

Lifting Growth in the Western Balkans

The Role of Global Value Chains and Services Exports

*Prepared by an IMF staff team comprising Nadeem Ilahi,
Armine Khachatryan, William Lindquist, Nhu Nguyen,
Faezeh Raei, and Jesmin Rahman*

No. 19/13

European Department

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Cataloging-in-Publication Data
IMF Library

Names: Ilahi, Nadeem, author. | Khachatryan, Armine, author. | Lindquist, William J., author. | Nguyen, Nhu (Research Analyst), author. | Raei, Faezeh, author. | Rahman, Jesmin, author. | International Monetary Fund. European Department, issuing body. | International Monetary Fund, publisher.

Title: Lifting growth in the Western Balkans : the role of global value chains and services exports / Nadeem Ilahi, Armine Khachatryan, William Lindquist, Nhu Nguyen, Faezeh Raei and Jesmin Rahman.

Other titles: Role of global value chains and services exports. | International Monetary Fund. European Department (Series).

Description: Washington, DC : International Monetary Fund, 2019. | At head of title: European Department. | European Departmental Paper Series. | No. 19 | Includes bibliographical references.

Identifiers: ISBN 9781498314916 (paper)

Subjects: LCSH: Economic development—Balkan Peninsula. | Balkan Peninsula—Economic conditions. | Exports—Balkan Peninsula. | Investments, Foreign—Balkan Peninsula.

Classification: LCC HC401.I43 2019

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Acknowledgments

This paper was completed under the overall guidance of Jörg Decressin. The authors are grateful for helpful comments and suggestions from IMF colleagues, and from seminar participants at the European Commission on an earlier version of the paper. The authors would also like to thank Indra Mahadewa and Aniko Madaraszova for editorial assistance, and Houda Berrada of the Communications Department for leading the editorial and production process.

Executive Summary

In the past 25 years, exports have contributed strongly to growth and economic convergence in many small open economies. However, the Western Balkan (WB) region, consisting of small emerging market economies, has not fully availed itself of this driver of growth and convergence. A lack of openness, reliance on low value products, and weak competitiveness largely explain the insignificant role of trade and exports in the region's economic performance. This paper focuses on how the countries in the WB could lift exports through stronger integration with global value chains (GVCs) and broadening of services exports.

The experience of countries that joined the European Union in or after 2004 shows that participation in GVCs can help small economies accelerate export and income growth. WB countries are not well integrated into Europe's vibrant GVCs. Trade within the region is also limited—it tends to be bilateral and not cluster-like. Our analysis shows that by improving infrastructure and labor skills and adopting trade policies that ensure investor protection and harmonize regulations and legal provisions, the region can greatly enhance its engagement with GVCs.

Services exports are an increasingly important part of global trade, and they offer an untapped source of growth. The magnitude of services exports from the WB region compares favorably with that of peers in Europe, particularly in travel services where several of these countries have a revealed comparative advantage. But there is significant room for growth in tourism exports and an untapped potential in business and information technology services exports that these countries can materialize through policy efforts that increase openness and enhance connectivity and labor skills. Serbia offers a good example of how decisive efforts, including education policies to ensure a sustained supply of skilled labor, can help information technology services exports to take off.

The slowdown in income convergence of WB countries with advanced Europe over the past decade calls for a rethink on policies and structural reforms. Exports have to play a key role. First-generation trade reforms in the WB, including tariff reduction, are advanced but deeper institutional, legal and trade logistics reforms are needed to fully integrate these economies into export supply chains. These “deep” reforms will also be required as these countries pursue EU membership. Frontloading some of the key legal and regulatory changes to facilitate trade and investment may start to pay dividends well in advance of actual membership through faster economic growth.

1 Motivation

In the past 25 years, exports have strongly contributed to growth and economic convergence in small open economies (Figure 1). During this period, in real terms, the annual average growth of exports, at 5.6 percent, was about 1½ times the rate of world GDP growth. The gains from exports have been significant in the emerging market economies in Europe, particularly those that joined the European Union (EU) in 2004 or later—the new member states (NMS).¹ Much of the strong income convergence witnessed in Europe prior to the global financial crisis came from these countries, aided by large intra-Europe investment and trade flows (IMF 2011). Despite some slowdown in the years following the global crisis, exports remain a robust avenue for growth for developing countries.

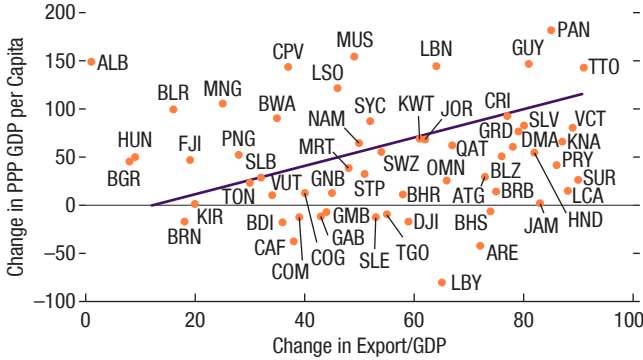
The Western Balkan (WB) region, consisting of small emerging market economies, is aspiring to embark on an export-led growth and convergence path.² After a late start in transition due to civil wars, the region experienced notable income growth nearly doubling its real GDP level in the last two decades (Figure 1). However, income convergence with advanced Europe has been less impressive when compared to NMS, partly reflecting lower exports. Although the contribution of net exports to growth turned positive in most countries in the post-crisis years, the region is yet to experience a meaningful boost from exports. A lack of openness, reliance on low value products, and weak structural competitiveness largely explain the subdued role of exports in the region. WB countries are less open than the NMS (Figure 2). Our estimates of trade openness—which control for price level and size bias—show that the WB countries are only about one-third as open as the

¹NMS of the EU include Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

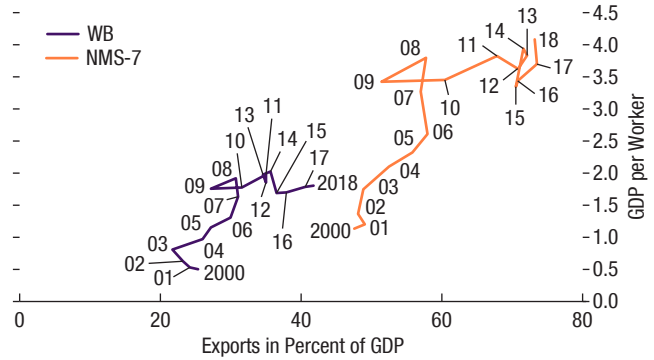
²WB comprises Albania, Bosnia and Herzegovina, Kosovo, Montenegro, Republic of North Macedonia, and Serbia.

Figure 1. Exports, Real GDP Growth and Income Convergence

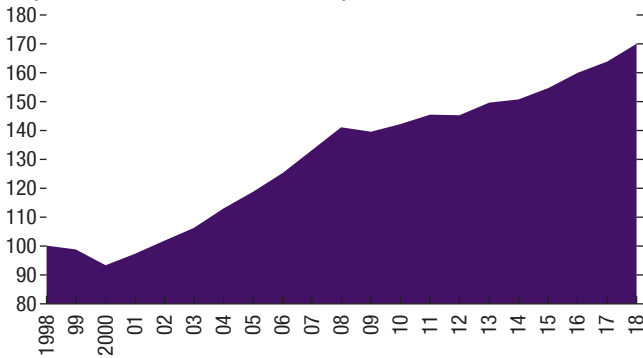
1. Exports and Growth in Small Economies, 1990–2016¹



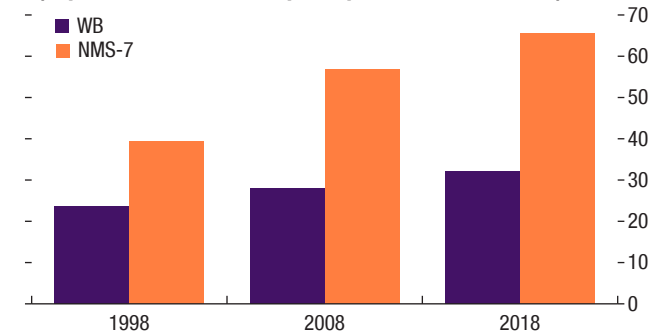
2. Export Performance: WB vs. Peers, 2000–16



3. Real GDP: Western Balkans (Index, 2000 = 100, in PPP terms)



4. Relative GDP per capita (In percent of Euro Area's per capita GDP in PPP terms)



Sources: Haver Analytics; World Economic Outlook; WDI; and IMF staff calculations.

Note: NMS-7 includes small economies that are members of the European Union: Bulgaria, Croatia, Estonia, Latvia, Lithuania, Slovakia and Slovenia.

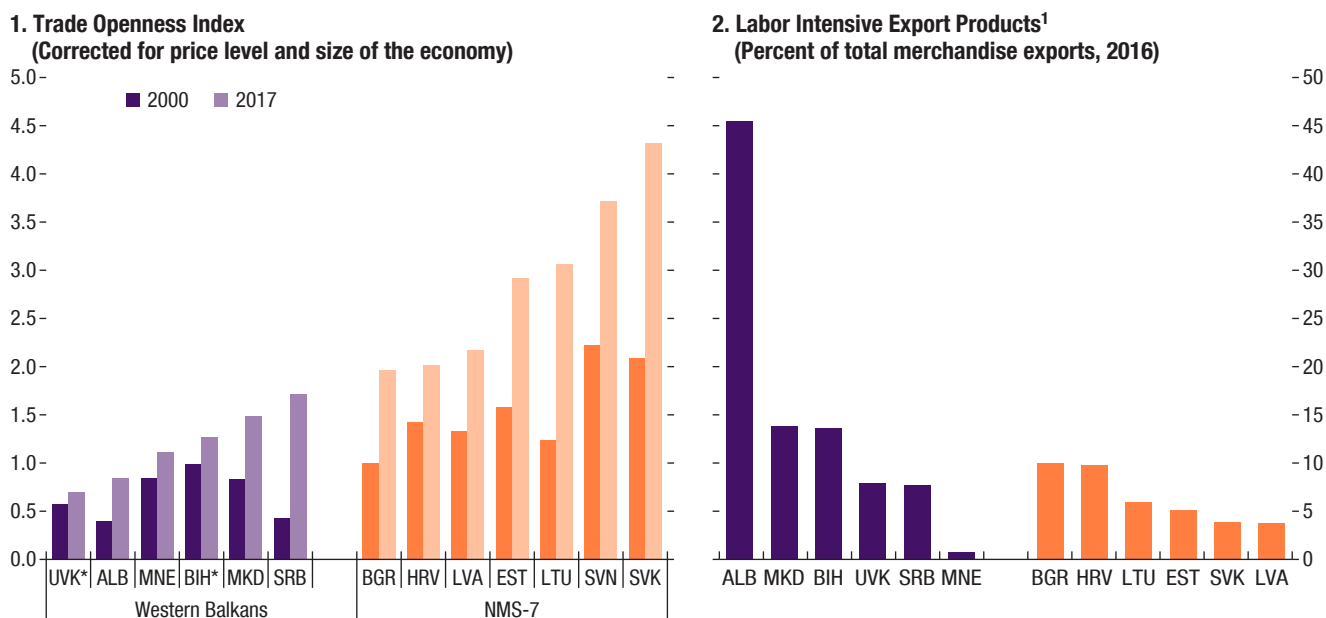
¹Small countries are those with population below 10 million.

NMS.³ Although trade openness in the WB region has increased over time, this has largely been driven by Serbia and Republic of North Macedonia. Labor-intensive products—which tend to generate low value—account for a higher share of merchandise exports in WB countries than in NMS. Meanwhile, a late start in transition and slow progress in key structural reforms have held the region back in competitiveness despite low wages relative to European peers.

This paper focuses on how exports and trade can play a stronger role in WB countries by drawing on the experience of the NMS. To make comparisons

³There is an upward bias in the standard trade openness measure—the ratio of sum of exports and imports to GDP—for small and developing economies as the nominal prices used to estimate GDP are lower than purchasing power parity (PPP)-adjusted prices, and small countries trade more internationally compared to economies with a bigger domestic market.

Figure 2. Trade Openness and Labor Intensity of Exports



Sources: UN Comtrade; World Development Indicators (WB); and IMF staff calculations.

Note: Correcting for price level and country size distortions, $Trade\ openness = (X + M) / ((GDP_i)^{-0.2}) + (GDP_{Prow})^{(-0.2)}(-5)$, where, X and M are real exports and import of goods and services; GDP_i and GDP_{Prow} are a country's own GDP and rest of the world's GDP, respectively (in constant PPP). See Tang, 2011 for coefficient estimates.

*Data point is 2006 due to lack of available data for 2000.

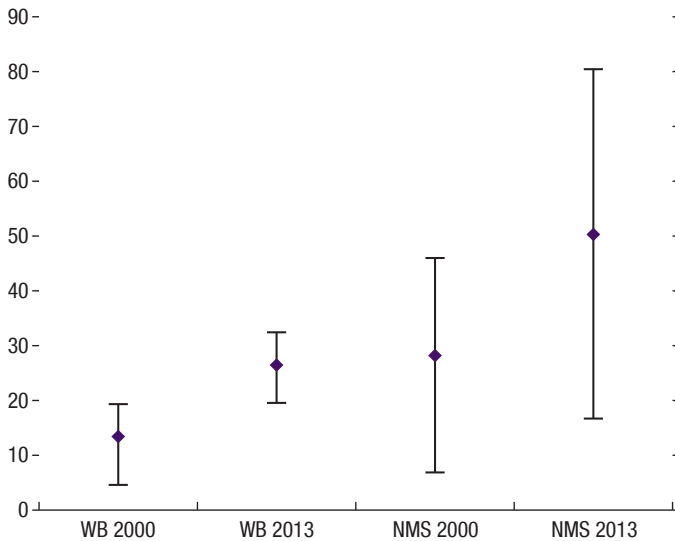
¹Include textiles and textile products, leather and leather products, and footwear.

relevant, we use a subset of NMS, consisting of smaller economies. This group, which we refer to as NMS-7, excludes Czech Republic, Hungary, Poland, and Romania. With WB countries' average per capita income at half of that in NMS, and a quarter of the EU-15 level (on purchasing power parity [PPP] basis), there is significant room for income convergence. However, to attain this goal sustainably, the WB countries will need to move away from their domestic demand-driven growth model and rely more on exports. In this paper, we explore the following three avenues on how this can be achieved.

- **Enhancing integration with global value chains.** For countries in the WB, linking up with global value chains (GVCs)—which account for nearly 80 percent of global trade—could be greatly beneficial for promoting exports. In western Europe—the main destination for WB exports today—GVCs are predominantly regional, located around a few hub countries, most notably Germany, and concentrated in a few sectors, namely automotive, electrical equipment, machinery, chemicals, and metals (Figure 3). Although GVCs are not the only means to raise exports, they have

Figure 3. GVC Participation Index: Western Balkans and New Member States

(Sum of forward and backward GVC linkages; percent of GDP)



Sources: Eurostat; WEO; WDI; and IMF staff calculations.
 Note: The diamond indicates median. WB = ALB, BIH, MKD, NME, and SRB; NMS = CZE, EST, HUN, LTU, LVA, POL, SVK, and SVN.

proven to be an efficient way for smaller economies, particularly in Europe, to integrate into global trade without having to build expertise in all aspects of production of a good. We explore the following questions in Chapter 2. How are WB countries linked to the European supply chains? What can these countries do to enhance their links? Would enhancing labor skills, improving trade logistics, and strengthening infrastructure sufficiently compensate for the diseconomies arising from their small size?

- **Expanding services exports.**

The services sector dominates the economies of the WB — generating 66–79 percent of gross value added and 60–82 percent of employment. However, its role in exports is limited, with the exceptions of Albania and Montenegro where tourism accounts for a large share of exports. In Chapter 3 we explore the types of services in which WB countries have a comparative advantage and how this can be enhanced. Is the tourism industry competitive relative to regional peers? What are the prospects for boosting exports in newer services products, such as IT and business services?

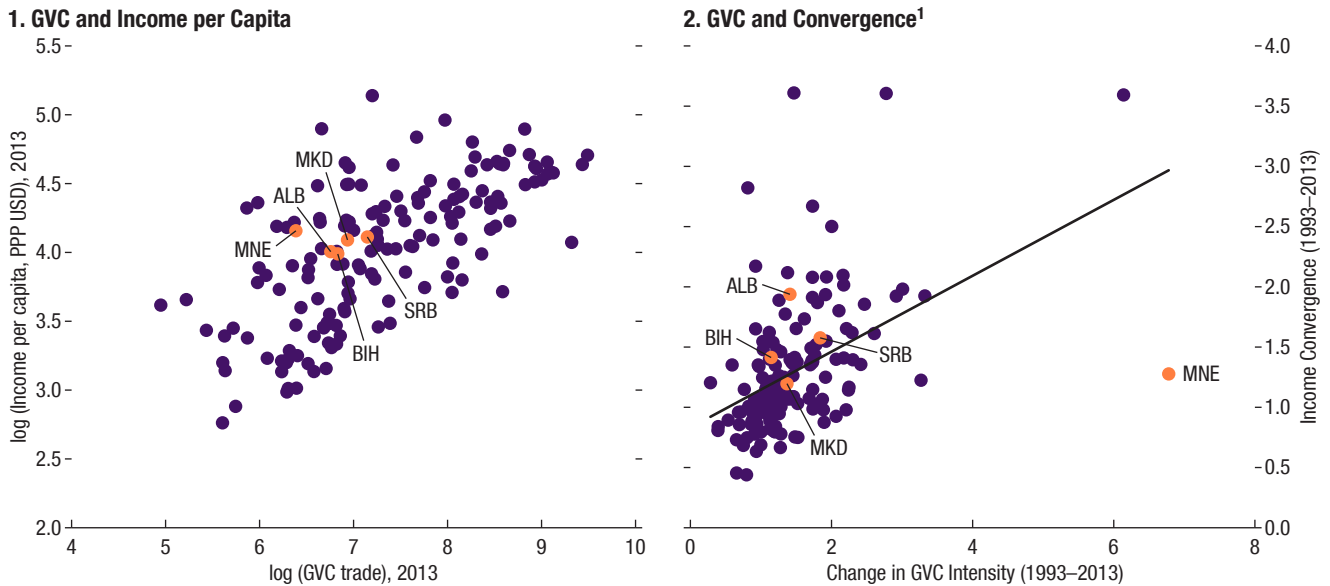
- **Raising imports' contribution to export growth.** Structurally, imports in WB countries are skewed toward consumer goods, reflecting their domestic demand-driven growth model. The share of intermediate and capital goods—which are deemed beneficial to investment and long-term growth—is substantially lower than in the NMS. With GVCs dominating the global trade scene, imports are increasingly viewed as a means for firms to access most efficient inputs. In Chapter 4 we approach competitiveness through import composition by asking how imports can play a more enabling role for exports.

Enhancing Integration with Global Value Chains

Participation in GVCs can help developing economies fast track export and income growth. Since the mid-1990s, production of tradable goods has become increasingly organized around GVCs, globally, as well as in Europe. Advances in information technology and transportation and falling trade barriers have allowed firms to unbundle production into tasks performed across international borders, thus maximizing gains from specific comparative advantage (Feenstra and Hanson 1997, Grossman and Rossi-Hansberg 2008). From an individual country perspective, participation in GVCs can enhance productivity and income through multiple channels: a finer cross-border division of labor, greater availability of input varieties, increased competition, and technology spillovers (Halpern, Koren, and Szeidl 2015). Indeed, recent studies conclude that developing economies can obtain significant growth and productivity gains from engaging in GVC-related exports (Constantinescu, Mattoo, and Ruta 2017; Raei, Ignatenko, and Mircheva 2019; Figure 4).

However, being able to successfully link with GVCs is not a given, nor are the potential gains that can materialize from such links. Empirical studies show that to establish or harness these links, countries need to improve human and physical capital, institutional quality, and trade logistics/connectivity (Rahman and Zhao 2013, World Bank 2017b)—all of which take effort, time, and resources. In addition, competition from other countries is typically strong, particularly at the lower end of production where competitive wages matter most. Unless countries pursue reforms and invest in education to upgrade skills and productivity, there is a risk that participation in GVCs may not help (Rodrik 2018). They may find themselves stuck in a low-wage, low-productivity trap possibly losing long run comparative advantage to automation or other countries with lower labor costs. In addition, GVC links are not without risks as they tend to accentuate spillovers from negative shocks.

Figure 4. GVC Participation and Income



Sources: Haver Analytics and IMF staff calculations.

Note: GVC trade represents the sum of backward and forward linkages.

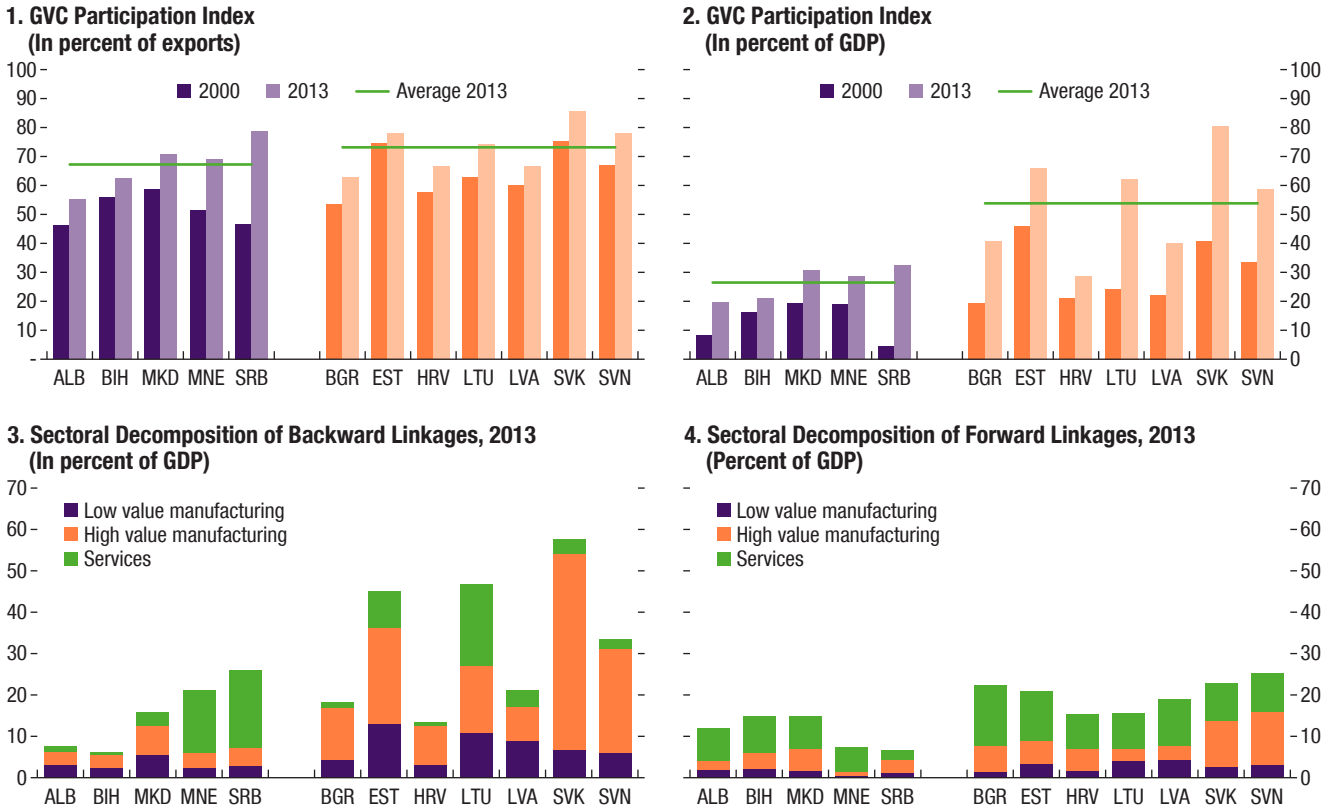
¹Change in GVC intensity is defined as the GVC trade in 2013 relative to the US (1993 = 1 normalized); and income convergence (1993–2013) is the income per capita in 2013 relative to the US (1993 = 1 normalized).

Background

Most WB countries are not heavily integrated into GVCs, although there has been an increase over time. Following the literature, GVC participation is defined as the sum of backward linkages (foreign inputs that are embodied in a country’s exports) and forward linkages (a country’s exports of intermediate goods that are embodied in another country’s exports). The size of GVC links in WB countries—measured as a share of total exports—is comparable to that in NMS-7 with a notable improvement since 2000 (Figure 5). However, when measured as a share of GDP, WB countries are significantly less GVC-linked than NMS-7, thus reflecting the limited role of exports in these economies. Among WB countries, Serbia, Montenegro, and North Macedonia have experienced the largest increases in GVC links since 2000 (Figure 5).

Compared to NMS-7, the GVC links of WB countries are more concentrated in services and low value manufacturing products (Figure 5). Given the relatively low level of development and sophistication of countries in the WB region, backward linkages are more common—these countries are mostly assembly centers in the GVCs in which they operate. For NMS-7, GVC links are also predominantly backward linkages but concentrated in high value

Figure 5. GVC Participation: Western Balkan Countries and New Member States

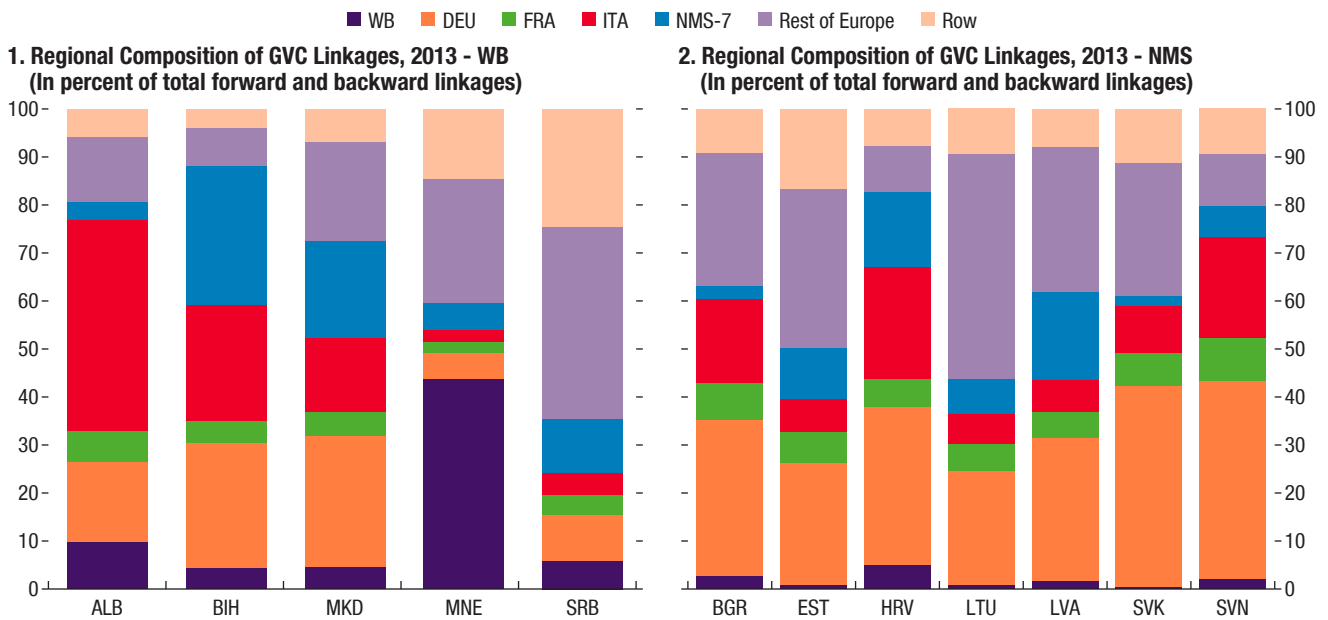


Sources: Cheng et al. (2015); Eurostat; World Development Indicators (The World Bank); WEO; and IMF staff calculations.
 Note: Low value manufacturing includes food, beverage, textiles, apparel, wood and paper products. High value manufacturing comprises the rest of manufacturing products. See Annex Table I.1 for a complete list.

manufacturing products, reflecting these countries’ well-established positions in machinery and automotive and chemical industries. However, it is important to note that although automotive and machinery may be considered high value as a product group, it is possible that the specific part of production taking place in a country may not be of high value.

Compared to NMS-7, WB countries are less linked with Germany, the most important GVC hub in Europe. The composition of products and partners matters in determining gains from GVC links (Arora and Vamvakidis 2004). The NMS-7 countries’ strong GVC ties with Germany—a competitive and dynamic export hub—likely contributed to generating sustained gains for these countries (Ward and Weber 2011). On the other hand, several WB countries’ strong GVC links with Italy—a country caught up in the euro area crisis experiencing slower exports growth than Germany—may explain the sluggish export growth in these countries. Two WB countries, Bosnia

Figure 6. GVC Links to European Hubs, WB and NMS-7



Sources: Eurostat; World Development Indicators (WB); WEO; and IMF staff calculations.

and Herzegovina and North Macedonia, also show strong links with NMS-7 countries, a possible indication of mature investors in NMS-7 outsourcing some of the low value activities (Figure 6).

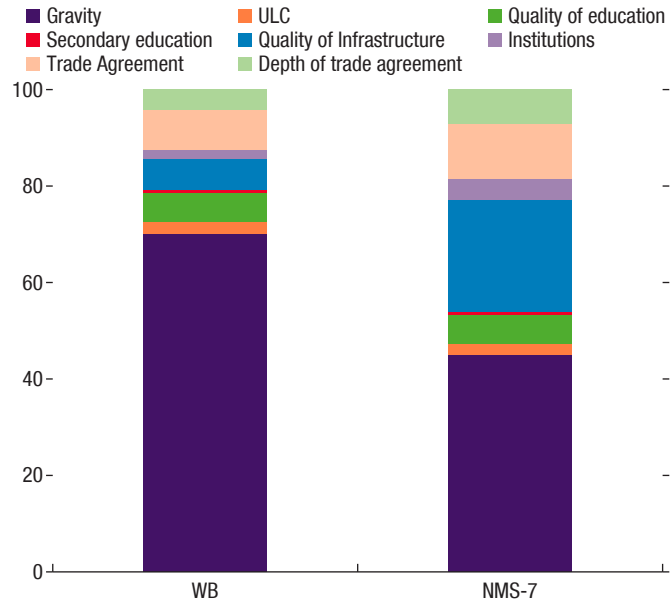
Intraregional GVC links in the WB region are generally limited, except in Montenegro. The WB region’s potential to be viewed as a common economic space by European investors, who can bring significant capital and trade to the region, is underutilized largely because of how regional trade agreements were implemented. WB countries are members of the Central European Free Trade Agreement (CEFTA) on goods trade and investments, under which members enjoy zero tariff on trade. However, individual countries have imposed bilateral tariffs on each other covering all merchandise trade. In addition, other rigidities created by a lack of recognition of production standards and agreed customs procedures may be contributing to low levels of intraregional trade.

Empirical Results

Our empirical analysis aims to identify factors that are important in explaining GVC links. Following the literature, we control for standard gravity variables and focus on the relative importance of costs, skills, quality of

infrastructure and institutions, and the presence and depth of preferential trade agreements (PTAs) in explaining GVC links. A novelty in our empirical approach is that we include a variable that captures the depth of trade agreements. Using a new database that documents the content and legal enforceability in 52 policy areas of PTAs around the world, we employ a dummy variable that captures the depth of PTA in addition to a dummy that captures the PTA itself (World Bank 2017b; Box 1).

Figure 7. Determinants of GVC Participation
(In percent of total)



Sources: Eurostat; World Development Indicators (WB); WEO; and IMF staff calculations.
 Note: Contributions of each explanatory variable are calculated based on the estimated coefficients (as in column 11 of Annex Table II.3) and observed values as a share of total predicted value of the GVC linkages. The regional contributions are the average of the calculated country estimates. WB = ALB, BIH, MKD, NME, SRB; NMS-7 = BGR, EST, HRV, LTU, LVA, SVK, SVN.

We find that GVC links and good policies are positively associated. As expected, gravity factors have an overwhelming role in explaining GVC links in Europe and elsewhere (Annex Table II.2). However, good policies also matter. The quality of infrastructure and institutions, quality of education, and the presence of PTAs and their depth are positively associated with GVC links. Our findings—showing the importance of infrastructure, institutions, and human capital in trade and investments—are consistent with empirical studies covering the region (Rahman and others 2015, World Bank 2017b, Jirasavetakul and Rahman 2018). A large set of robustness tests provide assurance about the significance of the variables used in our analysis (Annex II). Nonetheless, it is important to stress that our results establish associations rather than causality.

Although the small size of the WB economies puts them at a disadvantage, the experience of NMS-7, which are also small economies, shows that good

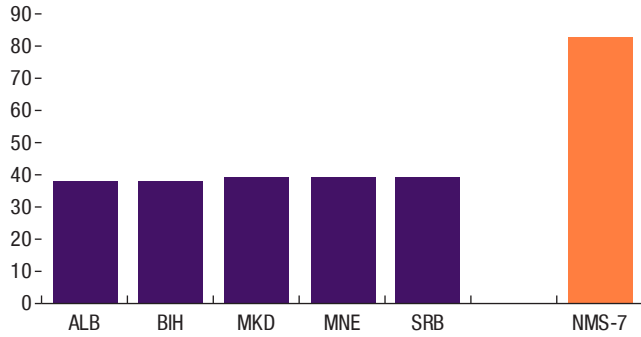
policies can help overcome gravity-related disadvantages. For example, for NMS-7, more than half of the explained variation in GVC links is from non-gravity variables, highlighting the role of better infrastructure, and the existence of deep PTAs that ensure institutional and regulatory harmonization (Figure 7). GVCs require cross border investments to allow multinational firms, often based in advanced economies, to break up their production chain along efficiency lines. For such firms to invest and produce in foreign countries, a certain level of institutional maturity, regulatory predictability, and contract enforceability is needed. “Deep” trade agreements are one way to provide that (Box 1).

The WB countries have significantly fewer and shallower trade agreements compared to NMS-7 (Figure 8). The number of countries that have trade agreements with the WB economies (38, all European) is less than half the number for NMS-7 (83). The larger number of trade agreements that NMS-7 are signatories to reflects their membership in the EU which enables them to be part of all EU-level trade agreements. Not only are the agreements to which WB countries are signatory to fewer in number but they are not as deep—they have fewer legally enforceable provisions than those held by NMS-7.

The WB region can potentially reap significant gains from targeted reforms. Although the WB countries’ performance in quality of education, infrastructure, and institutions is broadly in line with peers of similar per capita income, they lag that of NMS-7. To attract investment from European countries, they will however need to compete with other smaller countries in the region and, hence, raise the level of institutional readiness and labor skills. We try to estimate the gains in the trade/GDP ratio if WB countries were to achieve this. Using our estimation results (Annex Table II.2), we try to gauge potential gains in GVC links for WB countries, if these countries were to close the policy gaps relative to the top NMS-7 performer. The largest gains come from closing infrastructure and education quality gaps—where WB countries have, on average, 70 and 90 percent of the quality of top NMS-7, respectively. This is followed closely by deepening trade agreements (Figure 9). The gains from closing all policy gaps could imply an increase of about 6–12 percentage points in GVC trade flows. These gains in trade, using the typical range of elasticities found in the literature, would translate into a 3- to 10-percent gain in GDP level (Raei, Ignatenko, and Mircheva 2019).

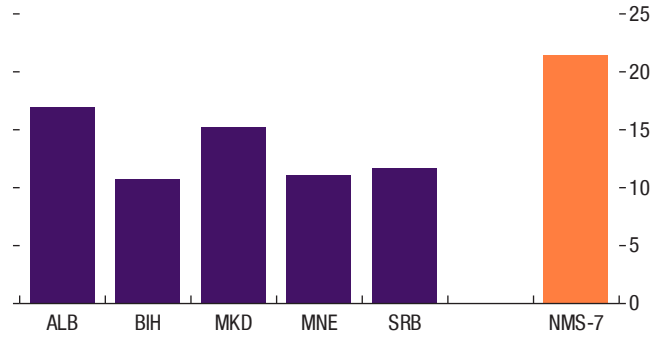
Figure 8. How Deep are Western Balkans Trade Agreements?

1. Number of Preferential Trade Agreements



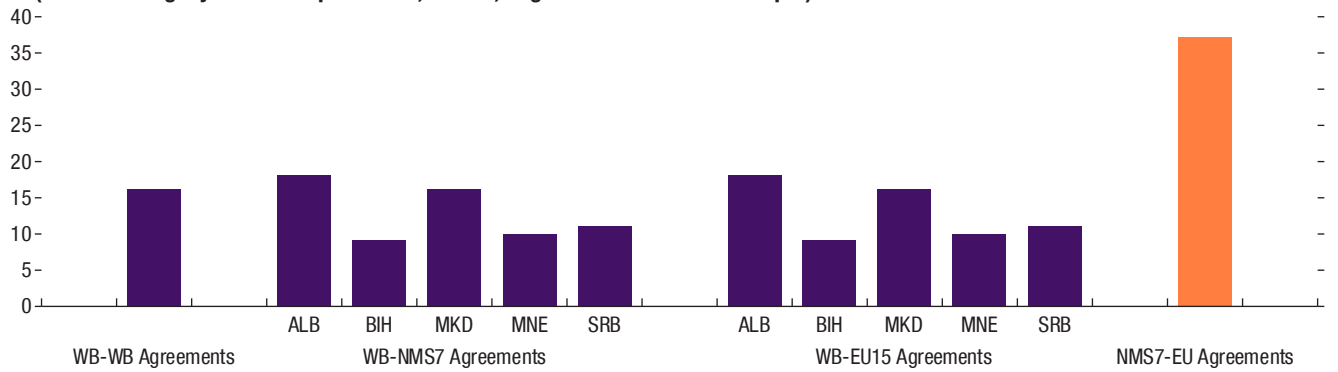
2. Depth of Trade Agreements

(Number of legally enforceable provisions in trade agreements; 0–52, larger number indicates deeper)



3. Depth of Trade Agreements Between European Countries

(Number of legally enforceable provisions; 0 to 52, larger number indicates deeper)



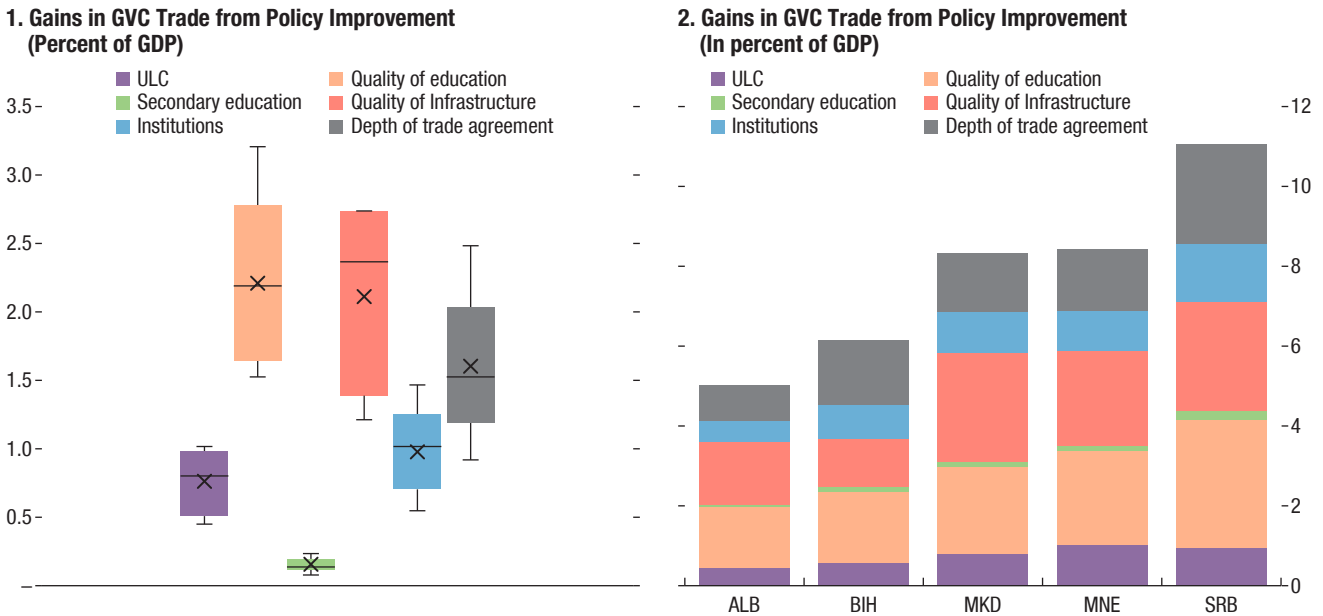
4. Heatmap: Depth of Various Policy Areas within the Trade Agreements with EU



Sources: World Trade Organization and IMF staff calculations.

Note: For panel 4, dark green = provision covered and legally enforceable; light green = provision covered but not legally enforceable; red = provision not covered. The areas shown are a subset of 52 policy areas described in Box 2.1. These selected areas are considered to be more economically pertinent (Hofman and others, 2017).

Figure 9. Gains from Bridging the Policy Gaps



Sources: Eurostat; World Development Indicators (The World Bank); IMF WEO database; and IMF staff calculations.
 Note: The boxes represent 25-75 percentile range; the line and cross represent median and mean, respectively. Simulated gains are calculated by applying the estimated regression coefficients (column 22, Annex Table II.2) to the change in dependent variable (maximum value of variable in NMS-7 less actual value of variable in the WB country) where the actual observed value is less than the top value in NMS-7 (i.e. where there is scope for policy improvement).

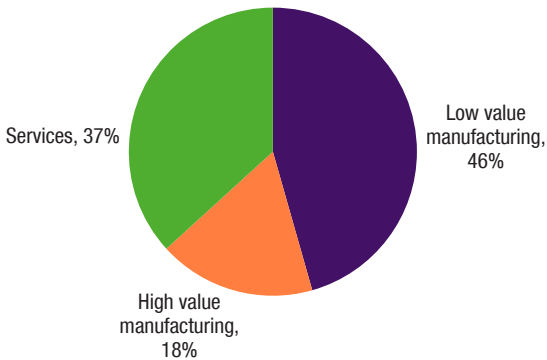
Survey Findings

We conducted a survey of the largest export firms operating in the WB region to complement our empirical analysis of determinants of GVC links. The key aim of the survey was to examine the characteristics of companies, factors that affect participation in GVCs, and the key obstacles that companies encounter while engaging in such trade. Our survey respondents comprise 66 firms that operate in five WB countries (Albania, Bosnia and Herzegovina, North Macedonia, Montenegro, and Serbia),¹ about half of which participate in GVCs. Considering the limited scope of GVCs in the region, the survey appears to capture a critical mass. The majority of respondents were established after these countries shifted to market economy and operate at the lower end of export supply chains, primarily in labor-intensive products. Members of their labor force hold a secondary education degree, on average (Figure 10). Since we cover the largest exporters, the survey

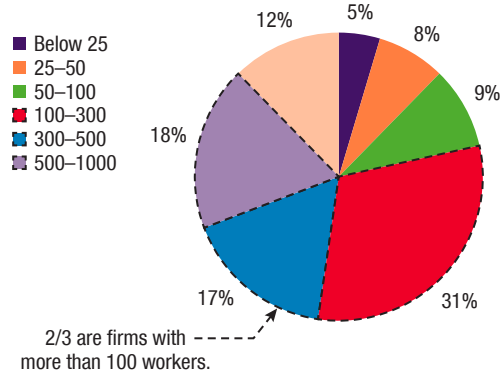
¹Our survey included the largest export firms in WB countries. We received responses from five out of six WB countries. Although the survey didn't ask the respondents to specify their share in total exports of the country, we estimate that the firms in our sample cover 20–40 percent of their country's exports.

Figure 10. Summary of Findings from Survey of Export and GVC Companies in WB

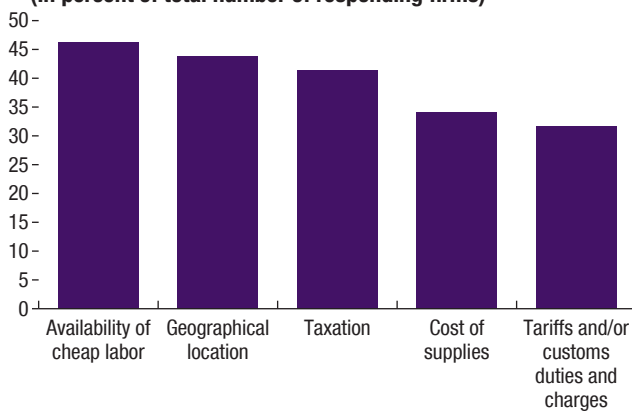
1. Sector of Operation?¹
(In percent of total responses)



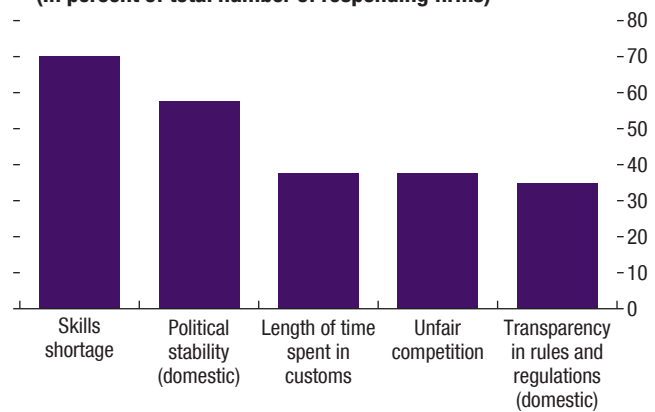
2. Number of Employees?
(In percent of total response)



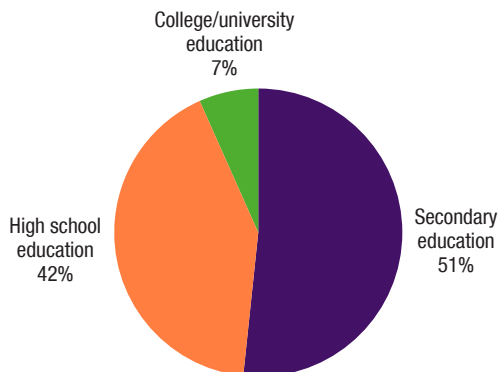
3. Top Five Most Attractive Factors When Setting Up GVC Operations
(In percent of total number of responding firms)



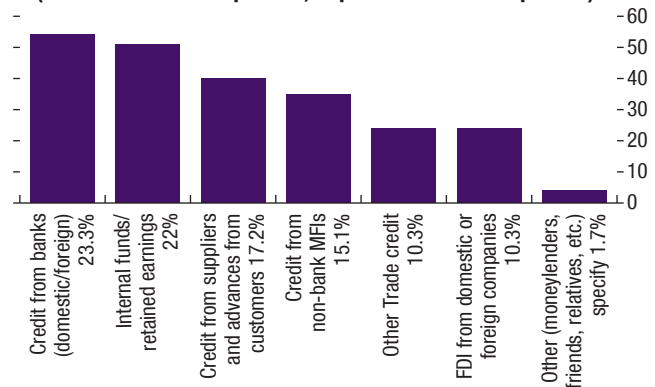
4. Top Five Constraints Identified by GVC Firms
(In percent of total number of responding firms)



5. Educational Attainment of Typical Production Worker
(In percent of total responses)



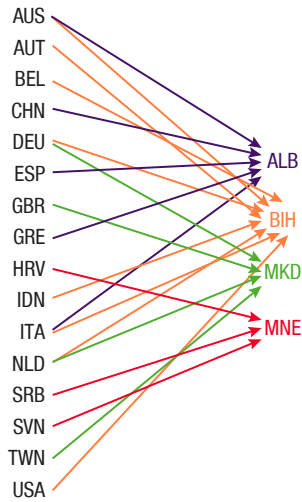
6. Sources of Finance for Working Capital
(Number of firms responded, in percent of total responses)



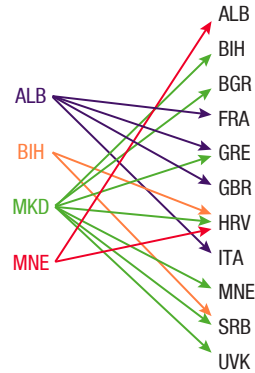
Source: Survey conducted by IMF resident representative office of export firms in Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and Serbia.
¹Low value manufacturing comprises food and beverage, textiles and wearing apparel, wood and paper. High value manufacturing includes the rest. See Annex Table 1 for a complete list.

Figure 11. GVC Connectivity in the WB

Backward linkages: GVC companies in WB importing intermediate goods from another country



Forward linkages: GVC companies in WB producing intermediate goods for another country



Source: Survey conducted by IMF resident representative office of export firms in Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and Serbia. For Serbia, survey respondents did not fill out this part.

has a representation and selection bias, thus its results should be interpreted with caution.

Consistent with the empirical findings reported in this chapter and Chapter 4, respondent firms see skills shortage and low institutional quality as key constraints for exports and GVCs. GVC participating firms have diverse and developed backward linkages with the EU and Organisation for Economic and Co-operation and Development (OECD) countries (Figure 11). However, their forward linkages are limited, indicating that these firms mostly assemble final products. The major reason why these firms were attracted to the region are cheap labor, geographic proximity to investors, favorable taxation, and low tariffs (Figure 10; see Annex V for survey questionnaire). In contrast, skills shortage, political instability, poor trade logistics, and institutions are viewed as key obstacles. Since WB countries have slashed tariff rates over time to the levels comparable to NMS-7, respondents deem non-tariff barriers—such as unequal treatment at borders, time spent at customs,

poor technical facilities for standard compliance,² and a lack of preferential agreements—to be constraints to trade.

The findings of our survey are also consistent with those of several other surveys conducted by international financial institutions, United Nations institutions, and investment banks.³ The sample size in other surveys varies from about 1,000 (European Investment Bank, UNESCAP) to 16,000 (EBRD) firms, with the issues covered ranging from setup logistics to sector-specific policies (Mekong Development Research Institute 2017). Despite differences in the sample size and coverage of issues and sectors between our and earlier surveys, several common themes emerge. GVCs are more likely to innovate than local firms and are an important source of knowledge and technology transfer to the local economy and exporters. Key factors for successful functioning of GVC firms are establishment of quality control institutions and standards, improvement in governance, and amelioration of labor skills. Specifically, the OECD and UNESCAP surveys identified that non-tariff barriers, including a lack of transparency in rules and regulations, an absence of preferential market access schemes, and a lack of technical facilities for standards compliance, are among the most important obstacles to operations of GVCs. Political stability is of lesser importance compared to these factors.

²This is due to absence of modern facilities for measurement, weighing, packing, sanitary, and phytosanitary facilities.

³UN ESCAP Survey on International Trade and Global Value Chains 2015; Trade by Enterprise Characteristics database used in “Inclusive Global Value Chains Policy options in trade and complementary areas for GVC Integration by small and medium enterprises and low-income developing countries,” OECD and The World Bank Group Report (2015); EBRD Business Environment and Enterprise Performance Survey (2012, 2014); and Mekong Development Research Institute 2017.

Box 1. Deep Trade Agreements: Why and How They Matter

All World Trade Organization (WTO) members commit to tariff and non-tariff reforms, but there are significant differences in coverage and enforceability. The newer agreements provide greater coverage to dispute resolution and legal enforceability. Such deep agreements promote trade more effectively and confer benefits akin to good institutions.

All members of the WTO have signed at least one preferential trade agreement (PTA) through which they commit to cut tariffs and undertake additional obligations in policy areas covered by the WTO, such as customs administration or contingent protection. However, not all trade agreements are created equal. They differ in coverage and enforceability of provisions and have also evolved over time. Prior to the 1990s, PTAs focused on a narrow set of policy areas—mostly commitments to reduce tariffs on industrial and agricultural goods and remove other constraints that directly affected market access. The newer agreements tend to be deeper and have wider reach. They include trade dispute remedies (that is, countervailing measures and antidumping duties) and subsidies, and a broader set of more legally binding behind-the-border measures covering services trade, investment, intellectual property rights, and domestic regulations (Lawrence 1996).

Deep trade agreements promote trade but also benefit an economy in ways akin to good institutions. Production in complex GVCs is spatially spread out and tends to involve many cross-border exchanges among firms, each facing a risk of contract breach. In this context, rule of law, protection of property rights, and enforcement of contracts irrespective of residency status can help promote cross border investment and GVC trade. Deepening of trade agreements is one way to fast track the development of key institutions needed for investment and GVC trade (World Bank 2017b). Because deep integration often involves leveling the playing field for investment, intellectual property, and competition policy, participation in deep agreements is an effective way for countries to fast track key institutional reforms and expand GVC involvement. Also, as these measures are nondiscriminatory, they have positive externalities on the overall economy as well (Mattoo, Mulabdic, and Ruta 2017).

Box 1. Deep Trade Agreements: Why and How They Matter (continued)

Box Table 2.1. Policy Areas in Preferential Trade Agreements¹

WTO1	WTO-X	
Provisions falling under the current mandate of the WTO	Obligations that are outside the current mandate of the WTO	
Tariffs on Industrial Goods	Anti-Corruption	Health
Tariffs on Agriculture Goods	Competition Policy	Human Rights
Customs	Environmental Laws	Illegal Immigration
Export Taxes	Intellectual Property Rights (IPR)	Illicit Drugs
Sanitary and phytosanitary measures (SPS)	Investment	Industrial Cooperation
Technical Barriers to Trade (TBT)	Labour Market Regulation	Information Society
State Trading Enterprises (STE)	Movement of Capital	Mining
Antidumping (AD)	Consumer Protection	Money Laundering
Countervailing Measures (CVM)	Data Protection	Nuclear Safety
State Aid	Agriculture	Political Dialogue
Public Procurement	Approximation of Legislation	Public Administration
Trade Related Investment Measures (TRIMs)	Audio Visual	Regional Cooperation
General Agreement on Trade in Services (GATS)	Civil Protection	Research and Technology
Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs)	Innovation Policies	SME
	Cultural Cooperation	Social Matters
	Economic Policy Dialogue	Statistics
	Education and Training	Taxation
	Energy	Terrorism
	Financial Assistance	Visa and Asylum

Source: Hofmann, Osnago, and Ruta (2017).

Note: Bolded items are often identified as economically important (Baldwin, 2008; Damuri, 2012).

¹There may be some overlap in the scope between the two categories. For example, certain GATS obligations (WTO+) are closely linked to FDI and investment in services, whereas Investment is a WTO-X category.

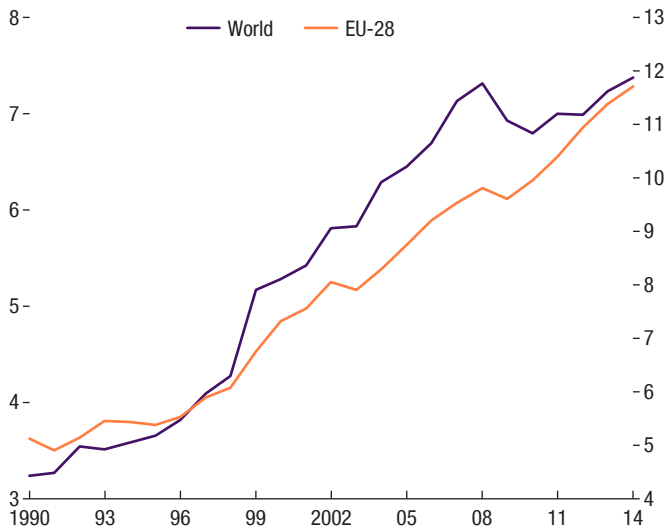
Expanding Services Exports

Services exports are an increasingly important part of global trade and they offer new sources of growth and stability (Figure 12). The share of services exports in world GDP has more than doubled in the last 25 years, and the sector accounted for nearly a quarter of global trade in 2016. The share of developing countries in global services exports has also grown, reaching 25 percent in 2016. Services trade is found to be less volatile than goods trade, and it is thus seen as an important source of stability during periods of macroeconomic and financial turbulence (Loungani and others 2017).

Background

The overall size of services exports in the WB countries is comparable with that in NMS-7. It amounted to 15 percent of WB region's GDP in 2016 compared to 17 percent in NMS-7. Apart from Bosnia and Herzegovina, all countries in the region have experienced an increase in services exports in recent years (Figure 13), primarily driven by tourism, which dominates services exports, particularly in Albania and Montenegro. The near tripling of travel-related exports in Kosovo since 2008 is notable, partly reflecting home visits of emigrants. In Serbia, the increase in services exports has been driven by newer sectors, namely information technology and communications (ITC), financial services, and business services, benefiting from policy efforts (Box 2). Studies show that services exports from newer products can provide a useful and more productive employment vehicle for middle-income countries that may need to shed labor from low productivity manufacturing sectors due to automation (Flaen, Ghani, and Mishra 2013). These sectors have seen large increases globally in recent years and are also prominent in NMS-7.

Figure 12. Exports of Services
(Percent of world GDP, LHS; percent of EU-28 GDP, RHS)

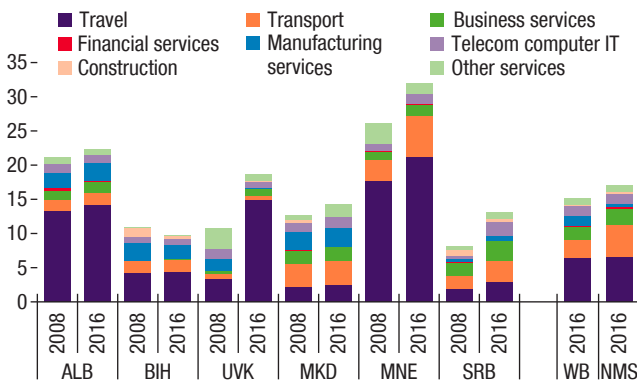


Sources: Papageorgiou et al 2017, WEO, and IMF staff calculations.

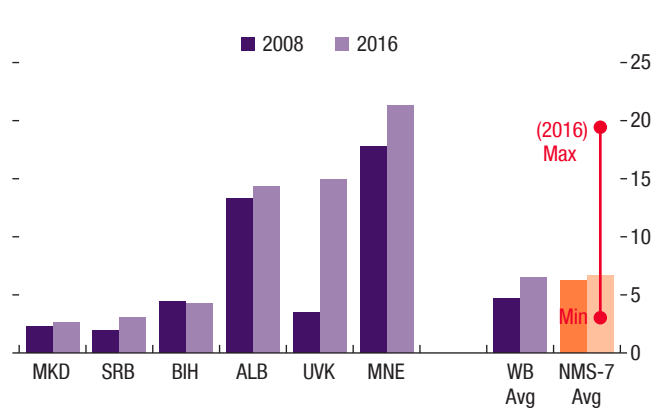
Most WB countries have a comparative advantage in travel services. A calculation of the revealed comparative advantage (RCA) index for travel services—that is, the share of travel services exports in a country’s total exports relative to the share of such exports in total world exports—shows that, apart from North Macedonia and Serbia, WB countries exhibit an RCA in this category (Figure 14). However, in all other main services categories, WB countries appear to lack a comparative advantage, particularly in fast-growing sectors such as ITC

Figure 13. Services Exports in the Western Balkans and NMS-7

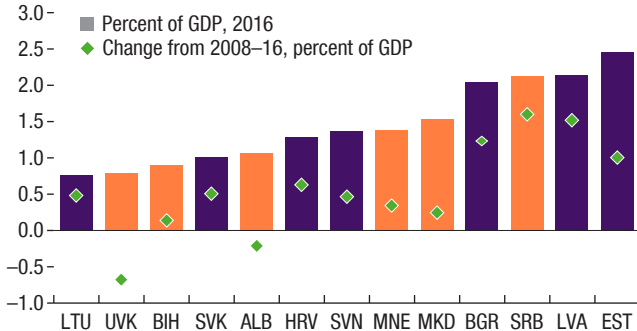
1. Western Balkans: Service Exports (In percent of GDP)



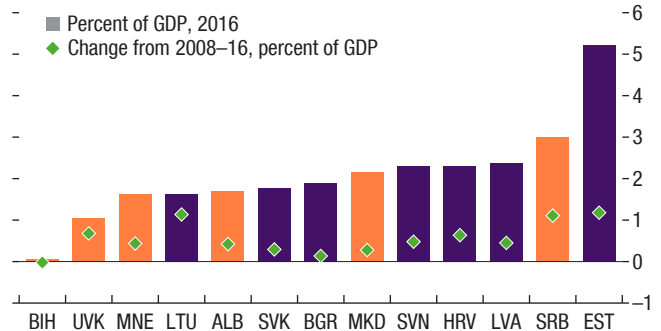
2. Travel Services Exports (Percent of GDP)



3. Telecommunications, Computer, and IT Services Exports

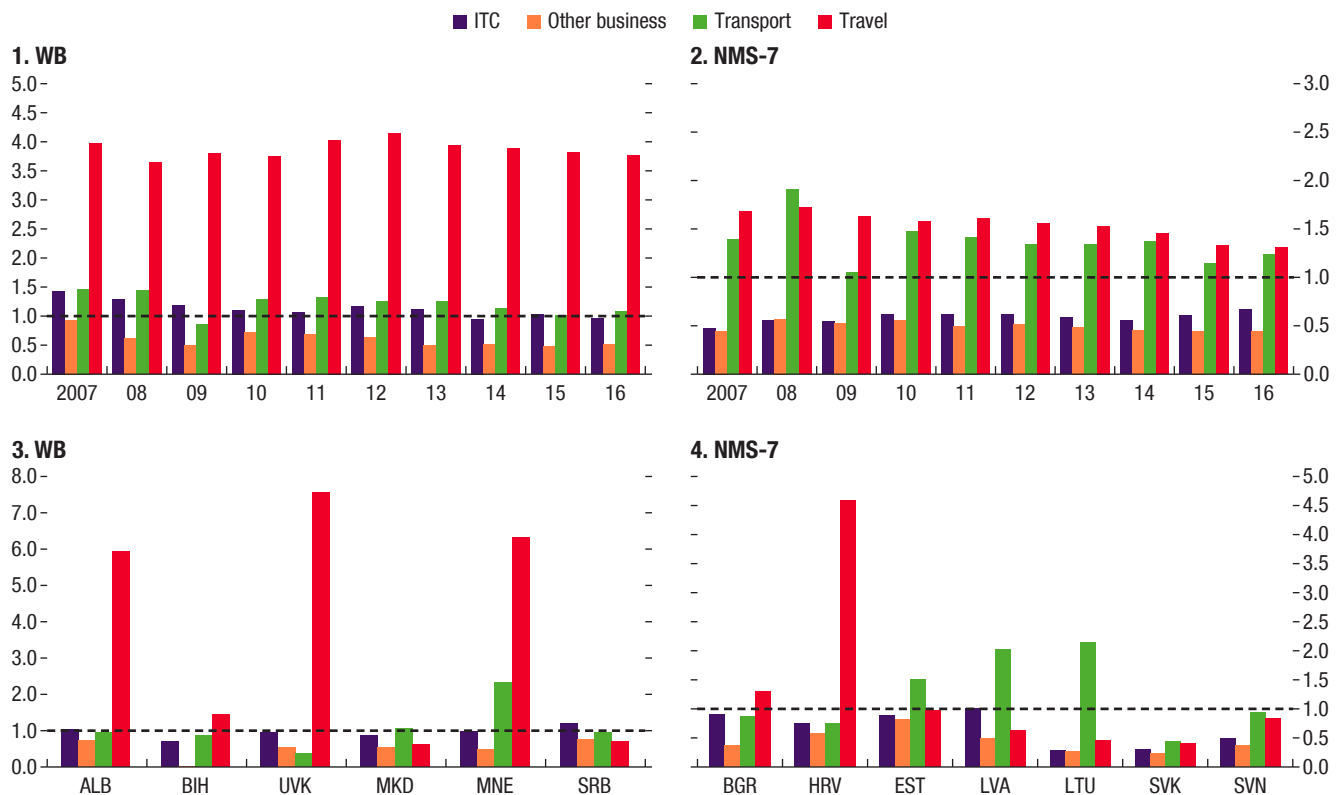


4. Business Services Exports



Sources: IMF Balance of Payments Database and IMF staff calculations.

Note: For panel 1, regional averages for 2016 are GDP weighted. “NMS” refers to NMS-7. For panel 2, averages are GDP-weighted.

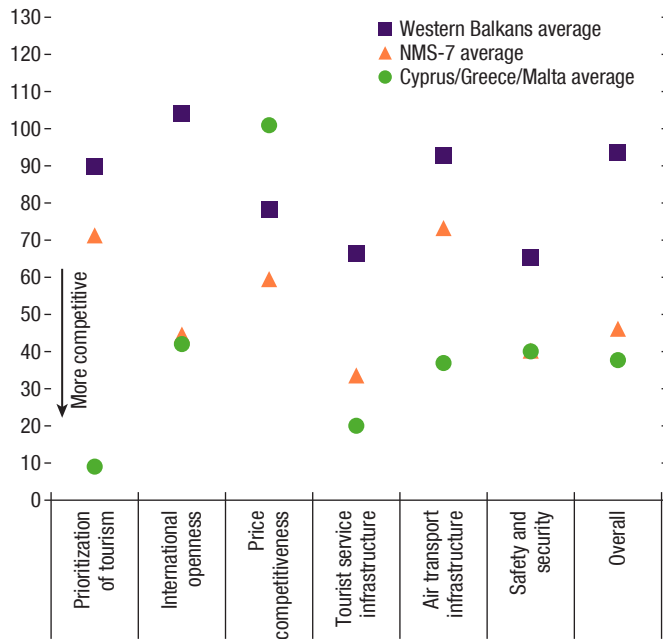
Figure 14. Revealed Comparative Advantage in Services Exports: WB and NMS-7

Sources: IMF Balance of Payments database; and IMF staff calculations.

and business services. Serbia, which has benefited from policy support and recent success, now has a small RCA in ITC services. NMS-7 countries also lack comparative advantage in most services products except for transportation, possibly reflecting their stronger GVC links that yield transport services exports as a by-product.

Despite their revealed comparative advantage in travel exports, WB countries seem to be less competitive than regional peers (Figure 15). A comparison across a range of competitiveness indicators with other countries in southern Europe that are renowned tourist attractions—Cyprus, Malta, and Greece—shows that the WB region lags significantly in several aspects. These include government prioritization of tourism, international openness, tourist services and air transport infrastructure, and safety/security. The only category where WB region ranks better than European comparators is price competitiveness, likely reflecting low wages. A more granular comparison of Albania with Croatia also suggests the former's weaker competitiveness arising from less developed infrastructure (Box 3).

Figure 15. Travel and Tourism Competitiveness Index Ranking
(Rank out of 136 countries)



Source: World Economic Forum Travel and Tourism Competitiveness Report, 2017.
Note: Higher ranking indicates a worse score.

Empirical Results

We conduct empirical analysis to identify factors that are associated with better performance in two services products: tourism and ITC/business services. Using a global sample of 184 countries and the period 2000–2015, we run panel fixed effects regressions to analyze variations in tourism performance and pooled regression analyses to explain variations in exports of ITC/business services (see Annex III for details). As suggested by the fixed effects regressions, a country’s fixed characteristics—including geography—explain the bulk of tourism performance, with limited role for policies. That said, we do find evidence that openness to trade, political stability, and the quality of infrastructure (electricity/telephone) matter for tourism performance (Figure 16). There appears to be a role for policy in ITC/business services exports, where the quality of

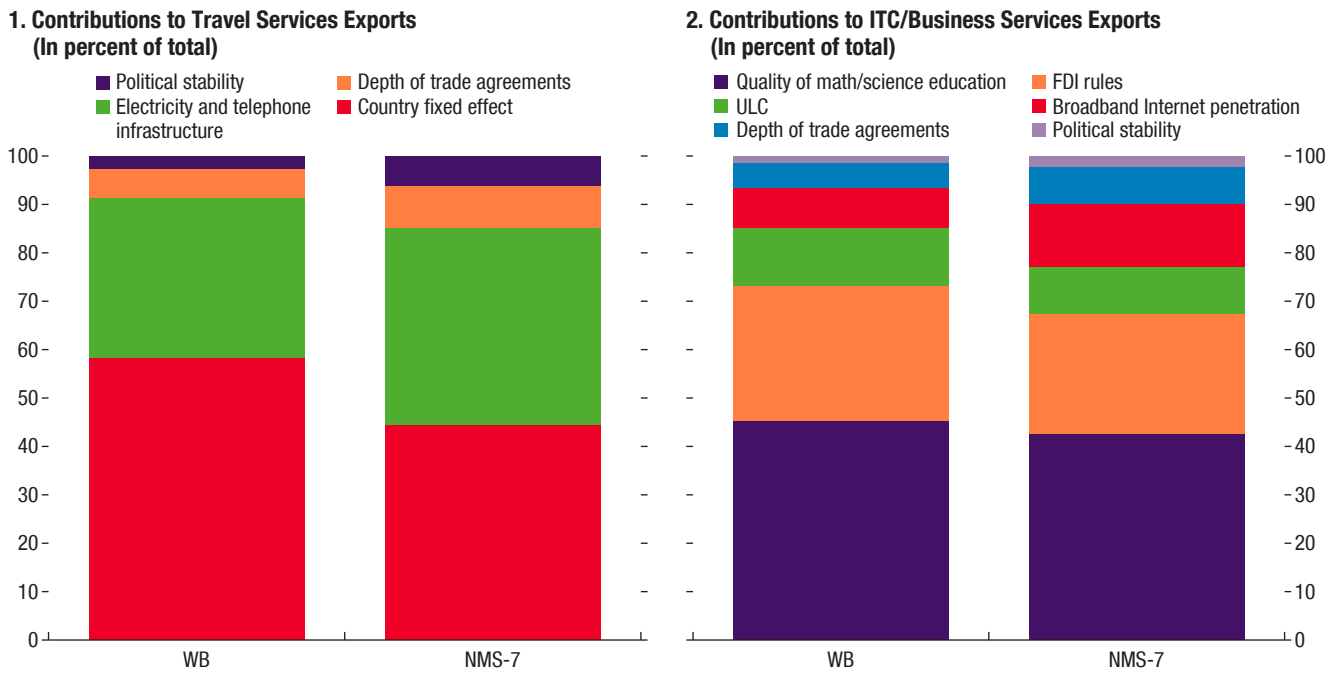
math/science education, openness to FDI and trade, broadband Internet penetration, and lower unit labor costs are positively associated with exports (Figure 16).

There could be significant gains in travel and ITC/other business services exports if the WB countries were to bridge policy gaps. Our simulation results suggest that policy improvements could boost, over time, exports of travel and ITC/other business services within a range of ¼ to 4 percentage points of GDP in WB countries (Figure 17).¹ For travel services, further trade openness and improvements to electricity/telephone infrastructure would have the largest gains. For ITC/other business services, an expansion of high-speed Internet, improvements in math and science education quality, and greater openness to FDI would yield the largest gains.²

¹Our simulation entails calculating thresholds for the observed upper quartiles in the global sample for the relevant policy variables and comparing them to the observed values for each WB country. For travel services, these policy variables include openness to trade and the perceived quality of electricity/telephone infrastructure and for ITC/business services openness to FDI, quality of math/science education, and Internet penetration. We use specification 1 for travel services in Appendix Table III.2 and specification 1 for ITC/other business services exports in Appendix Table III.3.

²Note that these simulations do not attempt to establish an upper limit but rather model the impact of specific policy improvements. Other measures that could boost travel services exports such as marketing, for example, are not modeled.

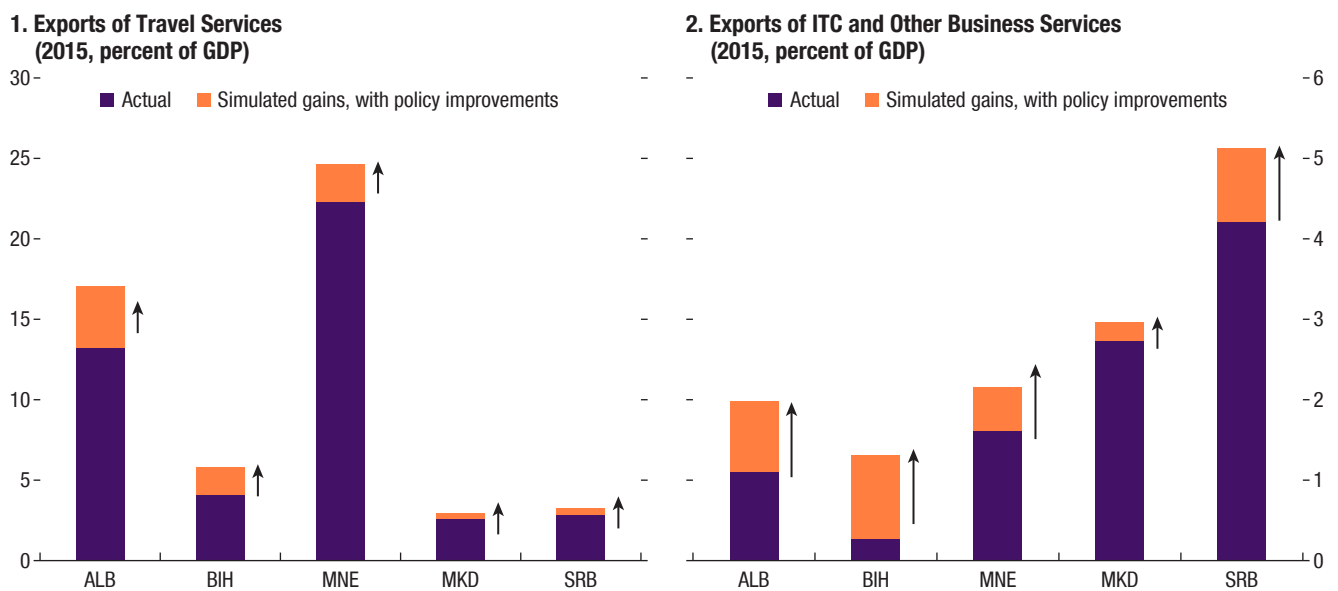
Figure 16. Contributions to Services Exports¹



Sources: IMF Balance of Payments Database; WEF Global Competitiveness Index; WB World Governance Indicators; ILO; Hofman, Osnago, and Ruta (2017); and IMF staff calculations.

¹Contributions of each explanatory variable are calculated based on the estimated coefficients and observed values as a share of total predicted value of the export. These estimates do not take into account possible interactions between variables. The regional contributions are the average of the calculated country estimates.

Figure 17. Simulated Gains to Services Exports from Policy Improvements¹



Sources: IMF Balance of Payments Database; and IMF staff calculations.

¹Benchmarks for policy improvements are based on the threshold value for the upper quartile of the observations for each indicator. Simulated gains are calculated by using this threshold value and the estimated coefficient where the actual observed value is less than the threshold value (i.e. where there is scope for policy improvement).

Box 2. Serbia's IT Success

Serbia's success as an IT hub can be attributed to successful public intervention at elementary school level and a supportive regime for investment and taxation.

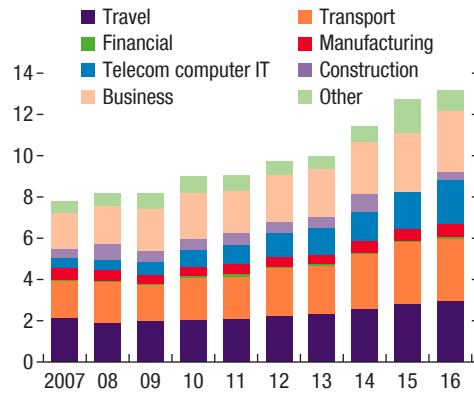
Serbia is fast becoming a hub for IT services in the region. The value of such exports grew to 2 percent of GDP in 2016, from ½ percent in 2007, a level now only exceeded by exports of electric machines and road vehicles. The pioneering launch of the Microsoft Development Center Serbia (MDCS) in 2005 was a turning point. The center has been involved in key development activities for Microsoft, including Live Search, handwriting recognition, image analysis, and database management. A positive externality of the center is that other international IT companies have entered the market by buying out Serbian firms that were providing coding services, software development and testing, and web design.

A multipronged policy approach has helped ensure the IT sector's success. The Serbian government has introduced "informatics" as a mandatory subject in elementary schools and raised enrollment quotas in IT departments in universities in 2017 by 20 percent. More than a quarter of university graduates each year major in technical subjects, more than in any other Western Balkan country, creating a strong computer science talent pool (Box Figure 2.1). The government also launched an Innovation Fund in 2011, with support from the EU and World Bank, to provide risk financing to Serbian businesses to support innovation in science and technology (Sanfey, Milatovic, and Kreisc 2016). Many IT professionals in Serbia also appear to benefit from a government tax regime that allows for presumptive taxation for entrepreneurs and sole proprietors, thus effectively taxing income at a lower rate.

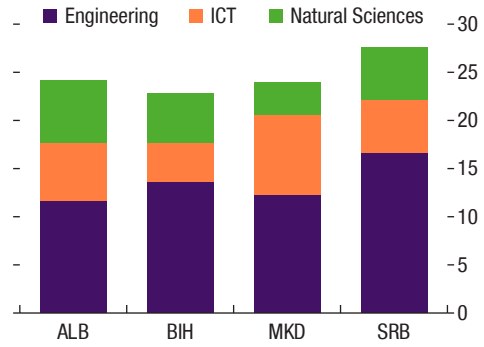
Box 2. Serbia's IT Success (continued)

Box Figure 2.1

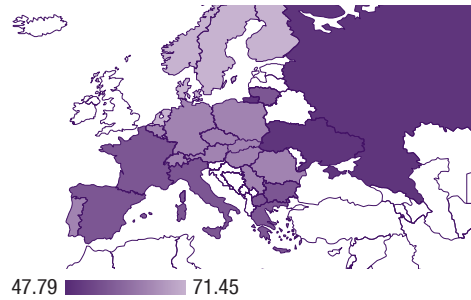
1. Serbia: Services Exports (Percent of GDP)



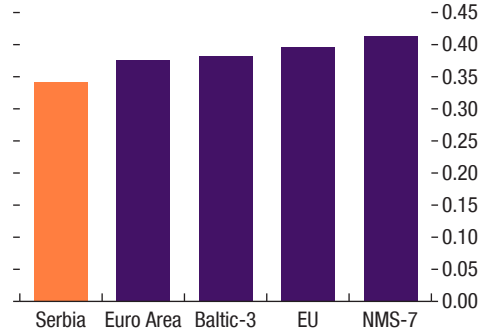
2. Tertiary Education Enrollment in Science and Engineering (Percent of total enrollment in tertiary education, 2015)



3. English Language Proficiency (Higher score indicates greater proficiency)



4. Unit Labor Costs, 2015



Sources: EF English Proficiency Index 2017; IMF Balance of Payments Database; International Labor Organization; UNESCO Education Database; and IMF staff calculations.

Note: For panel 4, ULC calculated as: (gross monthly wage *12) / GDP per worker.

Box 3. Tourism Performance: A Comparison of Albania and Croatia

Croatia and Albania have experienced fast growth in tourism, although the two are far apart. Albania lags Croatia in infrastructure and tourism development. Sand and sun tourism imposes challenges of seasonality on both countries.

Both Croatia and Albania have experienced significant tourism growth over the past two decades, although the two countries are at different stages of tourism development. Tourism growth in Albania took off only around 2000 once post-war economic transformation had taken root. Croatia is a more established market, with a high ratio of tourist beds to per capita income. A higher ratio of travel services exports to foreign tourist arrival in Croatia points to its status as a more upmarket destination than Albania. On the other hand, Albania has seen a faster increase in bed capacity.

Croatia is perceived to be more competitive in the tourism sector relative to Albania (Box Figure 3.1). The World Economic Forum's Travel and Tourism Competitiveness Report ranks Croatia and Albania as the 32nd and 98th most competitive in the world, respectively. Relative to Albania, Croatia stands out for marketing and branding, greater international openness (defined by the openness of visa regimes and the number of bilateral air service and regional agreements), better perceived safety and security, and a much higher perceived quality of tourist service and air transport infrastructure. However, Albania is more competitive on prices. This apparent paradox—that Albania has seen more rapid growth compared to Croatia despite being perceived as less competitive—can be understood in light of their different stages of development, with Croatia a more established, upmarket destination and Albania an emerging destination that competes well on price but lacks the overall development of Croatia.

The “sand and sun” tourism of Albania and Croatia comes with the challenge of seasonality. The bulk of tourists come in the summer, a phenomenon that is more pronounced in Croatia. Strong seasonality limits the backward linkages of tourism to the rest of the economy, as demand for labor and other inputs spikes on a seasonal basis. To build stronger year-round tourism the authorities of both countries are developing cultural, natural, gastronomic, nautical, and health tourism.

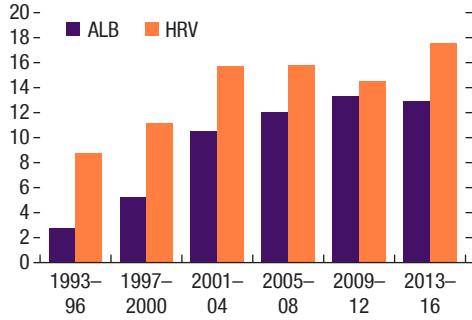
Albania's past airport development strategy may not have been well suited for tourism. The 2005 concession for Tirana Airport that gave an international consortium monopoly rights to all commercial air traffic in Albania, resulted in relatively high landing fees. This made the country unattractive for low-cost carriers, which tend to prefer regional airports (typically closer to resort areas) with lower landing fees. Since 2016, the ownership and terms of the concession have changed, and low-cost carriers are becoming more common in Albania. A new airport has been built in the north, with plans to add an airport in the south near tourist areas.

Box 3. Tourism Performance: A Comparison of Albania and Croatia (continued)

Box Figure 3.1. Croatia and Albania's Tourism Sectors

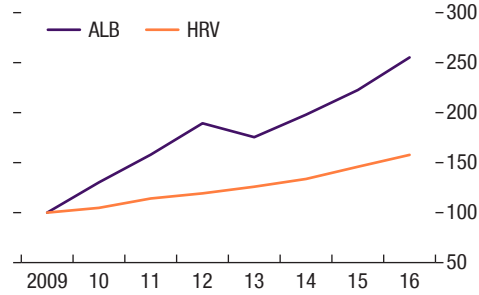
1. Travel Services Exports

(Percent of GDP; averages for indicated years)

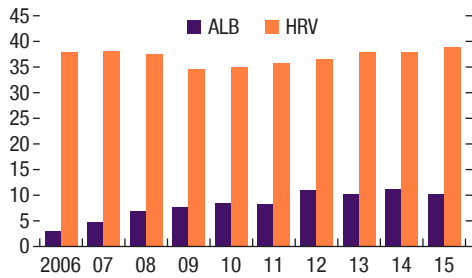


2. Foreign Tourist Arrivals

(Index, 2009 = 100)

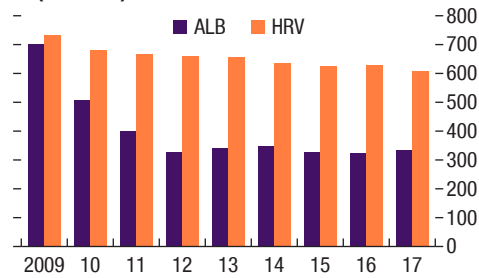


3. Available Tourism Beds Per 100 Inhabitants



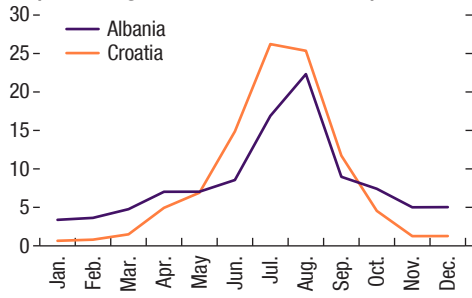
4. Travel Services Exports Per Foreign Tourist Arrival

(In euros)



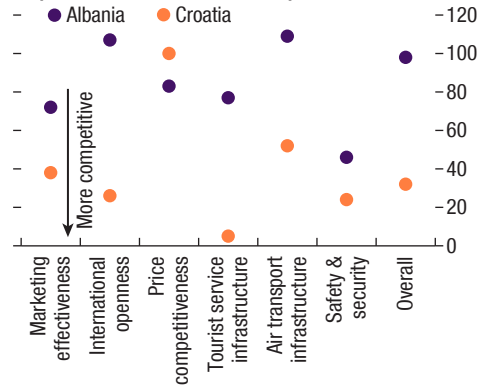
5. Monthly Distribution of Foreign Tourist Arrivals, 2017

(Percentage of total annual arrivals)



6. Travel and Tourism Competitiveness Index Ranking

(Rank out of 136 countries)



Sources: IMF Balance of Payments, WEO, Croatian Bureau and Statistics, Albanian Institute of Statistics, UN WTO, World Economic Forum Travel and Tourism Competitiveness Report 2017, and IMF staff calculations.

Box 3. Tourism Performance: A Comparison of Albania and Croatia (*continued*)

In contrast, Croatia embraced the regional airport model much earlier, attracting low-cost carriers. Low-cost carriers have been operating in Croatia since 2004 and currently operate in five coastal and two inland airports, bringing tourists much closer to resort areas. Research also suggests that low-cost carriers can play a significant role in attracting visitors from emerging, relatively far markets, including during shoulder (late spring/early fall) seasons (Mandić, Teklić, and Petrić 2017).

Raising Imports' Contributions to Growth

Economic integration through trade offers significant opportunities for domestic manufacturing to access and adopt imported technologies in the production process. In this context, imports play an important supporting role through technology transfer, thus offering the possibility of increasing value added for domestic firms. Although the direct causality is difficult to ascertain, an analysis of the composition of imports can provide useful insights into a country's growth model, the growth and exports structure, and country's labor skill mix (Box 4).

Background

Studies find that GVC trade can play a significant role in lifting growth not just through higher exports but also through transfer of technology embodied in imported capital goods (Mazumdar 2000; Herzer, Nowak-Lehmann, and Siliverstovs 2006; Halpern, Koren, and Szeidl 2015; Taglioni and Winkler 2016; Rodrik 2018). Export firms that operate at the higher end of the supply chain tend to be more imports intensive (Herzer, Nowak-Lehmann, and Siliverstovs 2006; Organisation for Economic Co-operation and Development 2007). Specifically, exports with high industrial value-added demand technologically advanced inputs, which are associated with capital goods imports. By facilitating transfer of foreign technology and associated knowledge and skills, GVCs may help boost the quality of exports, hence export competitiveness.

However, such a positive role of capital goods imports in enhancing exports and growth is conditional upon country's domestic absorptive capacity, particularly the quality of its labor, institutions, and infrastructure (Glas, Hübler, and Nunnenkamp 2016). Among other things, the presence of highly skilled labor augments the positive association between imported capital goods

Figure 18. Gross Value Added - Manufacturing
(In percent of GDP)

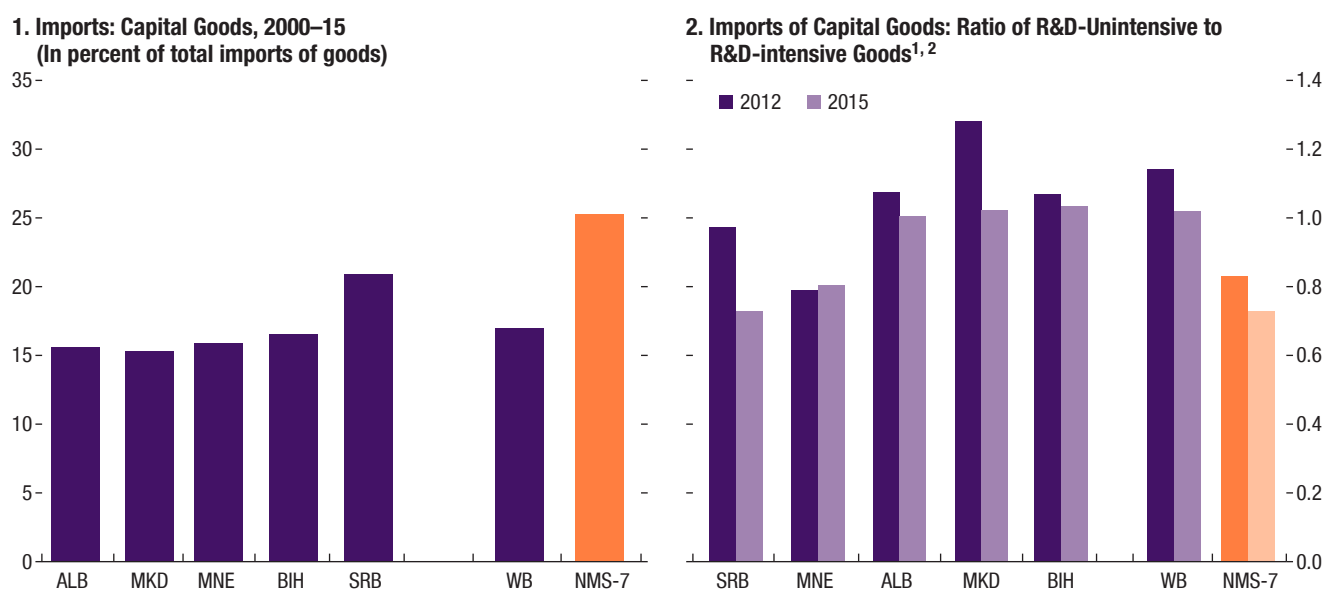


Sources: Haver Analytics and IMF staff calculations.

and firm productivity (Hümmels, Ishii, and Yi 2001; Yi 2003; Bas and Strauss-Kahn 2014). Therefore, having an adequate pool of skilled labor can facilitate the absorption of capital goods and create a conducive framework for higher production and economic growth. For example, if a country lacks sufficient number of engineers, then importing high-tech equipment will not add to productivity and output growth because the equipment cannot be utilized effectively in production.

In Western Balkan countries, the structure of imports broadly reflects a consumption-based growth model. Consumption goods account for a sizable part of imports, ranging from 33 percent of total imports

in Serbia to about 45 percent in Albania. The share of manufacturing in gross value added is small—ranging from about 4 percent in Montenegro to about 15 percent in Serbia compared to an average of 16 percent or more in NMS-7 (Figure 18). In Albania and Bosnia and Herzegovina, the manufacturing sector also consists of mostly labor-intensive products, namely leather, apparel, and unprocessed foods. Among other things, the composition of manufacturing is reflective of limited GVC links, or GVC links that are predominantly backward, concentrated in labor-intensive products, as discussed in Chapter 2. Consequently, the reliance on technologically advanced imports is limited with capital goods accounting for less than a fifth of total imports—considerably less than the share in NMS-7 (Figure 19). Following methodology proposed by Raveh and Reshef (2015) and Caselli and Wilson (2004), we decompose the capital goods into research and development (R&D)-intensive and R&D-nonintensive components. Our decomposition shows that the latter occupy a significantly greater share in Albania, Bosnia and Herzegovina, and North Macedonia compared to NMS-7 countries, whereas Montenegro and Serbia resemble NMS-7 (Coe and Helpman 1995; Coe, Helpman, and Hoffmaister 1997).

Figure 19. Composition of Capital Goods Imports

Sources: World Integrated Trade Solutions, UN Comtrade, and IMF staff calculations.

¹A lower ratio means more R&D intensive capital goods imports.

²R&D intensive goods include electrical machinery and equipment, aircraft, vehicles other than railway, optical equipment, and chips/semiconductors. R&D unintensive goods include tools, nuclear reactors/boilers, railways, mechanical parts, and articles of iron ore/steel.

Empirical Results

We explore WB countries' ability to benefit from higher capital goods imports by empirically testing whether imported capital goods matter for growth beyond their direct impact on investment. We start with a simple ordinary least squares (OLS) panel data regression for a sample of 45 OECD and European countries (that include WB and NMS-7), with country fixed effects. The results point to a statistically significant association between growth, capital goods imports, labor skill mix, and investments. Further, to control for endogeneity and potentially missing variables, we use a fixed effect instrumental panel specification with labor skill and investments as instruments. The results are broadly consistent with the OLS panel estimates. We then complement our analysis with a dynamic panel data model, which, in addition, contains lags of the dependent variable as regressors, and accounts for issues such as momentum and inertia, by using Arellano-Bond dynamic panel data estimation. The results broadly resemble our instrumental panel regression estimates (see Annex IV for details on methodology and estimates).

After establishing a simple positive association between capital goods imports and growth, we explore the necessary conditions that may amplify the impact of capital goods imports on growth. Although this is a somewhat uncon-

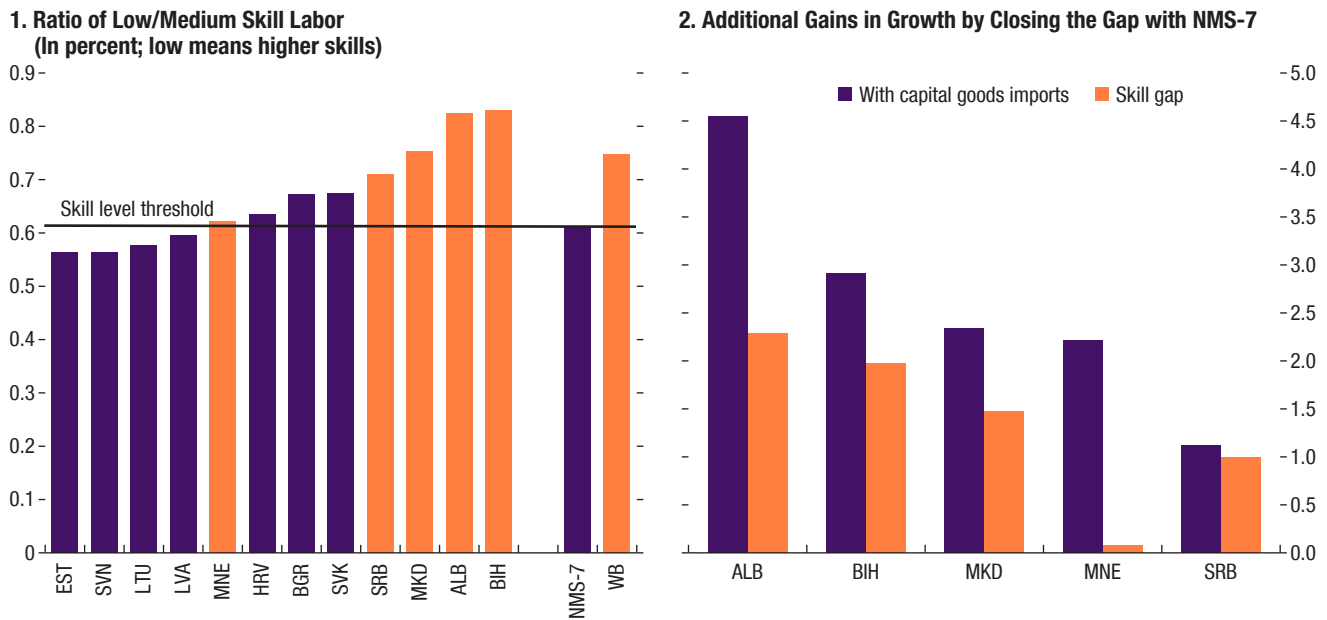
ventional approach for looking at the association of imports and growth, we develop this idea based on existing studies that show that the absorption of high-tech imports of capital goods is conditional upon skilled labor (Glas, Hübler, and Nunnenkamp 2016). Using a panel threshold model for our sample of 45 countries, we estimate the impact of capital goods imports on growth, using labor skill as the threshold variable (Annex IV).¹ We then test the hypothesis whether imports of high-tech capital goods are positively associated with growth in the absence of high skilled labor. We find that capital goods imports are absorbed more efficiently when the share of unskilled labor in total labor force is lower than an estimated threshold of 61 percent; that is, other things being equal, the imports of capital goods will have statistically significant association with growth if the share of low skilled labor is below 61 percent. Although our findings are consistent with earlier studies, the level of the estimated threshold is not precise, and the results have to be interpreted with caution, given potential issues of endogeneity and missing variables that we tried to address through several techniques (Annex IV).

Upgrading skills through better education and labor market policies would allow the Western Balkan countries to more efficiently utilize and absorb the higher technology embodied in imported capital goods. Our findings suggest that when the share of low-medium skilled labor is below 61 percent, the annual growth rate (proxied by the growth of GDPPC) could be higher by an additional 0.5 percentage points,² other things being equal (Figure 20). When this share exceeds 61 percent, the magnitude of the estimated effect is much lower and statistically insignificant (Annex IV), implying that in that case an increase in capital goods imports would not impact economic growth.

¹Our analysis is based on the labor skill categorization provided by the ILO database, which includes the following: low, low-medium, medium-high, and high (see Annex IV for details). To gauge relative skill level, we calculate the share of labor in the two lowest skill categories (low and low-medium skill) in total labor. This share variable has a high value in the WB countries compared to the NMS-7 peers, indicating a prevalence of relatively low-skilled labor. It ranges between 70 and 95 percent, except in Montenegro where it is 61 percent, reflecting a high concentration of labor in skill-intensive services such as IT and business (see Annex IV and Figure 20).

²The 0.5 percentage points is the combined regression coefficients for explanatory variables of capital goods imports in GDP and labor skill ratio.

Figure 20. Gains from Higher Labor Skills and Capital Goods Imports in the Western Balkans



Sources: ILOSTAT, World Integrated Trade Solutions, World Development Indicators (WB), WEO, and IMF staff calculations.

Note: Additional gains are estimated conditional upon the threshold value, as follows: the coefficients of each explanatory variable in the threshold regression (see Annex IV) were multiplied by the observed value of that variable for each of the countries and for the average of NMS-7, proxied by the average value for 2010–2015, then all the components were added together given the signs of their coefficients. The difference between the individual country value and the average of NMS-7 is used to estimate the additional gains to growth from closing the gap between the individual country and NMS-7.

Box 4. What Explains a Country's Import Structure?

There is sizeable literature on factors that explain a country's import structure contingent on its growth model, exports and industrial structure, and presence of GVCs.

The literature to date has tried to establish interrelations between a country's import structure and growth. As such, the structure of imports in a country is endogenous—a reflection of a country's economic growth model, industrial structure and labor skills, patterns in domestic and foreign investments, and composition of exports.

- **Growth model:** Kharroubi and Kohlscheen (2017) and Klemm (2013) find that a consumption-driven growth model is associated with the prevalence of consumer goods imports, whereas investment- and export-driven growth is associated with greater imports of capital goods. Countries with high levels of remittances tend to be prone to consumption-driven growth, and hence their imports are likely to be more consumption-heavy (Barajas and others 2009; Chami, Hakura, and Montiel 2009; Fullenkamp 2015). Emigration of skilled labor in its turn, reduces a country's human capital and thus the absorptive capacity of imported capital goods.
- **Export structure:** Export firms tend to be more imports-intensive than domestically oriented firms (Goldar 2013). A more diversified export structure tends to be associated with a greater variety of imported intermediate inputs through direct and indirect channels (Chuang 1998; Hümmels, Ishii, and Yi 2001; Lewer and Van den Berg 2003; Yi 2003; Herzer, Nowak-Lehmann, and Siliverstovs 2006; Bas and Strauss-Kahn 2014). For instance, capital goods imports may help enhance productivity and reduce exporters' fixed costs (the indirect channel). If imported capital goods' prices are low, they may help increase the revenue flow of exporters by lowering costs (the direct-cost channel).
- **Industrial structure and labor skills:** A country's industrial structure and the skills of its labor have a significant impact on the composition of its imports. Countries that rely more on manufacturing (including R&D intensive sectors) tend to import more capital goods, specifically technologically advanced goods that can have knowledge spillovers. Lee (1994), Romer (1990), De Long and Summer (1991, 1993), Veermani (2009), and Cavallo and Laundry (2009) find a strong causal link between equipment investment and growth, also showing that investment-specific technological change stimulates the growth rate of the output by raising efficiency.
- **GVC links:** Taglioni and Walker (2016) explore the role and benefits of imports of capital goods for GVCs. They find that GVCs boost the competitiveness of the exports of low- and middle-income countries by facilitating imports of foreign technology in combination with enhancing countries' labor skills. De Backer and Miroudot (2014) and Garetto (2013) find a strong impact of imports of capital goods on firm competitiveness and participation of GVCs.

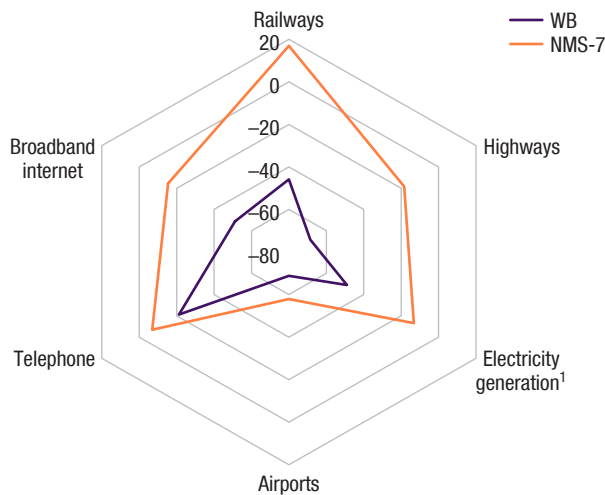
Conclusions and Policy Recommendations

The slowdown in income convergence of WB countries with the EU over the past decade calls for a reconsideration of policies and structural reforms. The small economies of the WB region lie on the southeast edge of mainland Europe—the largest trading bloc in the world—but their exports have played a subdued role in economic growth. Exports remain a small share of output, after adjusting for size and domestic price level. This paper focuses on the need to reorient policies to make exports in goods and services an engine of growth convergence. It asks for reigniting exports to European neighbors through better integration into GVCs, reorienting the approach to services exports, and enabling imports to play a more supportive role in growth.

To integrate into GVCs and reap benefits, WB countries will need to improve infrastructure and labor skills, as well as deepen trade agreements. The findings in the paper show that by increasing GVC links, WB countries could raise GDP level by 3–10 percent. Of course, integration into GVCs requires foreign investment, which, in turn, necessitates regulatory reforms, improvement in institutions, and investment facilitation. As the results in Chapter 2 and 3 show, these deep trade reforms are important ingredients along with the widely understood need for improvements in infrastructure and education for the region to better integrate into Europe’s sophisticated production and services networks (Figure 21). In addition, WB’s poor infrastructure poses a serious physical constraint to the region’s ability to integrate into GVCs and should be upgraded promptly (Atoyán and others 2018).

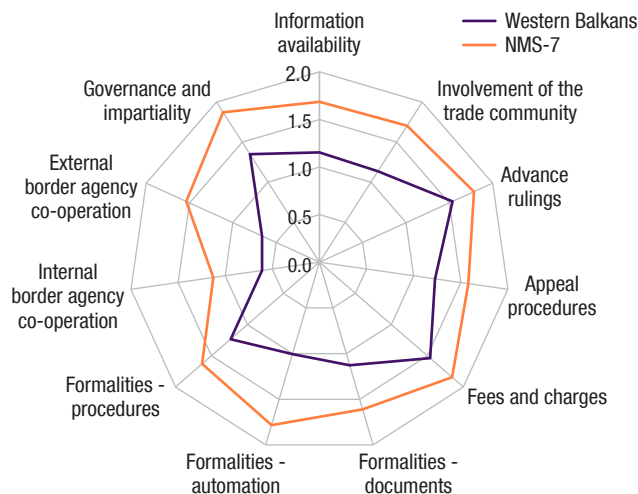
- It is critical to deepen trade agreements by including legally enforceable provisions. The WB states have carried out significant trade reforms over the past two decades, including through the adoption of the Central European Free Trade Agreement (CEFTA), by either already having joined WTO or being at an advanced stage of membership negotiations and having signed stabilization and association agreements (SAAs) with the EU. A

Figure 21. Infrastructure Gaps
(In percent)



Sources: WDI, EIA, IRF, Eurostat, Atoyán and others 2018, and IMF staff calculations.
Note: Infrastructure gaps are measured against the EU-28 average.

Figure 22. Trade Facilitation Indicators
(Index)



Source: OECD Trade Facilitation Indicator Simulator.
Note: NMS-7 = BGR, EST, HRV, LTU, LVA, SVK, SVN; WB = ALB, BIH, MKD, NME, SRB.

visible impact has been a substantial reduction in tariffs. The priority is now to pursue deep PTAs—ones that have provisions that are legally enforceable so that they can be successfully invoked by a nonresident complainant in a dispute settlement proceeding. Although de jure changes to laws are a necessary first step, improvements in de facto enforcement is key, and is perhaps more challenging than the former.

- The WB countries should seek to frontload adoption of key provisions of the EU accession process. Although the cross-border provisions of the chapters of the *acquis communautaire* will generally only apply once accession occurs, domestic reforms will enter into effect once a country has completed and implemented required legislation, which can happen years before accession. To facilitate integration into GVCs, the WB countries should seek to frontload adoption of legislations in the areas that will strengthen domestic institutions and competitiveness, such as *company law; intellectual property law; competition policy; judiciary and fundamental rights; and justice, freedom, and security*. Countries with SAAs that are already in place benefit from a privileged trade access to the EU market (Figure 22). But they should seek to align domestic legislation with that of the EU to allow them to improve trade facilitation (this was the case for some NMS that also received donor financial

and capacity building assistance). These steps would also help address the current weaknesses in trade logistics.

Links within the WB are weak and deepening regional integration could also bring about development of local GVC networks. Empirical evidence suggests that deep agreements would be more effective in promoting trade and investment if a group of neighboring economies joined together (World Bank 2017b). WB countries can deepen the CEFTA in the areas of capital movement and foreign investment–related trade measures (TRIMS). Removal of non–tariff barriers would also help facilitate intraregional trade within the WB (Kaloyanchev, Kusen, and Mouzakitis 2018). Improvements in connective infrastructure, particularly one that lowers the time it takes to cross WB borders—a key weakness—can position the region as an attractive foreign direct investment (FDI) and GVC destination.

The gap in services exports between WB countries and European neighbors is narrower than that in goods exports, but there is room for further growth. There is scope for quality enhancement in tourism and scaling up of IT and business services exports. The findings in Chapter 3 suggest that policies to increase openness, enhance skills, and improve various aspects of infrastructure could significantly boost services exports and increase real GDP by up to 4 percent.

Further openness in services trade in the WB region would also require fast-tracking reforms associated with regional initiatives. WTO member countries typically use the General Agreement on Trade in Services (GATS) to progressively remove barriers that foreign suppliers face in accessing home services markets. However, because not all WB countries are WTO members, it limits the scope of such global initiatives in the region. The WB countries could begin to include commitments on services trade liberalization in their existing trade agreements (which generally do not include GATS commitments or legal enforcement mechanisms; Hofmann, Osnago, and Ruta 2017). As in the case of fast-tracking provisions related to adoption of GVCs, front-loading the services reform agenda—including those related to the EU services directive¹—should also result in positive domestic spillovers.

- Without an improvement in labor skills, the agenda to upgrade WB exports and integrate production into the European GVCs would remain incomplete. As the results in Chapters 2 and 4 suggest, high quality and skilled labor is a critical requirement for enhancing GVCs—firms that work seamlessly across international borders by splitting production along optimal value-added lines—and increasing the domestic absorptive capacity of capital investments, including imports of technologically advanced capital goods. To the extent that the WB economies lag significantly in skilled manpower, there is a need to address this key weakness. The agenda for upgrading education and labor training is discussed in detail elsewhere

¹https://ec.europa.eu/growth/single-market/services/services-directive_en

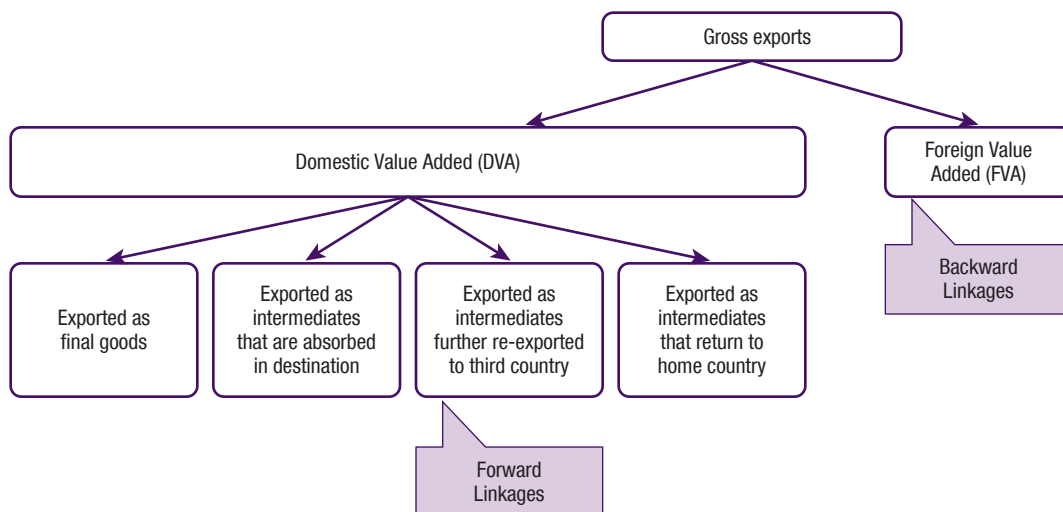
(Rahman and others 2015, Jirasavetakul and Rahman 2018). It is critical that the WB countries undertake GVC-related deep trade reforms in tandem with the upgrading labor skills. An improvement in the latter without improving employment prospects for skilled workers could further exacerbate the region's endemic emigration problem and the attendant negative consequences for these countries (Atoyan and others 2016). This underscores the need for comprehensive labor market and education reforms to address chronic informality, emigration, and high level of inactivity that plague all countries in the region. To the extent GVC firms are essentially an extension of a single firm that exists over multiple borders, efficient management and organization of such firms requires the presence of appropriate top tier management in the various locations to coordinate activities. Constraints on the employment of such talent, if any, should be eased. Investing in and harnessing such talents and removing remaining constraints on employment can greatly enhance the region's human capital.

Annex I. Analysis of GVC Trade Flows

Annex Table I.1. List of Sectors for GVC Analysis (EORA Database)

Low value manufacturing		High value manufacturing	
1	Food & Beverages	4	Petroleum, Chemical and Non-Metal Mineral Products
2	Textiles and Wearing Apparel	5	Metal Products
3	Wood and Paper	6	Electrical and Machinery
		7	Transport Equipment
		8	Other Manufacturing
Services			
9	Recycling		
10	Electricity, Gas and Water	17	Post and Telecommunications
11	Construction	18	Financial Intermediation and Business Activities
12	Maintenance and Repair	19	Public Administration
13	Wholesale Trade	20	Education, Health and Other Services
14	Retail Trade	21	Private Households
15	Hotels and Restaurants	22	Others
16	Transport	23	Re-export & Re-import

Annex Figure I.1. Decomposition of Gross Exports into Value-added Exports



Sources: Koopman and others (2011), Rahman and Zhao (2013), Aslam and others (2017).

Annex II. Regression Analysis for Determinants of GVC Flows

We use a gravity regression framework to analyze the determinants of bilateral GVC trade flows between 180 source and destination countries during 2000–13. The gravity model is mainly used to study determinants of trade flows (Lankes and Venables 1996; Baldwin and Taglioni 2006), with more recent applications to GVC and value-added export flows.

We rely on the structural gravity equation which can be written as follows:

$$\log(Y_{ijt}) = \alpha.G_{ijt} + \beta.X_{ijt} + \Upsilon.Z_{it} + \mu_i + \eta_j + \varepsilon_{ijt}$$

The variable of interest $\log(Y_{ijt})$ is the bilateral GVC-related trade flows from country i to country j at time t , comprising of forward and backward GVC flows. Based on the existing literature, a set of explanatory variables are included in various specifications of the panel regression. These include both gravity variables (G_{ijt}) as well as policy variables of bilateral nature (X_{ijt}) and institutional and structural variables (Z_{it}). Below is a brief description of the variables. Appendix Table III.1 provides the sources.

Variables

Gravity Variables

Five main gravity variables are used (sources in parenthesis) that capture geographic, historical, and physical relationships between the origin and destination countries. These included distance (CEPII), a dummy indicating common border (CEPII), a dummy indicating common official language (CEPII), a dummy indicating common colonial heritage (CEPII), and population of source and destination countries (world development indicators [WDI]). The latter is used to capture the market size.

Policy Variables

These fall into several policy areas and some are of a bilateral nature (trade agreements).

- *Production costs and skills* include the unit labor costs relative to trading partner (ILO), the share of working age population with at least an upper secondary education (World Bank World Development Indicators (WDI), the share of vocational enrollment to total secondary enrollment (World Bank WDI), and the competitiveness index on quality of education (WDI).
- *Infrastructure and institutions* include the index of quality of infrastructure (WEF), and several components of the worldwide governance indicators. The latter includes various dimensions of which we include the index of rule of law and the index of government effectiveness, as these two remain significant in most specifications.
- *Trade agreements* include variables that capture the existence and depth of trade agreements between each country pairs. As discussed in Box 1, not all trade agreements are created equally. Accordingly, we explore if the existence as well as the depth of an agreement has any explanatory power for GVC flows. Two specifications are explored: one that includes a dummy variable for the existence of a preferential trade agreement (PTA) between two countries (World Trade Organization RTA Database), and a dummy for the depth of that PTA, measured by the number of legally enforceable provisions in PTA (Deep dummy = 1 if this number is larger than 20), as discussed in Box 1 and following Hofmann, Osnago, and Ruta (2017). In the second approach, instead of using dummy variables, we directly include two variables that capture the total number of provisions in PTAs and the number of legally enforceable ones (Hofmann, Osnago, and Ruta 2017). The second approach is more suitable when the sample is restricted to European countries, since the PTA depth dummy in the first approach would be closely related to EU membership, confounding the impact of the two.

Regression Results and Robustness

We ran a variety of regressions experimenting with the set of explanatory variables as well as the country samples. Appendix Table II.2 summarizes our preferred regressions that are used for calculation of policy gains in Figure 9. Appendix Table II.3 reports the results of a sample set of robustness tests. As is well known in the literature, most variables described above (skills, institutions, infrastructure) are highly correlated with each other, which complicates the identification. As such, our findings represent associations. Nonetheless, among various explanatory variables, we have tried to narrow down the ones

with coefficients that appear most robust. This is achieved through a parsimonious approach by running numerous regressions and inclusion of variables one by one, and then in conjunction with others.

Here we provide a brief discussion of robustness by each category of variables. Regression results show that many control variables exhibit the expected signs and are statistically significant:

- The first block of variables, grouped as Gravity variables in Appendix Table II.2, exhibit the right sign and are significant at all specifications when the full sample is used. The significance of colonial heritage, however, diminishes in the Europe-only sample. The coefficient on distance becomes larger in the Europe-only sample. This should be interpreted with caution as it could reflect either that distance bears a higher cost on trade in Europe but could also be a result of the high intensity of trade in European countries given their high level of integration, compared to the world.
- Education, skill, and labor cost variables: The coefficients on vocational training and education levels were not robust across specifications (Appendix Table II.3). The quality of education appeared most robust, followed by unit labor costs, where the latter was significant only in the Europe-only sample.
- Infrastructure quality and institutions: The quality of infrastructure appeared robust in all specifications. We tested various components of the World Bank governance indicators and among them, the rule of law and government effectiveness were the most robust, although the latter was not so in all specifications. This partly reflects strong correlation among all survey-based variables capturing perceptions; nonetheless, the index of rule of law was quite robust, despite inclusion of many correlated variables.
- Trade agreements: these variables proved to be quite robust in various specifications in the full sample. Their importance increased for the Europe-only sample, as well as the NMS and WB samples (Appendix Table II.2), partly reflecting the importance of the EU single market in promoting trade within the block. Appendix Table II.3 (columns 10, 11, 21, and 22) show that both in the World and Europe-only sample, the depth of trade captured by the number of enforceable provisions remains significant, even after controlling for a host of other variables.

Annex Table II.1. Data Sources for Gravity Regressions

Variable Name	Description	Source
Gravity variables	Distance, common border, common language, common colonial heritage, population.	CEPII. Head and Mayer (2014)
ULC	Unit labor costs	Calculated from ILO data
Quality of education	Perceived quality of education (1–7, 7-Best)	WEF GCI
Vocational training	Secondary vocational pupils (those enrolled in technical and vocational education programs, including teacher training) as percent of total secondary education students.	World Bank. UNESCO Institute for Statistics
Secondary and upper education	Percent of working population with secondary and tertiary education	World Bank WDI and Wittgenstein Center
Quality of infrastructure	Perceived quality of infrastructure (1–7, 7-Best)	WEF GCI
Rule of law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Ranges from approximately –2.5 (weak) to 2.5 (strong).	Worldwide governance indicators
Government effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Ranges from approximately –2.5 (weak) to 2.5 (strong).	Worldwide governance indicators
Preferential trade agreement dummy	Takes value of 1 if the two countries are engaged in preferential trade agreement on the particular year.	World Trade Organization
Number of provisions in trade agreement	Number provisions in the bilateral trade agreement 0–52. The provisions are listed in Box 2.	Hofmann, Osnago, and Ruta 2017
Depth of trade agreement	Number of provisions in the trade agreement that are legally enforceable. This is a discrete variable from 0 to 52	Hofmann, Osnago, and Ruta 2017
Depth of trade agreement—dummy	Dummy=1 if the number of trade agreement that are legally enforceable are larger than 20	Hofmann, Osnago, and Ruta 2017

Note: The WGI are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from a number of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms. The WEF GCI combines both official data and survey responses from business executives on several dimensions of competitiveness. WDI = world development indicators; WEF GCI = World Economic Forum Global Competitiveness Index.

Annex Table II.2. Determinants of GVC Trade Flows

	(1) All countries	(2) Europe to Europe trade	(3) WB & NMS7 to World	(4) WB & NMS7 to Europe
Gravity variables				
Log of distance in kilometers	20.891***	21.383***	21.284***	21.292***
Common border dummy	0.467***	20.169	0.392*	0.412*
Common official language dummy	0.241*	1.495***	3.827***	3.756***
Common colonial heritage dummy	0.666**	20.209	20.0146	0.0234
Population of exporter country (log of millions)	0.987***	0.930***	0.664***	0.548***
Population of destination country (log of millions)	0.899***	0.789***	0.773***	0.742***
Labor costs and skills				
Unit labor cost (relative to destination country)	0.853*	20.411***	20.487***	20.257***
Quality of education index (1–7, 7=Best)	20.959	0.519***		
Vocational training (% of secondary enrollment)	0.0523***	20.00138	20.0410***	20.0162*
Secondary and upper education (% of working pop)	0.0164***	0.0140***	0.158***	0.228***
Infrastructure and institutions				
Quality of infrastructure (1–7, 7=Best)	0.680***	0.375***	0.195***	0.440***
WB Governance: Rule of Law	0.559***	0.388***	0.304**	0.184**
WB Governance: Government effectiveness	20.233	20.0303		
Trade agreements				
Number of Provisions in Trade Agreement (0–52) ¹	20.0067	20.0102	0.0097*	0.0121
Depth of Trade Agreement (0–52, 52=Best) ¹	0.0211**	0.0401**	0.0319***	0.0330**
Observations	3500	1,088	657	306
R-squared	0.972	0.949	0.966	0.952

Note: Robust standard errors in parentheses. Errors clustered at country-pairs. *** p < 0.01, ** p < 0.05, * p < 0.1.

¹Total number of provisions in the trade agreement ranges from 0–52 and is taken from the database by Hofmann, Osnago, and Ruta (2017). The depth of trade agreement is the number of provisions that are legally enforceable.

LIFTING GROWTH IN THE WESTERN BALKANS

Annex Table II.3. Additional Gravity Regressions for Determinants of Bilateral GVC-related Trade Flows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
All countries											
Gravity variables											
Log of distance in kilometers	20.861***	21.116***	21.079***		20.876***	20.933***	20.725***		20.965***	20.891***	20.893***
Common border dummy	0.338***	20.160	0.0844	0.286***	0.300***	0.266***	0.188***	0.255***	0.0738	0.467***	0.468***
Common official language dummy	0.445***	1.081***	0.970***	0.454***	0.444***	0.453***	0.399***	0.409***	1.008***	0.241*	0.238*
Common colonial heritage dummy	0.499***	0.542***	0.324*	0.524***	0.457***	0.515***	0.507***	0.544***	0.326**	0.666**	0.666**
Population of exporter country (log of millions)	2.459***	2.988***	0.879***	1.451***	2.491***	1.462***	2.387***	2.403***	1.032***	0.987***	1.182***
Population of destination country (log of millions)	2.459***	2.988***	0.710***	1.863***	2.493***	1.857***	2.387***	2.403***	0.733***	0.899***	0.903***
Labor costs and skills											
Unit labor cost (relative to destination country)		0.001	0.818						0.781	0.853*	0.880***
Quality of education index (1–7, 7=Best)			1.158***						0.0511	20.959	21.297
Vocational training (% of secondary enrollment)			20.0111**						0.0272***	0.0523***	0.108***
Secondary and upper education (% of working pop)			0.00212						0.00826***	0.0164***	0.0443***
Infrastructure and institutions											
Quality of infrastructure (1–7, 7=Best)				0.128***		0.124***			0.483***	0.680***	1.081***
WB Governance: Rule of Law					0.154***	0.0833***			0.713***	0.559***	0.690***
WB Governance: Government effectiveness					0.0574***	0.0255***			20.0753	20.233	20.262
Trade agreements											
Preferential Trade Agreement Dummy							0.870***	1.136***	0.548***		
High Depth Trade Agreement Dummy ¹								0.470***	0.180***		
Number of Provisions in Trade Agreement (0–52) ²										20.00674	
Depth of Trade Agreement (0–52, 52=Best) ²										0.0211**	0.0191**
Constant	30.39***	23.468***	12.02***	1.573***	210.33***	14.32	28.51***	28.04***	11.23***	11.96***	8.642***
Observations	617,147	40,418	4,524	191,084	446,709	185,751	617,147	617,147	4,453	3500	3500
R-squared	0.879	0.901	0.932	0.912	0.885	0.913	0.884	0.885	0.936	0.972	0.971

Note: *** p < 0.01, ** p < 0.05, * p < 0.1.

¹Dummy=1 if number of legally enforceable provisions in the trade agreement is larger than 20.

²Total number of provisions in the trade agreement ranges from 0–52 and is taken from the database by Hofmann, Osnago, and Ruta (2017). The depth of trade agreement is the number of provisions that are legally enforceable.

Annex II. Regression Analysis for Determinants of GVC Flows

(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
European countries										
21.433***	21.339***	21.409***	21.408***	21.438***	21.424***	21.332***	21.294***	21.383***	20.961***	20.960***
20.328**	20.122	20.158	20.294**	20.351***	20.301**	20.313**	20.272**	20.169	0.558***	0.564***
1.255***	2.318***	1.577***	1.196***	1.223***	1.172***	1.247***	1.203***	1.495***	0.0223	0.0172
20.0686	20.0761	20.214	0.00781	0.0138	0.0586	20.411	20.323	20.209	0.860**	0.866**
3.799***	20.308	0.910***	1.932***	4.604***	1.827***	2.494***	2.602***	0.930***	0.858***	0.957***
3.799***	20.308	0.685***	1.117***	3.046***	1.189***	2.494***	2.602***	0.789***	1.009***	1.066***
	0.002	20.616***						20.411***	20.346***	20.276*
		0.363***						0.519***	0.898**	0.813**
		0.0603***						20.00138	0.0309*	0.0282*
		20.0144***						0.0140***	0.0190***	0.0206***
			0.201***		0.174***			0.375***	0.341***	0.126*
				1.806***	0.182***			0.388***	0.520***	0.533***
				20.00442	20.145			20.0303	20.127	20.262
						1.057***	1.280***	0.761***		
						0.468***	0.401**			
									20.0092	
									0.0253**	0.0221**
211.09***	17.43***	17.69***	13.17***	35.47***	18.26***	1.648	20.137	13.58***	15.34***	15.30***
30,372	7,306	1,120	11,995	22,312	11,360	30,372	30,372	1,088	859	859
0.906	0.928	0.948	0.944	0.913	0.944	0.917	0.918	0.949	0.973	0.973

Annex III. Regression Analysis for Determinants of Services Exports

We estimate two separate sets of regressions to analyze the policy factors that are associated with exports of: (1) travel services; and (2) ITC/other business services. The global dataset contains annual observations from 2000 to 2015. Although the panel structure lends itself to fixed effects estimation, we only employ fixed effects for the travel services regressions. Given the importance of geography in tourism, a fixed effects estimator serves to capture much of a country's fixed (yet difficult to measure by one variable) tourism attractiveness. Because ITC and other business services depend less on geography, we employ pooled OLS for these regressions.

Travel Services Regressions

We employ a series of policy variables to explain the log of travel services exports/GDP. The fixed effects estimator creates a country-level dummy variable for each country to control for unobserved heterogeneity, which could include, for example, whether a country is a beach destination. Our policy variables include: (1) openness to trade, measured as the average number of provisions in a country's trade agreements; (2) a measure of political stability and the absence of terrorism; (3) two measures of the business environment; (4) the quality of transport and electricity/telephone infrastructure; (5) the quality of education; and (6) cost competitiveness, as measured by wages and unit labor costs.

The regression results suggest that a country's own characteristics (as proxied by the country dummy) are the primary determinant in the level of travel services exports as a share of GDP.¹ This result is consistent with the fact that geography naturally confers advantages to some countries. We find that policy variables have a weaker association with travel services exports compared to the country fixed effect. In our regressions, only (1) openness (as proxied

by the number of provisions in trade agreements), (2) political stability, and (3) electricity and telephone infrastructure are found to have statistically significant coefficients with the expected sign in most of the specifications. The ease of FDI and starting a business, quality of education, transport infrastructure, and wages/unit labor costs were not statistically significant in most specifications.

We also run regressions for samples covering only Europe, advanced countries, and emerging market/developing economies. The results indicate that the degree of openness to trade is more important for advanced economies, and political stability is a more important factor in emerging market/developing countries, and surprisingly, within Europe. In Europe and advanced economies, the number of procedures to start a business was significant with the anticipated sign, suggesting a greater importance of the business environment for tourism. The quality of electricity and telephone infrastructure also matters more in emerging market/developing countries than in Europe or advanced economies.

ITC/Other Business Services Regressions

The dependent variable is the log of ITC and other business service exports as a percentage of GDP. We also included measures of education and fixed broadband Internet subscription penetration (as a measure of technological advancement) in addition to the explanatory variables used in the tourism regression.

We find that most of the policy variables generally exhibit their expected signs and are statistically significant, except for tertiary education enrollment and the perceived quality of management schools in some specifications. Unlike for travel services, unit labor costs are negatively associated with these exports, suggesting that cost competitiveness matters for ITC exports. Openness measured by the depth of trade agreements is significant in some specifications, but not when ULC are added to the regression.

We split the dataset into samples covering only Europe, advanced economies, and emerging market countries. Within Europe, the most important policy variables include broadband Internet penetration, the perceived quality of math and science education, political stability, ULC, and whether FDI rules are business friendly. The quality of science/math education and management appear to be more important in emerging market/developing countries.

Annex Table III.1. Data Sources for Regressions

Variable Name	Description	Source
No. provisions	Average number of provisions in trade agreements	Hofmann, Osnago, and Ruta 2017
LE provisions	Average number of legally enforceable provisions in trade agreements	Hofmann, Osnago, and Ruta 2017
Tertiary edu	Tertiary education enrollment rate	WEF GCI
FDI rules	Business impact of rules on FDI	WEF GCI
Start business	Number of procedures to start business	WB Doing Business
Qual. Math/Sci	Perceived quality of math/science education	WEF GCI
Infrastructure	Perceived quality of air/road/port transport infrastructure (1–7, 7 best), average	WEF GCI
Elect/tel infra.	Perceived quality of electricity and telephony infrastructure (1–7, 7 best)	WEF CGI
Quality education	Perceived quality of education (1–7, 7 best)	WEF GCI
Qual. Mgmt.	Perceived quality of management schools	WEF GCI
Pol. stability	Political stability and absence of terrorism	World Governance Indicators
Internet	Fixed broadband Internet subscriptions/100 population	WEF GCI
ULC	Unit labor costs	Calculated from ILO data
Wage	Average monthly wage in USD	ILO

Note: ILO = International Labour Organization; WB = World Bank; WEF GCI = World Economic Forum Global Competitiveness Index.

Annex Table III.2. Regression Results from Tourism Exports

Dependent Variable: Log of Travel Services Exports/GDP

Variables	(1) Full sample	(2) Europe	(3) Adv Econ	(4) EM/Dev
No. provisions	0.007** (0.003)	0.003 (0.002)	0.041** (0.015)	0.008** (0.004)
Pol. stability	0.241* (0.133)	0.326*** (0.104)	0.033 (0.079)	0.225* (0.130)
FDI rules	0.004 (0.037)	0.036 (0.032)	0.031 (0.039)	0.002 (0.055)
Start business	20.010 (0.025)	20.034*** (0.009)	20.042*** (0.007)	0.021 (0.033)
Infrastructure	0.062 (0.054)	0.049 (0.053)	0.048 (0.064)	0.119 (0.075)
Elect/tel infra.	0.193*** (0.072)	0.034 (0.036)	0.105** (0.043)	0.225** (0.096)
Qual. edu.	20.171* (0.089)	20.063 (0.056)	20.028 (0.071)	20.248** (0.114)
Wage	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)
Constant	0.355 (0.435)	1.232*** (0.380)	20.679 (0.817)	20.014 (0.396)
Observations	265	206	112	153
R-squared	0.228	0.452	0.552	0.283
Number of id	46	36	19	27

Note: Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

Annex Table III.3. Regression Results from ITC and Other Business Services Exports

Dependent Variable: Log of ITC and Other Business Services Exports/GDP

Variables	(1) Full sample	(2) Europe	(3) Adv Econ	(4) EM/Dev
Tertiary edu	0.005* (0.003)	0.001 (0.004)	20.008** (0.004)	0.004 (0.005)
FDI rules	0.310*** (0.074)	0.394*** (0.123)	0.810*** (0.142)	0.217*** (0.072)
Qual. Math/Sci	0.569*** (0.056)	0.239** (0.106)	0.270*** (0.075)	0.597*** (0.090)
Qual. Mgmt.	0.085 (0.072)	20.238** (0.098)	20.015 (0.119)	0.302*** (0.113)
Pol. Stability	0.073 (0.087)	0.596*** (0.201)	20.400*** (0.086)	0.440*** (0.120)
Internet	0.026*** (0.006)	0.036*** (0.005)	0.067*** (0.007)	0.021 (0.014)
LE provisions		20.053** (0.023)	0.020 (0.014)	0.001 (0.016)
ULC		21.201** (0.566)	24.187*** (0.473)	20.602 (0.557)
Constant	25.025*** (0.453)	20.464 (0.691)	23.872*** (0.935)	24.817*** (0.760)
Observations	1,083	190	119	355
R-squared	0.346	0.431	0.705	0.367

Note: Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

Annex IV. Regression Analysis for Imports

Given the unconventional approach to establishing association between capital goods imports and growth, we use different types of econometric analysis to support our hypothesis and application of threshold regression methods to our analysis. First, we use a fixed-effect panel regression to test for potential association of capital goods imports with growth. To deal with endogeneity and omitted variables issues, we complement it with instrumental panel regression analysis with labor skill and investment as instruments. Further we complement our analysis with a dynamic panel data model, which also contains lags of the dependent variable as regressors, accounting for issues such as momentum and inertia by using Arellano-Bond dynamic panel data estimation. We also test for dependence between residuals and ran Wald test for group-wise heteroscedasticity. Our results reported in Table IV.1 show a positive association between capital goods imports and real per capital GDP growth after controlling for domestic investment, labor skills, and FDI inflows.

We conduct threshold regression analysis to explore necessary conditions for the positive impact of capital goods imports on growth. The empirical literature points to increasing use of threshold regression analysis in understanding the impact of different threshold variables on macroeconomic variables, including growth, FDI, the size of government expenditures, etc. Developed initially as an extension of simple univariate OLS regression, threshold regressions are also used for panel data. Hansen (1999) describe the use of threshold regressions with panel data to investigate whether financial constraints affect the investment practices of firms. Caner and Hansen (2004) extend their initial model to application of analysis of macroeconomic variables by using 2SLS and IV estimation techniques to threshold analysis.

Threshold regression methods are developed for nondynamic panels with individual-specific fixed effects. Threshold regression models specify that

Annex Table IV.1. Regression Results: Growth and Capital Imports Dependent Variable—GDPPC Growth

Independent Variables	Fixed-effect panel data regression	Instrumental Panel data regression (instrumented investment and labor skill)	Arellano-Bond dynamic panel
GDPPC growth-lagged	–	–	0.23***
Capital Goods imports (percent of GDP)	0.17 ***	0.17***	0.3***
FDI (percent of GDP)	0.02	0.02	0.03
Labor skill (ratio of low to medium skilled labor)	0.17***	0.17**	0.18**
Domestic investment (in percent of GDP)	0.12**	0.12***	0.11**
Constant	–13.1***	–13.2***	–15.8***
Observations	760	760	680
F test that all $u_i=0$:	F(4,716) = 16.52	F(39,716) = 3.64	
Wald test	–	Wald chi2(4) = 468.76	Wald chi2(5) = 164.35

Note: *** p < 0.01, ** p < 0.05, * p < 0.1.

individual observations can be divided into classes (so-called regions) based on the value of an observed variable (threshold). In principle, thresholds help to delineate one state of relationship from another. Unlike full sample, in threshold regression, there is one effect, meaning one set of coefficients up to the threshold and another effect (another set of coefficients) beyond it. Those regions are identified by a threshold variable being above or below a threshold value.

Formally, a threshold regression with two regions is defined by a threshold γ and presented as

$$y_t = \beta x_t + \delta_1 z_t + e_t \text{ if } -\infty < w_t \leq \gamma$$

$$y_t = \beta x_t + \delta_2 z_t + e_t \text{ if } \gamma < w_t < \infty$$

Considering the role of capital goods imports in empirical literature, we investigate whether the composition of labor skill (used as a proxy for country’s absorptive capacity) can affect the significance of the impact of capital goods on real growth. In other words, what is the threshold of the labor skill that makes imports of capital goods “meaningful” for economic growth.

Using panel threshold model, we estimate the impact of capital goods imports (*Capgoodsimp*), domestic investment (*DI*) and absorption capacity of the country proxied with labor skill mix (*Labskill*) on GDPPC growth in 45 countries, including OECD, emerging Europe, NMS, and WB countries (results in Table IV.2.).

$$dGDPPC = \alpha.Capgoodsimp_{jt} + \beta.DI_{jt} + \gamma.Labskill_{it} + \varepsilon_{jt}$$

The threshold variable used is labor skill which is measured as the ratio of low and medium skilled labor in total labor (a lower value indicates high labor skill). The threshold is estimated at 61.3 percent at 95 percent significance. We define in region 1 as high labor skill, indicating that the sum of low and medium labor as a share in total is below the threshold. Consequently, the region 2 is defined as low skill, indicating that the sum of low and medium labor share in total is above the threshold.

The details of skill definition as described in ILO database are presented in Annex Table IV.3.

Annex Table IV.2. Threshold Regression Results

Independent Variables	Region 1 (the ratio of low and medium skilled labor is lower than the threshold)	Region 2 (the ratio of low and medium skilled labor is higher than the threshold)
Capital Goods imports (percent of GDP)	0.42 ***	0.12
FDI (percent of GDP)	.002	0.04
Labor skill (share of low and medium skilled labor in total)	0.10***	0.15***
Domestic investment (in percent of GDP)	0.06**	0.13**
Constant	-11.00***	-11.00***
Observations	760	760
F test that all $u_i=0$:	F(39, 714) = 3.98	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Annex Table IV.3. Skill Level

Broad Skill Levels	ISCO-08	ISCO-88
Skill levels 3 and 4 (high)	Managers	Legislators, senior officials and managers
	Professionals	Professionals
	Technicians and associate professionals	Technicians and associate professionals
	Clerical support workers	Clerks
	Services and sales workers	Services and shop and market sales workers
Skill level 2 (medium)	Skilled agricultural, forestry and fishery workers	Skilled agricultural and fishery workers
	Craft and related trade workers	Craft and related trade workers
	Plant and machine operators, and assemblers	Plant and machine operators and assemblers
Skill Level 1 (low)	Elementary occupations	Elementary occupations

Source: ILOSTAT.

Annex V. Questionnaire for Survey of Export and GVC Companies in WB

Annex Figure V.1. Questionnaire for Survey of Exports and GVC Companies in WB

SECTION I—Company Details:

1. Name of the company _____
2. Please indicate the year the company began operations _____
3. Please indicate the year the company began operations _____
4. Please indicate the number of employees (choose one)
 - a. Below 25
 - b. 25–50
 - c. 50–100
 - d. 100–300
 - e. 300–500
 - f. 500–1000
 - g. More than 1000
5. Company's legal status and ownership structure (please choose one)
 - a. Sole proprietorship
 - b. Partnership
 - c. Joint stock company/corporation
 - d. Limited Liability Company (LLC)
 - e. Corporation (for-profit)
 - f. State owned corporation.
 - g. Other, please indicate _____
6. Please indicate the sectors of your company's operation (please choose one)
 - a. Food
 - b. Textiles
 - c. Chemicals
 - d. Plastics & rubber
 - e. Non-metallic mineral products
 - f. Basic metals
 - g. Fabricate metal products
 - h. Machinery and equipment
 - i. Electronics manufacturing
 - j. Other manufacturing
 - k. Construction
 - l. Transport
 - m. Wholesale Retail
 - n. Information technology (IT)
 - o. Hotels and restaurants services
 - p. Financial intermediation, real estate, other business services.
7. What percent of your company is foreign owned?
 - a. Mostly foreign owned (more than 75 percent)
 - b. More than half (50–75 percent)
 - c. About half (50 percent)
 - d. Less than half
 - e. Mostly domestic capital
 - f. Other, please specify _____
8. Approximately what is the share of exports in total production in your company
 - a. Largely exports (more than 75 percent)
 - b. More than half exports (50–75 percent)
 - c. About half (50 percent)
 - d. Less than half
 - e. Mostly domestic sales
 - f. Other, please specify _____
9. Are you a domestic company engaged in exports (not member of a company networks operating in different countries)? If your answer is yes, then please go to section III, if no then please proceed to the next question.

- a. Yes
- b. No
10. Are you a member of a global value chain (GVC) [a network of companies head by mother firm, where the different stages of the production process are located across different countries]?
 - a. Yes
 - b. No
11. If you have a mother company, then where is it located?
 - a. Euro area
 - b. Balkans
 - c. USA
 - d. Asia
 - e. Other, please specify _____

SECTION II—for Companies that are Involved in GVC
[please answer these questions if you are part of GVC]

12. Please indicate your GVC partner countries [list the 3 most important]
 - a. Upstream (a country/countries where firms are producing inputs for your production. These could include intermediate goods, R&D or product)
 - i.
 - ii.
 - iii.
 - b. Downstream (a country/countries where firms are using your company's output as inputs in its production process)
 - i.
 - ii.
 - iii.
13. What proportion of your inputs are imported from overseas?
 - a. Largely imported (more than 75%)
 - b. More than half imported (50–75 percent)
 - c. About half (50 percent)
 - d. Less than half
 - e. Mostly domestic inputs
 - f. Other, please specify _____

SECTION III—Economic Outlook and Prospects:

This section should be filled by all respondents, including domestic and GVC companies

14. How did external/overseas demand for your output change in 2017 compared to 2016?
 - a. Increased
 - b. Decreased
 - c. Remained about the same
 - d. Other, please specify _____
15. How did domestic demand for your output change in 2017 compared to 2016?
 - a. Increased
 - b. Decreased
 - c. Remained about the same
 - d. Other, please specify _____
16. How do you expect sales growth to fare over the next three years?
 - a. Increase
 - b. Decrease
 - c. Remain about the same
 - d. Other, please specify _____
17. What is your assessment of the level of wages in the country in relation to productivity?

- a. Too low
- b. Too high
- c. About right
- d. Other, please specify _____

18. Do you plan to scale up GVC operations in future? What are the key factors supporting your decision? Please explain.

SECTION IV—Structural Issues:

This section should be filled by all respondents, including domestic and GVC companies

- 19.** What factors influenced your decision to set up GVC operations in this country? (Please rank top 5 in descending order):
- a. Obtaining license
 - b. Access to finance
 - c. Geographical location
 - d. Political stability
 - e. Customs and trade regulations
 - f. Transport infrastructure
 - g. Regulations on foreign ownership
 - h. Free trade agreements
 - i. Incentives provided by the Government
 - j. Cost of energy
 - k. Cost of supplies
 - l. Geographical location
 - m. Protection of intellectual property rights
 - n. Low corruption
 - o. Taxation
 - p. Tariffs and/or customs duties and charges
 - q. Non-tariff barriers
 - r. Red tape or bureaucracy
 - s. Telecommunication infrastructure
 - t. Macroeconomic environment
 - u. Labor regulations
 - v. Availability of skilled labor
 - w. Availability of cheap labor
 - x. Flexibility of labor market

- 20.** What are the most important factors that constrain activities of GVC and influence international trade activities initiated from this country (Please rank top 5 in descending order):
- a. Non-tariff barriers
 - b. Ease of customs clearance
 - c. Length of time spent in customs
 - d. Transparency in rules and regulations (foreign)
 - e. Transparency in rules and regulations (domestic)
 - f. Access to capital/finance
 - g. Existence of preferential market access schemes
 - h. Technical facilities for standards compliance
 - i. Customs delays
 - j. Transport and logistic infrastructure or services
 - k. Political stability (domestic)
 - l. Insufficient information on foreign markets
 - m. Insufficient information on trading partners
 - n. Existence of free trade agreements
 - o. Security and safety
 - p. Geographical location
 - q. Unfair competition

- 21.** [Answer this question only if you are a domestic company that exports]. What are the key preventing your company from becoming involved in a GVC (please indicate the three most important).
- i.
 - ii.
 - iii.

- 22.** Which countries do you view as competitors of [relevant country name] in placing GVC firms? Please indicate top three
- i.
 - ii.
 - iii.

- 23.** If you pulled out of this country, where would you move operations to? (please indicate three countries)
- i.
 - ii.
 - iii.

- 24.** How would you rank the GVC environment in this country relative to others you know?
- a. Good
 - b. Above average
 - c. Average
 - d. Below average
 - e. Poor
 - f. Other, please specify _____

SECTION V—Labor Market Issues

- 25.** What is the average educational attainment of a typical production worker employed in your company?
- a. No education
 - b. Secondary education
 - c. High school education
 - d. College/university education
 - e. Other, please specify _____

- 26.** What are the key labor constraints (please rank in descending order of importance: 1 = very important; 4 = least important):
- a. Skills shortage
 - b. Regulations
 - c. Labor discipline
 - d. High and rigid wages/wage regulations
 - e. Other, please specify _____

SECTION VI—Financing

- 27.** Is access to financing (high interest rates, fees and/or collateral requirements) an obstacle in your operations?
- a. No obstacle
 - b. A minor obstacle
 - c. A major obstacle
 - d. A very severe obstacle

- 28.** Please rank the relative importance of the sources of finance for working capital (indicate 1 = most important, 4 = least important).
- a. Internal funds/retained earnings
 - b. Line of credit from banks (domestic/foreign)
 - c. Line of credit from non-bank financial institutions
 - d. Purchases on credit from suppliers and advances from customers
 - e. Other trade credit
 - f. Increase in equity through FDI from domestic or foreign companies
 - g. Other (moneylenders, friends, relatives, etc.) specify _____

- 29.** If you are not given enough financing what are the three most important reason?
- i.
 - ii.
 - iii.

- 30.** Is there anything you would like to tell, that we didn't ask you?
- _____

Thank you for your time, we will make sure you receive a copy of a consolidated analysis of the survey results.

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