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in cooperation with  
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## Economic and Social Development

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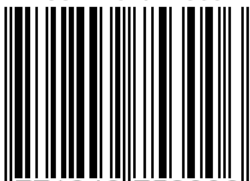
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## 5. EXPORT DIRECTIONS OF AZERBAIJAN

All developed countries gain much more revenues by accurate calculation of their export directions. Geopolitical and geo-economic position, geographical location, natural resources, scientific and technical situation of the countries in the world and other factors play a special role in this. Geographical location is an absolute advantage of Azerbaijan. The situation of the export directions of Azerbaijan in 2017 under the influence of such factors as: the utilization of resources, political stability, the implementation of transregional projects and those proposed for 2030 are presented in Table 4.

Table 4: Export directions of Azerbaijan by countries in 2017 and 2030

Top 10 countries in the export of Azerbaijan					
2017 (factual)			2030 (forecast)		
No	Countries	Share in export by percent	No	Countries	Share in export by percent
1	Italy	31.9	1	Italy	32.0
2	Turkey	9.9	2	Turkey	12.0
3	Israel	4.6	3	Russian Federation	5.0
4	Russian Federation	4.3	4	Germany	4.5
5	Czech Republic	4.0	5	Georgia	3.5
6	Canada	3.9	6	Israel	3.5
7	Georgia	3.4	7	Croatia	3.4
8	Indonesia	3.4	8	Indonesia	3.4
9	Germany	3.3	9	India	3.0
10	Portugal, etc.	3.2	10	China (PRC) etc.	3.0

Table 4 shows that, 71.9% of Azerbaijan's exports in 2017 fell to the share of ten countries, and up to one-third – 31.9% [5] to the share of only one country (Italy). Turkey, a very close and advisable for Azerbaijan from the geo-economical, historical and national point of view, and the Russian Federation with a large demand-oriented market comprise minority from the potential point of view. The exporting countries listed in Table 4 on the forecast of 2030, should be taken as the main direction in the upcoming decade. The geo-economic position affecting the economic development, the amount of natural resources, the attempts of territorial redistribution, national and religious discrimination, the clash of interests, etc. such rigorous factors require foreseeing and determination of the structure of the commodity export, its diversification and directions in all countries, including Azerbaijan in the new world order. The oil and gas projects implemented in Azerbaijan change the Eurasian energy map. Azerbaijan, being one of the 42 countries that have no access to the open sea, is now becoming one of the world's major transportation and logistics centers through the "North-South" transport corridor, the new geo-economic and industrial center of Eurasia.

## 6. CONCLUSION

The main targets for commodity structure of the increase in product export from Azerbaijan by 2030 are as follows:

1. Partial increase or stabilization of crude oil production, reduction of its export;

2. Creation of value added chains of large industrial enterprises producing high-tech petroleum products, perfumery and cosmetic products for transition from crude oil to finished oil products;
3. Increasing natural gas production and exports;
4. Increase of production and export of chemical products;
5. Rapid growth of fruits and vegetables, especially tomato production and export;
6. Rapid growth of cotton, tobacco, tea, honey, hazelnut, saffron and rice production and export;
7. Rapid growth of wine and mineral water production and export;
8. Rapid expansion of carpet production in Azerbaijan and increase of export;
9. Increasing the export of fish and fish products by rapid boosting of fisheries;
10. Increase of production and export of agro-processing products;
11. Increasing tractor exports through increasing production at Ganja automobile plant;
12. Increase of production and export in Nakhchivan, Neftchala and Ganja car factories, etc.

The main directions of product export from Azerbaijan to continents and countries until 2030 are as follows:

1. Increasing export by continents to Europe and Asia and by economic integration unions to European Union, CIS and ASEAN countries can promote national economic development;
2. Increasing fields of export to Italy, Turkey, Russia and Germany, preparation of projects on export promotion lines to new destination countries – India, China, Croatia, etc.
3. Expansion of product export, petrochemicals to Turkey, fruits and vegetables to Russia, petrochemicals and processing products to Germany, mineral water, plant-growing products, vegetables and processing products to the Middle East countries, increasing export of natural gas, chemical products, food products, etc. to South-East Asian countries.
4. Rapid expansion of transport-expedition and logistic services for the efficient use of the potential of East-West and North-South transport corridors passing through Azerbaijan;
5. Concentration of 71.9 percent of Azerbaijan's exports to 10 countries in 2017 is not considered geopolitically acceptable, and in the future it is deemed necessary to increase the number of export countries and their share in export.

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5. SSCRA. Statistical indicators of Azerbaijan 2018. Baku, 2018.

# IMPACT OF INTEREST RATES ON MANUFACTURING'S SHARE OF GDP

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## ABSTRACT

*Paper provides analysis of the impact of interest rates on manufacturing's share of GDP across countries and argues that 1) interest rates differently affects tradable and non-tradable sectors, 2) manufacturing is more sensitive to interest rate fluctuations than the non-tradable sectors, and 3) high interest rates lead to the shift from the manufacturing to the non-tradable sectors that negatively affects the trade balance of goods and services.*

**Keywords:** *deindustrialization, interest rates, manufacturing's share of GDP*

## 1. INTRODUCTION

While a decline in manufacturing's share of GDP is a global tendency and takes place in both OECD and low income countries (Figure 1), its causes and consequences vary across countries. In OECD countries decline in manufacturing's share of GDP is due to increase in efficiency, high income per capita (Fisher, 1935; referenced by Maroto-Sanchez, 2010, p. 8) or high efficiency in manufacturing compared to service sector (Baumol, 1967), but in low income countries deindustrialization results in persistent trade deficit in goods and services (Figure 2).

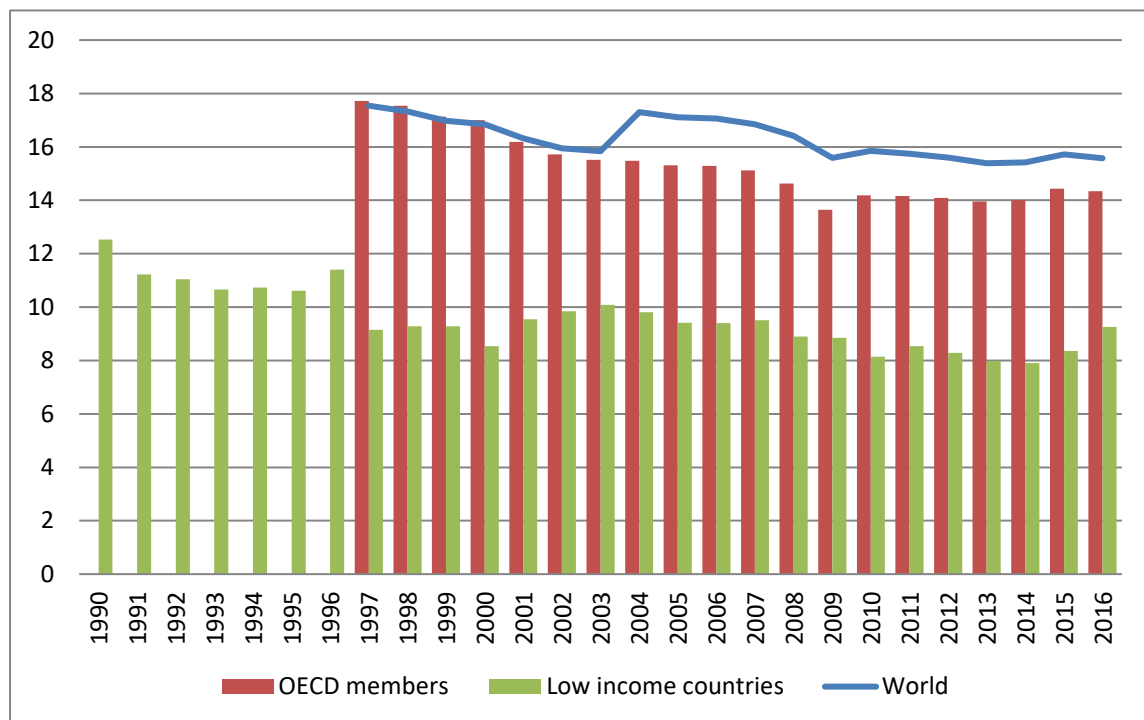


Figure 1: Manufacturing's share of GDP, % (World Bank)

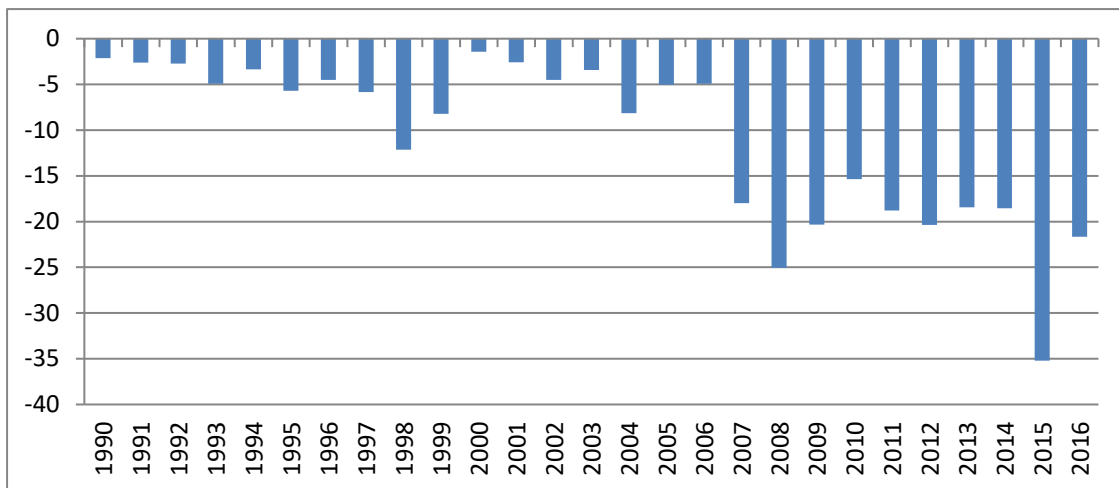


Figure 2: Net trade in goods and services in countries where manufacturing's share of GDP is less than 10% (except oil and OECD countries), billion US dollars (World Bank)

Researchers highlight the following causes of deindustrialization.

- Increase in productivity in economy. Increase in productivity causes rise in leisure time that leads to increase in service's share in consumption as people spend more time on entertainment, recreation and other leisure services (Dridea, Sztruten, 2010; Kraus, Barber, Shapiro, 2001).
- Other factor causing shift from manufacturing to service sectors is increase in income per capita. As demand for service (particularly housing, health and recreation) is income elastic compared to manufacturing goods (Fisher, 1935; referenced by Maroto-Sanchez, 2010, p. 8; Gemell, Falvey, 1996), increase in income per capita leads to increase in service's share of GDP.
- Increase in efficiency in manufacturing compared to service sector also accelerates shift from the manufacturing to the services sector. There is a tendency for the outputs of the low-efficiency sector to decline. However if demand for the product of low-efficiency sector is price inelastic or income elastic, resources will be transferred to low-efficiency sector (Baumol, 1967). So, as demand for service is income elastic compared to manufacturing goods, efficiency increase in manufacturing causes resources to shift to service sector. A positive correlation between the efficiency gap between manufacturing and service sectors and decrease in the proportion of the manufacturing sector has been supported by many studies (Rowthorn, Ramaswamy, 1997; Hori, Mizutani, Uchino, 2018).
- In resources-rich countries decline in manufacturing's share of GDP is caused by appreciation of national currency due to the export of natural resources (so-called Dutch Disease) (Magud, Sosa, 2010).
- Appreciation of national currency induced by surges in capital inflows, foreign aid, remittances from immigrants, etc. also negatively affects manufacturing's share of GDP (Magud, Sosa, 2010). The negative effect of remittance on tradable sector in different countries has been supported by many studies (Uddin, 2015; Nikas, Blouchoutzi, 2014; Makhoul, Mughal, 2013).
- Hori, Mizutani, Uchino (2018) argue that decentralization of economy positively affects shifts from the manufacturing to the services sector.

In addition to the above, paper argues that high interest rates also contribute to low manufacturing's share of GDP. High interest rates imply higher cost for domestic firms but as manufacturing firms face foreign competition, they cannot pass the cost onto consumers by raising its price.

However firms producing non-tradable goods, which are not exposed to the foreign competition, are able to raise prices, passing on higher costs to consumers, and protect profit margins. As a result, manufacturing becomes less profitable compared to non-tradable sector that causes resources to shift from manufacturing to non-tradable sector. Paper argues that 1) interest rates differently affect tradable and non-tradable sectors, 2) manufacturing is more sensitive to interest rate fluctuations than the non-tradable sectors, and 3) high interest rates lead to the shift from the manufacturing to the non-tradable sectors that negatively affects the trade balance of goods and services.

## **2. INTEREST RATES AND MANUFACTURING'S SHARE OF GDP ACROSS COUNTRIES**

Decrease in manufacturing's share of GDP is a global trend, and takes place in both OECD and low income countries. Researchers highlight the following causes of it: increase in productivity in economy (Dridea, Sztruten, 2010; Kraus, Barber, Shapiro, 2001), increase in income per capita (Fisher, 1935; referenced by Maroto-Sanchez, 2010, p. 8; Gemmell, Falvey, 1996), increase in income per capita, increase in efficiency in manufacturing compared to service sector (Baumol, 1967; Rowthorn, Ramaswamy, 1997; Hori, Mizutani, Uchino, 2018), appreciation of national currency due to the export of natural resources, surges in capital inflows, foreign aid, remittances from immigrants, etc. (so-called Dutch Disease) (Magud, Sosa, 2010), decentralization of economy (Hori, Mizutani, Uchino, 2018). In addition to the above, paper argues that high interest rates also contribute to low manufacturing's share of GDP. High interest rates imply higher cost for domestic firms but as manufacturing firms face foreign competition, they cannot pass the cost onto consumers by raising its price. However firms producing non-tradable goods, which are not exposed to the foreign competition, are able to raise prices, passing on higher costs to consumers, and protect profit margins. As a result, manufacturing becomes less profitable compared to non-tradable sector that causes resources to shift from manufacturing to non-tradable sector. In order to show the impact of interest rates on manufacturing's share of GDP statistically, we divided the countries into 3 groups. First group are countries where real interest rate on bank loans<sup>1</sup> is less than 5%, second group are countries where real interest rate on bank loans is 5-10%, third group are countries where real interest rate on bank loans is more than 10% (Figure 3). The Figure 3 shows that in the first group of countries, where real interest rate on bank loans is less than 5%, average manufacturing's share of GDP is 13.5%, in the second group of countries, where real interest rate on bank loans is 5-10%, average manufacturing's share of GDP is 9.5%, and in the third group of countries where real interest rate on bank loans is more than 10%, average manufacturing's share of GDP is 9.2%. The Figure 4 shows that among 15 countries where manufacturing's share of GDP is higher than 20% (2016) only in three countries real interest rate on bank loans exceed 5%.

*Figure following on the next page*

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<sup>1</sup> Real interest rate on bank loans is the lending interest rate adjusted for inflation (as measured by GDP deflator)

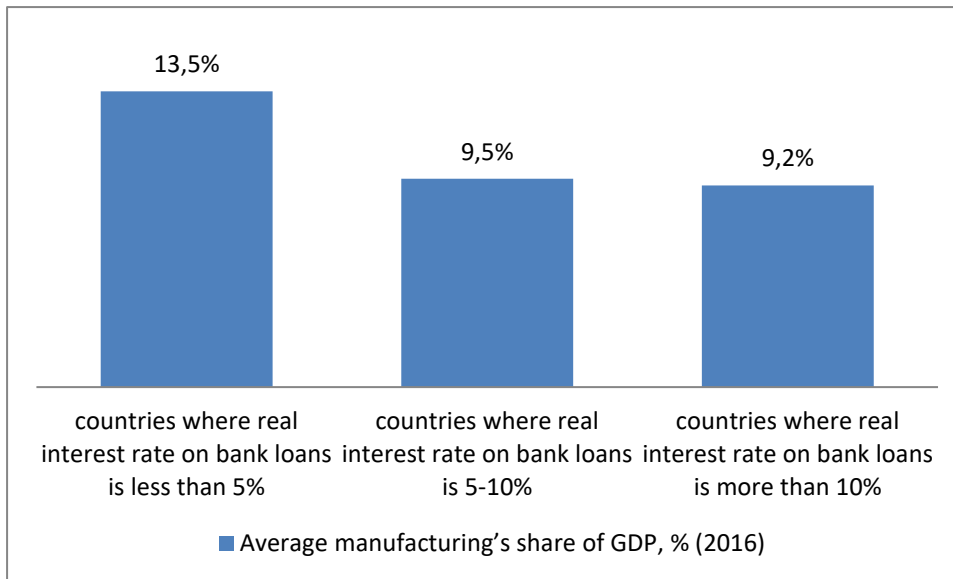


Figure 3: Real interest rate on bank loans (lending interest rate adjusted for inflation as measured by GDP deflator) (2010-2017) and average manufacturing's share of GDP (2016) (World Bank, Euro area statistics)

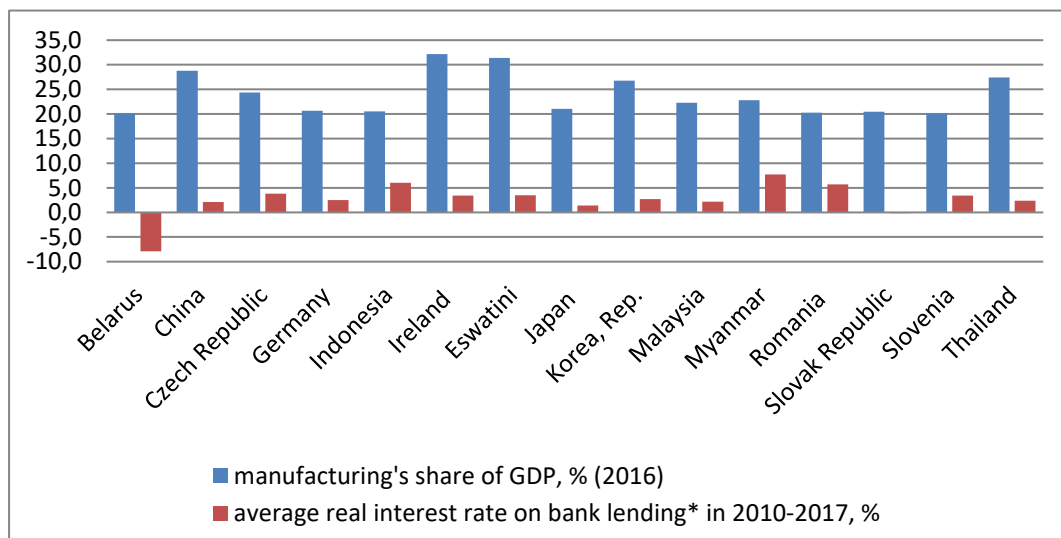


Figure 4: Average real interest rate on bank loans (lending interest rate adjusted for inflation as measured by GDP deflator) and manufacturing's share of GDP (World Bank)

\*Real interest rate on bank loans is the lending interest rate adjusted for inflation (as measured by GDP deflator)

### 3. MANUFACTURING'S SHARE OF GDP IN AZERBAIJAN, AND FACTORS CAUSING IT

Azerbaijan also faced deindustrialization. In 2003-2017 the manufacturing's share of non-oil GDP in Azerbaijan declined from 11.9% to 7.1% (Figure 5). Decline in manufacturing's share of GDP resulted in increase in non-oil trade deficit in goods and services from 1.3 billion US dollars to 7.9 billion US dollars in 2000-2017<sup>2</sup>. In Azerbaijan as in other resource-rich countries, decrease in manufacturing's share of GDP is traditionally associated with exchange rate appreciation (during oil boom in 2005-2014 real effective exchange rate of manat increased by

<sup>2</sup> Central Bank of the Republic of Azerbaijan



47%<sup>3</sup>). However high interest rates in Azerbaijan (Figure 6) also contributes to low manufacturing's share of GDP. When loans-to-added value ratio in Azerbaijan's manufacturing was low, lending rates had little impact on costs of manufacturing firms. However since 2006, as loans-to-added value ratio in manufacturing rose, impact of lending rates on firms' costs also increased that negatively affected the competitiveness of manufacturing and its share of GDP. In 2014 loans-to-value added ratio in manufacturing reached 73% that was higher than that of most post-Soviet countries (Figure 7). After depreciation of manat, as loans to manufacturing fell more than 3 times (from 2028 mln. manat in 2014 to 612 mln. manat in 2017)<sup>4</sup>, loans-to-value added ratio decreased to 19% that allowed manufacturing firms to reduce the costs and slightly improve the competitiveness.

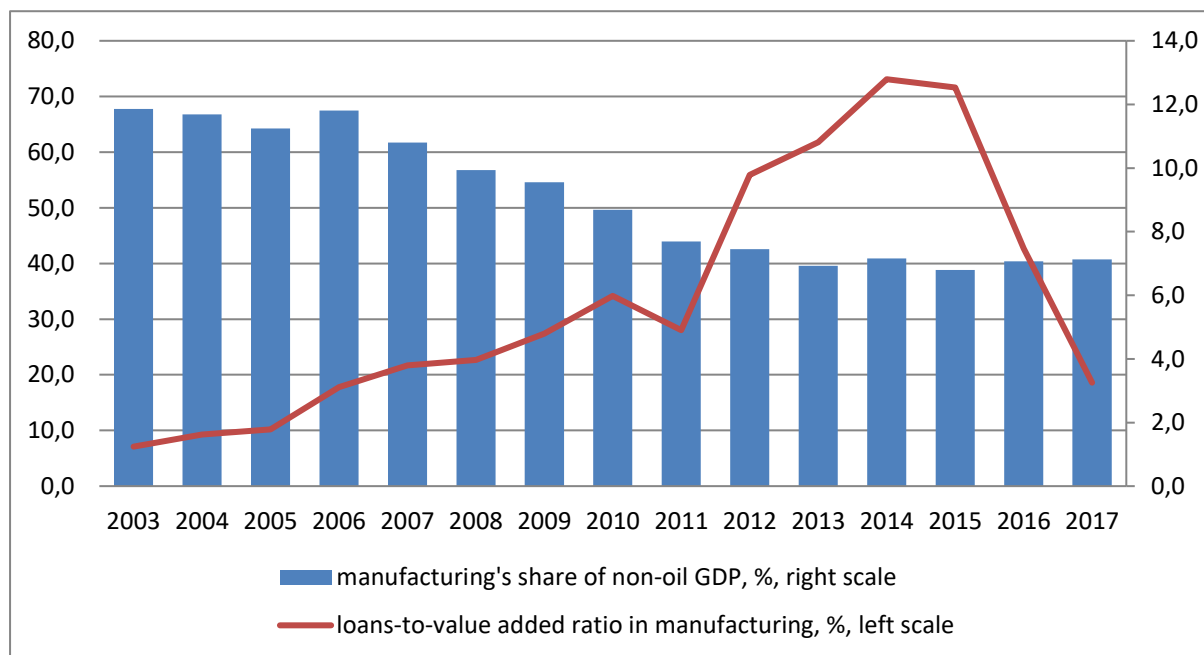


Figure 5: Loans-to-value added ratio in manufacturing and manufacturing's share of non-oil GDP in Azerbaijan (author's elaboration based on the State Statistical Committee of the Republic of Azerbaijan and Central Bank of the Republic of Azerbaijan)

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<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

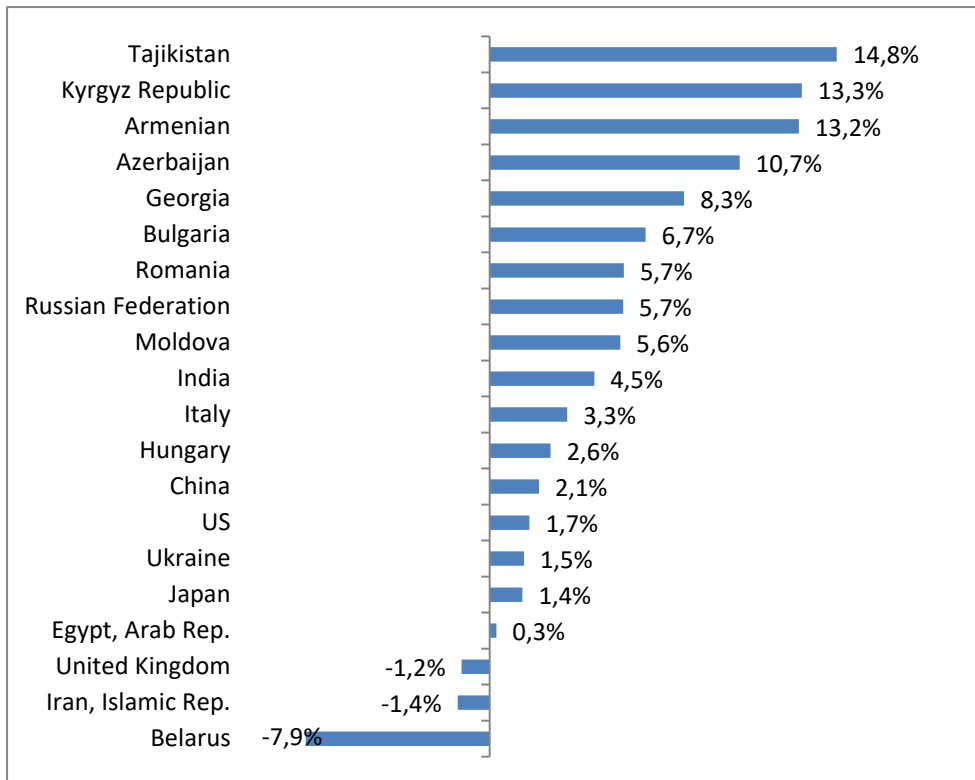


Figure 6: Average real interest rate on bank lending (lending interest rate adjusted for inflation as measured by GDP deflator), %, 2010-2017 (World Bank)

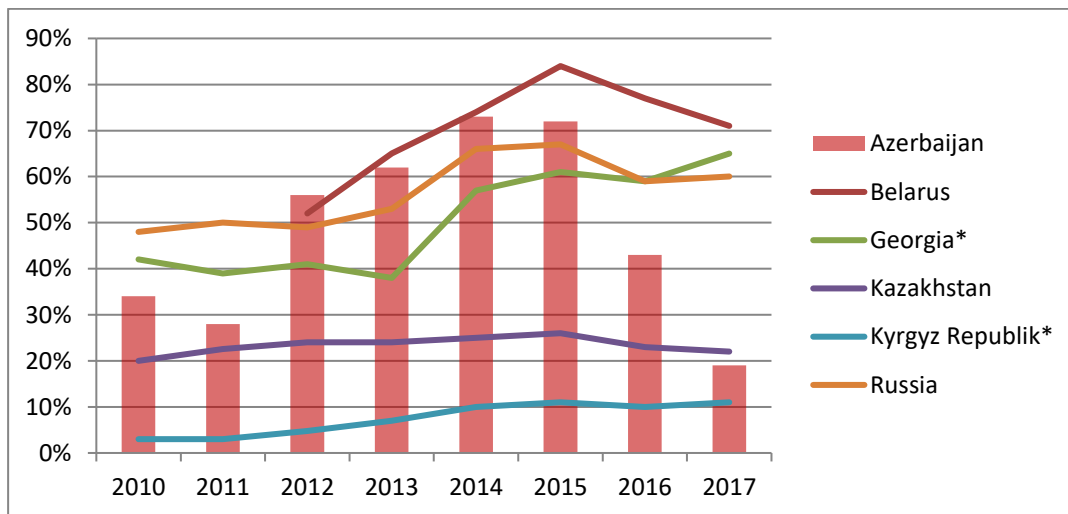


Figure 7: Loans-to-value added ratio in manufacturing, % (author's elaboration based on the countries' Central Banks and the State Statistical Committees)

\* Loans-to-value added ratio in industry

#### 4. CONSLUSION

Paper argues that interest rates differently affect manufacturing and non-tradable sectors. Manufacturing is more sensitive to interest rate fluctuations than the non-tradable sectors, and high lending rates lead to decrease in manufacturing's share of GDP below optimal level that negatively affects the trade balance of goods and services. The paper shoes that in countries, where real interest rate on bank loans is less than 5%, average manufacturing's share of GDP is 13.5%, in countries, where real interest rate on bank loans is 5-10%, average manufacturing's share of GDP is 9.5%, and in countries where real interest rate on bank loans is more than 10%,

average manufacturing's share of GDP is 9.2%. The paper also shows that among 15 countries where manufacturing's share of GDP is higher than 20% (2016) only in three countries real interest rate on bank loans exceed 5%. Paper also argues that high interest rates in Azerbaijan compared to other countries negatively affect the manufacturing's share of non-oil GDP and trade balance of goods and services.

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