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Textile and Chemical Subsectors in the Azerbaijani Economy: A Descriptive Glance at Possible De-industrialization

Working Paper No. 6

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Abstract

Azerbaijan's economy has been investigated within Dutch disease (DD) and Natural Resource Curse Theory (NRCT) several times during the last 20-22 years, but the studies relied on heavily aggregated data and speculative theoretical models. Opinions differ in academia as to how and to what extent these phenomena happened. However, we are still of the assertion that non-oil manufacturing, in general, has experienced adverse effects since the huge oil revenue found its way into the Azerbaijani economy because the cost of non-oil production rose and competitiveness declined due to the domestic inflationary pressures. Meanwhile, subsectoral and specific parts of non-oil economy have not been studied in more detail. This working paper invites to consider textile and chemical subsectors as de-industrialized economic subsectors due to the oil boom's take over since 2005 and 2006 in Azerbaijan. The descriptive analysis shows that the textile subsector is less likely to be relevant from a de-industrialization standpoint after the collapse of the Soviet Union; however, certain chemical subsectors seem to strongly react to the oil boom. Still, this does not mean that we have nothing to worry about the output of the textile industry. These results can be supported by quantitative and empirical works, but not limited to. Qualitative methods can generate new insights on microeconomic levels (i.e., factory or industrial park) about non-oil manufacturing in the Azerbaijani economy to reveal potential adverse/positive effects of oil-led economic growth and development. This working paper and upcoming works can be a useful framework for the government officials and decisionmakers to follow more thorough industrial policies to recover non-oil industrial potential of the Azerbaijani economy in a short period.

Keywords: Azerbaijan economy, chemical subsectors, de-industrialization, Dutch disease, economic subsectors, industrial output, natural resource curse theory, non-oil industry, textile subsectors

JEL Classification Codes: D04, E32, L6, O14, O52, O53

1. Introduction

The Azerbaijani economy is a famous case study when it is about the themes of oil dependency (Czech, 2018), lop-sided industrial structure, or poor economic diversification (Ismayil, 2015; Aybar et al., 2015; Bayramov and Abbas, 2017; Hamidova, 2018; Hamidova, 2021; Hamidova, 2021), and de-industrialization (Yun, 2018) during a recent couple of years. Many works employed Dutch disease (DD) and Natural Resource Curse Theory (NRCT) as explanatory frameworks (Bayramov and Conway, 2013; Hasanov, 2013; Sadik-Zada, 2016). In fact, since the late 1990s, many scholars alarmed the Azerbaijani officials that the country's unprepared institutions and political establishment may lead to poor economic diversification, lop-sided industrial output, and severe vulnerability to external shocks (Singh and Laurila, 1999; Auty, 2006). Without much wait, as soon as high oil revenue kicked in the Azerbaijani economy, reforms stopped, spending rose, inflationary pressures mounted, real effective exchange rate (REER) and

nominal effective exchange rate (NEER) appreciated (Hasanov, 2010; Hasanov, 2017). All these pointed to the significant gaps in the economic policy of the Azerbaijani government and in parallel academia focused on the aggregated data and simplified models to explain structural shifts and movement of the resources (Gahramanov and Fan, 2002). Nevertheless, a more focused, in other words, subsectoral perspective's time has arrived due to new opportunities and challenges that time has brought.

Auty (1994) pioneered NRCT studies inspired by the fact that natural resource-rich countries perform poorly compared to resource-scarce countries. The studies differentiated between resource abundance and resource dependence, however, the most important lesson from them was that certain resource-rich countries exhibit systemic and steady economic underperformance. DD was an economic explanation of NRCT and adopted a three-sector approach to explain open and small economies in the pioneering work by Corden and Neary (1982) and Corden (1984). In other words, an economy may have three sectors, namely, a booming, lagging, and non-tradeable sectors. A booming sector due to the output boom increases its share in the exports and lures a high amount of foreign currency into the country. If the government miscalculates the absorption capacity of the national economy and immediately spends the earnings, labor resources move from manufacturing sectors to non-tradable sectors, increasing the non-tradable sector's employment and output, and REER appreciation occurs. This is more relevant for the Azerbaijani case; however, there are more scenarios (see Corden (1984) for an intuitive explanation of the theory).

Azerbaijan's economic growth is highly and positively correlated with international oil prices (Hasanov, 2013; Mukhtarov et al., 2020). This created REER appreciation (Hasanov, 2017), domestic inflation (Mukhtarov et al., 2019), and a dependent economic model (Musayev and Aliyev, 2017). Mainly oil and natural gas sectors of the Azerbaijani economy became attractive for foreign capital and domestic capital markets failed to deliver sustainable financing opportunities for non-oil manufacturing (Mehtiyev, 2018; Bayramov and Gulaliyev, 2019). Moreover, the private share of non-oil manufacturing became highly indebted due to domestic high interest rates that increased bankruptcy and unit labor cost in Azerbaijan (Mikayilov and Najafov, 2019). In this vein, on aggregated levels, the oil factor showed a significant role to determine the main routes of the economic activities, but on subsectoral levels, research remains scarce in order to analyze the productive forces about main DD-related macroeconomic indicators. All in all, there are substantial expectations that the macroeconomic environment in the Azerbaijani economy does not serve to increase the competitiveness of non-oil manufacturing products, which in turn drags the motivation of the local producers and intentions of the government to support them further.

This working paper mainly intends to evoke an interest towards textile and chemical production in the Azerbaijan economy to be considered as de-industrialized. The English language literature examples that are highly visible and publicly available seem not to

reflect these subsectors' realities concerning the DD or NRCT. It must be noted that this work is descriptive and argumentative. To reach its goal, the author descriptively analyzes the associations among the chosen subsectors and DD-related variables to establish the initial ground for the de-industrialization phenomenon. Figure and scatter plot analysis have been applied to provide an overview of the main trends and dynamics. Therefore, the main aim of the work is to discover the trends and dynamics of the chosen subsectors to update the research interest when it comes to DD or NRCT in the Azerbaijani economy. Any conclusions and final inferences must be handled very carefully. The author believes that this working paper is a good starting point to focus on oil-sourced economic processes on the subsectoral level.

The next section provides data and methodology of the current work. The third section reports the results, and lastly, the conclusion and suggestions section seals the working paper.

2. Data and Methodology

Original research papers and studies need to be supported by descriptive and overall assessment of the main trends and dynamics on the subsectoral level in the Azerbaijani economy. The current research employs figure analysis on the collected data from the Soviet Union statistical yearbooks for the Soviet Union period and the State Statistical Committee of the Republic of Azerbaijan (SSCRA) for the post-Soviet years. The data type is annual and reflects the natural volume of the production—tons or thousand tons. Scatterplot matrices have been constructed on SPSS software to see the overall associations among the subsectors and REER. REER is the main indicator of competitiveness. REER also has captured the domestic inflation dynamics and oil boom period in the Azerbaijani economy since 2005 and 2006. The collected data covers the period of 1995–2020, but also with the backward extension to include the Soviet Union years, mainly starting from 1945 in the textile industry. The statistical data for the independence years can be obtained from the interactive system of SSCRA, called “Statistical Information System (ASIS)”, but Soviet Union data can be checked from the archive materials following the link: <https://istmat.org/statistics>

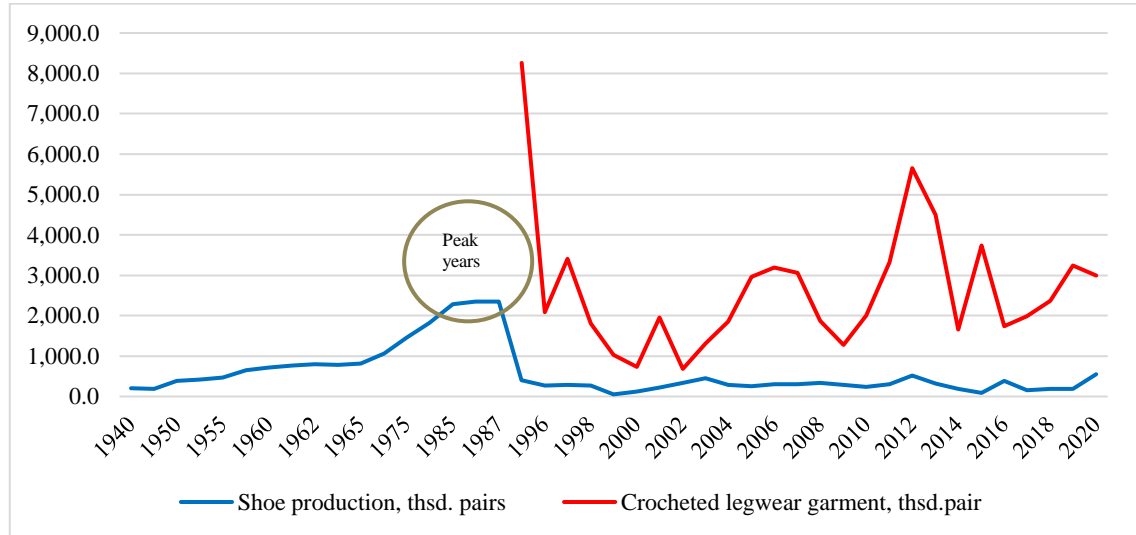
3. Results

3.1. Textile industry

The available Soviet-era data allowed to construct longitudinal data for limited textile categories such as the production of shoes and crocheted legwear garment between 1940 and 2020 described in Figure 1. Therefore the production of shoes peaked in the late 1980s, then almost collapsed after the independence and stayed lower than 500.0 thousand pairs, but in 2020, by 544.2 thousand pairs, shoe production showed an outstanding performance. Crocheted legwear garments used to be produced in high numbers in 1995 (8260.0 thousand pairs), but until 2012 the production fluctuated and reached 5645.6 thousand

pairs. Between 2013 and 2020, crocheted legwear garment production has not gained any significant levels, but production seems to continue without output growth collapse.

Figure 1. Production of shoes and crocheted legwear garment, in thousand pairs, 1940–2020.



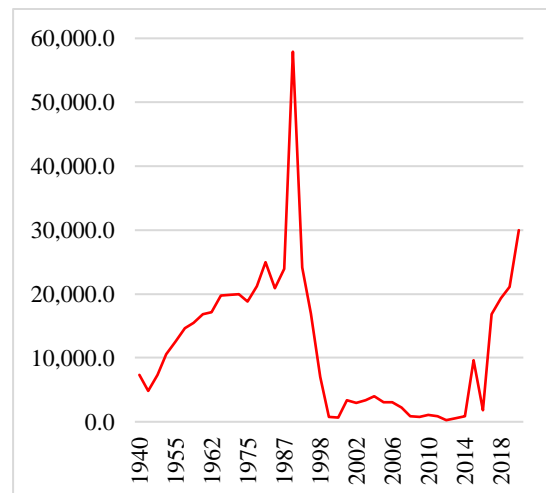
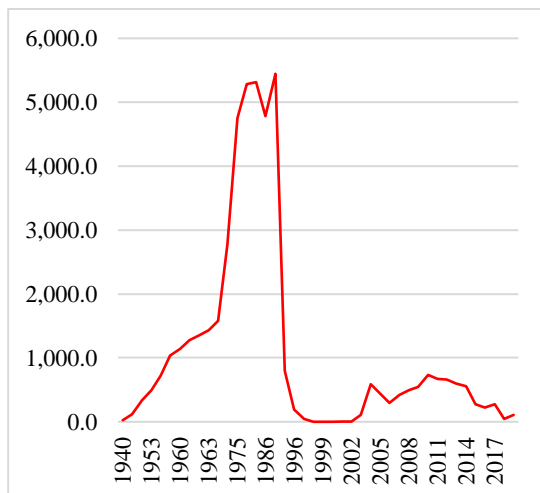
Source: Istmat.org and SSCRA (2022).

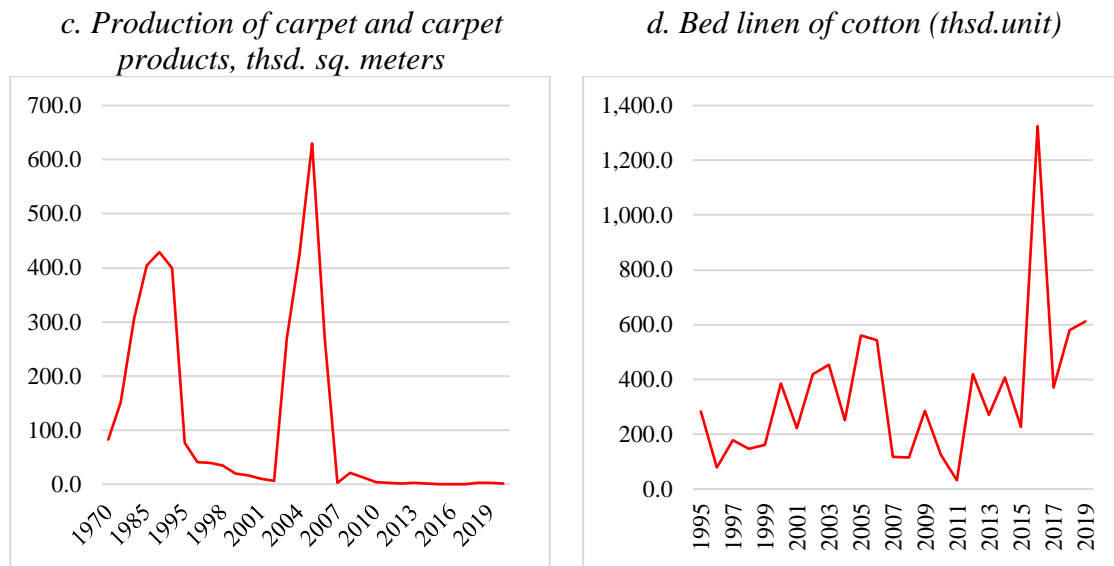
Compared to the Soviet Union years, production of silk fabric, cotton fabric, carpet and carpet products collapsed without ever reaching meaningfully elevated and sustainable growth levels (see Figure 2, panels *a*, *b* and *c*). However, production of cotton bed linen reached a high level such as 1325.0 thousand units in 2016, promising an upward and positive trend in this specific subsector of the textile industry (see Figure 2, panel *d*). Cotton production, therefore cotton fabric and bed linen of cotton are highly interlinked among each other and the state paid soaring attention to producing cotton during the post-boom period (2014–2020).

Figure 2. Production of variuos textile products.

a. Production of silk fabric, in thousand square meters, 1940–2019.

b. Production of cotton fabric, in thousand square meters, 1940–2020.



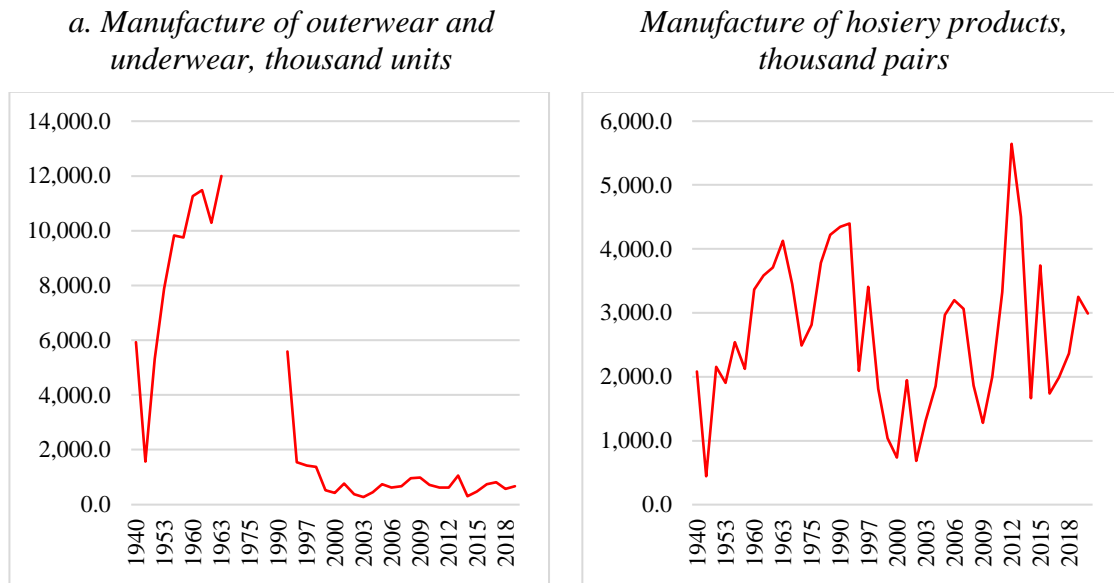


Source: Istatmat.org and SSCRA (2022).

Next, between 1945 and 1963, the manufacture of outerwear and underwear had a sharp and significant rise (from 1564.0 in 1945 thousand units to 11,998.0 thousand units in 1963), but the post-Soviet years delivered lower levels of production, without visible growth and maturation (i.e., 419.6 thousand units in 2000, or 314.7 thousand units in 2014, see Figure 3, panel *a*). Meanwhile, interestingly, production of hosiery products was higher during the post-Soviet years of Azerbaijan compared to Soviet Union years as depicted in Figure 3, panel *b*. Stated alternatively, the positive trend in the hosiery production was disrupted between 1996 and 2001, but starting from 2002 the production took off and peaked by 5645.6 thousand pairs in 2012. After the year of 2012, hosiery production slowed down and fluctuated, yet the subsector is a rare case where significant output collapse did not occur.

Lastly, scatter plot matrices in Figure 4 and 5 demonstrate the association among the subsectors of textile industry and REER which is the most widely used competitiveness indicator. Considering the oil-dependent nature of the Azerbaijani economy, this might give an intuition to understand the impact of oil boom on non-oil manufacturing in the face of textile industry. Therefore, REER appreciation was negatively associated with the production of carpet and carpet products, cotton fabrics, shoe and footwear, outerwear and underwear, bed linen of cotton. Meanwhile, REER appreciation was positively associated with the production of silk fabrics and crocheted legwear garment. If we assess the fact that five subsectors against two showed a negative response to the REER appreciation, then a slight direction of suspicion towards the fact that oil boom proliferated the DD effects, thus de-industrialization process in the textile industry. However, the magnitude of these effects measured by the steepness of the fitted regression line is lower, thus not much significant as expected.

Figure 3. Manufacture of outerwear, underwear and hosiery products, in thousand units and pairs, 1940–2020.



Source: Istmat.org and SSCRA (2022).

Notes: Data for the range of 1940 and 1963 have been constructed as a summary of the categories named “Production of underwear jersey, in thousand units” and “Production of outerwear jersey in thousand. units”; data for the range of 1965 and 1990 are missing from the Soviet archives or simply have been changed into the other category without elaboration.

Figure 4. Scatter plot matrix of the selected textile subsectors, 1995–2020.

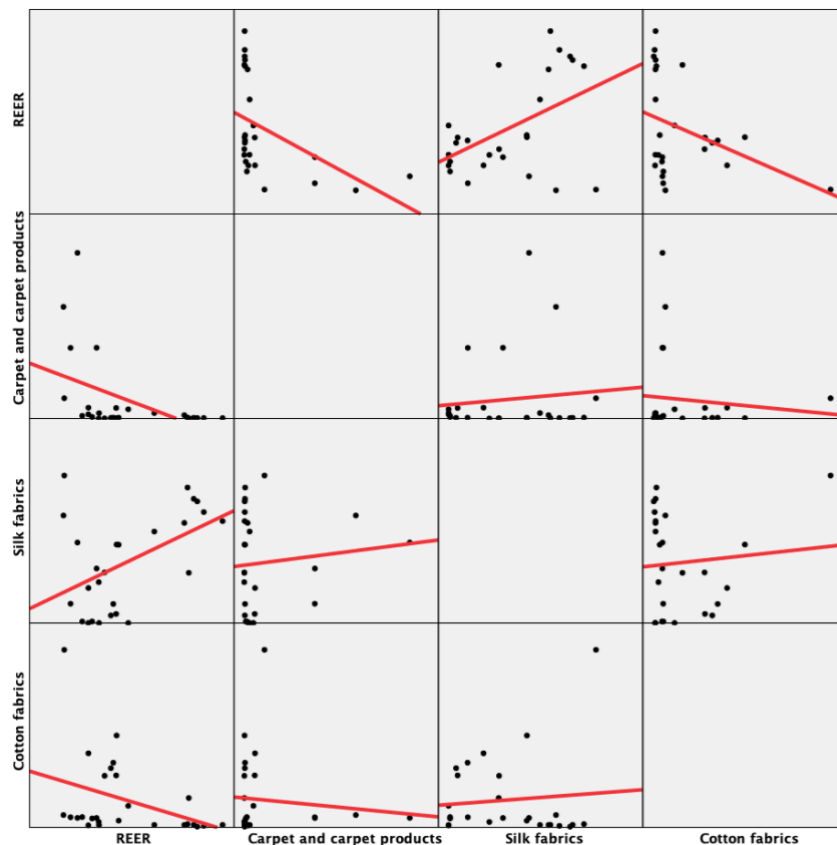
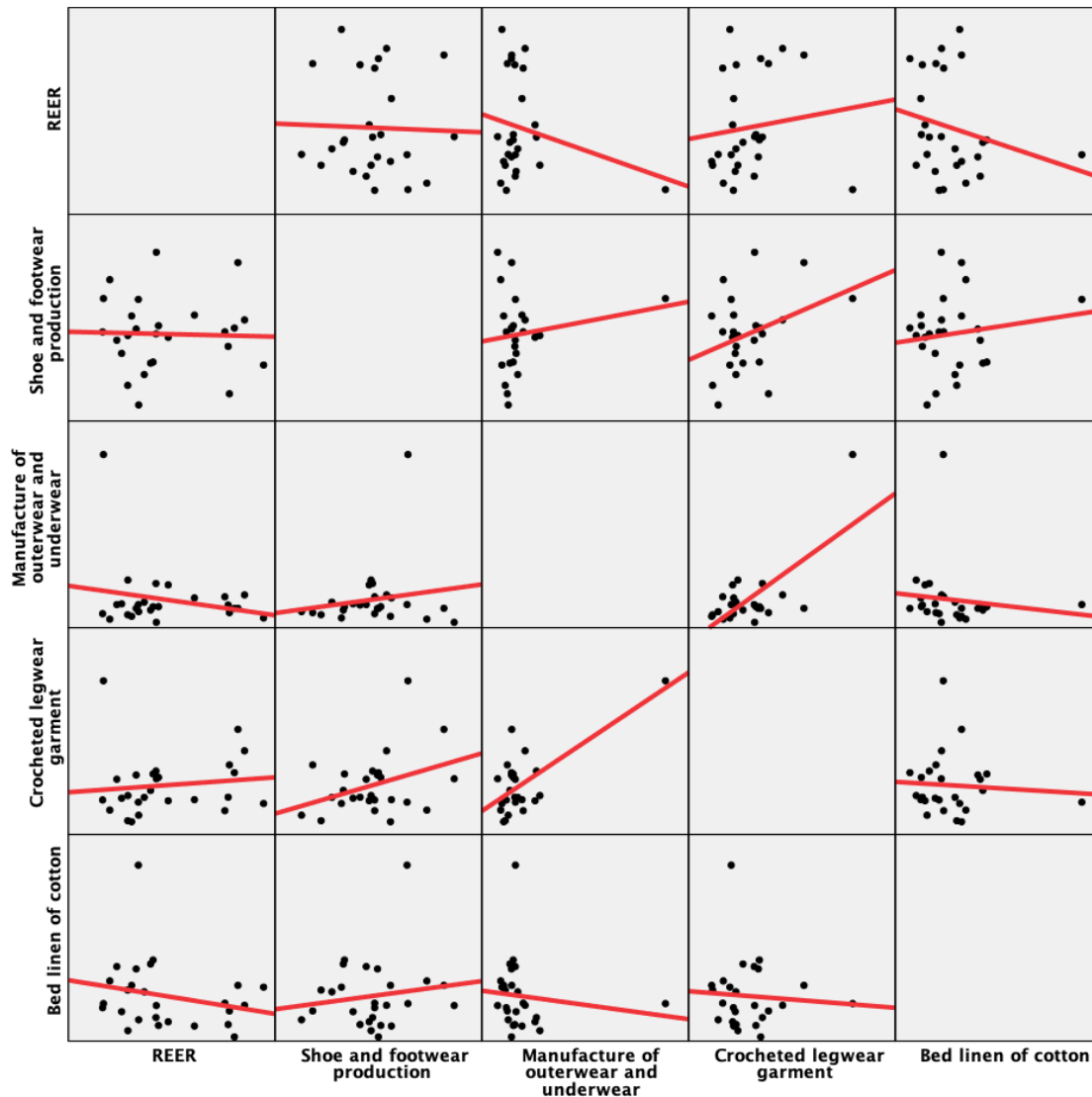


Figure 5. Scatter plot matrix of the selected textile subsectors, 1995–2020.

3.2. Chemical industry

From Figures 6 and 7, we can observe a negative association between REER and the subsectors such as chlorine, hydrochloric acid, sulphuric acid, caustic soda, isopropyl alcohol and liquid soda. The other subsectors had positive associations with REER. Although certain subsectors do not show any negative association, it is an expected result, as the chemical industry is very close to the oil and natural gas sector. Usually, oil and natural gas resources are the main inputs in chemical industry. Stated alternatively, they can go hand-in-hand in terms of output growth and reindustrialization patterns after the independence from the Soviet Union. Therefore, the uniqueness of the analysis of the chemical industry relies on the fact that both output collapses and its negative association, or output increases and its positive associations must be carefully explained to outline the differences.

Figure 6. Subsectors of the chemical industry and their association with REER, 1995–2020.

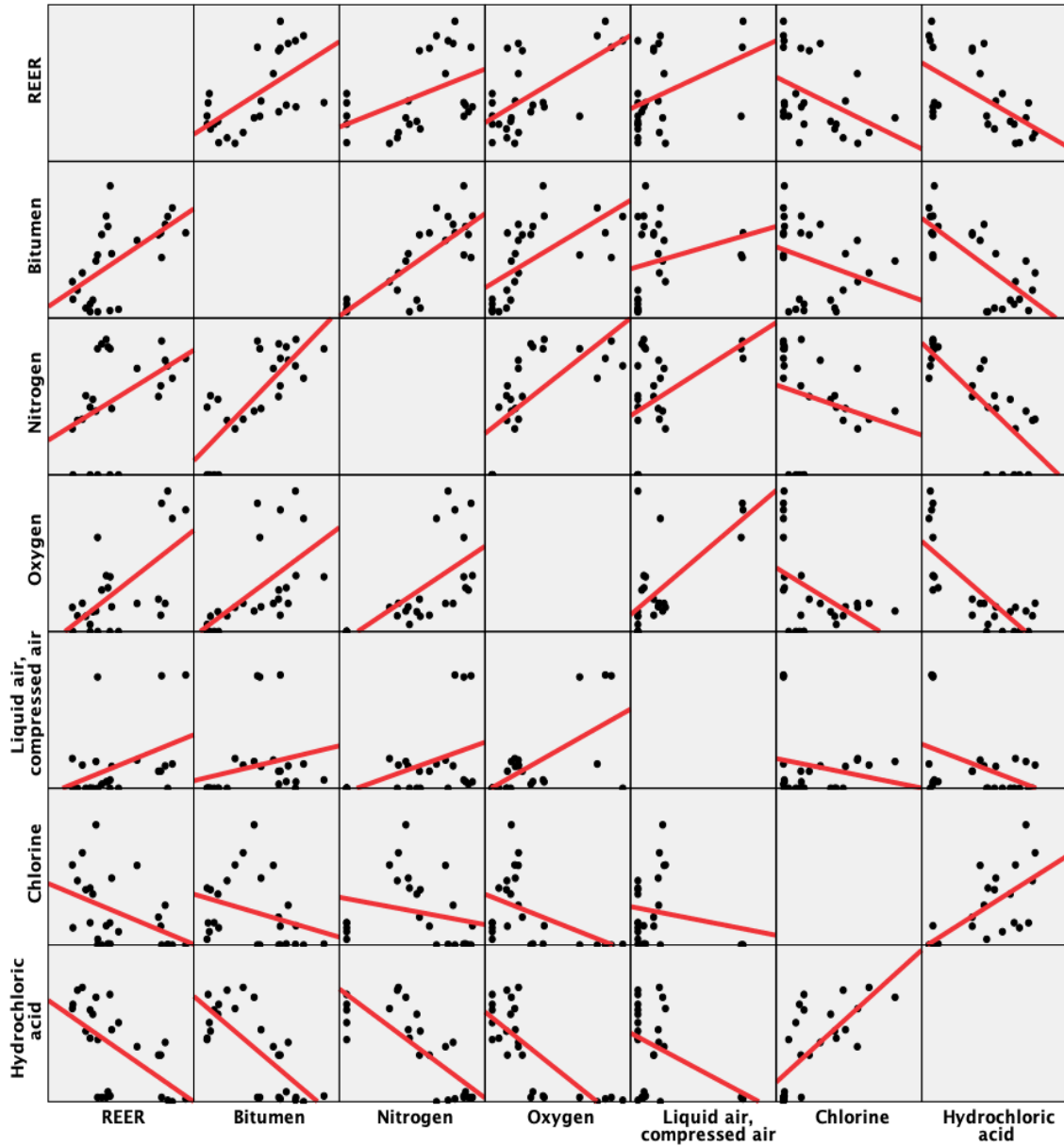
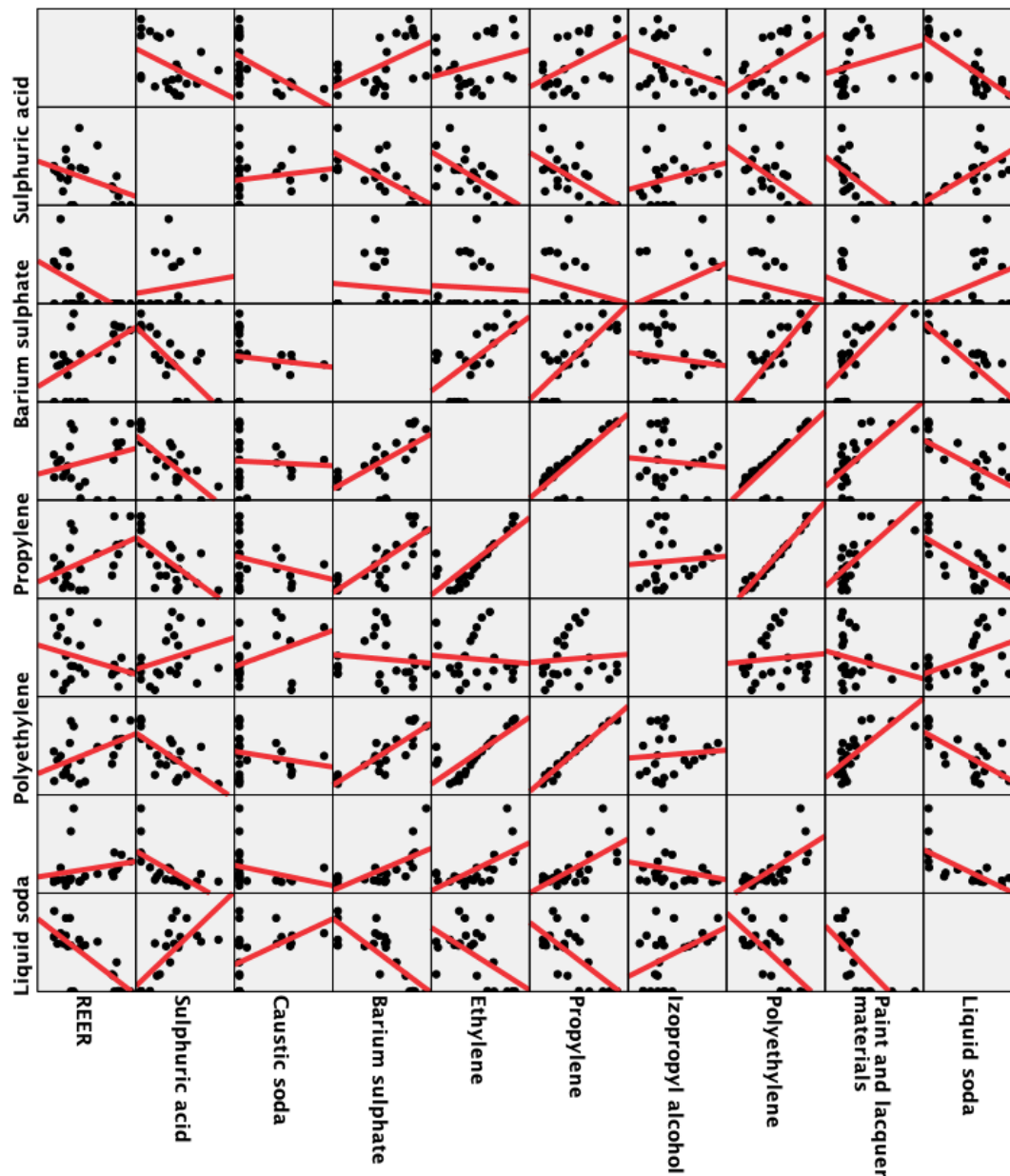


Figure 7. Subsectors of the chemical industry and their association with REER, 1995–2020.



4. Concluding Remarks and Suggestions

This working paper serves the purpose of analytically conceptualizing the possible negative association between non-oil manufacturing subsectors and REER. This direction of the relationship is highly expected in the Azerbaijani economy due to the Dutch disease effects resulting from the oil boom period between 2005 and 2014. Although Azerbaijan might experience a second oil boom period—as the oil prices have risen sharply since the second half of 2021—non-oil manufacturing and the necessary institutional reforms might get delayed again. The government becomes relaxed during the high oil prices and as soon as the commodity markets crash, the Azerbaijani government gets enthusiastic to reform the economy to fill the gaps in non-oil sectors. Therefore, not only highly aggregated

sectors—such as non-oil manufacturing, oil sector and non-oil tradable—but also specific subsectors must be analyzed to apply a microeconomic perspective on the macroeconomic events in the Azerbaijani economy. Such works are rare in the English language body of literature.

This study identified that the textile industry showed signs of de-industrialization during the post-Soviet years compared to the Soviet Union years. Nevertheless, post-Soviet years present more optimistic results in output growth in textiles—excluding the production of silk fabrics. Moreover, during the years like 2019 and 2020, the production levels peaked—for example, shoe production. This might be due to the positive results of the government's fight against the informal economy.

The major part of the subsectors of chemical industry did not show a negative association with REER, yet at least six subsectors—chlorine, hydrochloric acid, sulphuric acid, caustic soda, isopropyl alcohol and liquid soda—showed a preliminary negative association. While the reasons for the output collapse might be many, the chemical industry as an industry close to oil and natural gas industries should positively correlate, rather completely de-industrialization. Therefore, further examinations beyond the analysis of uncomplicated trends and dynamics must be carried out to elucidate the driving forces behind both negative associations with REER and decelerations in output.

Further research should follow the following principles and questions to clarify the driving forces of the subsectoral differences in terms of output growth rates (or de-industrialization):

- What is the structure of the industry in terms of producers? Is there one or many producers? Sometimes collapse of one big factory or plant leads to devastations of the whole specific subsector;
- Were there any state protections among the subsectors of the textile or chemical industry to protect from REER appreciation or lower demand among the consumer markets?
- To what extent the state control of the shadow economy is being reflected in the subsectors of textile and chemical industry? Azerbaijan increase its governmental efforts to diminish the size and share of the shadow economy during the last years which can be translated to output increases in the official statistics, but in reality, this is just a mere reflection of institutional measures, not economic productivity or efficiency;
- To what extent do the official statistics mirror the true value of non-oil production? The government's enthusiastic claims concerning the increased non-oil production and exports must be carefully analyzed in the background of the inflation, as the prices might get inflated without real reflections on the value added and output in natural form.

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