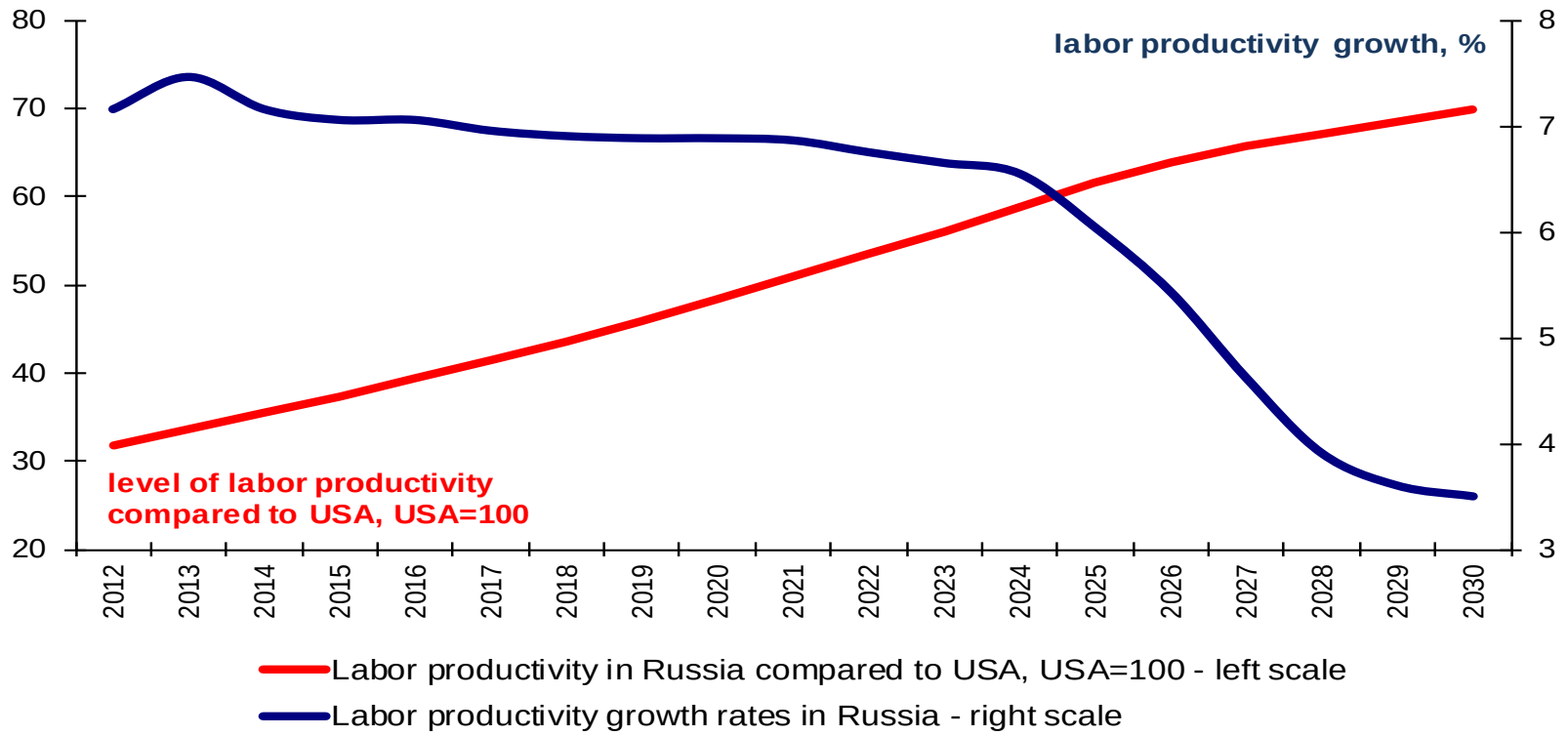
| Countries | 25 $US per hour worked, at constant 2005 PPP dollars | 33 $US per hour worked, at constant 2005 PPP dollars | Number of years |
|---|---|---|---|
| USA | 1970 | 1990 | 20 |
| Australia | 1983 | 1999 | 16 |
| Japan | 1991 | 2005 | 14 |
| Germany | 1982 | 1993 | 11 |
| France | 1980 | 1989 | 9 |
| Italy | 1984 | 2000 | 16 |
| Netherlands | 1974 | 1984 | 10 |
| Spain | 1984 | 2004 | 20 |
| Finland | 1992 | 2004 | 12 |
| Sweden | 1987 | 2002 | 15 |
| United Kingdom | 1991 | 2003 | 12 |
| Denmark | 1983 | 1995 | 12 |
| Ireland | 1990 | 2000 | 10 |




As a confirmation of hypothesis the following observation can be used:

- for lagging countries except Spain it took 1.5 times less to increase labor productivity from 25 to 33 $US per hour.

# Projections for labor productivity growth in Russia made on a basis of curve of catching-up growth




***Assumption***: labor productivity growth in USA is expected to stay at **1.57%** per year **during 2011-2030**, which is equal to average annual growth during 1971-2007

***Projection***: average annual growth rate of labor productivity in Russia **during 2011-2030** is expected to stay at **6.1%**





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# Conclusion

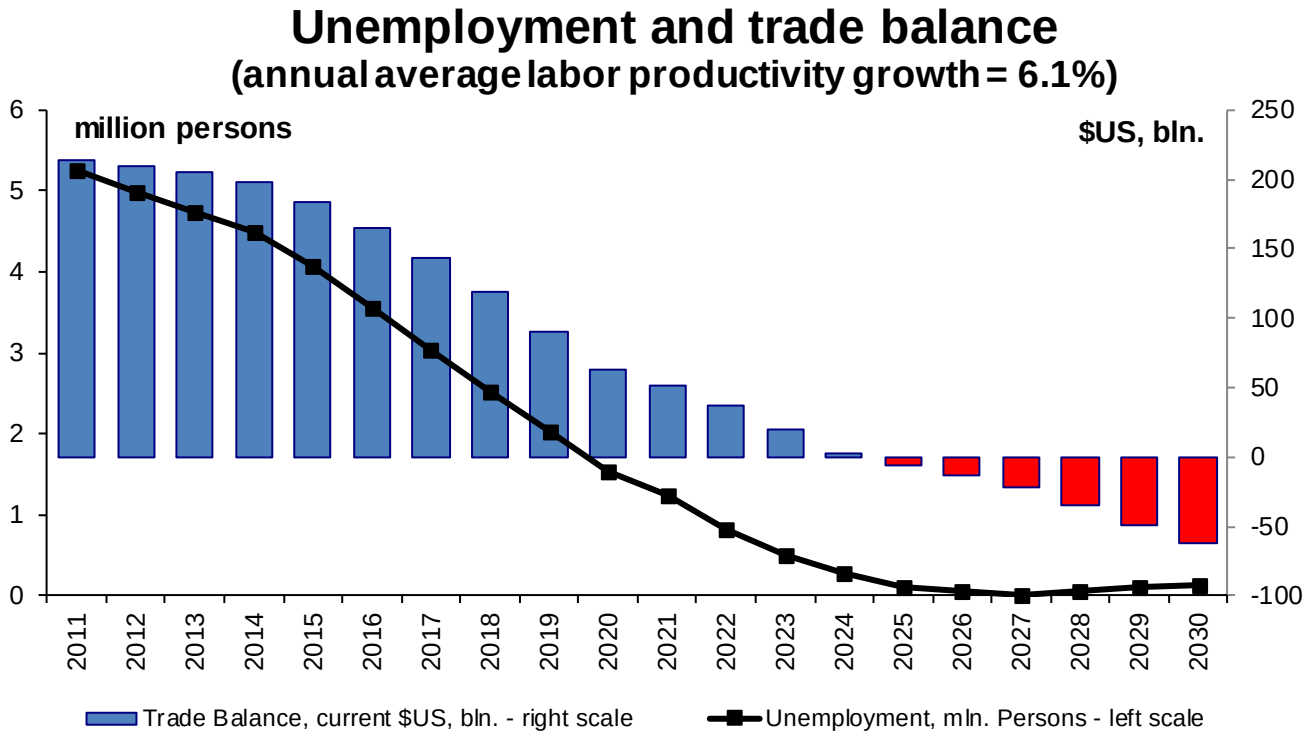
1. Russian economy has a chance to avoid the choice between negative trade balance and lack of labor force

2. Development of long-term forecasts for the Russian economy should include the reasoning for possible and necessary labor productivity growth rates

3. Main advice for economic policy makers may consist in development of such industries where the implementation of modern technologies gives the highest growth of labor productivity.

4. The investigation of experience of countries which passed through catching up growth stage is needed

# Trade Balance and Labor Market




6% of labor productivity growth in Russia will not provide positive trade balance





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