



Policy Brief

Assessing Participation of CAREC Countries in Global and Regional Value Chains

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Disclaimer

Under the CAREC Think Tanks Network (CTTN), the CAREC Institute has launched the Research Grants Program in May 2019 to support scholars and researchers from members of the CTTN to produce targeted knowledge products which would add to the body of knowledge on regional cooperation in CAREC.

Scholars from member think tanks were encouraged to research CAREC integration topics and undertake comparative analysis between (sub) regions to draw lessons for promoting and deepening regional integration among CAREC member countries particularly as anticipated in the CAREC 2030 strategy and stated operational priorities – (i) economic and financial stability; (ii) trade, tourism, and economic corridors; (iii) infrastructure and economic connectivity; (iv) agriculture and water; (v) human development – including, where possible, a history of policy interventions and adjustments that have shown limited results, but have the possibility of policy changes, innovations, reversals, and readjustments. A research proposal that had clear cross-border dimension and overt policy prescriptions to promote regional integration, and which showcased comparative perspectives on regional integration efforts to provide policy lessons was given an advantage.

The 2019 research grants have been awarded to five researchers who presented their preliminary findings during the August 2019 Think Tanks Forum in Xian, the PRC. This policy brief summarizes main findings of the research about assessing participation of CAREC countries in Global and Regional Value Chains.

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1. Introduction and background

The emergence of GVC, global value chains, around more than two decades ago transformed the way economists think about countries' comparative advantage and specialization in production. It has also transformed the understanding of what it takes for a country to be successfully integrated into world trade networks and derive maximum benefit from global trade. Participation in GVC became of crucial importance not only for larger emerging markets but also for smaller developing economies. For them, higher GVC participation translated, among other things, into increased sophistication and diversification of exports (Kowalski, P. et al., 2015); access to international markets, knowledge spillovers and technology transfers (Slany, 2017); more opportunities for SMEs, as they exploited their speed and flexibility to carve a niche in the global market.

And yet, developing countries find it hard to integrate into global value chains. For them, the impediments to GVC participation are often linked to institutional factors: contract enforceability, strength of business environment, degree of property rights protection. These factors along with quality of the labor force, lack of infrastructure, determine the degree to which these countries can participate and benefit from GVC. (OECD, 2013).

Paradoxically, regional integration seems to be even more of a challenge for developing countries. Developing countries in the same neighborhood cluster do not seem to trade enough with each other and are not more regionally integrated. This may be because, as Slany (2017) points out, the factors that are detrimental to establishing RVC are essentially the same factors that prevent the country from effectively integrating into GVC: transaction costs, lack of appropriate infrastructure, deficiencies in trade policies and weak institutional frameworks to facilitate cross-border trade. Thus, for any group of neighboring developing economies, establishing a functional RVC may be actually a more challenging than plugging oneself into the existing GVC.

The tendency towards low RVC participation may, unfortunately, hurt developing economies, especially as they miss valuable opportunities to benefit from proximity, access and natural resource endowments of each other. As a regional country group strategically located along the historical trade route between Asia and Europe, CAREC countries present a specific policy challenge. On the one hand, it is clear that tighter economic integration on the regional level can greatly benefit these countries. On the other hand, there is lack of research on just how well or poorly the CAREC countries are integrated into each other's production processes. Thus, there is a lack of understanding about policy issues that need to be addressed on a country level, or about concrete industries which might require attention of policy makers.

This policy brief outlines the findings of the first study on these issues and identifies the avenues for further policy intervention.

2. Identifying degree of GVC and RVC integration for CAREC countries

Methodology

In this study the indicators of global value chain participation are calculated on the basis of the simplified version of the Eora multi-regional input-output (MRIO) model¹. The Global Value Chain (GVC) participation index simply adds the shares of foreign value added (FVA) and the Domestic value added (DVX) in the exports of country i and industry k :

¹ The model consists of a balanced global MRIO table linking 4,914 industries across 189 countries (included all of the CAREC countries) estimated for 1990-2018 (results from 2016-2018 are nowcasted based on IMF World Economic Outlook).

$$GVC_{ik} = \frac{FVA_{ik}}{Gross\ Export^2_{ik}} + \frac{DVX_{ik}}{Gross\ Export_{ik}} \quad (1)$$

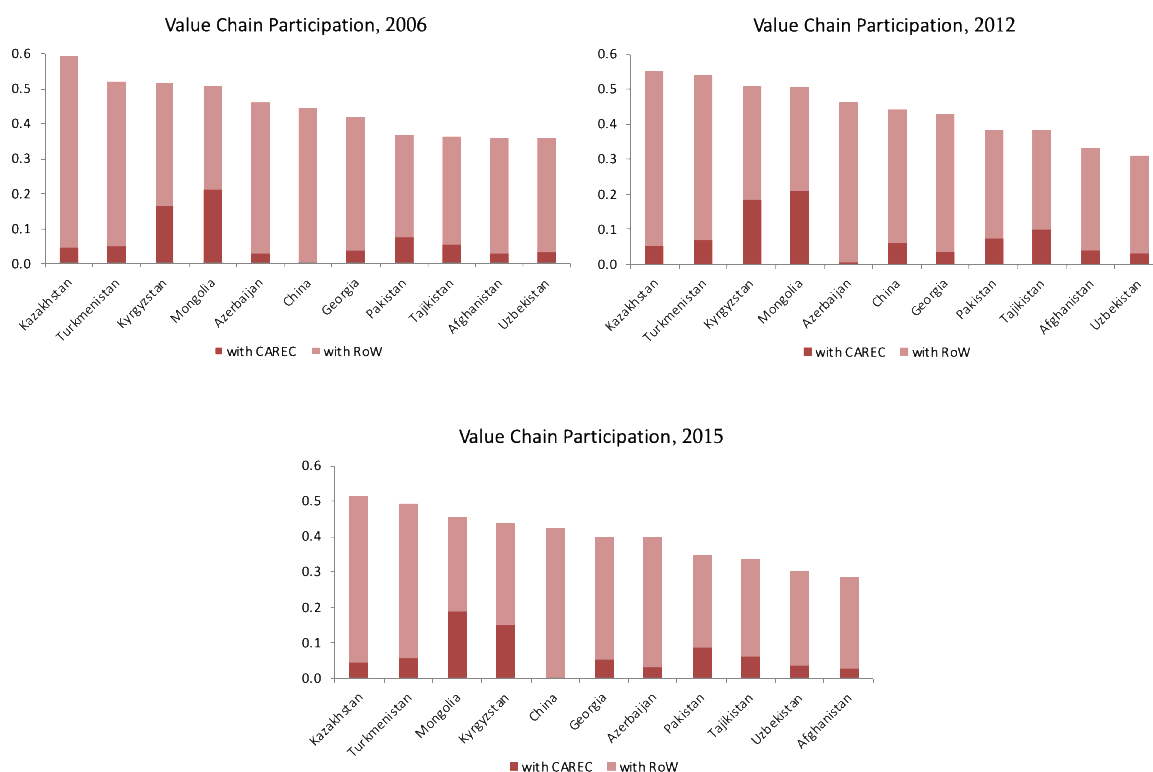
The higher the ratio, the greater the intensity of involvement of a particular country in the Global value chain. The first component of the GVC index (FVA/Gross Export) measures “backward participation” in the value chain – i.e. gives information about the share of intermediate imported goods in total exports of country *i*. The second component DVX/Gross Export measures the degree of “forward participation” in the value chain, and measures the extent to which country *i*’s exports are used as inputs in export production of other countries.

A Regional Value Chain (RVC) participation index for the CAREC region is then estimated by the same formula (1), but the data is restricted to include only CAREC countries.

Results for the CAREC country group

The graphs below (Figure 1) trace CAREC countries’ RVC and GVC indexes at three crucial junctures: 2006 (before the global financial crisis of 2008), 2012 (the year after the global financial crisis but before the oil price collapse and regional currency crisis in the ECA region countries), 2015 (the year of regional growth and demand slow down driven by low oil prices, political instability in parts of the region, trade wars between US and China and the move towards higher protectionism on the global scale).

Figure 1. Value Chain Participation for CAREC countries.



The results presented in Figure 1 clearly suggest that CAREC countries are not well integrated into production processes of the CAREC region. The countries which are most integrated into CAREC RVC are Mongolia and Kyrgyzstan (18.9% and 15.2% RVC participation index respectively), followed by Pakistan and Tajikistan (8.8% and 6%) in 2015. **The evidence also shows that CAREC**

² Gross Export = DVA + FVA. Where FVA is a share of value added generated in country *J* ($J \neq k$) and imported by country *k* in order to produce its exports.

countries are not integrated enough into GVC, given their size. The average GVC participation index for CAREC countries is 40.1% in 2015. Georgia, for example, has GVC index of 40%, while OECD countries with similar relatively small populations (e.g. Lithuania, Latvia, Estonia, Finland, Norway), all have GVC index over 50% according to 2009 data (OECD, 2013).

In the same time, it is evident that GVC and RVC participation indexes of CAREC countries are dynamic, which may reflect the changing economic landscape. For example, CAREC-RVC participation has been increasing for nearly all CAREC countries from 2006 to 2012, but then in 2015 there has been a retreat both in RVC and GVC participation. The pattern between 2006 and 2012 can be explained in part by the global financial crisis effects. The crisis likely forced many countries to look for fresh opportunities in their own neighborhood rather than rely mostly on global trade networks. In 2015, however, both RVC and GVC participation was on decline in nearly all countries. This can be explained by the global growth slowdown and regional economic and currency crisis affecting both oil-exporting and oil-importing groups of countries.

3. RVC and GVC participation patterns: the case of Georgia

Georgia presents an interesting case study among CAREC countries, because in some ways it illustrates important tendencies in the region. We constructed the bilateral value chain participation index (abbreviated as CVC) for Georgia and its top value chain partner countries. **The evidence shows that Russia (Georgia's largest neighboring economy) is also a top VC partner country for Georgia,** although it is not the topmost country in terms of total volume of trade (in 2015 the top trade partner country for Georgia, based on gross trade flows was Turkey). **It is also notable that Georgia's VC linkages with Russia were not only resilient, but expanding in the face of Russia's trade sanctions and restrictions against Georgia between 2006 and 2012.**

Another interesting point is that **with Turkey, another large and economically powerful neighbor, Georgia does not enjoy nearly as much integration as with EU countries like Germany and Italy.** This can be explained by the fact that Turkey and Georgia are both integrated with EU countries through primary product exports (e.g. hazelnuts which are then exported to Italy for confectionaries) and their natural resources and capacities are mostly related to substitutes rather than complements in production. Interestingly, among top 10 VC partner countries there is only one CAREC member – Azerbaijan. The rest are EU countries, USA, and larger neighboring countries like Turkey, Russia and Ukraine.

A closer look at the industry level reveals that Italy is even more important than Russia as a destination country for wholesale retail value-added trade (i.e., Italy is importing more Georgia's value-added and using it in exports than Russia in the wholesale retail trade industry), even though Russia is more important overall as a value-added destination country. Turkey and Azerbaijan also very prominent source countries for VC participation, especially what concerns wholesale products, land and water transportation services, etc.

Georgia and CAREC countries: Identifying forward and backward RVC linkages on industry level

We have already established that CAREC countries in general, and Georgia in particular, are not well integrated with each other on the value-chain level. Thus, for policy purposes it is important to identify the sectors which have both a high potential for value-chain integration and those in which the RVC capacity is yet under-developed.

Sector-identification diagnostics methodology

The first step is to compare GVC and RVC participation indexes for each industry. Clearly, in absolute value GVC participation index will be much higher than the RVC index, so the comparison should be made in relative terms, taking into account where each industry-specific index stands relative to the mean value (compute the so called “distance from the mean gap” for each industry k).

For example, if an industry X in Georgia has a high GVC participation index relative to the overall GVC mean for all industries, but in the same time its RVC participation index is far below the overall RVC mean, the question needs to be asked what is causing an industry that is so well integrated into the global value chain to lag behind in regional value chain participation³.

For example, in Georgia’s Hotel and Restaurant industry, the GVC index is 4.3% above the mean GVC value for all relevant industries (indicating that the industry is relatively well integrated into global value chains). In the same time, the CAREC RVC participation index for this industry is 21.6% below the mean for all industries. The “distance from the mean” GVC-RVC gap would then be 25.9% for Hotel and Restaurants. A large positive gap would indicate that the industry in question is much better integrated into the global value chains and into the regional (CAREC) value chains. A large negative gap would indicate a better RVC integration relative to GVC.

Industry selection criteria

In Georgia **8 industries with relatively high GVC and relatively low RVC participation are identified**. Out of the eight, “Private Households” and “Other” can be excluded, since they are not subject to policy intervention. Thus, Electricity, Gas and Water; Hotels and Restaurants; Post and Telecommunications; Financial Intermediation and Business Activities; Mining and Quarrying; Textiles and Wearing Apparel are the remaining 6 industries to be considered more closely.

Among these Post and Telecommunications as well as Financial Intermediation and Business Activities are the type of sectors that are typically servicing existing trade linkages between countries. If RVC linkages between Georgia and CAREC countries increase, the participation index of these industries will increase as well. Thus, only four remaining industries are of interest to policy makers:

- *Electricity, Gas and Water*
- *Hotels and Restaurants*
- *Mining and Quarrying*
- *Textiles and Wearing Apparel*

The final step is to check whether these industries are economically significant for the country, meaning that their export volumes to CAREC countries are not negligible. The industries’ rank in overall exports to CAREC are 15th, 13th, 10th and 17th out of 26, respectively. Thus, we can be sure that we are not dealing with outliers, or industries which are not economically meaningful for the country’s export.

The remaining **5 industries to consider are those which have significantly higher relative RVC participation (and thus a demonstrated capacity for RVC trade)**. These are Public Administration, Transport, Fishing, Wholesale Trade, Wood and Paper industries. Once again, we can exclude Public Administration and Fishing as either less relevant or not economically meaningful (very low volume of exports). The remaining three industries are identified as potential subjects for further analysis:

- *Transport*
- *Wholesale Trade*

³ The “distance from the mean gap” (DM_gap) for industry k can be defined as follows $DM_gap_k = \frac{GVC_k}{\sum_{k=1}^n GVC_k / n} - \frac{RVC_k}{\sum_{k=1}^n RVC_k / n}$

- *Wood and Paper*

Focusing on just two out of seven identified industries we consider the cases of *Textiles and Apparel* and the *Wood and Paper industries in Georgia*.

4. Main findings and policy recommendations based on industry case studies

We find that *Textiles and Apparel industry* in Georgia is connected with global value chains mainly through Turkey, which serves as a regional focal point for import and export of textiles. Georgia tends to import raw material (cotton, fabrics) mainly from Turkey (through Turkish-owned subsidiary companies established in the Adjara region) and export the unfinished goods (apparel) for further processing to Turkey. Georgia's value added in this process tends to be very low. Many CAREC countries import textiles and apparel from Turkey as well. In light of this, Georgia should:

- Support efforts to move up the value chain in Textiles and Apparel industry. This could be achieved by supporting industry investment in advanced technologies, strengthening the sophistication of the labor-force via training programs, developing tighter quality-control procedures to comply with international standards.
- Undertake more 'up-market' business operations, such as design, raw material sourcing and marketing/distribution. This would require collaboration with the textile exporting (e.g. Uzbekistan, Azerbaijan and Kazakhstan) and large apparel producing countries (e.g. China) in the region. Developing closer value-chain linkages with CAREC countries would thus serve to strengthen Georgia's apparel industry.

Another case study of the *Wood/Furniture value chain* in Georgia reveals that regional CAREC value-chain linkages can be strengthened. Georgia and Azerbaijan, both CAREC countries, are strongly emerging as regional producers of furniture, with Georgia also serving as a source of raw material (wood). The position of both countries in the global and regional value chains can be strengthened if they work to expand their market share (without compromising natural resources) and create a higher domestic value added. For Georgia this can be achieved by:

- Facilitate intra-industry coordination between Georgia and Azerbaijan. This means working with Azerbaijan on the industry-to-industry level to develop strategies for complementarity and cooperation rather than competing on the low value-added segments of the value chain.
- Utilizing Georgia's trade agreements - such as DCFTA with EU, Free Trade Agreements with China and neighboring countries (including Turkey and Azerbaijan) to become a tariff-free link for China and Azerbaijan to reach the European market.
- Building upon Georgia's specific cost advantages: labor, electricity and construction costs, availability of recyclable wood resources, as well as flexible institutional environment (favorable business climate and taxation system). to support the emerging industrial cluster and expand the export scale.

5. Concluding Remarks

The study underlying this policy brief is an important first step in creating a comprehensive mapping of the GVCs and RVCs for CAREC region by using the inter-country input-output matrices. While the study's main focus is Georgia, further analysis may be done for each CAREC country.

The study finds clear evidence that CAREC countries are not well integrated into each other's' production processes. Moreover, most CAREC countries are also not integrated enough into the global value chains, given their respective sizes. This points both to the challenges associated with CAREC countries economic systems, as well as the opportunities for cooperation and development.

Secondly, the evidence suggests that value-chain integration process is dynamic, and regional linkages can strengthen or weaken depending on economic climate. In particular, regional value chain participation for CAREC countries increased between 2006 and 2012, following the global financial crisis, but then declined again in 2015 as a result of the region-specific economic and currency crisis.

Studying Georgia's value chain participation patterns, it can be concluded that value-chain ties to larger neighbors and more traditional trade partners (such as Russia) can be quite resilient, even persist through conflict and trade sanctions. Value-chain ties are not solely a function of the size of the economy and geographical proximity. For example, Georgia enjoys stronger value-chain ties with Germany, Italy and France than with Turkey. Russia still leads the list of value-chain integrated countries with Georgia, but with notable exceptions in some industries.

Finally, a closer look at RVC and GVC patterns for Georgian industries provides interesting insights for policy makers: one set of industries appear to be much better integrated into GVC, than into CAREC-RVC, while another set of industries tends to have high CAREC-RVC participation index relative to the GVC. Both types of industries can be subject for further in-depth analysis to reveal potential constraints and opportunities for regional cooperation.

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