



## INDUSTRIAL POLICY IN THE SOUTH CAUCASUS

*Special Editors: Christian Timm, Yana Zabanova*

*Governance in Emerging Economies, Berlin*

*(University of Groningen and Private University Göttingen)*

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## Introduction by the Special Editors

This issue is dedicated to industrial policy and industrial development in the South Caucasus. In the past decade, industrial policy has experienced an unprecedented renaissance, both globally and in the South Caucasus region. Several developments have promoted this trend. Firstly, the global financial crisis of 2008 exposed the vulnerability of many economies. It fundamentally shook the faith in the liberal economic model and led to a particular openness to new policy approaches. Secondly, China's successful state capitalism demonstrated that other, especially Asian countries have developed incredibly fast, not despite but because of state industrial policy. Against this background, there has been an increasing experimentation with industrial policy approaches worldwide. This applies in particular to Armenia and Georgia, both of which began to intervene more actively in their economies in the aftermath of 2008. While Armenia developed a distinct industrial policy strategy including priority sectors, Georgia followed a rather horizontal policy approach while cautiously avoiding the term industrial policy. Azerbaijan, though, had launched its first explicit industrial policy initiative already before 2008 when policy-makers became aware of the risky dependency of the economy on global commodity prices.

We understand industrial policy broadly as “government actions to alter the structure of an economy, encouraging resources to move into particular sectors that are perceived as desirable for future development” (Altenburg and Rodrik 2017).

This issue is structured as follows: Three country case studies give a systematic overview of the periodization, strategy, objectives including chosen priority sectors as well as instruments of the respective industrial policy. The aim is to shed some light on the existing policy initiatives, the resources they draw on, and their outputs. The country cases are complemented by a contribution that focuses on the outcome and impact level of these policies by examining industrial development in a comparative perspective. The paper applies the EQuIP (Enhancing the Quality of Industrial Policy) approach for conducting a multi-dimensional industrial performance diagnosis across the three countries. This methodology was developed by UNIDO and GIZ and allows for a comparative quantitative analysis of industrial development dynamics ([www.equip-project.org](http://www.equip-project.org)).

Three of the authors (Jugheli, Timm and Zabanova) are part of the research group “Governance in Emerging Economies” run by Private University Göttingen and the University of Groningen ([www.governance-in-emerging-economies.net](http://www.governance-in-emerging-economies.net)). This publication has been made possible thanks to the generous funding of the research group provided by the Volkswagen Foundation. We also thank Cenk Sinar for his assistance in preparing this issue of the Caucasus Analytical Digest.

*Christian Timm and Yana Zabanova,  
Governance in Emerging Economies, Berlin (University of Groningen and Private University Göttingen)*

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## Armenia: Pursuing Export-Led Industrial Growth

By Yana Zabanova,

Governance in Emerging Economies, Berlin (University of Groningen and Private University Göttingen)

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### Abstract

In 2011, Armenia adopted its first-ever industrial policy (IP) strategy for 2012–2020 aimed at stimulating export-led industrial growth and focusing on 11 manufacturing subsectors in the initial phase. With only limited funding, the Strategy envisions the government's role primarily as a facilitator and aims at making full use of cooperation with the private sector and international donors. While Armenia has managed to significantly increase the share of exports in its GDP, this achievement is attributable mainly to the growth in exports of lower-sophistication goods such as tobacco products, agricultural produce, food and beverages, and textiles and apparel. Among non-manufactured exports, an impressive success story is the Armenian IT sector, which has been prioritized by the government already since 2000 and has benefited from the support of diaspora investors. The free economic zones launched in Armenia have so far performed below their potential. The new government under Prime Minister Pashinyan is in the process of revising and updating the IP strategy.

### Introduction

During Soviet times, Armenia boasted a well-developed industrial potential, with its key strengths in chemicals, electronics, and the light industry. Following independence, Armenia's GDP plummeted, and massive deindustrialization took place. While growth resumed in 1994 and intensified in the 2000s, the recovery was driven by the construction and services sectors rather than manufacturing. In 2010, the share of the industrial sector in Armenia's GDP stood at 14.9%, and in total employment, at 7.3%. Armenia's exports were poorly diversified and lacked sophistication, with the mining industry's products occupying the largest share, followed by processed food and diamonds. The economy also strongly depended on remittances from labour migrants (peaking at 22 percent of the GDP in 2004), mainly those working in Russia. As a result of Armenia's dependence on global commodity prices and remittances, it was hit hard by the 2008 economic crisis, with the GDP shrinking by nearly 16 percent in 2009. The failure of this growth model became the main impulse for the government to consider a targeted industrial policy strategy aimed at expanding and diversifying manufacturing exports. The new approach was meant to complement Armenia's positive experience with sectoral promotion policies in tourism and the IT sector since the early 2000s.

This article will discuss the development of Armenia's industrial policy (IP), using IT, textiles and apparel as examples. It will also address Armenia's experience with free economic zones (FEZs), a widely used instrument to promote export-oriented manufacturing, and discuss the impact of Armenia's membership in the Eurasian Union on its manufacturing exports. The article will conclude by briefly dwelling on the potential implications of the 2018 change in government in Armenia for its IP strategy.

### The 2011 Strategy for Export-Led Industrial Growth

The 2008 global crisis sparked a renewed interest in industrial policy worldwide, and Armenia was no exception. The overarching goals for Armenia, with its small domestic market of only 3 million consumers, were to (1) promote export-driven industrial growth and (2) diversification, (3) move up the value chain, and (4) create new jobs. Given its budgetary constraints, the government was determined to engage the private sector and donors to achieve those goals, using public-private partnerships (PPP) as the preferred form of cooperation.

In December 2011, Armenia adopted the Export-Led Industrial Growth Strategy for 2012–2020, developed by the local consultancy EV Consulting with support from the World Bank. The first implementation phase of the Strategy (2011–2013) focused primarily on removing constraints and scaling up existing capacities in 11 export sectors (most of them established but also several nascent ones): brandy, wine, canned foods, water, juices, diamond cutting, gold and jewellery, watches, precision engineering, pharmaceuticals, and textiles. The plan for the following phases was to move towards new "horizons" by focusing on higher-value activities and promoting diversification. Judging from expert interviews, however, there has been a lack of visibility and effort in the subsequent phases of the Strategy implementation. Thorough monitoring and evaluation of the IP Strategy have also been lacking, especially in recent years.

## The IP Toolkit

The industrial policy toolkit in Armenia combines instruments to improve the business and investment climate with instruments that should a) help to identify latent comparative advantages and b) overcome market and coordination failures by improving access to finance and markets and providing better training opportunities. Armenia's policies include (Armenia Development Strategy, para. 187):

1. *Special tax and customs regimes*: special tax regimes for exporting companies, deferred VAT for imported investment goods; setting up free-trade zones with special tax and customs preferences.
2. *Financing tools*: concessional loans for certain types of activities, export and credit guarantees, own capital funding and participation in investment funds.
3. *Improving access to markets*: setting up trade representations, support for participation in exhibitions and fairs, organization of conferences and visits, branding activities.
4. *Capacity building*: training programs, technical and financial assistance to companies implementing quality assurance systems, support for technology and knowledge transfer (in particular from the Armenian diaspora in industrialized countries)
5. *Research and Development*: establishing technoparks and industrial parks, providing research grants, creating venture funds.

The division of responsibilities in the IP strategy is somewhat complicated. In addition to the Department of Industrial Policy at the Ministry of Economic Development and Investment, several other bodies have played a role. The main coordinating body for public-private partnerships was the Industrial Board (or Council) adjunct to the Prime Minister,<sup>1</sup> which met until 2014 and then gradually became inactive (possibly reflecting the reduced attention given to the Strategy in recent years). Sectoral boards were also set up to promote public-private cooperation. The executing agencies were initially the Industry Development Fund and the Armenia Export Financing Insurance Company, established in 2013. In 2015, the two organizations merged into the Development Foundation of Armenia (DFA), which became Armenia's national authority for investment and export promotion. DFA was rebranded Business Armenia in 2018.

Budget allocations for the Strategy were first approved in 2012 and were very modest: in 2013, the amount was 1.14 million USD, and in 2014 it was 1.32 million USD, less than 5 percent of Armenia's state budget. One-third of the budget was spent on co-financing the participation of Armenian producers in international expos and fairs (World Bank, 2015, p. 49). Funding in subsequent years has apparently been similar.

In 2015, the World Bank conducted an evaluation of the first phase of the Strategy (which remains the only publicly available IP evaluation to date) and found that the target sectors did grow faster than the rest of the economy, with a 17 percent compound annual growth rate (CAGR) for 2010–2013; their share in Armenia's total exports increased from 23.3 to 26 percent. The best performing sectors were brandy and watch-making, as well as textiles and apparel (see Table 1 overleaf). There were also increases in productivity that outperformed the economy as a whole (12 percent CAGR in the target sectors, as opposed to the processing industry generally at 9 percent and the entire economy at 8 percent, respectively). Lastly, the report found that the number of workers in the target sectors went up by 38 percent between 2010 and 2013 (World Bank 2015). However, it was still too early to attribute these results to the programme itself.

## Free Economic Zones

Free economic zones are a common tool used by governments to attract FDI and facilitate export-oriented manufacturing and thus can function as an instrument supporting industrial policy. In June 2011, as the IP strategy was still being discussed, Armenia adopted the Law on Free Economic Zones. In addition, the 2014 Law on Industrial Policy identifies "industrial zones" (both with and without FEZ status), technoparks and clusters as instruments of industrial policy. Today, there are four FEZs in Armenia, offering investors the usual set of preferences: exemptions from the profit tax, VAT, customs duties, real estate and property taxes, and corporate income tax. The Alliance FEZ was established in 2013 with a focus on high-tech and pharmaceuticals. The second zone, Meridian (2015), focuses on jewellery and watch-making. In December 2017, Armenia opened the Meghri FEZ on the border with Iran, in an effort to take advantage of its geographic position as Iran's gateway to the Eurasian Economic Union (EAEU).<sup>2</sup> The most recent FEZ is ECOS, launched in October 2018 and tasked with hi-tech cluster development, including projects related to

1 The Industrial Council/Board is no longer found on the website of the Prime Minister of Armenia. However, a 2012 snapshot of the website shows the list of members: <https://web.archive.org/web/20121114002955/http://www.gov.am/ru/councils/members/19/>

2 In May 2018, Iran and the EAEU signed a temporary agreement establishing a free-trade zone between them; negotiations on the final deal are ongoing.

**Table 1: Export Indicators, Target Sectors**

Sector	2013 (mln. USD)	2010-13 CAGR (Percent)	Share of Sector Export in Total Exports (Percent)	2015 Target* (mln. USD)	2013 as Pro- portion of 2015 Target (Percent)	2020 Target* (mln. USD)
Pharmaceuticals	6.9	13	0.5	22.5	31	95
Wine	4.2	14	0.3	10.7	40	29
Brandy	181.3	24	12.4	180	101	300
Textile & apparel	38.5	81	2.6	66	58	133.5
Footwear	2.1	17	0.1	16.2	13	47.7
Jewellery	21.3	17	1.4	30	71	76
Diamond-cutting	88.1	-1	6.0	111	79	151.7
Watch-making	14	53	1.0	12	116	28
Precision engineering	25.3	14	1.7	47.5	53	150
Total	384	17	26.2	496	82**	1,1011

Source: UN ComTrade, sectoral strategies

Note: 2015 targets for pharmaceuticals, textiles and apparel, jewelry and precision engineering sectors include outsourcing orders by MNCs.

\*For textiles and apparel, target is for 2018 and for footwear 2023.

\*\*Does not include textiles, apparel and footwear.

Note: This table is reproduced from the World Bank evaluation report (2015), Table 1.9, p. 29.

artificial intelligence and machine learning, data mining and blockchain. While data on Armenian FEZs are difficult to obtain, there is a general consensus that they are still performing significantly below their potential. As for job creation, the Alliance FEZ had created 314 jobs as of September 2018 and Meridian 181 jobs (Sputnik Armenia 2018b), while the Meghri FEZ still stands empty. The new government has vowed to redouble its efforts to make FEZs thrive (especially in the high-tech and bio-tech sectors) (The Armenian Weekly 2019).

### The IT Sector: Armenia's Success Story

While not a manufacturing sector that would be the object of traditional industrial policy, the booming IT sector in Armenia showcases the benefits of thought-out, sustained cooperation between the government and industry. Between 2010 and 2018, the sector has grown at an average of 25.6 percent annually. In 2018, total revenues reached 7.4 percent of Armenia's GDP (12.4 billion USD) (EIF 2018: 33). The sector's share in Armenia's total exports increased from 8 percent in 2010 to 16 percent in 2017, with most exports (ca. 70%) going to the US and Europe. Armenia is no longer merely an outsourcing destination but has moved on to attract multinational corporations, develop global IT solutions and venture into the latest trends, such as AI and big data analysis. Two factors have played a key role in the IT sector's speedy development: the Soviet legacies of the engineering and science potential, and the involvement of diaspora investors from the West (in fact, to this day most start-ups in the IT sector have a diaspora connection).

Employment in the IT sector has been growing at very fast rates in recent years, reaching 19,552 in 2018 (EIF, 2018, p. 30), yet there is room for much more, and industry insiders name the lack of skilled resources as a key growth constraint. In 2018, some 800 companies were active in the IT sector (EIF, 2018, p. 3). Wages in the sector are higher than the average for Armenia.<sup>3</sup>

Successive Armenian governments have demonstrated sustained commitment to promoting the sector for nearly 20 years. After declaring IT a priority in 2000, in 2001 the government teamed up with the World Bank and other stakeholders to draw up the ICT Master Strategy and ICT Development Implementation Plan. Another milestone was the establishment, in 2002, of the public private partnership called the Enterprise Incubator Foundation (EIF). A broader ten-year programme was adopted in 2008, focusing on the development of the infrastructure (including setting up techno-cities in Gyumri and Vanadzor), better training for IT graduates, and creating new financing mechanisms for start-up companies (EIF 2017). In late 2014, the government adopted a legislative package providing attractive tax preferences for IT start-ups (0% profit tax and 10% flat payroll tax for 3 years), leading to rapid growth in

3 A junior technical specialist in a local company earns ca. 260 USD on average, with the amount increasing to 588 USD for senior specialists; the figures for those employed by foreign companies are 387 and 744 USD, respectively. Source: EIF 2018 report, p. 31.

their number. In 2017 alone, 431 companies benefited from the new provisions (EIF 2017). The law was amended in 2018, granting the same privileges also to engineering companies and extending the tax exemptions until 2022 (Sputnik Armenia 2018a).

The government and EIF have also partnered with key global IT companies and obtained USAID funding to establish top-class training facilities, such as the Microsoft Innovation Center Armenia (2011) and the IBM Innovative Solutions and Technologies Center (2015).

### Textile and Apparel Industry

The textile and apparel industry is a prime example of a sector that enables quick expansion of employment in the low-skilled job sector and provides backward and forward linkages to the rest of the economy. The sector played an important role in Soviet Armenia, employing some 120,000 people, but production collapsed in the post-Soviet period. Today, it is an emerging sector with fast export growth rates: from ca. 805,000 USD in 2010 to 155 million USD in 2018 (thus outperforming the 2020 target of 133.5 million USD, see Table 1 on the previous page). Estimates put total employment in the sector between 6,000 and 7,000, and there are five large companies and ca. 60 small and medium ones (Arzumanyan 2018). However, most textile and apparel manufacturers in Armenia have been operating on a toll (contract) manufacturing basis, making clothes from the raw materials supplied by foreign companies, usually from Italy—which leads to limited domestic value creation.

In December 2013, the Industrial Council approved a strategy (until 2023) for developing light industry, such as textiles, apparel and shoe manufacturing. The first action plan for 2014–2016 had a budget of 2.5 million USD. Government support in the sector has generally taken the form of co-financing participation in major exhibitions (e.g., *Textillegprom* in Moscow), facilitating business-to-business contacts with potential investors, and tax incentives such as zero or deferred VAT on investment goods (e.g., modern equipment for textile companies). Reportedly, however, the government has failed to deliver on a number of commitments in the sectoral strategy, such as providing investments, low-interest loans, or setting up a dedicated warehouse in Russia (Arzumanyan 2018a). In 2014, the Government partnered with the UN Industrial Development Organization (UNIDO) to implement a Russian-funded project aiming at building “local technical capacity to support the development and modernization of SMEs and to position Armenian products as high-end design goods” (UNIDO, n.d.).

### Membership in the Eurasian Union

Although the main reason Armenia joined the EAEU in January 2015 was geopolitics, there have also been hopes that membership in the bloc would allow Armenia to increase its manufacturing exports and achieve industrial growth—something that is expressly stated in Armenia’s Development Strategy for 2014–2025 (para. 183). (The European Union, on the other hand, is the chief destination for Armenia’s raw material exports, mainly metals). The Eurasian Union expressly emphasizes the importance of industrial policy in its founding Treaty.<sup>4</sup> The stated goal is to promote intra-Union trade in industrial goods, attract investment, and foster innovation and import substitution (Eurasian Economic Commission 2015). Potential opportunities for Armenia, in addition to simplified customs procedures, could include access to EAEU-wide public procurement tenders and benefits from common markets for goods requiring special certification, such as pharmaceuticals or jewellery. Armenia has been able to negotiate a longer phase-in period—until 2022—for implementing EAEU tariffs (which are significantly higher than those applied by Armenia in the past). Armenia’s trade with EAEU members has grown faster than that of any other member of the Union. After a slow start attributed to the impact of the 2014 economic crisis in Russia, Armenia’s trade with the EAEU grew by 45 percent in 2017 and by 21 percent in 2018.<sup>5</sup>

So far, however, Armenia’s lower-sophistication exports (especially agricultural produce, food, alcoholic beverages, textiles, apparel and footwear) have benefited the most from Armenia’s entry to the EAEU. One exception is pharmaceuticals, a small but rapidly growing export-oriented sector in Armenia. Due to investment in high-tech equipment and the leading Armenian companies’ obtaining the internationally recognized GMP certificate, Armenia has been able to increase its pharmaceutical exports (primarily generics, vaccines and herbal medicines) from ca. 5 million USD in 2010 to nearly 22 million USD in 2017, with roughly half of them going to Russia.

4 Relevant provisions are contained in Article 92 (Industrial Policy and Cooperation) and Annex 27, as well as in Article 93 (Industrial Subsidies) and Annex 28 to the Treaty on the EAEU.

5 Eurasian Commission, Intra-EAEU Trade, Statistical Spreadsheets. [http://www.eurasiancommission.org/ru/act/integr\\_i\\_makroec/dep\\_stat/tradestat/tables/intra/Pages/2018/12.aspx](http://www.eurasiancommission.org/ru/act/integr_i_makroec/dep_stat/tradestat/tables/intra/Pages/2018/12.aspx)



## Industrial Policy after the 2018 Velvet Revolution

Armenia's Velvet Revolution) and the advent to power of Nikol Pashinyan's My Step bloc, followed by the sourcing of new staff in many ministries from the civil society sector, will likely lead to revisions, re-prioritization, and a changed mode in the implementation of Armenia's IP. The economic strategy unveiled in February 2019 adopts a market-oriented approach, envisioning a flat income tax, a much leaner government apparatus, lower taxes for small businesses and special tax breaks for foreign investors. It also promises government support for export and industrial modernization and for implementing quality assurance and certification mechanisms with the goal of accessing new markets (Mejlumyan 2019). In addition, the government has announced its commitment to invest into skills development, especially in STEM subjects at the school level, and is planning to actively develop domestic defence industry, significantly increasing budget allocations for this purpose.

## Conclusion

Armenia's high growth rates in the 2000s were driven by the construction and services sectors, as well as by the high prices for commodity exports. The drastic effects of the global economic crisis of 2008 on Armenia exposed the vulnerabilities of such a growth model, leading the government to pay greater attention to manufacturing. Close cooperation with the private sector has been an important feature of the 2011 IP strategy, which has enjoyed only very limited allocations from the state budget. On the whole, Armenia has been able to significantly increase its exports as a share of its GDP (from 24% in 2011 to 37% in 2017<sup>6</sup>); however, the growth took place mostly in the lower-sophistication segment and in traditional markets. This increase in exports has not been accompanied by significant increases in manufacturing value added, showing that Armenia still has much work to do to move up the value chain. The extent to which the growth in exports is attributable to the IP strategy is questionable. In fact, the subsector that has grown the most in recent years and accessed the new (Middle Eastern) markets—the tobacco industry—has received no special government support. Armenia's membership in the Eurasian Union has benefited the agriculture, food processing, beverage and textile, apparel and footwear sectors, but thus far there has been no measurable impact on higher-sophistication exports, with the exception of pharmaceuticals. The IT sector has been a definite success story, yet its linkages to the rest of the economy are weaker than the linkages of manufacturing. Currently, the IP strategy is being revised by the new government.

### *About the Author*

Yana Zabanova is a fellow in the Berlin-based Governance in Emerging Economies Research Group funded by the Volkswagen Foundation and a PhD candidate at the University of Groningen. She is also a Visiting Fellow at the Stiftung Wissenschaft und Politik (SWP) in Berlin, where she worked as a research fellow in 2014–2016. Prior to that, she was a South Caucasus analyst at the European Stability Initiative think tank in Berlin (2009–2014). In her PhD project, she focuses on renewable energy development and green industrial policy in post-Soviet Eurasia.

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## Components and Priorities of Industrial Policy in Azerbaijan

By Kenan Aslanli, Ankara Yildirim Beyazit University

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### Abstract

This article examines industrial policy in Azerbaijan and its link with the broader development agenda with respect to its periodization, priorities, and instruments. The article finds that despite the government’s attempts to diversify the economy and exports by promoting non-oil industries, the imbalance between the mining and manufacturing industries remains a challenging issue. Additionally, the high level of oil-gas dependence negatively affects the quality of policy formulation and implementation in industry.

### Introduction

The oil and gas sector of the mining industry has been historically dominant in the economy of Azerbaijan. The national economy’s dependence on oil and gas remains high, with the hydrocarbon sector representing 44% of GDP, 90% of goods exports and at least 50% of fiscal revenue in 2018. As a consequence of the high dependence on hydrocarbon resources, Azerbaijan’s economy faced (i) negative implications of the “resource curse”, as reflected in a gradual slow-



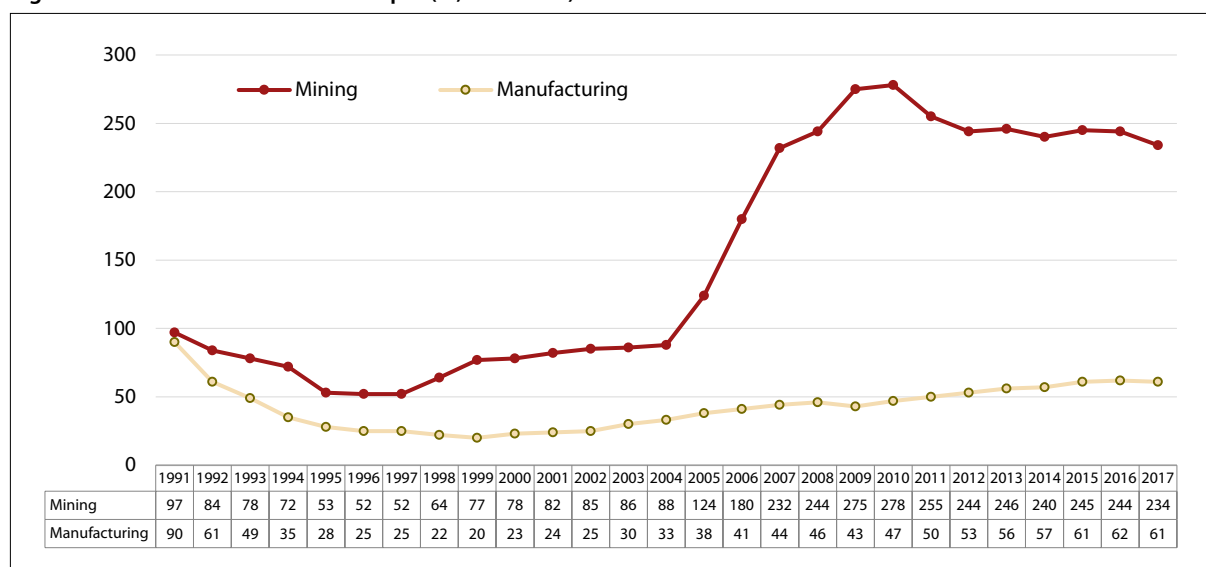
down of economic growth and (ii) deindustrialization in line with the “Dutch disease”, as indicated by the stagnant contribution of non-oil industries to the GDP. Total natural resource rents are associated with lower rates of government effectiveness, which affects the quality of policy formulation and implementation in industry<sup>1</sup>. The oil and gas industry dominates both the national economy and total industrial production, yet it has very limited inter-industry linkages to contribute to the development of alternative sectors. The oil and gas sector in Azerbaijan developed only weak development transmission channels, such as a low employment multiplier and small-scale domestic contributions to the value chain, which minimizes the sector’s backward/forward linkages with other industrial sectors.

The main objective of the current industrial policy is to decrease the “double dependence” on the oil and gas sectors and on imports of non-oil products. Therefore, the government follows a mixed policy of combining import substitution with the promotion of non-oil exports. The officially declared diversification-led industrial policy is reflected in various state programmes and strategies aimed at supporting domestic industrial producers in traditional (e.g., petrochemical) and non-traditional (e.g., shipbuilding) fields and balancing the export orientation strategy with the import-substitution effects of industrial policy.

### Periods of Industrial Development

The discovery and exploitation of the first oil fields in Baku in 1848 can be considered the beginning of industrialization in Azerbaijan. Industrialization spread to other regions of Azerbaijan, and new industrial cities (e.g., Sumgayit, Mingencevir, etc.) were constructed after the 1950s, and especially during the 1970–1980s. Industrial production dropped after the collapse of the Soviet Union in 1991 but started to improve again in the 2000s. Only in 2014 did the annual output in the mining industry exceed the level of production in 1990 (just before the collapse of the Soviet Union when all state-owned industrial enterprises actively produced a very broad range of products). The manufacturing sector, however, has not succeeded in reaching the production levels of 1990, falling short by almost 40% in 2017 (see Figure 1 below). The manufacturing industry mostly covers basic metals and non-metallic minerals; refined petroleum products, such as diesel fuel and jet fuel, and polyethylene; electricity production and supply; foods and beverages; and cement and construction materials.

**Figure 1: Indexes of Industrial Output (%; 1990=100)**



Source: <https://www.stat.gov.az/> (State Statistics Committee didn't specify currency or units that calculations on indexes of industrial output were based)

Large enterprises that were able to effectuate added industrial value have been restored to achieve industrial diversification and durable growth of the national economy since the beginning of the 2000s. Despite the attraction of billions of dollars of foreign investment in the oil-gas sector, private investors hesitated to invest in non-oil sectors because of the narrow scale of the domestic market and the fragile business environment. Therefore, the state’s industrialization

<sup>1</sup> Ahmadov, Ingilab and Mammadov, Jeyhun and Aslanli, Kenan, Assessment of Institutional Quality in Resource-Rich Caspian Basin Countries (June 5, 2013). (p. 25). Available at SSRN: <https://ssrn.com/abstract=2274813> or <http://dx.doi.org/10.2139/ssrn.2274813>

efforts encountered financial scarcity in non-oil industries until 2004–2005. However, the state has initiated large-scale investments in industrial development through public investment programmes since 2004–2005, as massive oil revenues enabled it to solve the infrastructure and energy supply problems for industrial enterprises. Given that oil revenues were a major source of fiscal resources, fluctuations in the market price of crude oil led to disruptions in the government's ability to finance industrial companies during the financial turmoil in 2008–2009 and after 2014. Particularly, the sudden collapse of oil prices in 2014 forced the government to take some measures for the development of the non-oil industry and that year was proclaimed “the year of industry” in Azerbaijan, during which government-financed industrial projects were implemented. The government adopted the “State Program of Industrial Development for 2015–2020 in Azerbaijan” in December 2014, which sets policy goals to help the industry achieve economic diversification in this period of falling oil prices and the lack of diversity in industrial production.

### Objectives and Priorities of State Industrial Programmes

The diversification of the economy and exports through the development of the non-oil industry and the increase in non-oil GDP have been the main goals of economic policies in Azerbaijan since the early 2000s. The major tasks of industrial policy, as identified in official documents, are to ensure sustainable growth in industrial production and to enhance the structure and efficiency of industrial production<sup>2</sup>. The government has officially focused on the heavy industry, food industry, construction materials, machine-building, and the chemical industry as priority fields outside of the oil and gas sector for achieving economic diversification<sup>3</sup>.

The government sets the following goals for industrial development:<sup>4</sup> (i) modernization of the industry and improvement of the structure of the industry; (ii) increasing the export potential of non-oil industries; (iii) expanding energy-efficient and high value-added competitive industrial production; (iv) amplification of knowledge-based and innovative industrial production; (v) preparation of qualified human resources for new industrial production areas. Increasing competitiveness and capacity-building in industry, supporting industrial enterprises, constructing industrial zones and clusters, and enacting legislative improvements are the main directions of the State Program.

### Instruments of Industrial Policy

Instruments of industrial policy indicated in the “State Program of Industrial Development for 2015–2020 in Azerbaijan” include the creating of new state-owned industrial enterprises, promoting exports, setting standards for industrial products, providing financial support for local production in specific fields with economic importance (aluminium, iron ore and steel production plants in the Ganja/Dashkesen regions, carbamide and polymers plants in the Sumgayit region), and establishing industrial zones, research & development activities, etc.

### Doing Business and Tax Incentives

Improving the business environment has been highlighted as a cornerstone of enhancing the number of industrial enterprises and opening new modern processing facilities in the regions of Azerbaijan<sup>5</sup>. The procedures for doing business in industrial and non-industrial companies have been reformed recently: the number of procedures for the official registration of legal entities has been reduced from 3 to 1; the duration of the company registration process has been reduced to 20 minutes; and the amount of funds and documents required to start entrepreneurial activities has been reduced to zero<sup>6</sup>. Changes to the tax code, effective from January 1, 2019, are designed to affect small and medium industrial business entities through tax administration, tax breaks and an extended taxation base. Income tax exemptions are applied to individuals working in the non-oil sector by January 2019<sup>7</sup>. Small and medium-sized companies are exempt from corporate and income taxes for a period of 7 years. Due to recent changes in tax legislation, profits from the innovation activities of industrial companies are exempt from income tax for a period of 3 years from the

2 Aslanli, K. Ismayil, Z. Agayev, R. Mehtiyev, A. The Assessment of Economic and Export Diversification. Natural Resource Governance Institute & Free Economy Center. 2013 (p. 16) [http://www.freeeconomy.az/site/assets/files/1188/iqtisadi\\_diversifikasiya\\_az.pdf](http://www.freeeconomy.az/site/assets/files/1188/iqtisadi_diversifikasiya_az.pdf)

3 Strategic Roadmap on Perspectives of National Economy and Strategic Roadmap on Development of Heavy Industry and Machine-Building in Azerbaijan (2016). <http://www.president.az>

4 “State Program of Industrial Development for 2015–2020 in Azerbaijan”. 2014. [https://azertag.az/xeber/Azerbaycan\\_Respublikasinda\\_senayenin\\_inkisafina\\_dair\\_2015\\_2020\\_ci\\_iller\\_uchun\\_dovlat\\_proqrami-821350](https://azertag.az/xeber/Azerbaycan_Respublikasinda_senayenin_inkisafina_dair_2015_2020_ci_iller_uchun_dovlat_proqrami-821350)

5 Musayev, V. Azerbaijan Economic Reforms Review. 2017. CAERC. [https://ereforms.org/store//media/ekspert\\_yazilari/islahat%20icmalimart/strateji%20yol%20x%C9%99rit%C9%99si%20-eng1.pdf](https://ereforms.org/store//media/ekspert_yazilari/islahat%20icmalimart/strateji%20yol%20x%C9%99rit%C9%99si%20-eng1.pdf)

6 Ministry of Taxes. 22/01/2018. State registration of legal entities will be carried out within 20 minutes with only 1 procedure. <http://taxes.gov.az/modul.php?name=metbuat&bolme=pressreliz&pid=1767&lang=>

7 Ministry of Taxes. 24/12/2018. Changes to Tax Code with questions and answers. <http://www.taxes.gov.az/VM2019/VM2019.pdf>

date of receipt of the “start-up” certificate. Tax incentives and doing business reforms can stimulate entrepreneurial activity in various sectors.

### Regulation and Financing of Industrial Policy

The regulatory environment was managed by the Ministry of Energy and Industry until the 2010s. In 2013, the Ministry of Economy and Industry was established on the basis of the Ministry of Economic Development (it was renamed the Ministry of Economy in 2016), but later, it was renamed the Ministry of Economy and accumulated substantial responsibilities related to the formulation and implementation of industrial policy. The Ministry of Economy is responsible for the industrial policy including the development and implementation of state policy related to industry, the support of industrial enterprises and their domestic production, and the functioning of industrial parks and special industrial zones.

Industrial policies and programmes are funded by the following sources: the state budget, extra-budgetary funds, local budgets, domestic private and foreign direct investment, loans and grants, and technical and financial assistance from international and foreign organizations. More than 15% of the state’s centralized budget expenditures were allocated to industry-related public investment (construction) projects in 2017, which expenditures had reduced significantly after 2014<sup>8</sup>.

The government established various institutional mechanisms to finance industrial projects and production plants or to provide a guarantee to the investments: the Azerbaijan Investment Company, the National Fund for Entrepreneurial Development, AZPROMO, the Mortgage and Loan Guarantee Foundation, and the Small and Medium Business Development Agency<sup>9</sup>. The Azerbaijan Investment Company (AIC) functions as a co-investor representing the state and establishes joint funds to attract foreign investments. 82% of the current investment portfolio of AIC is allocated to heavy industry plants specializing in shipbuilding and cement production<sup>10</sup>. AIC has owned 21.28% of shares in Baku Shipyard Company LLC since 2013, which operates in the areas of vessels construction, ship repairs and conversions for domestic and foreign clients<sup>11</sup>. The Azerbaijan Industrial Corporation (ASK) was established in 2017 to enhance the effective management of some state-owned industrial entities (which were transferred to the ASK as “toxic non-financial assets” from the largest state-owned commercial bank of Azerbaijan) and to contribute to non-oil industrial production<sup>12</sup>. However, the ASK is a giant conglomerate without any industrial specialization or pre-existing experience, which creates risks related to the efficient management of the assets transferred to the balance of the corporation.

### Industrial Clusters and Industrial Zones

The creation of industrial parks and industrial zones in certain regions to ensure the development of the non-oil sector, the creation of favourable conditions for the development of competitive industries, and the organization of industrial enterprises based on modern technologies were among top priorities of the government for establishing industrial infrastructure. To develop local industrial areas by utilizing resources efficiently through the expansion of small and medium-sized enterprises and increasing the industry’s specific weight in terms of employment, the government established a number of industrial parks and industrial zones. Industrial clustering through industrial parks and zones was a priority of the government.

*Sumgayit Chemical Industrial Park* was established in 2011 for the purpose of developing the chemical industry in the country. The 18 resident companies that operate in the Park produce steel and polyethylene pipes, hose and fittings, mechanical and hydraulic equipment, synthetic lubricants, electronic equipment, pesticides and agrochemicals, non-ferrous metals, ferroalloys, and polypropylene. SOCAR Polymer has a polypropylene plant in the Sumgayit Chemical Industrial Park in cooperation with Italian companies to produce 300,000 tons of products annually, and 70% of that will be exported to foreign markets. The total investment in SOCAR Polymer’s polypropylene and carbamide plants amount to USD 1.7 billion<sup>13</sup>.

8 Ministry of Finance. State Budget Revenues and Expenditures for 2017. <http://maliyye.gov.az/scripts/pdfs/web/viewer.html?file=/uploads/static-pages/files/5b1f722f85964.pdf>

9 Azerbaijan Export and Investment Promotion Foundation (AZPROMO). 2019 <http://www.azpromo.az/>

10 Azerbaijan Investment Company (AIC) Investment Portfolio. 2018. <https://aic.az/en/portfolio/sector:4>

11 AIC Investment Portfolio. 2018. Baku Shipyard Company. <https://aic.az/en/portfolio/sector:4/id:1>

12 Azerbaijan Industrial Corporation. 2019. <http://ask.gov.az/en/mission>

13 President of Azerbaijan Ilham Aliyev, Italian President Sergio Mattarella attended inauguration of polypropylene plant constructed in Sumgayit Chemical Industrial Park. 18/07/2018.

*Mingachevir Industrial Park* was established in 2015 to reduce the dependence on imports in the light industry and to create national textile brands in order to increase export potential. “Khazar” Car Factory was established in the *Neftchala Industrial Zone* (2015), where the “Azer mash” Company cooperates with the Iran Khodro Car Company to produce 10,000 cars annually for export mostly to the Middle East and the post-Soviet countries (e.g., to Ukraine beginning in 2019)<sup>14</sup>. The creation of industrial zones in various regions continues, with new additions including the Masalli Industrial Zone (2016, industrial products from metals, plastics, and woods), the Hajigabul Industrial Zone (production of buses for city transportation systems), and the Sabirabad Industrial Zone (processing of agricultural products). However, other industrial zones, such as the Balakhani Industrial Zone (2011, fertilizers and waste processing), the High-Tech Park (2012, no specific clustering), the Karadakh Industrial Park (2015, shipbuilding), and the Pirallahi Industrial Park (2016, production of medicines) are located close to Baku, the capital city and Azerbaijan’s main industrial and financial hub. Some steps have been taken to realize the law on free economic zones within the area of the newly established Baku International Sea Trade Port to combine industrial production with the logistical advantages of Baku. According to the World Bank’s country memorandum, “the government plans to develop several oil-gas related industries and sees its geographical position as an ideal to further develop transportation and other transit-related services”<sup>15</sup>.

### Industrial Outputs and Its Structure

Over the course of 13 years (2005–2017), at least 75% of total foreign and domestic investment was directed to the oil and gas industry<sup>16</sup>. With the exception of the petrochemical sector, however, the oil and gas sector did not produce spillover effects that would stimulate growth in other industrial sectors. The petrochemical industry provides intermediate and final products for Azerbaijan’s economy, such as polyethylene, plastic products, fertilizers, packaging, and detergents. In 2017, the share of the chemical industry, including the manufacture of plastic products, in the structure of total industrial production was 2.1%, while the contribution of the extraction of crude petroleum and natural gas in total gross output stood at 61%<sup>17</sup>. The mining and manufacturing industries are greatly disproportionately represented in the economy. The ratio of mining and manufacturing to total industrial output was almost 70% to 30% in 2017. There is also a significant disparity in average wages: in the mining industry, this indicator stood ca. 1800 USD in 2017 compared to only 325 USD in the manufacturing industry. Despite the financial and material superiority of Azerbaijan (the share of the country’s strategic foreign exchange and gold reserves (40 billion USD) in the GDP is more than 85%—<http://www.oilfund.az>) over its resource-poor neighbours, the institutional and technological capacities to increase manufacturing value and exports per capita are relatively limited. Manufacturing value added per capita was USD 307 in 2015 (compared to USD 411 in Armenia and USD 428 in Georgia), and it increased by 10% in Azerbaijan between 2010–2015 (compared to 48% in Georgia and 36% in Armenia)<sup>18</sup>. Additionally, the level of manufactured exports per capita in Azerbaijan is lower than in neighbouring countries<sup>19</sup>.

### Conclusion

The main objective of Azerbaijan’s current industrial policy is to decrease the “double dependence” on the oil and gas sectors and on the import of non-oil products. The government follows a mixed policy to combine import substitution and the promotion of non-oil exports. The diversification of the economy and exports through the development of the non-oil industry and the increase in non-oil GDP has been the unvarying goal of economic policies in Azerbaijan. For these purposes, industrial parks and industrial zones have been established to support industrial enterprises in Baku and other regions, including small and medium entrepreneurs. However, despite all the efforts to diversify the economy, the substantial disparity between the mining and manufacturing industries in Azerbaijan’s economy persists. The newly established tools of the government’s industrial policy, such as giving tax incentives, implement-

14 Khazar cars will be exported in Ukraine this year. Azertac İA. 09/02/2019 [https://azertag.az/xeber/Khazar\\_avtomobilleri\\_bu\\_il\\_Ukraynaya\\_ixrac\\_edilecek-1243992](https://azertag.az/xeber/Khazar_avtomobilleri_bu_il_Ukraynaya_ixrac_edilecek-1243992)

15 World Bank. 2009. Azerbaijan—Country economic memorandum: a new silk road—export-led diversification (English). Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/531321468221991045/Azerbaijan-Country-economic-memorandum-a-new-silk-road-export-led-diversification> (p. 7)

16 State Statistical Committee of Azerbaijan. 2019. Industry of Azerbaijan. Investments directed to main capital of industry, <https://www.stat.gov.az/source/industry/?lang=en>

17 State Statistics Committee. 2018. Industry of Azerbaijan. Sectoral Structure of Industry (p. 32)

18 The Competitive Industrial Performance Index. 2018. UNIDO. <https://stat.unido.org/database/CIP%202018>

19 For more information see: Timm, Christian. 2019. Industrial Development in the Southern Caucasus—A Comparative Perspective in this issue, p. 21–28.

ing business reforms and establishing preferential conditions in the industrial zones could potentially stimulate entrepreneurial activity in various sectors.

#### *About the Author*

Kenan Aslanli is a PhD candidate at the Ankara Yildirim Beyazit University (Turkey). Formerly, he was a programme officer for Asia at the International Budget Partnership (DC, USA) on the global open budget initiative and was a guest lecturer on economic integration in the wider Black Sea region at the University of Applied Sciences BFI Vienna, Austria. Kenan was a project partner for the Research Centre for East European Studies at the University of Bremen, the Norwegian Institute of International Affairs, and the *Eurasia Extractive Industries Knowledge Hub* on natural resource management issues.

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## The Elements of Industrial Policy in Georgia

By Tamar Jugheli,

Governance in Emerging Economies, Berlin (University of Groningen and Private University Göttingen)

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### Abstract

Georgia does not have a national industrial policy strategy document to guide a long-term transformation of the country's economic structure. Officially, the Georgian state does not pursue an industrial policy. However, some of the state activities, such as the establishment of state agencies to facilitate investment by providing funding in promising sectors, overlap with the idea of industrial policy and its instruments. The present article addresses Georgia's socio-economic development strategy and the intervention tools of the state, with the aim of supporting industrial growth and diversification.

### Introduction

The history of economic development shows that the transformation of a country's economy towards more productive sectors is crucial for economic development. A country's economic transformation has not always occurred autonomously but rather as an outcome of an effectively designed and implemented industrial policy (Buur et al., 2015). As Wade (2016) notes, in Georgia, since the collapse of the USSR, the term "industrial policy" has been avoided, except in the understanding that "the best industrial policy is no industrial policy," as referenced by several economy ministers over the years. Given this background, it is no surprise that the administration of the government of Georgia has not come up with a national industrial policy strategy.

The definition of industrial policy (IP) has changed over time. According to Altenburg (2011), a goal of traditional IP used to be to enhance the productivity of land, capital, and labor. The states intervened in the markets by creating incentives (subsidies in the search process) to direct the flow of private capital into new sectors. In the 21<sup>st</sup> century, the task of IP is to provide a setting that allows the state and private sector to come together to learn about and discover the entrepreneurial opportunities and the constraints faced by the economic actors and to engage in strategic coordination (Rodrik, 2004, 2009). According to Pack and Saggi (2006), IP may refer to any selective intervention or policy that aims to modify the production structure in order to move it towards sectors that are expected to offer better chances for economic growth. Although the government of Georgia does not officially use the term industrial policy in reference to its intervention in economic activities, some of its economic policies do overlap with the idea of industrial policy.



## The Evolution of Georgia's Economic Policy Towards Promoting Industrial Development

Since gaining independence, Georgia's economic policy can be roughly divided into four phases. (1) The beginning of the 1990s was the period of massive deindustrialization. (2) Between 1994–1996, the state implemented a stabilization programme, reining in hyperinflation and restoring growth, which declined sharply after the collapse of the Soviet Union and the civil war at the beginning of the 1990s. However, in the years that followed, economic mismanagement and widespread corruption led to poor public services and political and economic uncertainty (WB, 2009). (3) In 2003, after the peaceful “Rose Revolution”, the country experienced a change of power. The new government, headed by the United National Movement (UNM) party, united the policymakers who had a prevailing ideology that economic liberalization would bring economic growth. At the initial stage, in 2003–2008, the activities of the state were non-interventionist, leaving the economic development entirely reliant on market forces. The state implemented economic and institutional reforms for extensive liberalization, privatization and deregulation of the economy (Jobelius, 2011). The simplification of administrative procedures and a consistent introduction of e-governance systems were meant to diminish interactions between the public administration and businesses in order to limit opportunities for corruption (Engvall, 2012, p. 7). The reforms contributed to the improvement of the business environment, Foreign Direct Investment (FDI) flow in the economy and rapid economic growth. Due to these achievements, Georgia earned the status of the top global reformer for the 2005–2010 period (World Bank, 2012). Despite the government's non-interventionist dogma, it began intervening informally in economic processes (Bertelsmann Stiftung, 2014b). While most of the market barriers were removed, the state managed to regulate access to markets and resources on an informal basis (Timm, 2013). Since 2008, in the aftermath of the global financial crisis, the military conflict with Russia, and the sharp decline in FDI, Georgia shifted its official economic policy towards more formal, state-led, coordinating approaches (Timm, 2014). (4) In 2012, a new government headed by the Georgian Dream (GD) came into power. With a change in power, the state's economic policy also changed, as it initiated more formalized interventions to promote economic development by establishing state agencies that implemented state programmes that provide technical and financial support to the private sector to promote production and export growth and diversification. Among them, the state fund JSC Partnership Fund, the Entrepreneurship Development Agency (Enterprise Georgia) and the Georgia Industrial Development Group are implementing projects/programmes that support manufacturing development. The government remains cautious regarding industry-specific approaches. The underlying assumption of the government is that Georgia has been held back by “government failure,” not “market failure,” and that when the former is fixed, the market will work “by itself” to produce high levels of growth (Wade, 2014). However, the state pursues policies that support the operation of the markets in general and promotes specific activities across sectors. The term “industrial policy” and “industrialization” are either not referred to or carry a negative connotation due to the controversial Soviet experiences (Adeishvili, Khudadze, and Gunava, 2016).

## The Current Social Economic Development Strategy of Georgia

In regards to the economy, the approach of the GD can be referred to as horizontal industrial policy, which according to Warwick (2013), aims to improve the business environment and promote economic activities for markets that are missing or are difficult to create (UNCTAD, 2016). The GD elaborated on a social-economic development strategy document titled “Georgia 2020”, which has been implemented since 2014. This strategy represents a broad agenda directed at long-term growth beyond 2020. The document reflects the priorities and the problems that need to be resolved to achieve long-term, sustained and inclusive economic growth. The economic policy of the government of Georgia targets three broad goals. These goals are (i) ensuring fast and efficient economic growth, (ii) implementing economic policies that facilitate inclusive economic growth and (iii) using resources rationally. The government aims to improve production capacity, stimulate exports, diversify production and exports and deepen free trade agreements. The strategy states that the critical obstacles to achieving these three economic development goals are the low competitiveness of the private sector, the access to financing and the low capacity of human capital. The strategy highlights some activities to overcome the mentioned obstacles. Improving the business environment, increasing innovation and technologies, facilitating export growth and realizing Georgia's full transit potential are all considered means to strengthen competitiveness. Mobilizing investments and developing financial intermediations are considered ways to maintain access to finances. Upgrading the skills of the country's workforce to the level of the labour market requirement, tightening the social security net and ensuring accessible and quality healthcare are considered the keys to human capital development.

## The State Activities to Support Industrial Development

Since 2011, under the umbrella of the Ministry of Economy and Sustainable Development, the JSC Partnership Fund, the Entrepreneurship Development Agency and the Georgia Industrial Development Group were established, which are implementing projects and programmes initiated by the Ministry of Economy and Sustainable Development. The state supports industrial development, specifically production and export growth and diversification, through these programmes. We observe, inter alia, that the provision of financial and technical assistance to the private sector is a means of state intervention in the economy. The state created various instruments, including co-financing foreign and local investments, subsidizing interest rates on bank loans and providing grants. Although the JSC Partnership Fund, the Enterprise Georgia and the Georgia Industrial Development Group were not specifically created to elaborate and implement industrial policy, their activities do overlap with the idea of industrial policy (Adeishvili, Khudadze, and Gunava, 2016).

## The Activities of the JSC Partnership Fund to Support Industrial Development

In 2011, the government of Georgia established the investment fund JSC Partnership Fund (PF) as an independent agency to manage the asset portfolios of the strategically important and the most profitable SOEs. The goal of establishing this fund was to facilitate investment projects in Georgia in joint ventures with private investors (foreign as well as local) in promising (in terms of the growth potential) sectors of the Georgian economy. The PF participates in greenfield (new business initiatives) and brownfield (investments in already existing businesses) projects as a passive partner with an exit strategy, which is determined in advance. The targeted sectors for investment co-financing include agro business, the energy sector, infrastructure and logistics, manufacturing, real estate, and tourism. The SOEs under PF receive shares (1.4 billion USD), assets (2.95 billion USD), and an annual income (50 million USD, which is 0.3% of the GDP of 2017) from assets and financial investments. The fund provides a maximum of 49% of the co-financing (equity, mezzanine) for the medium or long term in projects at their initial stage of development. The Partnership Fund has supported investments in the power engineering, real estate, agriculture and manufacturing sectors at their initial stage of development. Since 2013, twenty-two investment projects have been initiated, with a total value of 1500.9 million USD, which is equivalent to 9.9% of the GDP. Among them, three projects are in power engineering, eight projects are in real estate, four projects are in agriculture, two projects are in logistics, and five projects are in manufacturing. The projects in manufacturing that are co-financed by the Partnership Fund are the Avia Factory, the Sandwich Panel Factory, the Aerated Concrete Block Factory, the Brick Factory and the Corn Oil Factory. Of these five projects, two are finished, and three are ongoing. The total volume of the investment in manufacturing accounts is 110.5 million USD, which is only 7.3% of the total volume of the Partnership Fund's investment projects (1500.9 million).<sup>1</sup> This investment volume is quite low; hence, it might not be sufficient to have a significant impact on the overall industrial development.

## The Activities of Enterprise Georgia to Support Industrial Development

The state agency Enterprise Georgia implements the components of the "Produce in Georgia" programme, which is supposed to support the production of industrial goods and promote exports. The "Produce in Georgia" programme was launched by the Ministry of Economy and Sustainable Development in 2014 to support private sector development by employing a variety of financial and technical assistance mechanisms, including subsidized credit, partial collateral guarantee schemes, and organized exhibitions to promote exports. By 2019, the Industrial Component of Enterprise Georgia supported 276 enterprises, with a total investment value amounting to GEL 638 million (269 million USD), which is 1.6% of the GDP in 2018. The instruments of financial support are credit or leasing. In the case of credit, the state co-finances the 10% of interest rate of bank loans with a minimum amount of GEL 150000 (55770 USD) and a maximum amount of GEL 5 million (2.1 million USD) during the first 24 months. The state also provides a 50% collateral guarantee during the first 48 months of the investment. In the case of leasing, the state co-finances 12% of the annual interest rate for the first 24 months. The value of the project should be a minimum of GEL 100 000 (37 174 USD) and a maximum of GEL 5 million (2.1 million USD). Within the Industrial Component, the state has supported the following industries: building materials (23%), food and beverages (21%), paper and packaging (21%), plastics (12%), pharmaceutical and chemicals (9%), apparel and textiles (4%), metals (4%), electri-

1 The author's calculations. The data source is the JSC Partnership Fund. Available online at <http://www.fund.ge/site/projects/4>

cal equipment (2%), wood processing (1%), other (rubber and plastics, bitumen products), and manufacturing (4%). According to the agency, this component created more than 11 480 new job positions<sup>2</sup>.

Enterprise Georgia is the first state agency in Georgia that promotes export products and services in the international market. To facilitate export growth, Enterprise Georgia provides support to the private sector for participation in international exhibitions by providing the following: coordinating, organizing, and co-financing of exhibitions; helping Georgia-based companies build a network with other businesses; identifying potential partners; diversifying production; and penetrating new export markets. The agency provides the planning, organizing, and co-financing of meetings for Georgian exporters. It also supports the exporters to build networks, to diversify production and to penetrate new export markets. It provides information associated with the documentation and certifications necessary for exports from Georgia, including customs procedures and tariffs in foreign markets. It also provides education and training and increases the professional capacity of export managers working with export-oriented companies in Georgia. Through this component, the agency provided support to 135 export-oriented companies to participate in 10 exhibitions in seven different countries in 2017. However, the information on how many companies started exporting in new markets through this component is not available. That same year, Enterprise Georgia provided training to 305 SMEs.

### The Activities of the Industrial Development Group

The Industrial Development Group, established under the Ministry of the Economy and Sustainable Development in 2014, aims to identify projects with new economic activities, prepare business plans and develop recommendations for industrial policy, as well as coordinate activities between the PF and Enterprise Georgia. As Wade (2016) states, the group is tiny (9–12 people), and the members are employed on three-month contracts. Hence, it is difficult to imagine that employees are concerned about long-term development strategies. Activities carried out by the Industrial Development Group are based on three main principles: the establishment of a diversified economy, the diversification of production, and the export markets. At present, the total value of projects prepared by the Industrial Group exceeds 80 million USD (Adeishvili, Khudadze, and Gunava, 2016). The project targets the production of natural facing and ceramic tiles; the export of greens to Europe; the production of milk powder; sewing and textile factories; plants producing essential oils, carton boxes, and steel square pipes; and the establishment of match factories.

### The Structure of the Economy and Employment

Despite the changed approach of the state in terms of its economic activities implemented since 2012, the country did not show much transformation of the structure of the economy or of employment in the period of 2012–2016. The growth rate of the economy slowed but remained positive (2.8% in 2016), the share of agricultural VA in total VA remained the same, the share of industrial VA increased (0.4% point), and the share of services VA declined (0.4% point) (see Figure 1 overleaf).

Regarding the structure of employment during 2012–2016, this indicator shows a slight change (see Figure 2 overleaf). In the period 2012–2016, employment in the industrial sector increased (11%), and the share of industrial sector employment in the total employment increased as well (2% point); however, it remained low (14%).

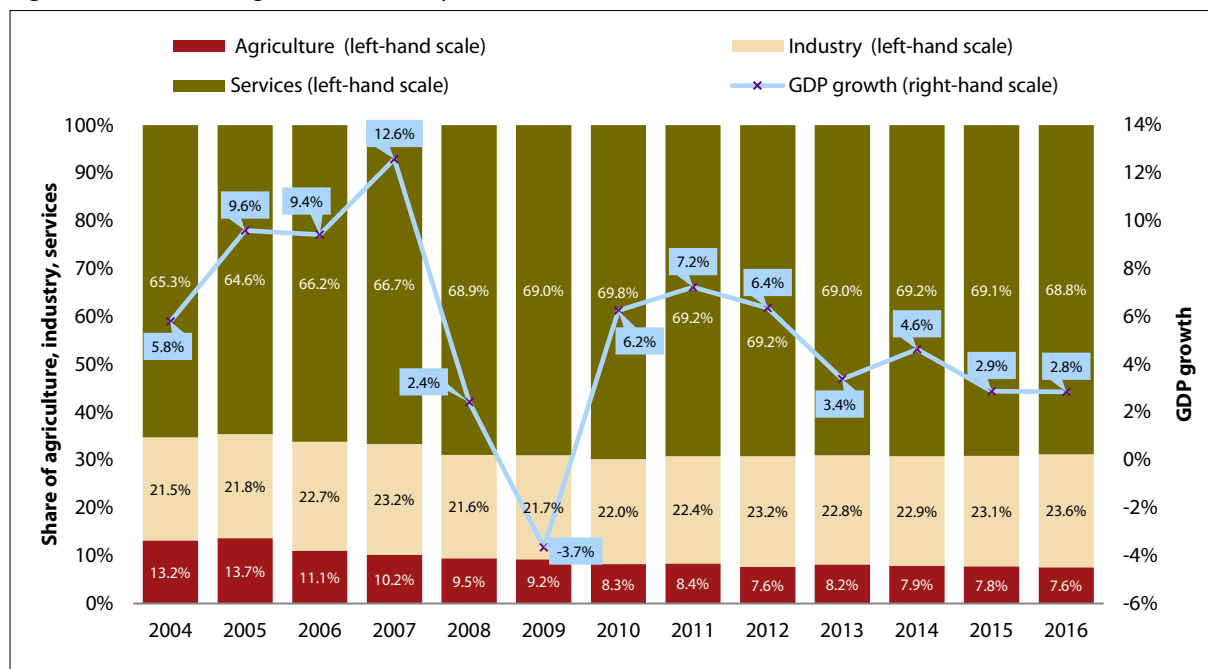
The VA of the industrial sector has an increasing trend during the period 2012–2016 (see Figure 3 on p. 19). The VA of the industrial sector exceeds its corresponding indicator in 2012 by 17%. However, the annual growth rate slowed from 3.7% in 2012 to 2.4% in 2016.

### Conclusion

Even though Georgia does not admit that it is pursuing IP, we observe that the state intervenes in the economy to support industries in various ways and applies the instruments of IP, such as co-financing investment projects, co-financing interest rate subsidies on loans and providing grants. However, the existence of these elements does not imply by itself that this type of policymaking is successful. The industrial sector has been growing; however, considering that the scale of the state-supported projects in this sector is low in comparison to the GDP, it is difficult to conclude that the causes of the increased performance of the industrial sector are state-initiated projects, as some of them are still in the implementation phase.

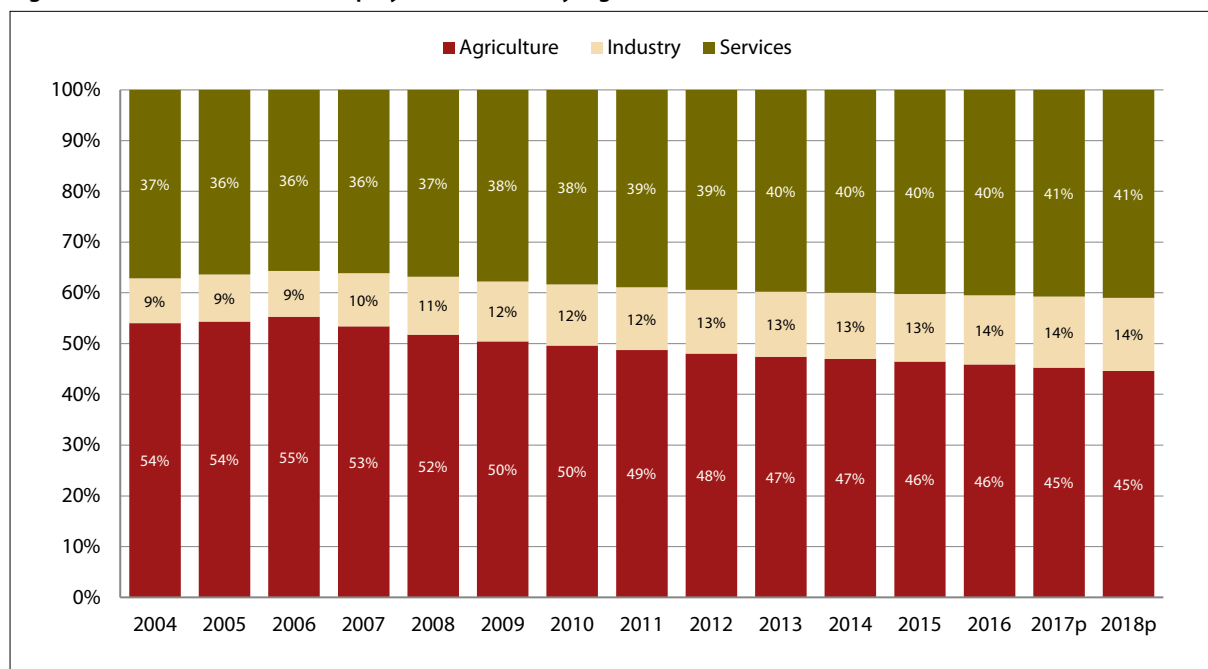
2 The author's calculations. The data source is Enterprise Georgia. Available online at <http://www.enterprisegeorgia.gov.ge/en/business-development/INDUSTRIAL-COMPONENT>

**Figure 1: Shares of Agriculture, Industry and Services in the Total Real Value Added**

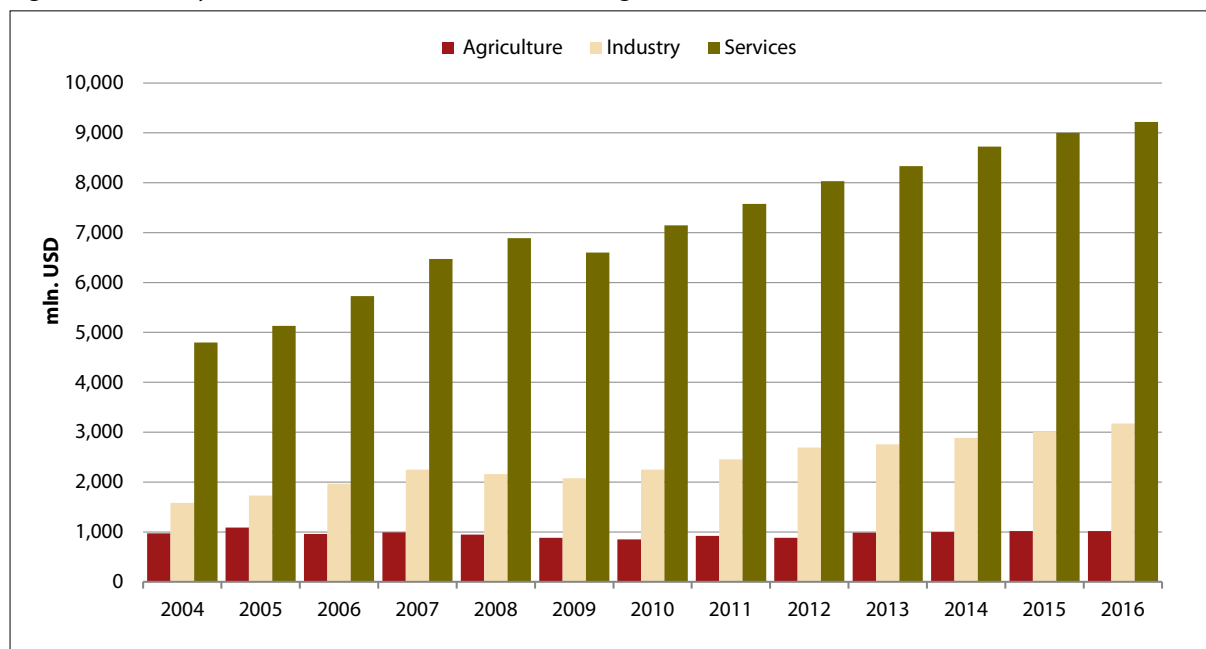


Data sources: UN Statistics, author's calculations

**Figure 2: Share of the Total Employment in Industry, Agriculture and Services**



Data sources: ILO, author's calculations

**Figure 3: The Dynamics of the Economic Sectors of Georgia**

	■ Agriculture	■ Industry	■ Services
2004	972,066,205.2	1,581,499,577.0	4,795,010,363.9
2005	1,085,789,984.4	1,732,535,501.2	5,134,508,299.9
2006	958,713,339.2	1,968,459,140.1	5,731,364,835.4
2007	988,785,340.0	2,248,705,763.4	6,474,044,236.3
2008	945,584,891.0	2,158,769,508.3	6,890,075,894.3
2009	884,206,590.9	2,077,248,333.4	6,600,566,953.4
2010	847,121,530.2	2,248,089,732.1	7,144,065,662.7
2011	919,215,785.9	2,455,623,994.2	7,574,680,703.2
2012	884,599,322.2	2,692,556,954.5	8,031,272,370.2
2013	984,801,922.0	2,757,640,484.3	8,333,909,786.5
2014	1,000,960,011.9	2,885,896,883.7	8,723,566,812.6
2015	1,016,220,430.3	3,004,671,237.3	9,001,292,608.6
2016	1,016,557,057.1	3,170,743,086.9	9,219,772,217.8

Data sources: UN Statistics, author's calculations

#### About the Author

Tamar Jugheli is a Ph.D. candidate at the University of Groningen and a member of the Governance in Emerging Economies Research Group in Berlin. Her research project addresses the role of institutions in economic development, with a specific focus of the institutional settings of state business relations in the food and agriculture sector of Georgia. She has over seven years of professional experience in economic development and policy-related research. Previously, she worked as a Research Director at the PMCG Research Center, one of the leading economic think tanks based in Georgia, and as a statistician at the National Statistical Office of Georgia. She has also taught courses in public economics and applied statistics and SPSS at the University of Georgia and at the Center of Social Science at Tbilisi State University.

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## Industrial Development in the South Caucasus—A Comparative Perspective

By Christian Timm,

Governance in Emerging Economies, Berlin (University of Groningen and Private University Göttingen)

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### Abstract

Against the background of amplified industrial policy initiatives, the paper reviews the development of industries in the Southern Caucasus from a comparative perspective. The analysis is organized based on four objectives in industrial policy: increasing economic performance, expanding exports, strengthening economic resilience and creating jobs. The paper explores Armenia's export-oriented development model, which lacks translation into relevant domestic value capture and job creation, Azerbaijan's failed liberation from oil-based industries and Georgia's decreased industrial development. Nevertheless, Georgia shows comparatively high domestic value capture and positive employment effects.

### Introduction

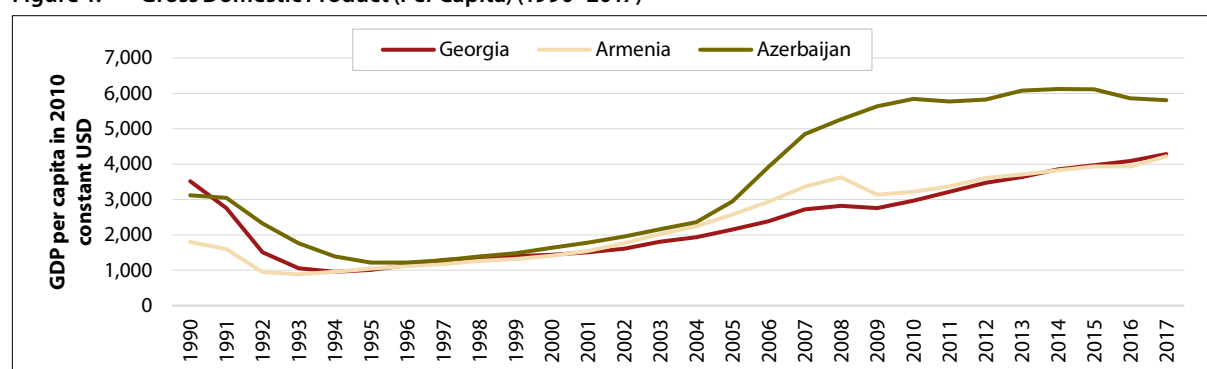
The objectives a government may strive to achieve by deploying industrial policy (IP) can differ fundamentally. Common to the countries of the Southern Caucasus are the desires to accomplish the following goals: (1) increase productive activities and domestic value capture as well as shape the structural composition of the economy. Considering the small size of domestic markets, it has been a high priority for policy-makers to (2) expand exports and benefit from deepening global market integration. Furthermore, they want to (3) build economic resilience to external shocks as well as (4) generate productive employment, which have been to a varying degree top priorities. Energy efficiency and reducing environmental pollution are increasingly important objectives of IP but will be disregarded here. It is beyond the scope of the paper to study the impact of specific industrial policies. Rather, the abovementioned four objectives will provide guidance for this brief review of industrial development in the Southern Caucasus.

Regarding industrial development in the region, four relevant periods can be distinguished: (1) the 1990s were characterized by substantial de-industrialization. They were followed by (2) a period of rapidly catching-up growth rates from the beginning of 2000s until the global financial crisis in 2008 with practically no distinct IP. (3) Between 2008 and 2014, we observe increasing policy efforts as answers to the crisis, which can be implicitly or are explicitly labelled industrial policy. (4) The devaluation of local currencies and the fall of oil and gas prices in 2014 mark another turning point leading to massive economic setbacks and partial intensifications and adjustments of IP in the region lasting until today.

### Increasing Productive Activities

It took the countries of the Southern Caucasus until the mid-2000s to economically recover and reach the pre-independence GDP per capita level (see Figure 1 below). Azerbaijan's economic performance has been very dependent on global prices of oil and gas leading to impressive growth between 2005 and 2010 but also to stagnation and decline

Figure 1: Gross Domestic Product (Per Capita) (1990–2017)



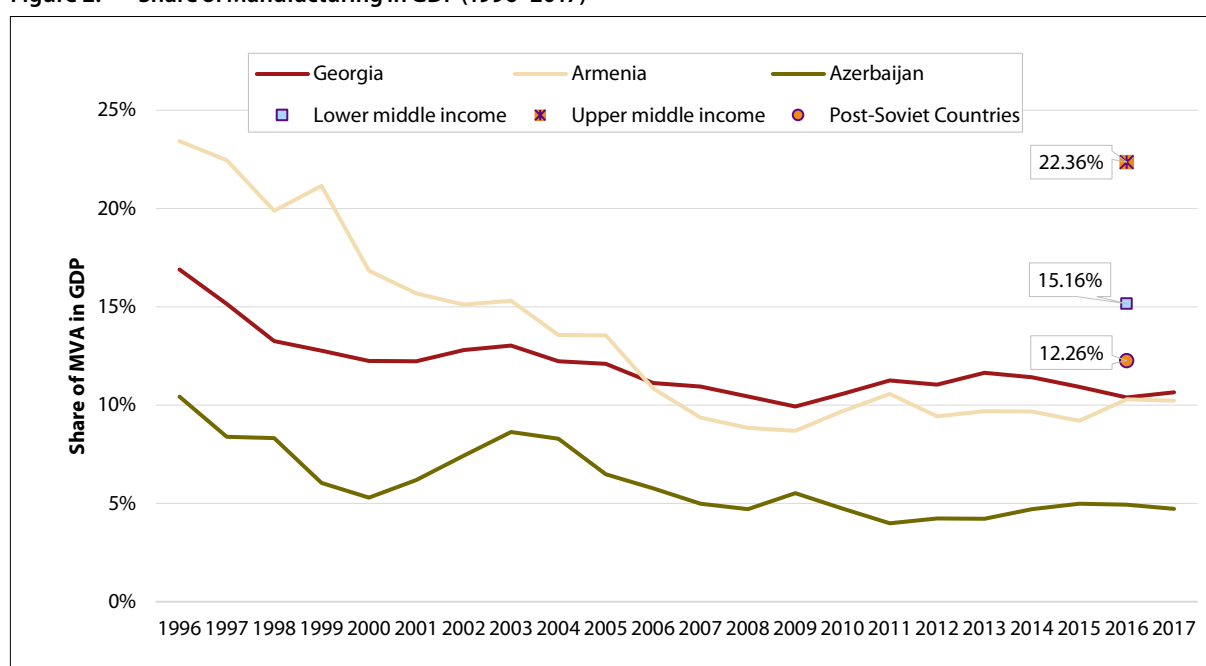
Source: World Development Indicators, own calculation

after 2014. The 2008 crisis hit Armenia marginally more than Georgia, but the two countries show generally similar growth paths. The impact of the 2014 crisis on industrial development will be addressed in the section below on subsector development. To varying extents, all three countries were exposed to the abovementioned external shocks translating into new policy initiatives.

## Structural Changes

There were significant disparities regarding industrial bases by the end of the Soviet Union. Manufacturing accounted for approximately 30% of GDP in Armenia and only 17% in Azerbaijan (1990). Data from Georgia for that time are lacking, but given the country's massive de-industrialization in the early 1990s, we can assume Georgia's former share of manufacturing in GDP was close to that of Armenia.

**Figure 2: Share of Manufacturing in GDP (1996–2017)**



Source: World Development Indicators, own calculation

Figure 2 shows the share of manufacturing in GDP between 1996 and 2017 and illustrates, first, the structural transformation along with a decreasing role of industry in the economies down to 8% in Armenia, 5% in Azerbaijan and 10% in Georgia. Second, the reached equilibriums on the mentioned levels illustrate that IP over the past 10 years could not reverse this process of structural change. At best, it helped the manufacturing sector grow as fast as the overall economy. Third, the chart reveals that the degree of industrialization is below the average of the post-Soviet region (12.26%) and below the respective income-country groups: for Armenia and Georgia as lower-middle-income countries and for Azerbaijan as an upper-middle-income country.

## Drivers of Development—Subsector Development

The composition of industries has significantly changed over time. Armenia and Georgia were strong in light industries, especially in textiles, a sector that has almost fully forfeited its relevance. To understand which main subsectors are currently contributing to manufacturing, we examine the four most important subsectors in each country over the abovementioned three periods beginning in 2003. In general, subsectors have been highly unstable in their development in all three countries, reflected in very volatile growth rates across periods (for details see Annex 1 on p. 29–30).<sup>1</sup>

<sup>1</sup> This section is based on data from UNIDO INDSTAT 2 (Revision 3). The subsector data on Armenia is mostly based on estimates. Therefore, we used alternatively national data from the Statistical Yearbooks on outputs as proxies to calculate subsectoral growth rates and shares in total manufacturing. For a detailed overview on subsector development of both data sets, see Annex 1 on p. 29–30.

The most dominating subsector can be found in Azerbaijan, whose annual industrial growth rate of 29% between 2003 and 2008 was mainly boosted by refined petroleum. Petroleum grew by 48% annually—increasing its share from 29% to 58% in MVA within this period.<sup>2</sup> After 2008 there has been no significant growth of petroleum; instead—following the 2014 crisis and the sharp fall in oil prices—a rapid annual decline of 33% set in.

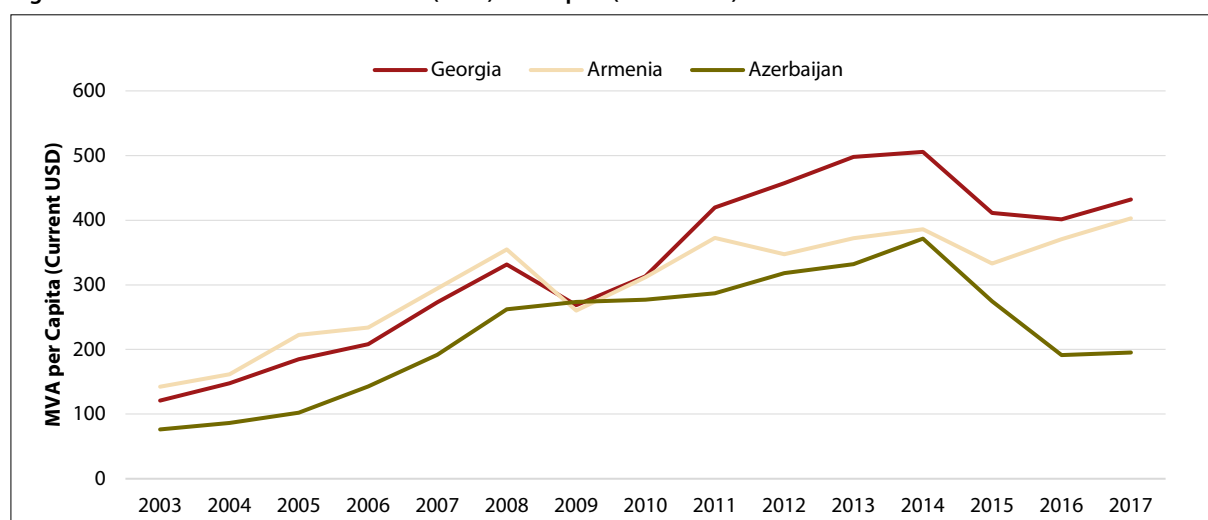
The food and beverage subsector is dominant in all three economies. In Georgia and Armenia, it accounts for up to 50% of MVA, and in Azerbaijan it has stabilized at approximately 25% of MVA. We see significant growth rates for this subsector in Georgia between 2003 and 2014 and in Azerbaijan between 2008 and 2014. For Armenia, given the poor data, we can only assume significant growth rates between 2003 and 2008. In the following period, subsector growth was only moderate. After 2014, this subsector declined in all three countries.

Another subsector, which is present among the top four subsectors in all the countries, is non-metallic mineral production, which is mostly cement and related products for domestic construction. In Armenia and Azerbaijan, it remains at 4% and 6%, respectively, but in Georgia it reached 11% of MVA (2016). Georgia managed to develop export capacities in this subsector reaching 6.6% of manufactured exports in 2008 (UNCOMTRADE, own calculation). The government recognized the potential and started supporting export-oriented companies in this subsector (see contribution on Georgia in this issue).

Armenia and Georgia have also been relatively strong in basic metals. UNIDO estimates basic metals' share in Armenia at 13% of MVA. Our calculation suggests a share of basic metals (mainly copper products) of approximately 20% of MVA in 2014. In Georgia, basic metals (mainly iron and steel products) has been one of the fastest-growing sectors—even significantly after 2014—increasing its share from 2003–2016 from 5% to 15% of MVA.

Some surprising developments can be found. In Armenia, the tobacco industry grew from 3% to 15% of total manufacturing between 2003 and 2016. The annual growth rate was 31% between 2008 and 2014 and 37% between 2014 and 2016 when other sectors had significant negative growth. Notably, the tobacco industry was not an addressee of any state IP. In Azerbaijan, it is the machinery sector that was steadily growing, up to 40% annually between 2008 and 2014, far exceeding the overall manufacturing growth of 7.5%. Machinery in Azerbaijan refers almost exclusively to ship repair and maintenance. The shipping industry is one of the priority sectors of the government—developed almost from scratch—and accounting for nearly 13% of MVA in 2016. In Georgia, it has been the chemical sector, which showed stable growth rates of up to 46% annually between 2003 and 2008. In particular, fertilizer as an important linkage to the growing agricultural business and pharmaceuticals were the driving product groups. Figure 3 summarizes and clearly illustrates the above-outlined trends of the overall manufacturing sector in the three

**Figure 3: Manufactured Value Added (MVA) Per Capita (2003–2017)\***



\* The MVA per capita is presented here in current USD as the subsector data from UNIDO is also in current USD.

Source: World Development Indicators, own calculation

countries across the mentioned periods; the respective subsector growth rates can be found in Annex 1 on p. 29–30.

2 All growth rates are annual growth rates calculated as Compound Annual Growth Rates (CAGR).

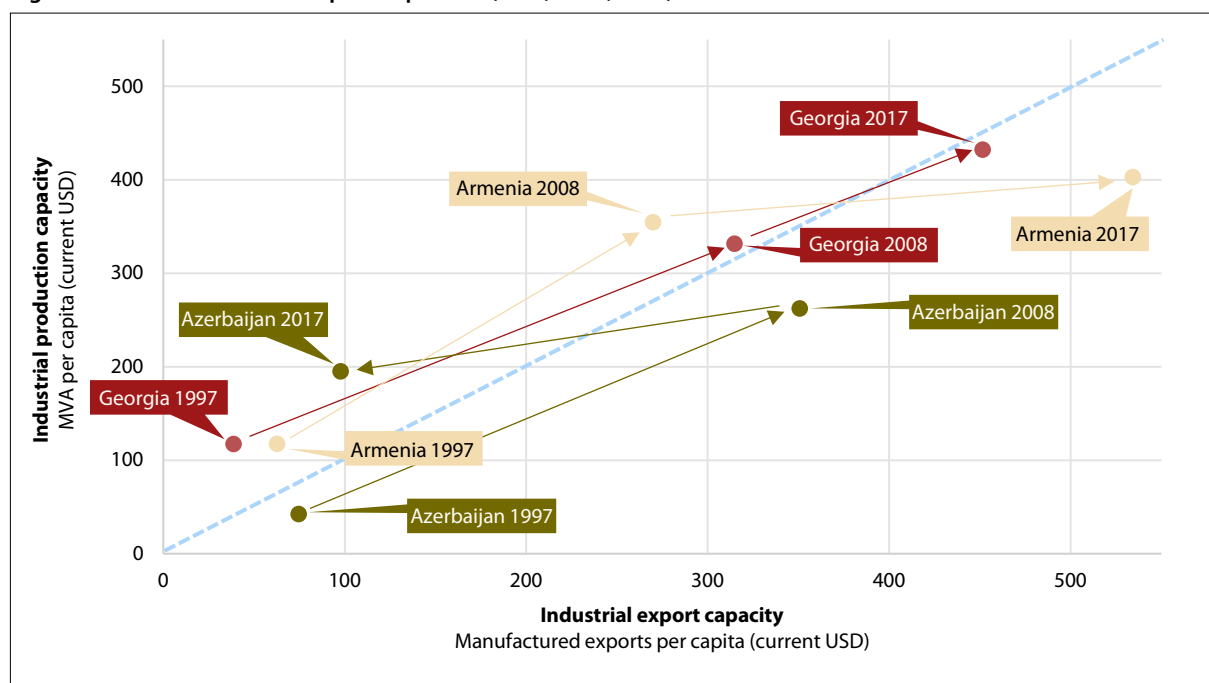
## Exports and Deepening Global Market Integration

For countries with small domestic markets, tapping into export demand can be very conducive to reaping economies of scale and spurring productivity growth. Export promotion has been, hence, an important objective for regional policy-makers.

## Production and Export Capacities

To assess industrial production and exports in a meaningful framework and control for the different sizes of economies, Figure 4 combines the capacity of a country to produce manufactured goods (measured as MVA per capita) with its capacity to export them (measured as manufactured exports per capita). The applied time span is broader, covering the development from 1997–2008 as the period of industrial recovery and 2008–2017 as the period of crises and corresponding IP.

**Figure 4: Production and Export Capacities (1997, 2008, 2017)**



Source: World Development Indicators, UNCOMTRADE, own calculation

We note that the graph compares, first, domestically captured value added (outputs minus inputs) that remains as wages, taxes and profits in the country with, second, exports as outputs of the production sold abroad containing all inputs needed for the production of exports. Also important, higher exports do not automatically imply higher value addition. If a country imports most of its inputs for production, it may boost export values massively but will have little effect on domestic value addition. Therefore, countries strive to domestically generate more production inputs and import fewer. Nevertheless, developing export capacities is crucial because it allows, first, growing production capacities beyond domestic demand and, second, developing economies of scale. Both production and export capacities are important interlinked components of IP.

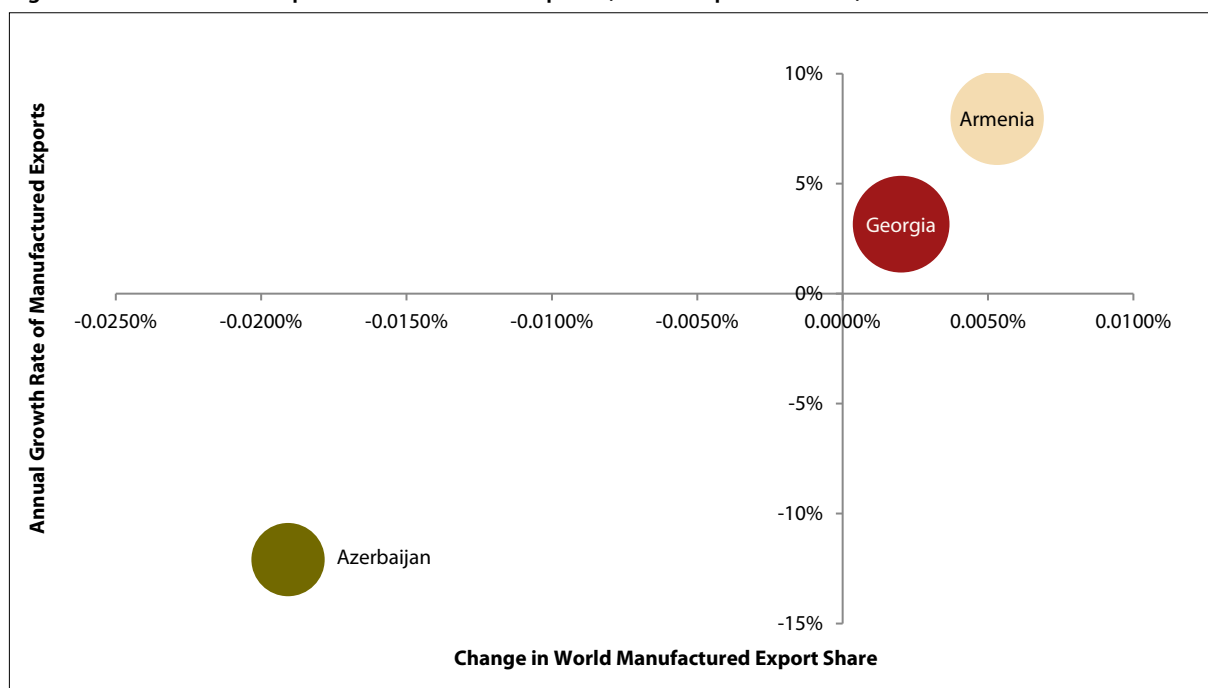
Georgia shows straightforward development over both observation periods, constantly increasing its production and slightly more its export capacities towards a relatively balanced relationship between the two. Armenia also managed to improve in both dimensions until 2008 but was still not fully exploiting its export potential. This changed in the following decade. Armenia improved its industrial production capacity very little but made huge steps towards expanding exports. If export capacity far exceeds production capacity, this could, as mentioned above, signal increased imported inputs for production or engagement in assembly activities for foreign companies whereby most of the products' value is generated abroad. This illustrates that expanding exports does not automatically translate into domestic value addition, which is crucial for prosperity. Azerbaijan's development trajectory differs fundamentally. It also developed quickly in the first decade while exports always exceeded pro-

duction capacity. Between 2008 and 2017, Azerbaijan experienced a slight loss in production capacity but a dramatic loss in export capacity.

### Impact in World Markets

Figure 5 below sheds some light on exports in the period after 2008 when all countries were increasingly active in intervening in their economies. The Y-axis shows the annual growth rates of manufactured exports and the bubble size the manufacture export values in 2017. The X-axis shows the change in a country's share of global manufactured exports (impact). In 2017, Georgia had the highest manufactured export value, which since 2008 has grown annually by 3%. This moderate growth rate was sufficient to change its share of global manufactured exports by 0.002 percentage points. Armenia's 2017 manufactured export value is only slightly lower but has been growing by 8% annually. This helped expand Armenia's share of global manufactured exports by 0.005 percentage points. Azerbaijan had the lowest manufactured export value, which is also a result of the negative annual growth rate of 12% since 2008. Additionally, Azerbaijan lost a significant 0.019 percentage points in global manufactured exports.

**Figure 5: Growth and Impact of Manufactured Exports (2008 compared to 2017)**



Source: UNCOMTRADE, own calculation

To gain world export market share, it is necessary for a country's manufactured exports to grow faster than the world average. To improve export competitiveness, it is not enough to expand exports rapidly; instead, the country must expand its exports faster than the rest. Despite the difficult international environment after the 2008 global financial crisis, Georgia and Armenia performed well in expanding their shares of global manufacture exports. However, without a correspondingly increasing domestic value addition (see Armenia), increased exports remain essentially useless.

### Building Resilience to External Shocks

There are various policy measures and, correspondingly, indicators to measure the potentially increased resilience of an economy to external shocks. Here, we will focus on, first, the share of medium- and high-tech in production/ exports and, second, export market and export product diversification.

### Shift to Medium- and High-Tech in Production and Exports

Shifting production and exports from resource-based and low-tech to medium- and high-tech (MHT) activities can help grow the prosperity of a society but also decrease its vulnerability by making the economy more independent

from changing global commodity prices. Table 1 below shows the shares of MHT in production and exports between 1997 and 2014/2016.

**Table 1: Share of Medium- and High-Tech in Production and Exports\***

		1997	2003	2008	2014	2016
Armenia	Production	18,21%	7,55%	7,44%	3,66%	
	Exports	21.17%	17.08%	27.67%	10.18%	13,11%
Azerbaijan	Production	10,34%	19,82%	13,17%	17,54%	
	Exports	12.04%	15.49%	11.18%	12.67%	28,26%
Georgia	Production	14,44%	17,12%	15,39%	15,11%	
	Exports	36.58%	28.35%	48.92%	42.84%	29,06%

\* Given the absence of UNIDO data on the 4-digit level on production for Armenia, we relied on data from the World Bank. Please note that these production data also include construction.

Source: World Development Indicators, UNCOMTRADE, own calculation

Regardless of its success in exporting high-tech services in the IT sector (see contribution on Armenia in this issue), Armenia shows by far the lowest shares of MHT in manufacturing production and exports in the region. Both shares have continuously dropped, reaching 3.66% in production and 10.18% in exports. Armenia's growth in production and exports was, hence, accompanied by a decrease in the technological complexity of its economy by mainly focusing on low-tech activities. Azerbaijan and Georgia possess similar shares of MHT in production and kept them relatively stable over time. Regarding exports, Georgia managed to upgrade and increase the technological complexity of the country's export basket to almost 50% MHT but was losing shares again until 2016.

### Export Market and Export Product Diversification

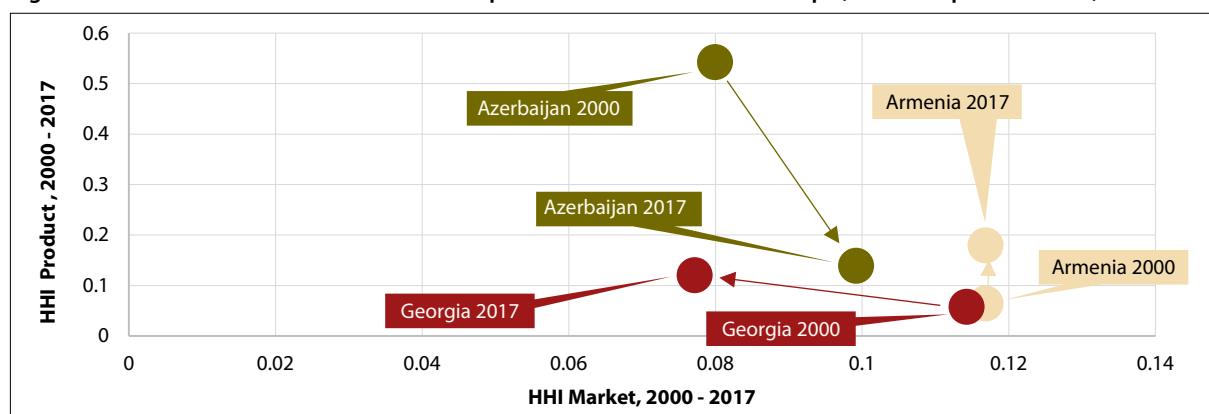
Depending predominantly on one or a few export products and/or export markets constitutes a serious risk for the economic resilience of a country. The Hirschman-Herfindahl index (HHI) is a measure of concentration and is here applied to assess the degree of diversification of export markets and export product groups (SITC 3-digit level). An HHI of 1 would mean the highest concentration (1 country or 1 product group) and an HHI of 0 an equal distribution of exports among trade partners or respective export product groups (see Table 2 and Figure 6 below).

**Table 2: Hirschman-Herfindahl Index of Export Markets and Product Groups (2000 Compared to 2017)**

	Market div. 2000	Market div. 2017	Diversif.	Product div. 2000	Product div. 2017	Diversif.
Armenia	0.116825726	0.141652578	down	0.064420956	0.179646106	down
Azerbaijan	0.079939462	0.099174692	down	0.542597529	0.139103071	up
Georgia	0.114242569	0.077159415	up	0.057799476	0.120435841	down

Source: UNCOMTRADE, own calculation

**Figure 6: Hirschman-Herfindahl Index of Export Markets and Product Groups (2000 Compared to 2017)**



Source: UNCOMTRADE, own calculation



Armenia lost both market diversification and, significantly, product diversification between 2000 and 2017. Azerbaijan had a very diversified export market structure and experienced a slight loss in diversification. In contrast, the product market was highly concentrated in 2000, and due to the fall in refined petroleum exports, it increased its HHI score significantly towards increased diversification. Georgia managed to diversify its export markets but became more concentrated in export products (groups).

What are the implications for the objective of strengthening economic resilience? In Armenia we find a significant low level of MHT and decreased product and market diversification. Given the increased importance of exports, Armenia increased its vulnerability to external shocks. Azerbaijan's economy is still very much exposed to external shocks due to its dependency on global oil prices. The setback in manufactured exports, growth of which might have helped decrease this dependency, outweighs the higher share of MHT and product diversification. Georgia's mixed record of higher but decreased MHT and increased market but decreased product diversification suggests an unchanged level of resilience.

### Employment Effects of Industrial Development

Generating employment is often one of the central objectives of IP directly affecting people's lives. Wages, inclusiveness, working conditions and gender balance are closely related issues. Table 3 below summarizes the employment effects of the respective main important subsectors and total manufacturing between 2003 and 2016 in absolute employment numbers (L) and annual growth rates. It also shows the employment elasticity, which indicates how much employment in percentage is generated or abolished when the (sub-)sector grows or declines by 1% in VA (for sub-period calculations, see Annex 2 on p. 31).

The results are striking (Table 3). Armenia lost more than half of its employment in manufacturing, and in Azerbaijan the employment effects were very limited; only Georgia managed to significantly increase employment numbers. Across all the Armenian subsectors, we see significant negative employment elasticity. The national statistical data con-

**Table 3: Employment Elasticity (2003–2016)**

	L 2003	L 2016	CAGR of L 2003–16	CAGR of VA 2003–16	Employment Elasticity 2003–16
<b>Armenia</b>					
15 Food and beverages	41,423	22,044	-4.74%	4.11%	-1.15
16 Tobacco products	4650	2,950	-3.44%	11.88%	-0.29
27 Basic metals	9363	4,340	-5.74%	4.11%	-1.40
26 Non-metallic mineral products	12,423	4,736	-7.15%	4.11%	-1.74
D Total manufacturing	110,100	53,181	-5.44%	4.11%	-1.32
<b>Azerbaijan</b>					
23 Coke, refined petroleum products, nuclear fuel	6,430	4,309	-3.03%	10.68%	-0.28
15 Food and beverages	12,308	25,083	5.63%	4.68%	1.20
26 Non-metallic mineral products	5,317	13,214	7.25%	12.94%	0.56
29 Machinery and equipment n.e.c.	11,151	11,947	0.53%	18.91%	0.03
D Total manufacturing	95,297	100,681	0.42%	8.22%	0.05
<b>Georgia</b>					
15 Food and beverages	17,570	33,880	5.18%	17.42%	0.30
27 Basic metals	5,802	11,016	5.06%	26.16%	0.19
24 Chemicals and chemical products	4,362	6,590	3.22%	22.98%	0.14
26 Non-metallic mineral products	3,688	9,373	7.44%	17.40%	0.43
D Total manufacturing	51,619	87,544	4.15%	16.04%	0.26

Source: UNIDO INDSTAT 2, Revision 3, own calculation

firm this general trend. If the data are correct, then even the booming tobacco industry was losing employment between 2003 and 2016. In Azerbaijan, the growth of the petroleum sector was productivity-driven, leading to extensive job cuts (El. -0.24). The elasticity of 1.2 for the food and beverage sector, in contrast, implies that employment was growing faster than production and might indicate a specific political interest in job creation (in rural areas). The booming ship repair and maintenance industry grew only productivity-based without any employment effects. In Georgia, we see elasticity rates between 0.14 and 0.43, which means that (1) all subsectors contribute to job creation but (2) not at the expense of productivity growth. These elasticity rates illustrate a very healthy development that combines productivity growth with employment growth.

## Conclusion

State industrial policy—as analysed in this issue—could not reverse the process of structural transformation towards a marginal role of industry in the economies of the Southern Caucasus. Nevertheless, some specifics of the industrial development, influenced to varying degrees by industrial policies, can be summarized as follows:

Armenia managed to increase its exports but failed in the last decade to translate this into corresponding domestic value capture. It is mostly engaged in primary economic activities, has the lowest share of MHT in the region and failed to diversify export markets and products. Industrial development went along with significant job cuts across all subsectors.

Azerbaijan failed to decrease its reliance on oil products. Along with the fall of oil prices, Azerbaijan's industrial production capacity dropped to 50% and its export capacity down to 25% of Georgia's capacities. The remaining industries might be well-positioned regarding share of MHT and diversification; however, their magnitude in ratio to the overall economy is negligible. Notable is the positive employment effect in the food and beverage subsector.

Georgia exhibits the most balanced development; even though growth has slowed since 2008, the country was more affected by the 2014 crisis and lost diversification in export products. Nevertheless, it managed to constantly increase its industrial production and export capacities, has the highest share of MHT products in its export basket, diversified its export market and shows significant positive employment effects while simultaneously increasing its productivity.

Some subsectors developed evidently due to state IP (ship repair and maintenance in Azerbaijan), some without any state support (tobacco in Armenia), and others failed to develop despite state support (textiles in Azerbaijan). In this study, we lack sufficient basis for assessing factors of success or failure of the policies discussed in the country cases. However, some general conclusions can be made. All three countries clearly see the need to intervene in their economies to grow, strengthen resilience or create jobs. However, the political commitment to go beyond the general improvement of the business climate and develop clear industrial sector development strategies is still largely lacking. Providing access to finance and promoting exports are common approaches, but more comprehensive sector development strategies (including linkage creation across sectors or close interlocking with other policy areas, such as education) are still not being pursued. Most important, all three countries lack the crucial prerequisite of modern industrial policy: a comprehensive and sophisticated monitoring and evaluation system. Instead of constantly revising strategies and action plans based on M&E intelligence, policy-makers tend to rely too much on blueprints from alleged best practices, pursue long time-horizons and forego steady monitoring of supposed effects. In doing so, they fail to timely adapt their instruments based on learning from experimentation as the core of contemporary industrial policy. This mixed record of industrial development of the Southern Caucasus illustrates that the potential of industries to contribute to overall development and prosperity has not yet been fully exploited.

### *About the Author*

Christian Timm holds a postdoc position and is the team leader of the research group “Governance in Emerging Economies” run by the Private University Göttingen and the University of Groningen funded by Volkswagen Foundation. As a member of the department of Internal Economics of the Private University of Göttingen, he has worked over the past seven years on various research projects, such as the research network “Institutions and Institutional Change in Postsocialism” (KomPost). Apart from his research activities in Institutional Economics and Political Economy, he works as a consultant on industrial policy for the United Nations Industrial Development Organization (UNIDO) and German Corporation for Development Cooperation (GIZ).

## STATISTICS

## Annex I

Table 1: Four Most important Subsectors: Value Added (in current USD), Share in Total Manufacturing, Growth Rate (CAGR)

	Value added 2003	Value added 2008	Value added 2014	Value added 2016	Share in MVA 2003	Share in MVA 2008	Share in MVA 2014	Share in MVA 2016	Growth 2003-2008	Growth 2008-2014	Growth 2014-2016	Growth 2003-2016
<b>Armenia</b>	<b>*Starting 2004</b>								<b>**Growth 2004-2008</b>			
15 Food and beverages	242,105,042	491,941,836	447,005,085	408,758,153	49.90%	49.90%	49.90%	49.90%	19.39%	-1.58%	-4.37%	4.11%
16 Tobacco products	27,462,737	48,052,158	129,305,480	118,241,762	5.66%	4.87%	14.44%	14.44%	15.01%	17.94%	-4.37%	11.88%
27 Basic metals	62,998,520	128,008,932	116,315,872	106,363,579	12.99%	12.99%	12.99%	12.99%	19.39%	-1.58%	-4.37%	4.11%
26 Non-metallic mineral products	19,604,954	39,836,003	36,197,157	33,100,033	4.04%	4.04%	4.04%	4.04%	19.39%	-1.58%	-4.37%	4.11%
D Total manufacturing	485,153,615	985,800,868	895,752,238	819,109,319					19.39%	-1.58%	-4.37%	4.11%
<b>Azerbaijan</b>												
23 Coke, refined petroleum products, nuclear fuel	187,289,975	1,338,818,432	1,553,015,508	700,245,766	29.22%	58.24%	43.85%	39.13%	48.20%	2.50%	-32.85%	10.68%
15 Food and beverages	244,902,184	335,649,084	893,406,798	443,859,260	38.21%	14.60%	25.23%	24.80%	6.51%	17.72%	-29.51%	4.68%
26 Non-metallic mineral products	23,412,303	116,598,914	256,332,444	113,913,204	3.65%	5.07%	7.24%	6.37%	37.86%	14.03%	-33.34%	12.94%
29 Machinery and equipment n.e.c.	21,999,275	32,131,642	237,879,297	208,987,106	3.43%	1.40%	6.72%	11.68%	7.87%	39.61%	-6.27%	18.91%
D Total manufacturing	640,862,662	2,298,645,359	3,541,475,213	1,789,449,605					29.10%	7.47%	-28.92%	8.22%
<b>Georgia</b>												
15 Food and beverages	47,392,911	149,802,588	515,332,506	382,153,229	35.64%	22.97%	48.86%	41.55%	25.88%	22.86%	-13.89%	17.42%
27 Basic metals	6,864,726	118,405,519	82,727,264	140,808,669	5.16%	18.16%	7.84%	15.31%	76.75%	-5.80%	30.46%	26.16%
24 Chemicals and chemical products	6,838,627	44,825,703	111,874,040	100,641,121	5.14%	6.87%	10.61%	10.94%	45.65%	16.47%	-5.15%	22.98%
26 Non-metallic mineral products	12,465,453	97,808,212	121,391,689	100,338,562	9.37%	15.00%	11.51%	10.91%	50.98%	3.67%	-9.08%	17.40%
D Total manufacturing	132,987,859	652,048,844	1,054,705,219	919,643,490					37.43%	8.34%	-6.62%	16.04%

Source: UNIDO INDSTAT 2, Revision 3, own calculation

**Table 2: Outputs of Armenia's Four Main Important Subsectors (Converted into Current USD), CAGR of Outputs, Employment Elasticity**

Volume of industrial production by type of economic activity in mln. current USD					
	2009	2014	2016	CAGR 2009–14	CAGR 2014–16
15 Food and beverages	USD 608.982	USD 1,042.462	USD 829.990	11.35%	-10.77%
16 Tobacco products	USD 39.193	USD 151.748	USD 283.639	31.09%	36.72%
27 Basic metals	USD 261.126	USD 413.133	USD 317.485	9.61%	-12.34%
26 Non-metallic mineral products	USD 114.555	USD 126.622	USD 71.492	2.02%	-24.86%
Employment					
15 Food and beverages	28,932	20,556	22,044	-6.61%	3.56%
16 Tobacco products	3,248	2,321	2,950	-6.50%	12.74%
27 Basic metals	6,540	4,235	4,340	-8.32%	1.23%
26 Non-metallic mineral products	8,677	4,291	4,736	-13.14%	5.06%
Elasticity					
				Elasticity 2009–14	Elasticity 2014–16
15 Food and beverages				-0.582	-0.330
16 Tobacco products				-0.209	0.347
27 Basic metals				-0.866	-0.100
26 Non-metallic mineral products				-6.493	-0.203

Source: National Statistic Yearbooks, UNIDO INDSTAT 2, Revision 3, own calculation

## Annex 2

Table 1: CAGR of Value Added (MVA) Based on Current USD, of Manufacturing Employment (ML) and Employment Elasticity

	VA Growth 2003–08	L Growth 2003–08	Elasticity 2003–08	VA Growth 2008–14	L Growth 2008–14	Elasticity 2008–14	VA Growth 2014–16	L Growth 2014–16	Elasticity 2014–16	VA Growth 2003–16	L Growth 2003–16	Elasticity 2003–16
<b>Armenia</b>												
15 Food and beverages	19.39%	-3.82%	-0.20	-1.58%	-8.08%	5.10	-4.37%	3.56%	-0.81	4.11%	-4.74%	-1.15
16 Tobacco products	15.01%	-3.83%	-0.25	17.94%	-7.99%	-0.45	-4.37%	12.74%	-2.91	11.88%	-3.44%	-0.29
27 Basic metals	19.39%	-3.82%	-0.20	-1.58%	-9.49%	5.99	-4.37%	1.23%	-0.28	4.11%	-5.74%	-1.40
26 Non-metallic mineral products	19.39%	-3.82%	-0.20	-1.58%	-13.47%	8.51	-4.37%	5.06%	-1.16	4.11%	-7.15%	-1.74
D Total manufacturing	19.39%	-3.82%	-0.20	-1.58%	-9.23%	5.83	-4.37%	2.45%	-0.56	4.11%	-5.44%	-1.32
<b>Azerbaijan</b>												
23 Coke, refined petro- leum products, nuclear fuel	48.20%	-0.31%	-0.01	2.50%	-3.83%	-1.53	-32.85%	-7.25%	0.22	10.68%	-3.03%	-0.28
15 Food and beverages	6.51%	12.59%	1.94	17.72%	2.90%	0.16	-29.51%	-2.59%	0.09	4.68%	5.63%	1.20
26 Non-metallic mineral products	37.86%	12.70%	0.34	14.03%	5.33%	0.38	-33.34%	0.06%	0.00	12.94%	7.25%	0.56
29 Machinery and equipment n.e.c.	7.87%	-6.19%	-0.79	39.61%	4.10%	0.10	-6.27%	7.65%	-1.22	18.91%	0.53%	0.03
D Total manufacturing	29.10%	2.98%	0.10	7.47%	-0.81%	-0.11	-28.92%	-2.15%	0.07	8.22%	0.42%	0.05
<b>Georgia</b>												
15 Food and beverages	25.88%	0.51%	0.02	22.86%	9.65%	0.42	-13.89%	3.99%	-0.29	17.42%	5.18%	0.30
27 Basic metals	76.75%	9.53%	0.12	-5.80%	3.89%	-0.67	30.46%	-2.13%	-0.07	26.16%	5.06%	0.19
24 Chemicals and chemical products	45.65%	2.62%	0.06	16.47%	1.81%	0.11	-5.15%	9.17%	-1.78	22.98%	3.22%	0.14
26 Non-metallic mineral products	50.98%	6.17%	0.12	3.67%	8.02%	2.19	-9.08%	8.90%	-0.98	17.40%	7.44%	0.43
D Total manufacturing	37.43%	1.99%	0.05	8.34%	6.79%	0.81	-6.62%	1.80%	-0.27	16.04%	4.15%	0.26

Source: UNIDO/INDSTAT 2, Revision 3, own calculation

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**Corresponding Editor**

Heiko Pleines, Research Centre for East European Studies at the University of Bremen, [pleines@uni-bremen.de](mailto:pleines@uni-bremen.de)

**Layout**

Matthias Neumann, Research Centre for East European Studies at the University of Bremen, [fsopr@uni-bremen.de](mailto:fsopr@uni-bremen.de)

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Research Centre for East European Studies • Country Analytical Digests • Klagenfurter Str. 8 • 28359 Bremen • Germany

Phone: +49 421-218-69600 • Telefax: +49 421-218-69607 • e-mail: [fsopr@uni-bremen.de](mailto:fsopr@uni-bremen.de) • Internet: [www.laender-analysen.de/cad/](http://www.laender-analysen.de/cad/)