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Expanding and Diversifying Montenegro's Exports: A Product Space Analysis

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Summary. This paper provides an analysis of the export potential and export diversification of Montenegro. Based on this analysis as well as a review of international experience and field discussions, the paper also provides policy recommendations for exploiting its considerable export potential and engendering export diversification. The Product Space (PS) methodology is used to identify prospective comparative advantage by making inferences from the revealed pattern of trade. The indicated products in which Product Space methodology points to export potential have links to information available to entrepreneurs and producers that can be expected to be reflected in private investment decisions and decisions regarding entry into export markets. The analysis shows that Montenegro currently has a limited and highly concentrated export base but it is also in the middle of a major transformation towards a much more tourism and services based economy. The policy challenge is how to foster this process to fully tap into its potential for exports and diversification. Exports allow entrepreneurs and producers in small economies to expand beyond the limitations of the domestic market size. Successful export potential has been realized in other countries through openness in international trade and allowing the private sector to judge profitable opportunities.

Thanks to its superior geographic location, adequate human capital and infrastructure base, and natural resources, Montenegro has been found to possess substantial export potential, which could turn into its major growth engine. To convert this potential into success, Montenegro will need to rebalance the role of government policy and improve local incentives towards entrepreneurship and exports. The important policy role of government in Montenegro is to correct

mismatches between educational preferences of students and the human-capital requirements for export success. The other important role of government is to foster greater infrastructure connectivity (especially via air, rail and roads, but also the greater use opportunities offered by sea trade and port logistics services). The government also should maintain and promote an open trading regime and flexible, neutral regulatory environment. Finally, the government should avoid subsidizing particular firms or sectors at the expense of taxpayers or other firms or sectors. This would likely distort incentives and channel local private and public resources into rent-seeking as opposed to efforts to improve skills, products, and productivity.

Key words: Exports, Trade, Competitiveness, Diversification, Montenegro.

JEL classification: F14 (empirical studies of trade), O24 (trade policy), 52(Europe).

Introduction

At present, Montenegro is not using the principal growth engine–exports–that has transformed many small countries, especially those with significant location-al advantages. Montenegro is not nearly as open or connected as it needs to be, internally or externally, in order to activate that growth engine. Its exports are the lowest in the Western Balkans except for Kosovo, and very low compared to most small-state comparators. At 11 percent of GDP in 2011, Montenegro has one of the lowest ratios of goods exports to GDP in the world – it is not well-connected. And if metals exports are excluded, the ratio drops below 6 percent. With regard to goods exports, the Montenegro economy is quite autarkic. Movement across borders is slow and inefficient, and despite the large tourism sector, when services are also considered the exports-to-GDP ratio still averaged only about 39 percent for 2007–11. More prosperous small countries have much higher ratios than this. Slovenia, for example, has a ratio of 68 percent, Estonia 78 percent, and Malta 85 percent and many successful small states have even higher ratios (Favaro 2000).

There are thus critical development questions for Montenegro: What does Montenegro export? What is the income potential of its exports? Why is the export structure a constraint on development? And how can export expansion and diversification be achieved? This detailed analysis of exports suggests the elements of an answer.

Because Montenegro's export basket depends so heavily on traditional metals exports whose potential is dissipating, future export expansion will depend on expanding its success exports – tourism and wine – while diversifying into new products and services – agriculture, food processing, energy as well as new, knowledge-based services. Presently, a significant share of exports is associated with the socialist heritage – so much that Montenegro's limited exports are dom-inated by a few large firms that still are, or were until recently, state-owned.

Principal Export Sectors

Metals

The aluminum plant, once the crown of Montenegrin industry, appears to be operating with negative value-added at international market prices. Employment there has been declining but it is still in operation because a complete and sudden closing would have heavy political costs. The lack of investments, the build-up of arrears to the electricity company, and loan guarantees that the Montenegrin government provided when the plant was sold to a foreign investor cloud its future. With negative value-added and its current technology, the plant cannot be the source of export expansion. The government has proposed to search for investors who will use the aluminum produced to make higher value-added products closer to final consumption – but in the present circumstances, it would be more efficient for the economy as a whole to import aluminum to be used as inputs. Inevitably, expanding Montenegro's exports means expanding into non-traditional exports.

Niksic Steel and other privatized metal-related factories export their output. While the recent sale of Niksic to the Turkish steel company Toscelik may indeed promise a new start, it is not evident that such factories, given their capacity and technological limitations, can become the foundation for long-term, large-scale expansion of exports that will open up the Montenegrin economy.

Tourism

Tourism is a major source of growing earnings and economic success in Montenegro and it will continue to be so (CANU 2010, Popović). Tourism, which is based mainly in the coastal region, offers the usual summer type of "sea–and-sand" leisure, plus casinos. Old coastal towns like Budva, Kotor, Herceg-Novi, Perast, and Petrovac are regional attractions. The national and royal capital Cetinje also attracts tourists, as do ancient monasteries like those in Cetinje, Morača, and Ostrog. According to the latest economic impact research from the World Travel & Tourism Council (WTTC) and Oxford Economics, Montenegro is expected to be the fastest-growing travel and tourism economy in the world over the next 10 years in terms of contribution to GDP and employment. In 2010 the total contribution of tourism to GDP, including indirect and induced impacts, was 15.7 percent. According to the WTCC, by 2021 this share is projected to more than double to 36.3 percent – an increase of 12.4 percent annually for the next 10 years.

Commendably, although for the foreseeable future large-scale tourism will continue to have a role, the government aims to steer the growth toward high-end tourism. For example, the Mediterranean's newest mega-yacht marina is Porto Montenegro in the coastal town of Tivat, owned by Canadian investors; now fully operational it has transformed the local economy. Nearby an international-quality golf course is being built. The government has also signed a long-term investment agreement with Swiss-based Orascom to build an extensive complex of 5-star hotels, a golf course, and related tourist facilities on the Luština peninsula.

Yet there are limitations to relying on tourism for economic development, such as road infrastructure and the capacity limitations of the coastal airport at Tivat. Furthermore, tourism employment is significantly seasonal, concentrated in the South and Central areas, and consists primarily of relatively low-skilled, numerous jobs for hotel staff and waiters and cleaners and fewer, higher-level skilled position, calling for language abilities for receptionists and the culinary skills of cooks, not to mention management skills. But Montenegrins do not seem to take advantage of even the present seasonal employment opportunities. The workers come principally from neighboring countries, which suggests that wages are too low to be attractive to Montenegrins – including students, who rarely use the summer vacation to take jobs in tourism, wine, and agriculture. This is unlikely to change overnight, which raises the question of where Montenegrin graduates and entrants into the labor market will find jobs.

Tourism also introduces the possibility of problems in relations between local government and private investors that elsewhere have been problematic. Government officials determine the conditions of entry into the tourism industry for foreign investors through zoning and provision of infrastructure. Negotiations about the contributions of local government and the provision of land are often not transparent. With poor governance or management of the growth of tourism or because of the consequence of the external financial crises, major local development projects and potential tourist assets could become liabilities. The construction boom and bust of the town of Budva shows why growth of tourism must be managed carefully and apolitically.

Tourism has remarkable potential for diversifying by strengthening its links with agriculture, transport, and logistics. But because tourist demand is seasonal, productive capacity will not be utilized year-round. Such issues as business planning for future tourist facilities are best resolved – within a clear and transparent spatial and regulatory environment – by private entrepreneurs and firms making decisions about the profitability of investments.

Wine

A state-owned wine producer is an export success on demonstrating that an even stronger wine export industry, including many small private producers, could thrive. The company has been well-managed and among consistent profit makers and leading exporters; its wines are beginning to be sold in many more countries. The long tradition of winemaking in some areas of Montenegro is a natural basis for this activity. Ownership of vineyards by wine producers has significant environmental and touristic benefits and could stimulate development of the private wine industry – already emerging – in previously rural areas (e.g., Crmnica, Danilovgrad). The state company is planning to expand exports to even more new markets, such as China, and move to higher-value-added wines.

But with limitations of land and capacity, wine cannot be the sole source of major export growth, although it will certainly contribute significantly. Also, with the exception of a few skilled experts and management, wine production employs primarily unskilled labor, which cannot be the basis for Montenegro's desired transition to a high-income economy. With the decline of the metals industry and constraints on growth and incomes in tourism and wine, what new export opportunities are there for Montenegro to diversify? To answer this question, we conduct the first product space analysis on Montenegro's exports to ascertain the income, growth, and diversification potential of the existing and potentially new exports. The analysis identifies potentially promising, new products and sectors that can drive the necessary export expansion and diversification.

Product Space (PS) Analysis

Product Space (PS) Analysis (pioneered by Hausmann, Hwang, and Rodrik (2007), Hausmann and Klinger (2006), and Hidalgo, et. al. (2007)) provides a measure of "proximity" between pairs of goods by observing global trade data and patterns of revealed comparative advantage for countries (Figure 1). For example, the proximity between two agricultural products is high if the inputs (e.g., land) used for the production of one (e.g., pears) can also be used for others (e.g., apples) at relatively low cost. Likewise, the proximity between two consumer electronics products should be relatively high. On the face of it, apparel's proximity to agricultural products might be greater than its proximity to electronics, just as proximity between auto parts and electronics is greater than between auto parts and agricultural products.

Figure 1: Illustration: Proximities Across Goods in the Product Space

Source: The Product Space and the Wealth of Nations,
http://www.chidalgo.com/productspace/network.htm.
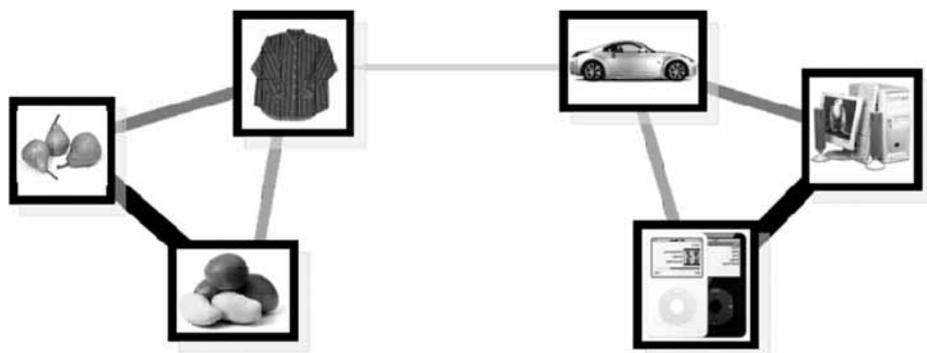
The PS model can reveal the extent to which a country's knowledge and capital can be adapted for use in structural transformation – in other words, how "nimble" the local economy and its inputs are in shifting to new export opportunities. The model is based on the principle of similarity in production functions and mobility of inputs. It may reveal vertical links between sectors, as for example between tourism, agro-processing, and transportation. The aim of the PS analysis is thus, given initial PS positions and production transformation trends, to identify the sectoral diversification that has the most potential for a country's export growth.

A country may, for example, be specialized in low-value-added industries or products for which world demand is declining, suggesting avenues for diversification. Ideally, through market responses (and government regulation), the product mix should then adapt to higher-value industries and expanding export markets. Figure 2 shows an example of how an economy can form clusters across the 785 products in the Standard Industrial and Trade Classification (SITC Rev. 2).

The global experience and research findings show that a country's PS export position is highly correlated with its GDP per capita and that the level of income is determined by capabilities, technology, and resource endowments. Because of differences ("heterogeneity") in the distribution of capabilities across countries, those with small populations whose capabilities are limited can be expected to experience only minor diversification gains if only a few capabilities are added. The structure of the PS also has implications for technology and geographic

links, transfers, and spillovers. For example, the probability that a new product will be added to a country's export basket has been found to be on average 65 percent higher if a neighboring country is a successful exporter of the same product – countries can learn from each other. Moreover, technology diffusion is stronger the shorter the geographical distances (proximity matters), weaker for more knowledge-intensive products (adding value with knowledge products is difficult), and has speeded up over time (countries are competing in new products and markers more intensely than ever before).

PS analysis produces empirical measures of relatedness between products and income levels for individual products. Thus, a diversification strategy should increase competitiveness in product categories that are within reach and that offer more scope for further diversification – which in the PS terminology are referred to respectively as products with higher density and with higher paths. Goods with higher income potential (PRODY) increase GDP per capita.[1]

Figure 2: Proximities Across Pairs of Goods in the Product Space

Source: The Product Space and the Wealth of Nations,
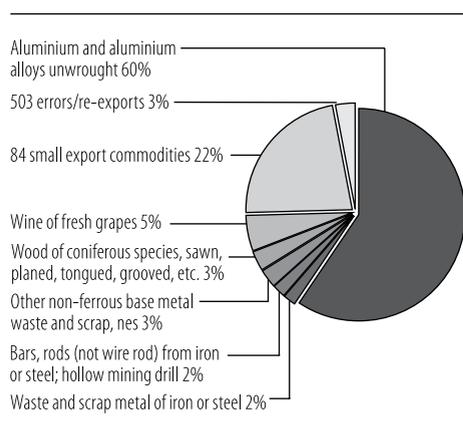http://www.chidalgo.com/productspace/network.htm.

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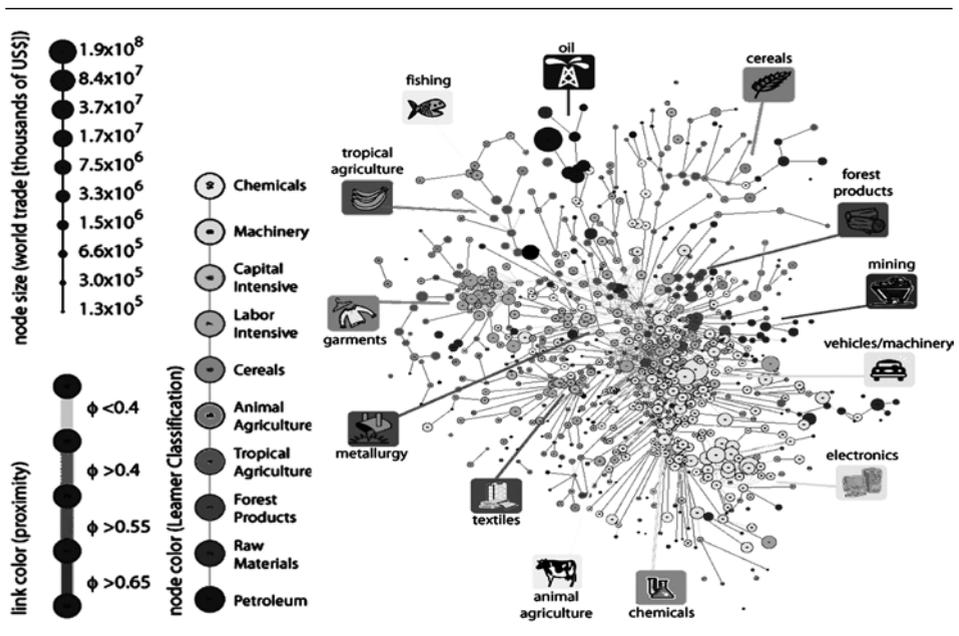
[1] PS is a stepwise methodology. For the case of Montenegro, because data are lacking for a long time series of exports, products cannot be categorized by structural shifts in revealed

Application of Product Space Analysis to Montenegro

The PS methodology was applied to bilateral trade data for Montenegro from 2006 to 2011. Because of the short export series, however, inferences had to be made from (i) the export basket's associated productivity level (prody and EXPY); (ii) the scope for further diversification (path); and (iii) the strength of comparative advantage (density).

The data confirm Montenegro's fundamental export problem: high concentration in metal products that have little value-added and little technological sophistication (Figure 3). The category of unwrought aluminum and aluminum alloys accounts for 60 percent of merchandise exports, followed by wine from fresh grapes (5 percent), and coniferous wood (3 percent). Metals – aluminum, iron, and nonferrous metals – account for two-thirds of all goods exports. Clearly, traditional industries dominate Montenegro's export structure.

Figure 3: Concentration of Montenegro's Exports

Aluminium and aluminium alloys unwrought 60%

503 errors/re-exports 3%

84 small export commodities 22%

Wine of fresh grapes 5%

Wood of coniferous species, sawn, planed, tongued, grooved, etc. 3%

Other non-ferrous base metal waste and scrap, nes 3%

Bars, rods (not wire rod) from iron or steel; hollow mining drill 2%

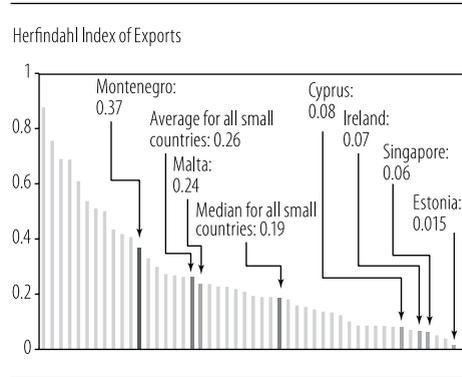Waste and scrap metal of iron or steel 2%

Source: World Bank (2012).

Comparatively, Montenegro has the highest export concentration in its region, though neighboring Balkan countries are not particularly well-diversified either. Figure 3 shows that the 6 largest export categories accounted for 75 percent of Montenegrin exports and the next 84 for only 22 percent. The Herfindahl index of concentration of exports (0.37) is much larger for Montenegro than for neighboring Albania (0.05), Slovenia (0.03), or Bosnia and Herzegovina (0.02), indicating less diverse exports.

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comparative advantage (RCA), as has been done in several other World Bank studies. However, even without time-series data, the concept of density can be used to rank products according to the country's capability to export. Products can also be ranked according to prospects of further diversification (path) and associated productivity level (PRODY). Products with a high density, high path, and high PRODY are the best candidates for export diversification. The empirical structure of the PS tends to show a negative relationship between the concepts of density and PRODY and density and path, and a positive relationship between PRODY and path. The PS thus reveals the difficulty of formulating a successful development strategy when products that are highly profitable are not within easy reach, while nearby products have limited scope for diversification and growth.

The level of concentration of merchandise exports in Montenegro is also high compared with the comparator group of small countries. Its Herfindahl index (0.37) is substantially above the median (0.17) and the average (0.26) for all small countries. Yet prosperous small countries such as Malta, Cyprus, Ireland, Singapore, or Estonia have well-diversified export baskets, not only in terms of the number of products, but also in their technological content (Figure 4).

In Montenegro government and the private sector should be concerned about the structure of the export basket because exports can drive competitiveness and economic growth. Export diversification and sophistication have proved to be prerequisites for sustained episodes of economic growth. Growth over the long term cannot be explained as simply the consequence of the accumulation of aggregate factors of production, such as labor. Countries that have grown successfully have done so by acquiring capabilities that allow them to introduce more and newer goods into foreign markets. Figure 6 shows the relationship between the sophistication of the export basket (measured by the Log of EXPY) and its relationship with GDP per capita for 138

Figure 4: Comparative Export Concentration as Measured by the Herfindahl Index

Source: World Bank (2012).

Figure 5: Exports by Technological Content in Selected Small Countries

Source: World Bank (2012).

developing and developed countries. Clearly small countries do not necessarily rely on a few unsophisticated exports. Producers and entrepreneurs in Montenegro can learn from successful experiences to take into account the opportunities of export markets.
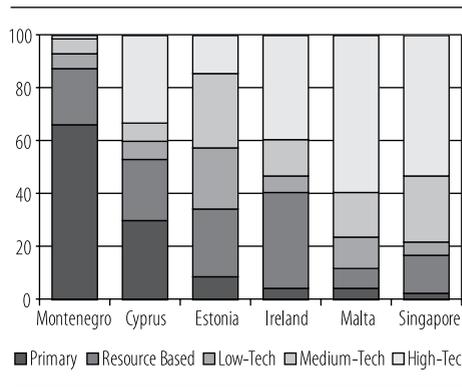
Figure 6: Export Sophistication and Economic Development

Log of GDP per capita

Sophistication of the Export Basket [Log of EXPY]
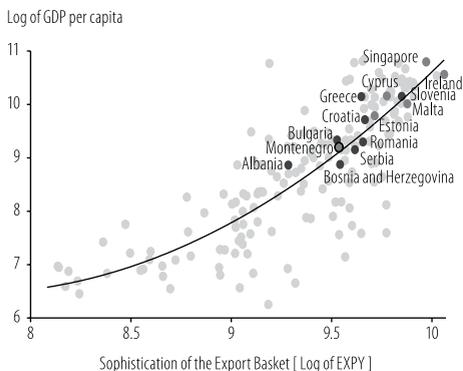
Source: World Bank (2012).

Figure 7: Montenegro: A Dearth of Income-Enhancing Products

Higher Income Potential [Log(prody)–Log(expy)]

● RCA < 1   ● RCA > = 1

Greater difficulty to diversity into [Inverse of Density]
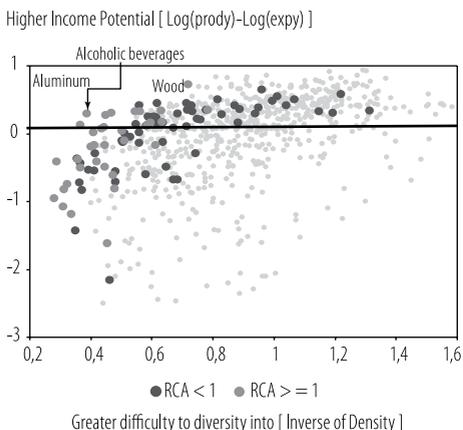
Source: World Bank (2012).

Moreover, Montenegro's few merchandise exports have relatively little income potential. What this means is that even if Montenegro could expand the current export structure significantly, it would not bring in much additional revenue or create many jobs. In Figure 15 red and blue dots are products that Montenegro currently exports (gray dots are not produced by Montenegro). The negative relationship between PRODY and the inverse of density indicates that products that are within reach (left on the x-axis) – "low-hanging fruit," given Montenegro's export structure – unfortunately do not have much income potential (above on the y-axis). Also, products that are income-enhancing (above the red line, where PRODY is greater than EXPY) are not easily "reachable" in terms of the density of Montenegro's exports. Moreover, exported products for which Montenegro has revealed comparative advantage (RCA>1) are sparse in the product space and often located in the difficult-to-reach periphery of the PS (Figure 8 – Figure 9).

Figure 8: Montenegro's Position in the Product Space, part 1 of 2
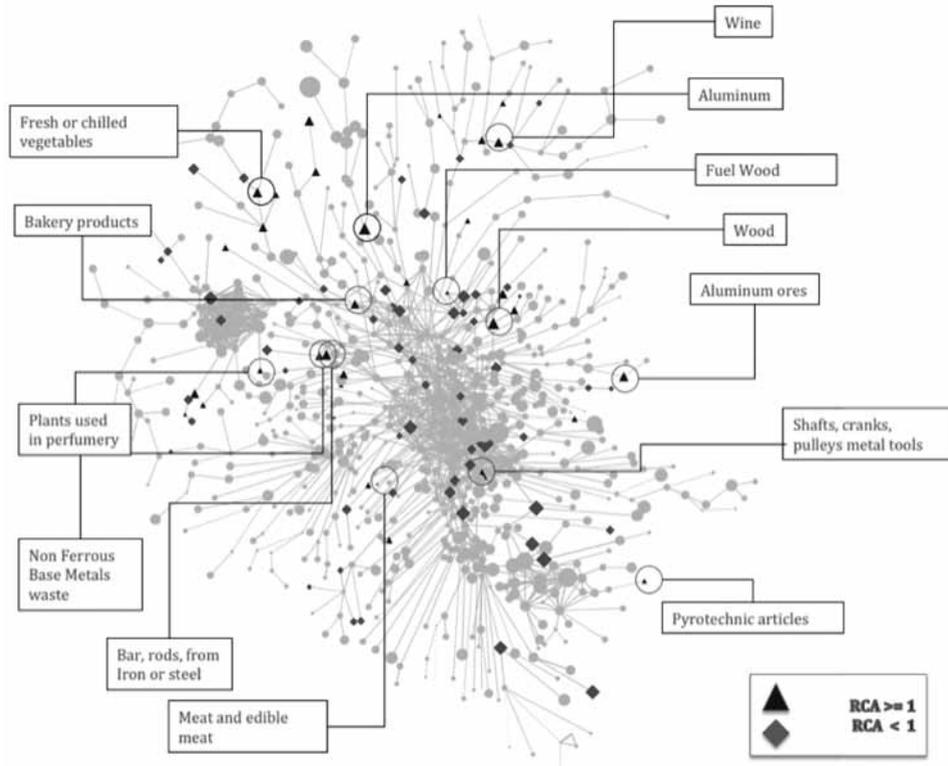
Source: World Bank (2012) representation using the original diagram from "The Product Space and the Wealth of Nations," http://www.chidalgo.com/productspace/network.htm.

Figure 9: Montenegro's Position in the Product Space, part 2 of 2
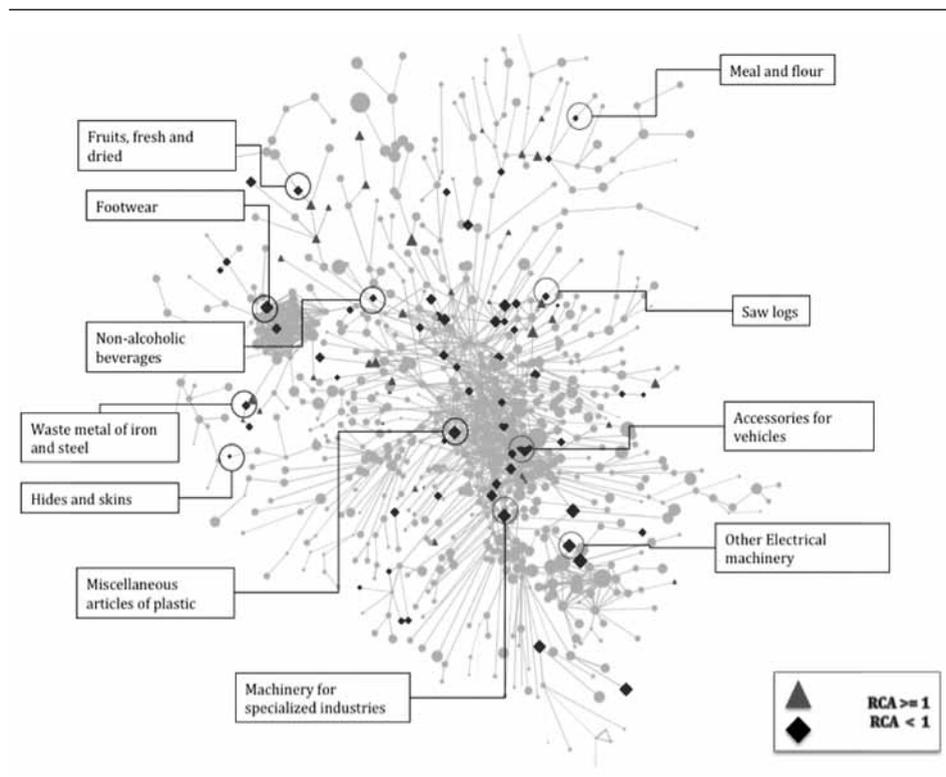
Source: World Bank (2012) representation using the original diagram from "The Product Space and the Wealth of Nations," http://www.chidalgo.com/productspace/network.htm.

Montenegro's economic diversification potential can be classified into three main groups with very different income potential (Table 1).

- The first group consists of dominant, **traditional merchandise exports**, aluminum and iron, that according to the PS metrics could in principle offer relatively large income potential, but only with significant additional investments and a major move up the value chain. The argument behind providing additional support to aluminum and iron has been associated with gains in diversification. It is true that technological advances and the new wave of industrialization of East Asian countries have imprinted dynamism and demand for aluminum and iron; nevertheless, for Montenegro the risk of failure is high given current uncertainty and falling prices in international markets, its small number of products, their low technical

content, and the fact that these heavy industries need large investments to modernize equipment, strengthen supporting infrastructure, and ensure cheap energy.

- The second group consists of **other products** in food and agro-processing, hides and skins, wood processing, and miscellaneous manufactures. While the relative low value of PRODY indicates that on average these sectors have limited income potential, especially hides and skins, the value of density indicates that their potential for Montenegro is relatively substantial (Fabris and Pejović 2010). Of special interest is a subgroup of 24 agricultural products with high density and revealed comparative advantage that could satisfy the domestic market, especially in the food category, if the products were appropriately linked to tourism (Table 1). This suggests an important opportunity for Montenegro to expand existing and develop new agricultural and food exports; if linked with related sectors, multiplicative effects on growth and jobs could be substantial, especially in the relatively underdeveloped areas of the country. Although machinery is the product group with the highest income potential and the most options for diversification, here Montenegro is weak in PS density, meaning that these products have only tenuous backward and forward linkages with Montenegro's current export structure.

Table 1:   Montenegro: Exports, Comparative Advantage (RCA), Links with Export Structure (density), and Income Potential (prody)

Sector	Number of products	Products with RCA>1	Imports 2006-2010		Exports 2006-2010		Prody	Path	Density	Export Destinations
			('000 USD)	(% of total imports)	('000 USD)	(% of total exports)				
Aluminum	2	1	119	0.001	1,260,879	61.1	18,680	136	0.123	15
Mining, metals, raw	11	7	328,491	2.5	135,710	6.6	10,781	112	0.126	35
Manuf Iron	7	4	55,615	0.4	111,352	5.4	15,528	151	0.11	32
Food	24	11	646,269	5	246,276	11.9	12,709	127	0.122	39
Hides	4	2	187	0	20,644	1	7,860	118	0.141	10
Wood	14	5	29,131	0.2	117,685	5.7	12,687	133	0.122	48
Misc.	9	2	-	-	15,983	0.8	14,324	133	0.1	39
Machinery	22	2	-	-	91,705	4.4	19,510	144	0.084	70

Source: World Bank (2012).

- The third group is **tourism and the related service chain**, such as transport, energy, and logistics but also modern digital and IT services. The

potential for exports here is significant but it will depend critically on how well it is linked with the second group of new exports to exploit synergies and stimulate productivity.

Conclusions from Product Space Analysis

Montenegro has substantial export potential in tourism, wine, food, energy, and a number of newer products. Exploiting that potential will require a government strategy, but the government should limit its role to dismantling barriers to exports, whether physical, infrastructure, regulatory, or institutional; and ensuring greater connectivity with external markets – physical, informational, and institutional. The analysis could be useful in informing private sector and export associations and international and domestic chambers of commerce about likely opportunities for future export expansion and diversification.

The analysis should not be interpreted as a call for a state-led export push, with state subsidies to identified sectors; this would carry substantial risk of failure and capture by special interests. The terminology of PS analysis describes "countries" (not governments per se) as bodies guided by the data to adopt "export diversification" strategies. Since Montenegro is predominantly a market economy based on private ownership, comparative advantage can therefore only be realized through the private sector's evaluation of the profitability of investments. Private commercial enterprises do not need subsidies for success and taxpayers should not be underwriting private risks and enterprises. The government role in increasing exports should be limited to promotion of Montenegro's brand through its diplomatic and commercial representations abroad, using its convening power, and ensuring maximum regulatory transparency and ease of doing business and exporting. This is a tall order for governments of much larger countries; if Montenegro can be effective in these areas, the export supply response is likely to follow, as it has in other small and now prosperous exporting countries.

The PS analysis can, however, help guide the private sector in choosing how to use accumulated expertise and experience in different ways. The information from the analysis can also act as a signal to the private sector as to where comparative advantage might lie and where producers might succeed in global markets. Government assistance in the export area should be limited to improving the enabling environment and bringing Montenegro's exporters and exports to the attention of potential markets. Finally, is important to recognize that the above analysis is just one tool in ascertaining opportunities for more effective opening up and connectivity, based on the notion of comparative advantage and product

space analysis. To understand and identify other components of success in ensuring greater connectivity of Montenegrin economy, one must look beyond exports into other concepts such competitive advantage and the role of human capital, multinational firms, and infrastructure – especially transport and energy.

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