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# Is There a Dutch Disease in Russian Regions?

The low economic diversification in Russia is commonly blamed on the abundance of energy resources. This brief summarizes the results of our research that investigates the presence of Dutch disease effects across Russian regions. We compare manufacturing subsectors with different sensitivity to the availability of natural resources across Russian regions with varying natural resource endowments. We find no evidence of differential deindustrialization across subsectors, thereby offering no support for a Dutch disease. This finding suggests that the impact of energy resources on Russian manufacturing is more likely to go through the "institutional resource curse" channel. Thereby, we argue that more efficient policies to counteract the adverse effect of resources on Russian economy should focus on improving the institutional environment.

Russian abundance in oil and gas, and the ways it could negatively affect long-term economic performance and institutional development is not a new debate. One of the key concerns is the influence of energy resources on Russian industrial structure. Energy resources are often blamed for the low diversification of the economy, with an extensive resource sector and the dominant oil and gas export share.

In a forthcoming chapter (Le Coq, Paltseva and Volchkova), we contribute to this debate by exploring the channels through which abundance in energy resources influences the industrial structure in Russia. Our main focus is on the deindustrialization due to the expansion of the natural resource sector, the so-called 'Dutch disease'. Specifically, we explore the impact of energy resources on the growth of manufacturing subsectors in Russian regions. Adopting a regional perspective allows us to separate the Dutch disease mechanism from the main alternative channel of the institutional 'resource curse'. This brief summarizes our findings.

## Dutch disease vs. institutional resource curse

The Dutch disease and the institutional resource curse are, perhaps, the most discussed mechanisms proposed to explain the influence of natural resources on economic performance (see e.g., earlier FREE brief by Roine and Paltseva for a review). In an economy facing a Dutch disease, a resource boom and resulting high resource prices shift production factors from manufacturing industries towards resource and non-tradable sectors. As a result, a country experiencing a resource boom would end up with a slow-growing manufacturing and an under-diversified economic structure. Since the manufacturing sector is often the main driver of economic growth, the economic development may be delayed. If, instead, an economy is suffering from the institutional 'resource curse', it is the interplay of weak institutions and adverse incentives created by resource rents that leads to a slow growth of manufacturing and delayed development.

Importantly, offsetting the potential negative impact of these two channels requires different policy interventions. In the case of a Dutch disease, a state can rely on direct industrial policy mechanisms targeted towards increasing the competitiveness of the manufacturing sector and isolating it from the effect of booming resource prices. For example, it can use subsidies or targeted trade policy instruments, or channel money from increased resource prices out of the economy through reserve fund investments abroad.

In the case of an institutional resource curse, on the other hand, resource rents and weak institutions may undermine and disrupt the effect of such policies. In this case, state policies should be targeted, first and foremost, towards promoting good institutions such as securing accountability and the transparency of the state, and protecting property rights. This suggests that properly understanding the channels through which resource wealth impacts the economy is necessary for choosing appropriate remedial measures.

In our analysis, we address the differential impact of energy resources in Russian regions. This regional perspective allows us to single out the Dutch disease effect, and disregard the mechanisms of a political resource curse to the extent that the relevant institutions do not differ much across regions.

## Resource reallocation effect vs. spending effect

The mechanism of a Dutch disease implies two channels through which a resource boom negatively affects the manufacturing sector. First, a resource boom implies the reallocation of production factors from other sectors of economy such as manufacturing or services to the resource

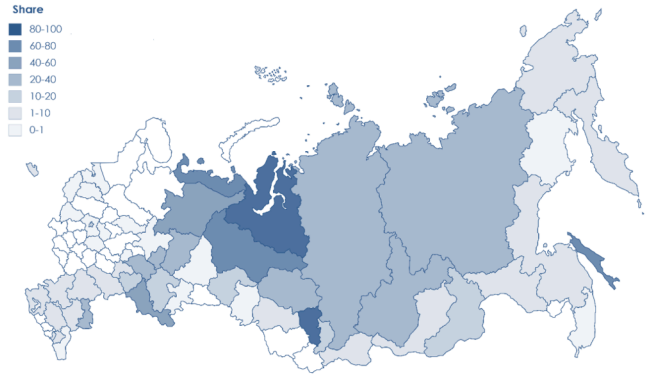
sector, a so-called 'resource reallocation effect'. Second, an additional income resulting from a boom in the resource sector leads to an increase in demand for all goods and services in the economy. This increase in demand will be accommodated differently by different sectors, depending on their openness to world markets. Namely, in non-tradable sectors, isolated from international competition, there will be an increase in prices and output. This, in turn, will increase the prices on domestic factor markets. For tradable manufacturing sectors the price is determined internationally and cannot be adjusted domestically. As a result, production factors will also reallocate away from manufacturing to non-tradable sectors, a so-called "spending effect".

The strength of either effect is likely to be different across different subsectors of manufacturing depending on the sectoral specificities. In particular, subsectors with higher economies of scale are likely to be more affected by the outflow of factors towards the resource sector through the "resource reallocation effect". Similarly, subsectors that are more open to international trade are likely to be affected by the "spending effect".

These observations give raise to our empirical strategy: we access differences in growth of regional manufacturing subsectors with different sensitivity to the availability of energy resources, where sensitivity reflects economies of scale, for the first mechanism, and openness to the world market, for the second mechanism. In other words, we test whether manufacturing subsectors with higher economies of scale (or openness) grow slower than subsectors with lower economies of scale (or openness) in regions rich in energy resources, as compared to the regions poor in energy resources. Observing differential deindustrialization, depending on the industry's exposure to the tested mechanism, would offer support to the presence of a Dutch disease.

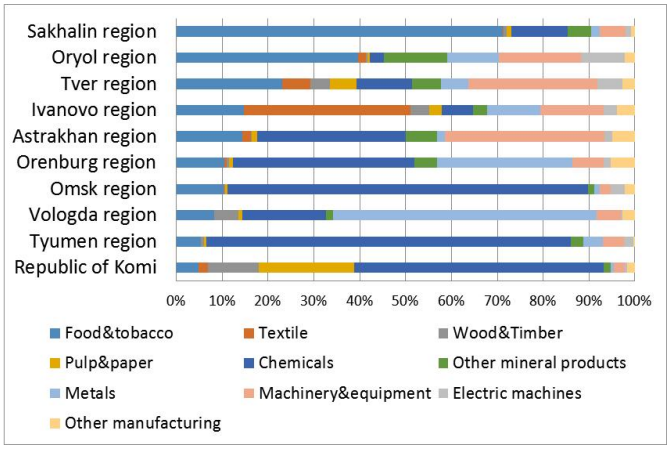
Note that the validity of our empirical strategy relies on the fact that there is high variation in resource abundancy and structure of the manufacturing sectors across Russian regions (as illustrated by Figures 1 and 2).

*Figure 1. Geographical distribution of fuel extractions relative to gross regional product; 2014, percent.*




*Source:* Authors' calculation based on Rosstat data. *Note*: Figures for regions exclude contribution of autonomous okrugs where applicable.

*Figure 2. Regional diversity in manufacturing structure, 2014.*




*Source:* Rosstat.

# Data and results

Our empirical investigation covers the period 2006—2014. The data on manufacturing subsector growth and regional energy resource abundancy come from Rosstat, the sensitivity measures across different manufacturing sectors are approximated based on data from Diewert and Fox (2008) (economies of scale in US

manufacturing), and OECD (sectoral openness to trade).

The results of our estimation show that the differences in growth rates of manufacturing subindustries across Russian regions with varying natural resource endowments cannot be explained by the sensitivity of these subindustries to the availability of energy resources. This can be seen from Table 1, where the coefficient of interest – the one of the interaction term between the measure of sectoral sensitivity if resource abundance and regional energy resource wealth – is not significantly different from zero, no matter how we measure the sensitivity: by the returns to scale or by openness to international trade.

*Table 1. Estimation of Dutch disease effect with different sensitivity measures.*

| | Dependent variable: average annual growth index of sectoral output | |
|---|---|---|
| | Sensitivity measure: Economies of scale | Sensitivity measure: Openness |
| Subsector sensitivity * Size of the fuel extraction sector in the region | -0.0353 (0.0873) | 0.0674 (0.0954) |
| Subsector fixed effect | YES | YES |
| Region fixed effect | YES | YES |
| Observations | 1,185 | 1,185 |
| R-squared | 0.1574 | 0.1577 |
| | | |

*Source:* Authors' calculations.

These results hold true if we control for differences in regional taxes, labor market conditions, and other region-specific characteristics by including regional and sectoral dummy variables, if we consider alternative measures of energy resource wealth, and if we use other, non-parametric estimation methods.

In other words, our data robustly offers no support for the presence of a Dutch disease in Russian regions.

# Conclusion and policy implications

Diversification is often mentioned by the Russian government, as one of the top economic policy priorities, and the need for 'diversification' has been used in the political debate as an argument for an active industrial policy.

However, the policy measures that are necessary to counter the effect of abundant energy resources on diversification and, more generally, on economic development may be highly dependent on the prevailing channel through which resources affect the economy. In particular, while active industrial policy may be justified as a remedy in the case of a Dutch disease, industrial policy may well be ineffective, or even harmful, in the presence of an institutional resource curse mechanism.

In our study, we find no support for the Dutch disease effect when looking at the impact of energy resources on the growth of regional manufacturing sectors. Thereby, to counterbalance the resource curse effect on the Russian economy, we argue that it may be more efficient to improve the institutional environment than to use active government policies affecting industrial structures.

# References

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