

Serbia 2009-2016: Real Sector Performance and Competitiveness Some Stylized Facts and Open Questions

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Foreword

With its macroeconomic framework rebalanced and the global, especially European, growth environment more decisively favorable, Serbia's policy is turning to fostering growth, and the possible adoption of industrial policies. The international mainstream attitude to industrial policy has also changed after the global financial crisis, and IFIs are much more interested and willing to give new, carefully thought-out industrial policies a try. Serbia certainly needs to focus on its real sector – nearly two decades after the destruction of the 1990s, its GDP per capita still stands between 10-20% below that in 1989. Yet, surprisingly little research has been conducted on the reasons for such a difficult and slow transition, on the gradually changing structure of the economy, and on what policies could best help turn its performance economy around.

The current study provides background information to a call for policy research and a societal dialogue on what can be done, and how, to accelerate not only economic growth, but above all the generation of decent employment, and of the broader economic development that promotes human and social growth. The question, and the call to a dialogue, is addressed not only to policy researchers and the government, but to all stakeholders and especially the business community.

The study presents the stylized facts of Serbia's post-crisis export growth – as the key aspect of its sustainable growth and competitiveness, against the backdrop of its broader GDP growth, focusing on a few industries that show the greatest promise for further competitiveness and growth. After a brief review of Serbia's historical growth performance, it focuses on the period since 2009, and the takeoff in exports that we have seen since. The analysis is conducted not only by industry, but also by company size and ownership, both services, manufacturing overall and for the selected industries.

The study shows strong evidence that underneath the rather lukewarm overall growth of value added in manufacturing, the strong export growth reflects not only what could have been considered to be an adjustment to the post-crisis environment (without credit-driven domestic demand) but also the growth of a new economy. The evidence suggests that in addition to the existence of potential comparative advantages, the performance of the individual industries has been determined by the extent to which the traditional sector has been transformed—to a lesser degree through privatization, and more through the growth of a new economy consisting of greenfield foreign investment and a de novo private sector.

Furthermore, we explore the structure of the new economy and find patterns that appear to reflect the partial recovery and activation of resources shed by the traditional sector. We can expect these patterns to differ from what would be seen in an economy operating on its production possibility frontier, developing such resources as it conquers new levels of economic sophistication. In general, the new economy is highly diversified – both by product composition, and international market orientation-- and not overly concentrated. This reflects, we believe, the broad diversification of the resources shed by the traditional economy. However, at the moment, the FDI and domestic SME sector appear to coexist largely in parallel and fill rather different competitiveness niches.

Serbia presently expends substantial resources on policies supporting various aspects of the economy (just at the central government level, in cash terms, about 80 million EUR to attract FDI, and some 8 million EUR in support of SMEs). However, much more needs to be known, to make sure these resources are well spent. First, it is necessary to understand better the very different drivers of these two sectors. Second, the growth, exports and employment effects of the different incentives and support offered to each of these kinds of enterprise, and the differences by industry, should also be studied, both analytically and empirically. Finally, it is important to open up the question of linkages between these outcomes and human and social development.

A key question for Serbia is how to, in recovering and advancing the competitiveness of its resources, make sure that the benefits are shared. Serbia needs to accelerate quality job generation, and it needs to arrest and reverse the worsening income inequality exhibited over the past decades. Clearly, one key characteristic of a quality growth path would be that the growing competitiveness and employability of its labor force is accomplished by raising its productivity, rather than reducing its relative costs.

The link between growth model and development path is an extremely complex question, but at least some obvious questions need to be asked. Certainly, this link is driven by the kinds of investments made by FDIs and SMEs, and these, in turn, are affected by public investment made in education, infrastructure, and local development, as well as by the measures used to attract FDI and incentivize domestic investment. All these issues require study, and the present describes fundamental background information. Further study is also needed to assess can sustained growth be accomplished by SMEs currently exhibiting competitiveness? Presently a quarter of Serbia's exports, about 13% of GDP, is by SMEs, and a half of that is by the agribusiness sector. Can SMEs serve as a continued and growingly substantial vehicle of incorporation into the global economy? The mainstream view is that this is not possible without domestic large global economy champions. Are all FDIs equally valuable to accomplish this incorporation? Moreover, what if the current international environment is such that it is simply unlikely to attract adequate champions in sufficient numbers? Do the stylized facts shown in this study suggest that maybe there is an alternative? May the SMEs of an economy recovering, rather than developing in the vicinity of EU markets is able to do more than is usually expected and seen from them?

This study is a starting point of this debate.

Executive Summary

Serbia's economic growth shows patterns of gradual recovery, rather than pushing the frontiers of its productive capabilities. While some aspects suggest the likely acceleration of growth over the short- to medium- term, it could also quickly run against a number of factors limiting employment and productivity growth over the medium-to longer term. We present some relevant stylized facts of the sectoral and industrial organization structure underpinning mainly the performance of the tradables sector, but substantially more will need to be known in order to aim policies towards sustained competitiveness growth through productivity growth.

Very recent export growth continues to be robust, and exports have reached a size where they should begin to have a clearer positive effect on the overall performance of the economy. The past subdued overall economic growth reflects the divergent performance of the struggling traditional economy and a new economy that has been growing only very gradually since the onset of transition. The non-tradables part of the new economy, and the tradables under domestic ownership, were strongly hit by the new macroeconomic environment since the crisis. However, the new tradables sector has now fully adjusted (foreign-owned company exports were not much affected even in 2009/10) and total exports now comprise 50% of GDP, coming close to European levels.

However, we observe what appears to be an excessive diffuseness, and a low integration of the new economy. We believe this reflects fragilities that threaten the sustainability of the likely accelerated growth. While diversification of exports is, of course, a desirable characteristic, we find the extent to which we see no clear clusters of strength at the two-digit and particularly at lower industrial aggregation levels of some concern. It is through such clusters of competitiveness, innovation and shared learning that sustainable productivity of growth is generated. This is evident in a number of indicators such as that there is systematically strong gain of market share across nearly all 2-digit industries, and also subsectors.

The strong export performance is led by FDI companies, but a whole quarter of exports is comprised of SMEs and it also grows strongly. In line with the above observed diversification, comparative manufacturing sector export performance by company ownership and size shows broadly similar sector performances. In particular, export growth of foreign-owned companies is systematically faster and broadly spread across the 2-digit industries, while domestic SME companies show somewhat slower but also strong and broadly spread growth at sub-sector level. However, based on key informant interviews, there appears to be little integration between the FDI and domestic SME sectors.

An analysis of factors of competitiveness (strengths and limitations) of selected sectors shows that more is shared among FDIs and among SMEs across industries, than among both types of companies within each sector. A key overall factor is the high quality of engineering and technical skills, especially in the medium-high range of technologies. These are paradoxically both a particular source of strength, but also a limitation owing to their "low density". By "low density" of skilled labor we denote the paradox that high-quality skills are available at very low wages in relative terms, but that companies employing such workers cannot find them in larger numbers and expand fast.

We conjecture low skilled labor mobility is also a key factor underlying the lack more clustering and specialization in the economy, and in turn, that the low density is linked to the extremely low domestic mobility of labor in Serbia. Workers living beyond a certain distance from a company are not available to the company at somewhat higher wages. At the same time, this lack of mobility probably also reduces the chances of development of clusters of industrial strength, and strongly contributes to the growing differences in regional development levels and structures.

The lack of availability of two kinds of skills--process management (quality control, sales/purchases, production process and corporate governance) and all those related to downstream activities (market penetration and development, adaptation to market demand) skills are also a competitive disadvantage. However, particularly damaging to the development of the emerging SME tradables economy is the underdevelopment of the trade intermediation function. There are generally no large domestically owned intermediaries directed at consolidating small domestic producers for a more forceful approach of global markets. At the same time, this is too costly for foreign companies to focus on. Hence the main niche of domestic SMEs exports is custom-made products for known buyers.

A strong competitive strength is the very favorable agricultural land, climate and tradition, giving rise to Serbia's agri-food exports. However, it largely consists of low-value and low-value added exports. The high fragmentation of land South of the Sava river, together with the mentioned issues above, present a significant limitation to increasing its competitiveness.

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Setting the Stage: An Unexpected Take-off in Exports

To understand Serbia's recent competitive strengths and weaknesses, it is important to understand the historical context that has shaped them, as it has resulted in certain apparent paradoxes. The last thorough and comprehensive study of Serbia's competitiveness known to us, the World Bank's *Serbia - Country Economic Memorandum: The Road to Prosperity*¹ issued in 2012 (covering data up to 2008-10), finds that to embark on the necessary export led growth, Serbia needed to redress its macroeconomic imbalances, and implement a host of thorough reforms. The report pins considerable hope on what was then the recent entrance of FIAT in Serbia, as well as the strong export performance of the metals industry—largely comprised of a steel mill then owned by US Steel. In the event, macroeconomic imbalances were redressed only in 2014-15, the metals industry tanked and the automobile industry did not become quite the takeoff that was hoped for, and, finally--most of the report's reform recommendations were not implemented and remain highly relevant today.

And yet, **exports did take off in the post-crisis period**. As shown in Table 1, total exports of goods and services in the period 2009/2016 grew by 11,6% on average annually, with merchandise exports growing 12,3% and services 9%. This trend appears unabated in the first 11 months of 2017 relative to the same period in 2016 (12,5%), both for merchandise exports (13,1%) and for services (15%). These are not very high growth rates by the historical standards of fast industrializing/developing countries, but they are impressive in the context of the extremely sluggish European post-crisis market environment.

Table 1 Growth and Structure of Serbia's Exports 2006-2016

	2016 (mil EUR)	% of export (2016)	% of export growth (2009-2016)	CAGR (2016/2009)	CAGR (2017/2016)**	Trend (2006-2016)
Total export (goods and services)	17.385	100,0	100,0	11,6	12,5	
Merchandise	13.432	77,3	80,0	12,3	13,1	
o/w Manufacturing	12.124	69,7	73,5	12,7	14,4	
Services	4.571	26,3	22,2	9,0	15,0	

* There is a difference between merchandise export registered by NBS and merchandise export registered by SORS, due to different treatment of re-export. Merchandise export registered by NBS is lower by 4.6% (618 mil EUR).

Source: NBS (Total Export, Services); SORS (Merchandise, Manufacturing)

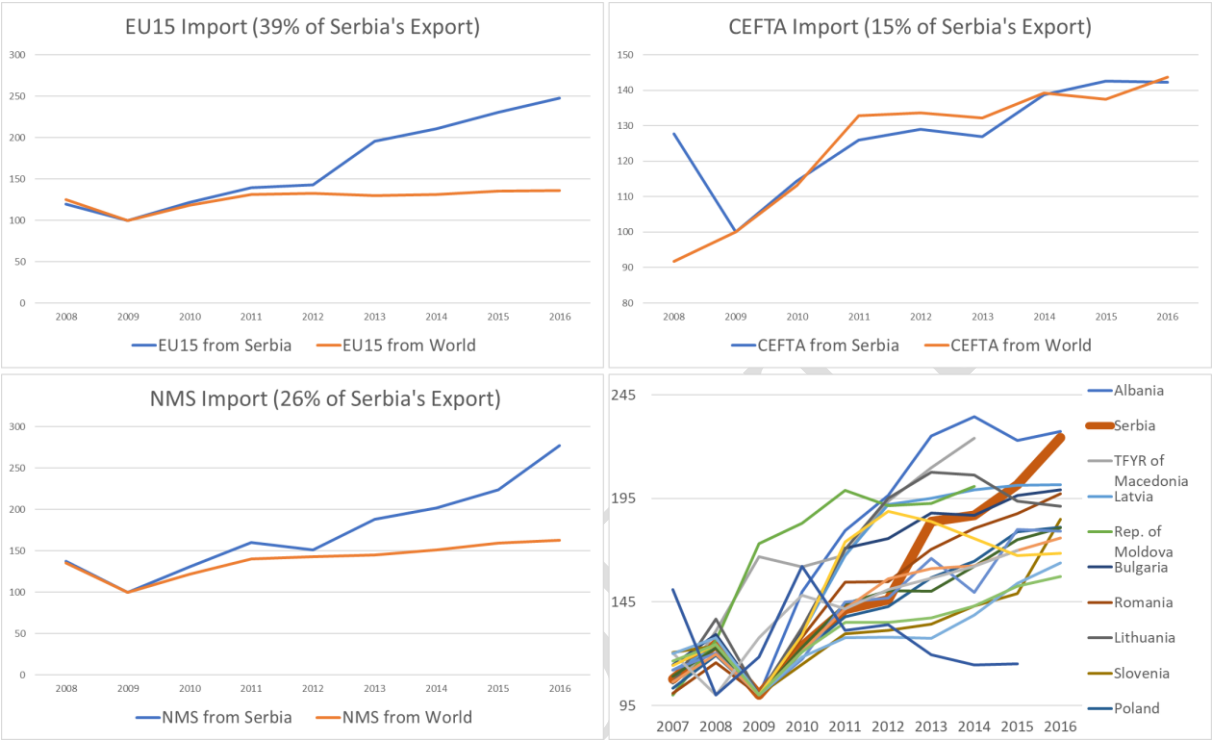
It should be underscored that both merchandise and service exports have grown strongly in recent years, even though merchandise exporters often benefited from investment subsidies (if employing large numbers of substantial employees), while service exports tend to be by small firms and without subsidies. Unfortunately, we know very little about service exports – only what can be deduced from inbound payments for services, data collected by the National Bank of Serbia based on reported payment codes. Serbia's services, it cannot be emphasized too much, need to have dedicated study and analysis, but we do not know that they have.

Much more can be said about merchandise exports. They exhibited a rather competitive and steady performance, considering the low import-growth environment, even compared to new

¹ The Republic of Serbia - Country Economic Memorandum: The Road to Prosperity - Productivity and Exports (2012)

EU member states (NMS), as shown on Graph 1. Serbia’s export on three key markets – EU15, NMS, and CEFTA, that consist more than 80% of Serbia’s total export, grew at faster rates, compared to total import growth of those markets. In addition, Serbia exhibited more dynamic growth than other CEFTA and NMS countries, with the exception of Albania.

Graph 1 Panels 1-3: EU 15, NMS and CEFTA Import Growth – Serbia v. Total; Panel 4: Serbia, v. Selected Country Export Growth; 2008-2016, 2009=100



Source: UN Comtrade

One key reason why exports accelerated after 2009 is, of course, that with the global crisis, domestic credit-fueled demand shrank, and producers had to seek new outlets. Serbian entrepreneurs can often be heard to say that they turned to exports because collection of payments was/is much too uncertain on the domestic market. However, other global competitors were finding the same implosion of their domestic markets, or worse, they adjusted their fiscal policies much before Serbia did, and yet they were not equally successful in shifting production to export markets. Besides, domestic production in Serbia had been just as much hit by the implosion of foreign as by that of domestic demand.

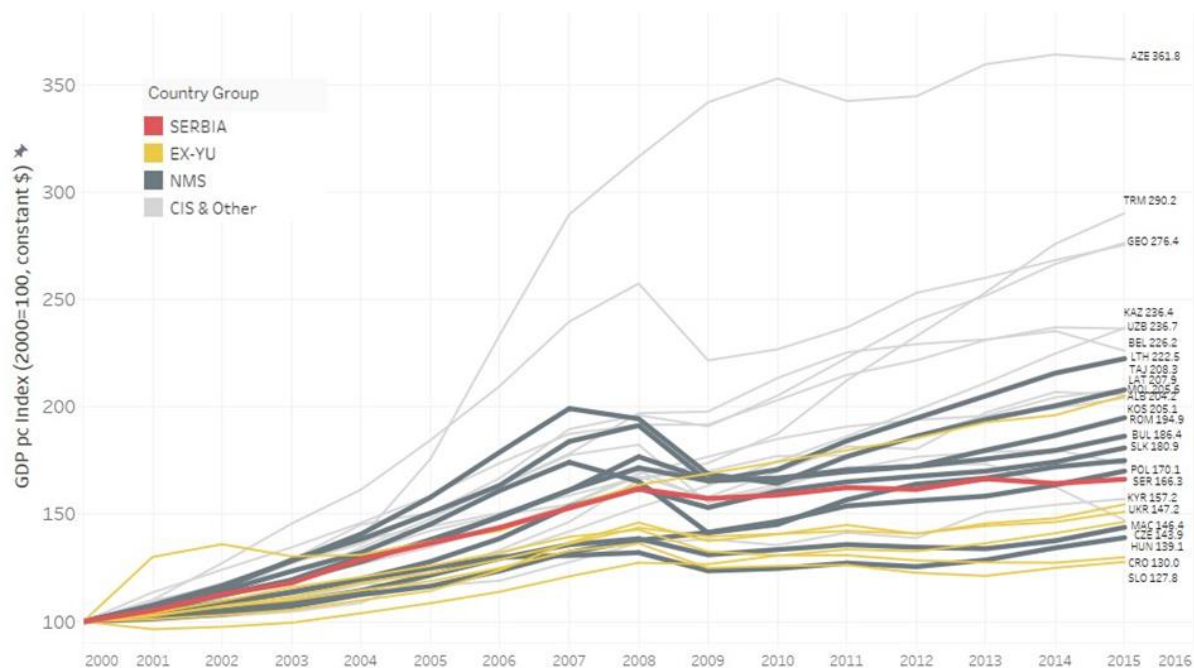
However, an additional fundamental explanation is that **Serbia’s new tradeable economy had reached sufficient strength and size to make the shift towards exports significant and well felt.** It had previously been laboriously growing, rather imperceptibly small, in the shadow of the overblown non-tradeable and non-performing traditional sectors.

To explain this point, we take a detour to review the historical background in which Serbia’s post-crisis economic performance took place. Serbia’s economy, especially its traditional manufacturing sector², had been more than halved throughout the 1990s relative to pre-transition levels, and a recovery has been surprisingly slow to take off since 2000 despite the

² By “traditional sector” we denote current and formerly socially-owned or state-owned enterprises.

lifting of the international embargo. Throughout the subsequent fifteen years, it grew faster only than those of other former Yugoslav states who started their recoveries in 1995 (Graph 2).

Graph 2 Transition Europe: Real GDP per Capita Growth Index, 2000=100



Source: UN Statistics Division

According to official statistics, GDP in 2015 stood 61% higher than in 2000/2001³, but it still stood about 25% below pre-transition levels (with GDP/capita faring only some 5 p.p. better).⁴ Total manufacturing, in fact, first declined until 2003 and then grew at an average 3,6% rate until the crisis, overtaking the 1998 level only in 2007. The above performance based on official statistics is likely to be under-estimated, but not to the point of substantially changing the overall assessment⁵.

Massive FDI would have been necessary to rescue Serbia's devastated traditional manufacturing in the 2000s. In best shape were the industries that had a sufficiently large domestic market in the isolated 1990s, such as the food and beverages industry, in the traditional

³ Note that the data shows a very significant growth of the indirect tax wedge of 20 p.p. of the 2000 GDP, as indirect tax and collection rates had been nearly wiped out by hyperinflation in 2000. In this same period, GVA at production factor cost increased by only 41%.

⁴ While the data are notoriously weak, there is little doubt that GDP first halved in the early 1990s, and that a short-lived recovery was reversed with the NATO bombing of 1999, so that it ended the decade at about a half of its pre-transition level. Our calculations coincide with the findings of Miloško Arsić „Dugoročne posledice ekonomskog sloma privrede Srbije tokom 90-tih godina: dinamika potencijalnog BDP-a u periodu 1909-2015. godina, Kvartalni monitor br. 44, januar-mart 2016.

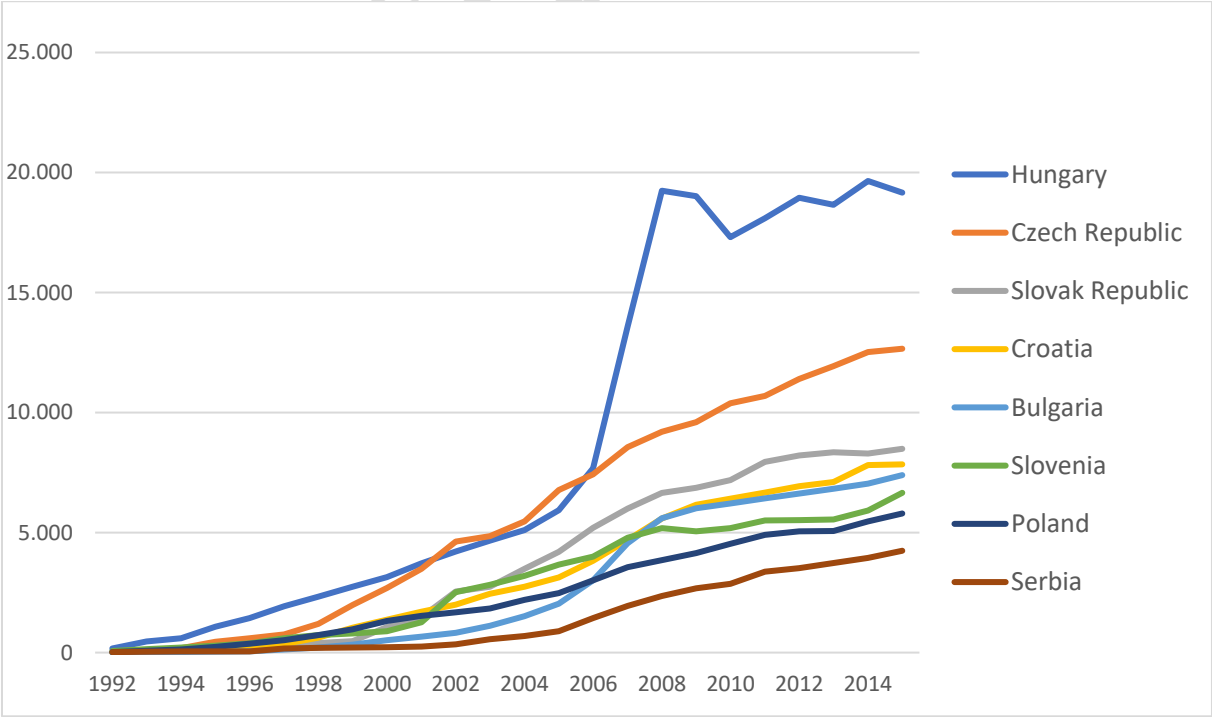
⁵ Earlier CEVES' estimates suggest formal GDP could have been as much as 8% higher than the official figure in 2012-13. Official statistics by the Statistics Office of the Republic of Serbia (SORS) is generated using assessment methodologies that tend to be biased towards "traditional sector" establishments, whose performance has tended to be weaker than that of the *de novo* foreign and domestic private sector. At this point, we believe there are strong indications that the agribusiness production is underestimated (eg. for several years in a row the production of raspberries is smaller than exports by amounts that cannot be explained with inventory). Also, as the MSME sector (micro, small and medium enterprises) begins to gain in importance in Serbia's overall economy, it could be that the underestimation of growth performance is becoming more acute.

sector, and apparel in the new, largely informal sector. The best performing portions of the traditional sector had mostly already been privatized before 2000. Unfortunately, these were largely insider privatizations—a business model that often limited their performance thereafter. The large construction, heavy industry, and agro-industrial complexes that had made the backbone of Serbia’s pre-transition economy came out of the 1990s effectively bankrupt, deeply technologically obsolete and overstaffed. Moreover, a transformation and streamlining would anyway have been due as the global economy had been transformed throughout the 1990s with the massive move of manufacturing to the Far East and the transformation of the global economy into a global factory (in the sense that many production processes that used to take place in one production plant or at least company, became strewn out across countries and even continents).

Only very small portions of that economy were subsequently successfully privatized at all. The reminder has lived on explicit and implicit subsidies, gradually falling into long-drawn liquidations. Today the exit of these enterprises is almost complete, having been accelerated during the global financial crisis and a more decisive policy change since 2015.

Instead, FDI came too little too late. Serbia “missed the boat” of the massive pre-global-crisis FDI inflows that benefited the transformation of the first and second waves of transition countries acceding to the EU (Graph 3). FDI could conceivably have begun to flow in only after 2002, when the minimal regulatory/institutional conditions had been put in place. However, even under much better microeconomic and strictly business environment conditions than those that prevailed, they would have been (and were) held back by political considerations.⁶

Graph 3 Foreign Direct Investment (FDI): Cumulative Net Inflows per Capita (constant 2015 EUR)



⁶ Already in 2003 post-Milošević Serbia’s reputation suffered a new deep blow with the assassination of the prominent reformist prime minister Zoran Đinđić. Thereafter, Serbia’s European perspective and institutional transformation had been held back by the resolution of Montenegro’s and Kosovo’s status, and the arrest of war-criminal suspects.

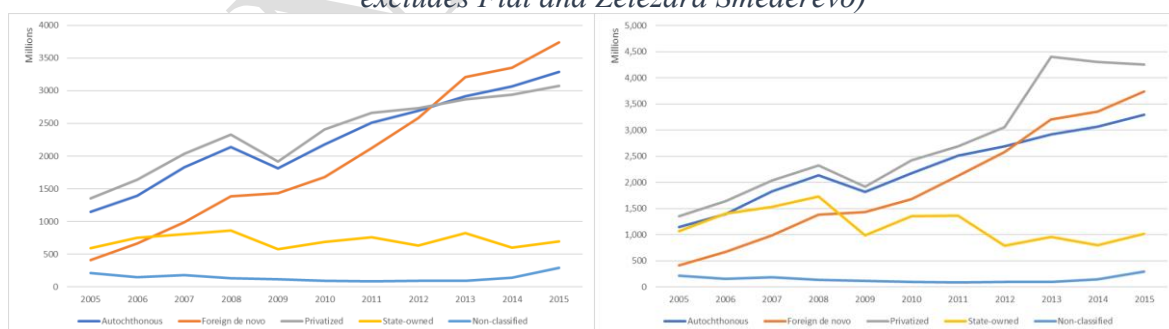
Serbia did not only miss the transformational effect on its economic structure, but also the contribution that more massive FDI could have made to the transformation of institutions, creating a virtuous cycle, reinforcing reforms and accelerating the EU accession process.

Clearly, at the start of the decade, there simply were hardly any companies able to offer goods to the international market, but their number and size grew over time. The performance of manufacturing, especially exports, has been shaped by a relatively thin inflow of FDI, a new domestic sector comprised of the relatively few traditional companies successfully privatized to domestic owners and a domestic de novo sector comprised of MSMEs, as well as of the struggling, majority, portion of the traditional sector. Relatively few of the early entrant FDIs were in the tradable sector (by far most have been in finance, telecoms, and commerce), and of those, most were in industries oriented to the domestic/regional market—such as soft drinks and beers. By the time of the financial crisis, the new tradable sector had grown enough to make a mark on exports, and was of course encouraged further and reshaped by the implosion of the credit and construction-fueled domestic demand.

As can be seen in Graph 1 and Graph 4, merchandise exports growth from Serbia has been remarkably steady. It dipped, of course, in 2009, but most industries returned to 2008 export levels already in 2010. These rates have continued to materialize and even accelerate up to the most recent data for the first half of 2017. When the single-company dominated automobile and basic metals industries are removed, the trend is even steadier (with signs of acceleration) and clearer.

By 2016, Serbia’s total exports of goods and services have come to comprise 50% of GDP, with merchandise exports comprising 38,8% of GDP (and manufacturing alone comprising 35%). Still relatively low by NMS standards, but double the share in 2009 and 76% larger than in 2008. Moreover, company net exports (total exports excluding imports of intermediate goods) have come to comprise 25.3% of GDP up from 11.6% in 2009.

Graph 4 Merchandise Exports from Serbia by Ownership Type, 2005-2015 (left panel excludes Fiat and Železara Smederevo)



Source: CEVES’ staff calculations based on Customs data

Export Growth: Some General Patterns

Some general characteristics of Serbia's recent export performance stand out: that export growth is highly diversified, that it is led by FDIs but that domestic SMEs also make a significant contribution, and that we cannot yet identify particularly significant and large "export champions", nor clusters of firms sharing similar sources of competitiveness within a clear ecosystem. This is not to say that such champions or clusters may not yet appear—as large company exports are growing fastest. The listed characteristics are important because they suggest that there is a broad-based foundation of competitiveness, but also that the absence of particular and growing sources of strength may pose a risk to the sustainability of this growth in the future.

Table 2 Export Performance and Competitiveness (2009—2016)

	Export 2016		% of export growth	Export CAGR 2009-2016	Trend	RCA 2015	CE* (% of export growth) (09/10-15/16)
	mil EUR	%					
Total exports (goods and services; NBS)	17.385	100,0	100,0	11,6		1,0	
Merchandise export (SORS)	13.432	77,3	80,0	12,3		1,0	69,8
A - Agriculture, forestry, and fishing	960	5,5	6,2	14,0		2,6	54,5
B - Mining	57	0,3	0,4	13,5		0,1	-44,2
C - Manufacturing	12.124	69,7	73,5	12,7		1,0	71,3
High-technology	438	2,5	1,5	5,7		0,1	32,7
21 Basic pharmaceutical products	206	1,2	0,8	6,9		0,4	42,6
26 Computer, electronic and optical products	231	1,3	0,7	4,7		0,0	79,2
Medium-high-technology	4.805	27,6	37,9	21,1		1,0	82,8
20 Chemicals and chemical products	754	4,3	4,8	13,8		0,6	51,2
27 Electrical equipment	1.130	6,5	8,2	17,5		1,8	72,6
28 Machinery and equipment	655	3,8	4,0	12,7		0,5	62,4
29 Motor vehicles	2.147	12,4	21,0	41,4		1,5	95,5
30 Other transport equipment	119	0,7	0,0	0,2		0,3	68,5
Medium-low-technology	3.117	17,9	15,1	9,0		1,5	35,6
19 Coke and refined petroleum products	219	1,3	1,1	9,7		0,4	84,1
22 Rubber and plastic products	983	5,7	6,5	14,9		2,7	70,2
23 Other non-metallic mineral products	153	0,9	0,6	6,6		1,1	67,7
24 Basic metals	1.024	5,9	2,5	3,8		1,8	237,5
25 Fabricated metals products	739	4,2	4,3	12,0		1,4	54,9
33 Repair and installation of machinery and equipment							
Low-technology	3.764	21,7	19,0	9,5		1,9	67,5
10 Food products	1.491	8,6	6,9	8,4		2,3	43,1
11 Beverages	175	1,0	0,4	3,4		2,4	44,0
12 Tobacco products	302	1,7	3,0	42,4		17,0	98,9
13 Textile	166	1,0	1,2	16,3		1,0	72,5
14 Wearing apparel	535	3,1	1,6	4,9		1,6	74,9
15 Leather and related products	314	1,8	1,7	11,0		1,5	40,9
16 Wood and products of wood	200	1,1	1,0	9,8		2,1	62,1
17 Paper and paper products	319	1,8	1,9	12,1		2,2	68,6
18 Printing and publishing	0	0,0	0,0	6,0		1,7	221,4
31 Furniture	136	0,8	0,4	4,6		1,8	85,6
Other manufacturing	129	0,7	0,9	15,9		0,3	95,4
D - Electricity, gas and steam	107	0,6	-0,4	-4,0			
E - Water supply, sewerage, and waste management	112	0,6	0,3	3,5			
F - Construction	180	1,0	0,2	1,6			
G-U Services (NBS)	4.464	25,7	22,1	9,2			
Knowledge intensive market services	972	5,6	4,1	7,3			
High-tech knowledge intensive services	822	4,7	6,2	19,0			
Knowledge intensive financial services	46	0,3	0,1	4,0			
Other knowledge intensive services	214	1,2	0,5	3,3			
Less knowledge intensive market services	2.078	12,0	10,0	8,9			
Other less knowledge intensive services	0	0,0	0,0	0,0			
Non-classified	333	1,9	1,2	6,1			
Memo Item:							
Merchandise export difference (NBS - SORS)	-618	-4,6	-2,1	5,7			

*Competitiveness effect

Source: NBS, SORS, UN Comtrade

It is notable that the strong export performance has been very broadly spread, creating an increasingly diversified export portfolio. This breadth is best exemplified by the performance of exports of goods and services at the 2-digit NACE sector level shown in Table 2. Over the period 2009-2016, a great majority of sectors significantly gained market share, where by market we understand the sales of a product in a specific country. A trade-share analysis shows that fully 68 p.p. of the overall increase of 90% attained in this period is due to the competitiveness effect (CE), i.e. winning market share on specific product/country markets. The increase of these sales by more than the rate of growth of the specific market comprised over 70% of the growth of exports of 12 industries, and between 40-70% of the growth of exports of 11 industries. We delve deeper into questions of sector performance in the following chapter.

The broad base of export growth is evident also at the product level. The number of 4-digit SITC markets with more than 1 million euros of exports increased from 43 to 78, and with more than 10 million euros from 25 to 51 over the same period. The number of products at the 3-digit SITC level with $RCA \geq 1$, increased from 86 in 2007 to 90 in 2015 (out of a total of 260 products).

Export growth has mostly been led by foreign investors, but the domestic de novo sector in manufacturing has, nevertheless, also been substantially contributing to it, even at very small levels of average company size. In 2009-2015 export revenues (nominal) of foreign owned companies in Serbia grew at the average annual rate of 17%, with their share in total exports increasing from 49% to 60%, as shown in Table 3. As most of them are large enterprises, this also increased the share of large enterprises, but by less—from 49-55% (As we show later, this is probably in good measure because of the weak performance of some large traditional sector enterprises).

As would be expected, the export performance of MSM enterprises was weaker, in proportion to their size, but still significant--with exports of medium sized enterprises growing 10.4%, and small and micro ones 7.6% on average per year—as shown in Table 4.

Moreover, even the exports of micro enterprises grew faster (6% annually) than the growth of imports of our main markets (see also Graph 1), although we cannot say to what an extent did they specifically gain market share. Small and micro-sized enterprises are principally comprised of domestic de novo private enterprises, while medium-sized ones are mixed, comprised of all types of ownership.

Table 3 Export Performance and Structure, by Type of Ownership (2009--2015)

	Share (2015)						CAGR (2015/2019)					
	Total	Domestic de novo	Foreign de novo	Privatized	SOE	Other	Total	Domestic de novo	Foreign de novo	Privatized	SOE	Other
Merchandise export (SORS)	100	26.4	29.3	33.8	8.1	2.5	12.3	9.4	18.9	14.2	0.6	17.3
A - Agriculture, forestry, and fishing	100	58.6	25.4	11.1	0.7	8.2	14.9	15.2	12.7	23.2	-8.3	31.6
B - Mining	100	15.5	15.7	63.7	2.4	2.6	8.7	8.8	7.3	8.9	-0.3	41.8
C - Manufacturing	100	23.9	30.3	35.2	8.8	1.8	12.2	9.4	18.3	14.5	0.6	12.5
High-technology	100	33.9	18.8	45.5	1.1	0.7	4.5	-0.9	8.6	8.6	-3.1	2.3
21 Basic pharmaceutical products	100	5.1	5.6	88.8	0.0	0.5	7.0	-6.3	2.6	8.6	-100.0	22.8
26 Computer, electronic and optical products	100	62.8	32.0	2.0	2.3	0.9	2.3	-0.3	9.9	9.7	-3.1	-3.0
Medium-high-technology	100	14.7	41.4	34.9	7.5	1.5	20.6	11.5	22.8	31.4	8.0	2.3
20 Chemicals and chemical products	100	22.5	18.0	29.6	28.8	1.1	14.0	13.5	13.6	18.9	10.9	9.2
27 Electrical equipment	100	15.5	70.7	10.0	3.2	0.6	15.5	11.2	21.4	1.3	6.0	14.7
28 Machinery and equipment	100	31.9	48.8	14.0	1.7	3.6	13.3	8.6	22.6	6.6	-8.4	21.6
29 Motor vehicles	100	5.1	36.0	57.0	0.6	1.4	38.5	12.8	30.9	89.4	-13.2	-4.4
30 Other transport equipment	100	21.6	9.6	20.5	47.3	1.0	3.6	24.3	-11.6	-6.4	15.0	-20.2
Medium-low-technology	100	19.9	19.8	36.7	22.5	1.1	9.3	11.3	16.6	11.9	1.0	14.1
19 Coke and refined petroleum products	100	29.6	1.7	67.5	1.1	0.0	23.0	34.3	0.2	51.7	-36.0	21.9
22 Rubber and plastic products	100	21.2	23.4	53.4	0.8	1.2	18.2	15.7	24.1	17.7	-2.5	19.7
23 Other non-metallic mineral products	100	23.1	16.8	55.0	3.9	1.2	5.5	6.8	9.1	5.1	-5.7	7.5
24 Basic metals	100	10.0	13.8	30.4	45.2	0.6	3.2	2.1	14.5	5.8	-0.1	1.4
25 Fabricated metals products	100	31.8	28.1	15.4	22.6	2.1	12.0	13.7	13.6	10.8	8.4	22.6
33 Repair and installation of machinery and equipment												
Low-technology	100	36.9	25.4	34.4	0.6	2.8	9.4	9.6	15.6	7.3	-25.6	27.5
10 Food products	100	40.3	16.4	40.9	0.1	2.3	8.6	10.6	18.7	4.0	-21.7	43.2
11 Beverages	100	19.1	25.1	54.3	0.6	1.0	5.4	4.8	12.5	3.0	4.5	28.1
12 Tobacco products	100	3.5	0.1	96.3	0.1	0.0	33.5	-1.6	29.0	38.3		
13 Textile	100	34.9	51.9	10.9	0.3	1.9	19.2	14.8	32.1	2.7	13.3	32.8
14 Wearing apparel	100	28.2	63.4	5.2	0.5	2.6	3.7	4.4	12.4	0.9	-46.2	14.0
15 Leather and related products	100	55.4	36.4	0.6	3.4	4.2	10.2	7.9	12.8	-11.8	21.2	39.6
16 Wood and products of wood	100	62.5	13.3	17.3	0.6	6.3	11.4	13.4	11.9	3.7	22.1	21.2
17 Paper and paper products	100	21.5	7.8	68.7	0.0	1.9	9.3	13.6	10.2	8.1	-40.3	13.2
18 Printing and publishing	100	62.4	24.4	4.3	2.7	6.2	4.0	5.4	-1.5	17.4	12.8	10.0
31 Furniture	100	73.8	13.9	1.2	1.4	9.8	14.0	12.4	32.7	-1.8	-17.4	48.6
Other manufacturing	100	31.8	64.8	0.3	0.0	3.0	16.5	5.5	26.9	-6.0	-29.6	29.8
Non-classified	100	19.8	52.1	1.2	21.5	5.4	-5.8	-5.8	-0.2	-38.4	-8.5	4.7

Source: CEVES Staff calculations on Customs data

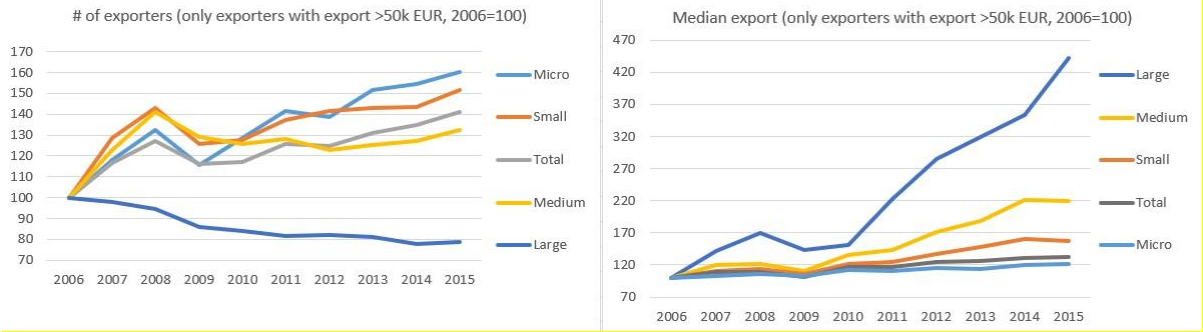
Table 4 Export Performance and Structure, by Size of Exporter (2009--2015)

	Total	Large	MSM	Medium	Small	Micro	Other	Total	Large	MSM	Medium	Small	Micro	Other
	Share (2015)							CAGR (2015/2019)						
Merchandise export (SORS)	100	55	43	23	11	9	3	12.3	14.8	9.5	11.0	9.2	6.5	14.3
A - Agriculture, forestry, and fishing	100	8	88	28	25	34	5	14.9	15.5	14.8	22.0	13.9	11.2	16.8
B - Mining	100	63	36	15	10	12	1	8.7	9.4	7.6	10.4	5.5	6.1	9.4
C - Manufacturing	100	58	39	23	10	7	3	12.2	15.0	8.8	10.2	8.4	4.9	14.0
High-technology	100	55	44	19	16	9	1	4.5	5.3	3.5	0.1	4.9	10.4	2.5
21 Basic pharmaceutical products	100	92	8	3	3	1	0	7.0	7.9	-0.8	-7.1	13.1	-4.9	11.5
26 Computer, electronic and optical products	100	18	80	34	28	18	2	2.3	-3.5	4.0	1.0	4.1	12.5	1.2
Medium-high-technology	100	72	25	14	7	5	2	20.6	27.2	10.5	10.4	10.9	10.4	8.2
20 Chemicals and chemical products	100	55	41	22	13	6	3	14.0	14.3	13.1	12.9	13.8	12.0	23.8
27 Electrical equipment	100	74	21	11	6	3	5	15.5	17.6	7.6	6.3	11.8	5.5	45.8
28 Machinery and equipment	100	46	50	22	17	11	4	13.3	16.3	10.9	14.8	8.5	8.2	13.1
29 Motor vehicles	100	87	12	8	2	2	1	38.5	51.4	16.5	16.2	13.1	22.0	-19.6
30 Other transport equipment	100	59	41	25	7	8	0	3.6	10.2	-2.0	-5.5	6.2	7.3	-23.9
Medium-low-technology	100	56	40	25	10	5	4	9.3	7.4	11.0	16.1	9.0	-0.2	29.5
19 Coke and refined petroleum products	100	68	32	17	14	1	0	23.0	21.4	27.1	32.2	32.2	-13.5	4.3
22 Rubber and plastic products	100	62	32	19	8	4	7	18.2	19.8	13.3	17.5	6.3	13.6	40.9
23 Other non-metallic mineral products	100	19	77	62	10	5	4	5.5	-8.6	12.5	15.5	5.2	1.0	13.7
24 Basic metals	100	67	31	20	6	5	2	3.2	1.6	6.9	22.4	2.6	-9.9	21.5
25 Fabricated metals products	100	38	58	33	16	9	4	12.0	10.9	12.1	10.4	16.4	12.1	24.3
33 Repair and installation of machinery and equipment														
Low-technology	100	44	54	34	12	8	2	9.4	10.6	8.3	8.8	8.6	6.0	12.6
10 Food products	100	44	55	31	14	11	1	8.6	13.7	5.4	3.1	9.3	8.5	18.3
11 Beverages	100	61	36	26	6	4	3	5.4	2.8	9.8	11.4	14.0	-0.1	41.1
12 Tobacco products	100	94	6	4	2	0	0	33.5	52.4	-7.8	-14.1	49.1	-18.4	8.8
13 Textile	100	27	71	55	11	5	2	19.2	44.5	15.0	17.3	7.3	13.0	7.3
14 Wearing apparel	100	59	38	26	6	6	3	3.7	2.0	6.3	11.8	-2.5	-0.7	8.8
15 Leather and related products	100	33	66	56	7	3	1	10.2	5.4	13.6	18.8	9.8	-11.6	1.5
16 Wood and products of wood	100	16	78	35	26	18	6	11.4	5.2	13.0	19.0	8.8	10.3	12.5
17 Paper and paper products	100	30	68	55	11	2	2	9.3	2.9	13.4	13.8	13.4	4.5	6.7
18 Printing and publishing	100	32	59	28	20	11	9	4.0	16.3	-0.6	-1.0	0.4	-1.2	10.8
31 Furniture	100	31	64	30	21	14	5	14.0	14.2	13.4	7.1	20.0	25.5	20.3
Other manufacturing	100	45	52	20	23	9	3	16.5	28.1	10.8	29.2	5.1	4.8	11.5
Non-classified	100	22	74	15	7	52	4	-5.8	-7.2	-5.5	-5.7	-18.8	-1.9	-2.9

Source: CEVES Staff calculations on Customs data

Most of export volume growth came from the growth of median exports of large companies, but with the possible exception of rubber products, **it is not yet clear that there are champions or clusters of competitive strength that would lead the economy into further acceleration.** On the right hand side of Graph 5, we can see the evolution of median exports for different groups of companies by size. Over the last decade, the median exports have increased significantly, and proportionally to company size: quadrupled for large companies, doubled for medium-sized ones, and increased by approximately 50% and 20% for small and micro companies, respectively. However, the value of only one 3-digit product exports is above a billion euro (automobiles), and only 13 are above 100 million—all of them below 400 million. No company is close to being an international giant. What is more, the described increase in average company exports size was also broadly spread so that in most of the 2-digit NACE industries the concentration of exports actually gently declined over the observed period. The share of exports of the three largest exporters declined and of the 25 largest exporters declined or remained unchanged in all sectors except automobiles and machinery and electrical equipment.

Graph 5 Evolution of Number of Exporters (left) and Median Exports (right) – by companies’ size (only for companies with exports larger than 50,000 EUR)



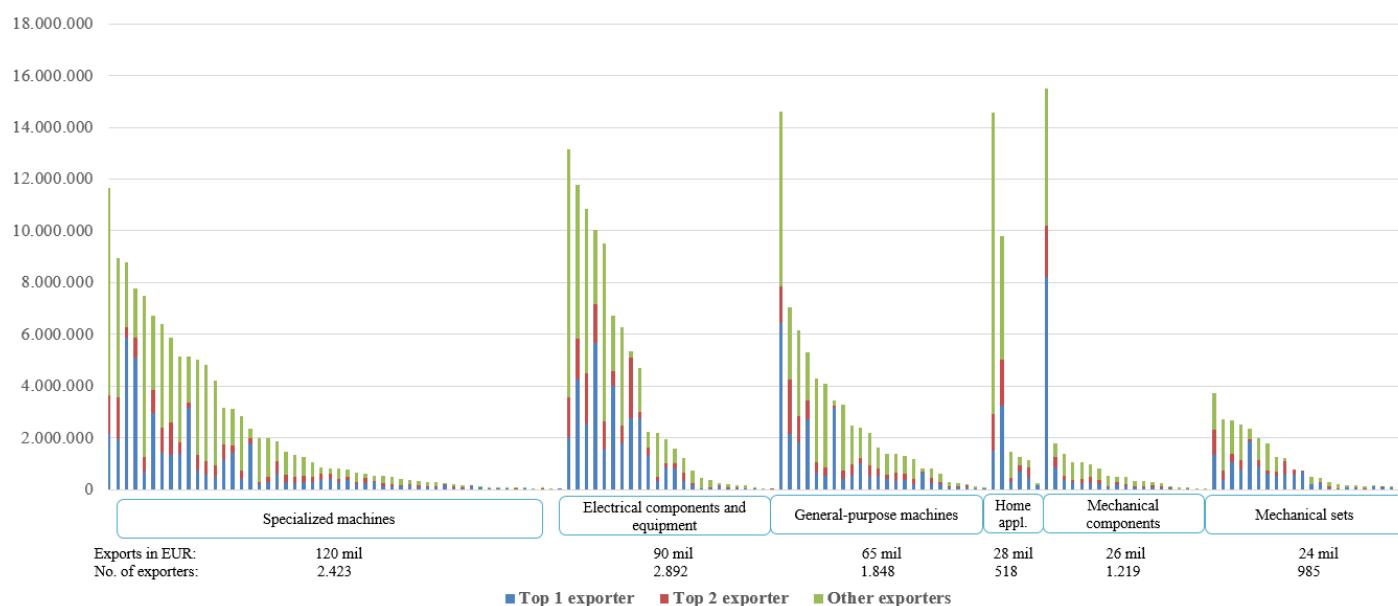
The pace of increase in the number of companies exporting more than 50 thousand EUR worth of merchandise has been inversely proportional to company size, with the number of large companies actually steadily declining – from 336 in 2006 to 265 in 2015—largely because of a decline in the number of exporting state-owned enterprises (SOE). On the other hand, the number of micro exporters increased by 60%, and small ones by 51%, and while their rate of growth appears sustained, it is slower than in the period up to the crisis. The number of medium-sized exporters suffered the longest, and is still below the 2008 peak, but appears to be recovering now.

The described dispersion is not an artifact of aggregation into sectors. Deeper probing shows that also within industries exporters tend to be dispersed across sub-sectors and products⁷. This is particularly true of exports by domestic *de novo* companies but also of foreign investment. For example, the exports of machines and electrical equipment by *de novo* domestic companies are strikingly broadly distributed across products at the 4-digit level of product aggregation, with usually two companies accounting for the bulk of the sectors’ exports. Graph 7 shows 149 product groups falling into machinery and electrical equipment and exported by *de novo* domestic companies, with the largest exporter of each product group marked in blue, second largest in red and the rest in green. Although exports are quite diversified across products, there

⁷ Unpublished study “Performance and Value Chain Analysis of Selected Sectors”, CEVES, 2017.

is a certain grouping -- the major share of exports is made up of specialized machines (36 %), electrical components and equipment (25 %) and general-purpose machines (17 %).

Graph 6 Diversification of De Novo Domestic Companies Exports of Machines and Electrical Equipment (Trade Firms Included), 2015⁸



There is also some suggestion of a clustering emerging in the production of customized machinery for the food industry and specialized machines for wrapping and filling (i.e. packaging), but this is not yet clear.

Another example can be seen in the exports of wood furniture which are largely driven by domestic *de novo* companies. Wood furniture exports are nearly evenly distributed between solid wood (24%), upholstered (20%) and panel (37%) furniture, but also quite evenly distributed across markets, with the SEE region comprising 50%, old EU member states 42%, and Russia and Kazakhstan 7%. With the exception of the regional market, all others show very strong rates of growth.

Larger foreign owned exporters tend to be distributed across rather different products within industries as well. The only significant exports of a product by more than one or two companies that has come to our attention are pneumatics (more than 360 mil EUR, exported by Michelin, Cooper and Mitas), and electrical cables for the electrical or automobile industry (more than 450 mil EUR, exported dominantly by Yura, Leoni, Draxlmaier, Tisza, PKC Wiring and Contitech). While the former likely reflects a particular competitive strength for Serbia (discussed in the next chapter), the latter is hard to gauge as the subsidies offered per employee in these sectors are likely to represent a relatively large share of total costs.

This dispersion of exports partly reflects the high degree of diversification of Serbia's economy before transition, but also a pattern of spontaneous and very gradual shifting of resources from the traditional to the new economy.

All too often chance, rather than a systematic process, provided for the rescuing of resources trapped in the otherwise gradually dissipating traditional sector. For reasons

⁸ Unpublished study "Performance and Value Chain Analysis of Selected Sectors", CEVES, 2017.

beyond the scope of this study, successful privatizations in the tradables sector, especially of larger systems, were few and sporadic. At no point in time, or within no industry or sub-sector, did Serbia become a „fashionable“ investor destination to attract interest from a multiplicity of similar companies. Subsidies to foreign investors have played an important part in attracting them, although successful privatizations have also happened by international companies that Serbian companies had cooperated with (including using technology licenses) before the 1990s (Michelin, Fiat) and with whom a link had not been completely severed by the early 2000s. Greenfields tended to happen because of previous knowledge of the market (Gorenje) or by chance, as is the case with Siemens who happened to obtain a small local plant in Subotica when it bought its much smaller German owner.

For some time now, foreign investors have been attracted with substantial subsidies. This process tends to be different and merits separate study.

For a domestic *de novo* company to develop, three elements needed to combine: production (technological) knowhow, a market opportunity, and entrepreneurship. We have observed that today's most successful *de novo* companies (generally exporters) surprisingly often hail from small shops established as suppliers of the traditional sector already in the 80s and especially during the trade embargo of the 1990s. Some developed as spin-offs of the traditional sector, where an individual or group of employees established a new company (usually with some access to the original company's assets). A third frequent channel has been when a distributor of an imported good began to produce and supply parts for the original producer, or locally, in competition with him. Production for exports typically developed after a company established itself domestically, and very often it started with exports into the region, and only then to more distant Western or Eastern destinations. Exports often start due to contacts established in fairs, but also a frequent link is through contacts with, or even intervention and active involvement of, individuals in the diaspora. However, we also observe relatively small domestic or foreign owned companies set up for exports, and often to supply a foreign buyer either from, or connected to, individuals in the diaspora.

It is **useful to put this recovery in the context of the complexity paradigm.**⁹ In this context, economic development can be seen as the accumulation of diverse kinds of capabilities (functional knowledge) embedded in individuals, organizations, and networks of organizations, interconnected with a web of linkages whose complexity increases with the growth of productive, i.e. income earning, power. „For a society to operate at a high level of total productive knowledge, individuals must know different things. Diversity of productive knowledge, however, is not enough. In order to put knowledge into productive use, societies need to reassemble these distributed bits through teams, organizations and markets.” (Housmann, Hidalgo et al. 2014, p. 7).

Under the complexity paradigm we can see the economic implosion associated with a transition recession as the breakup of statist organizations (both governmental and market) and the associated disassembly of a myriad capabilities¹⁰. Recovery under the new private market

⁹ This was given extensive treatment in RtP CEM, as well as in Atlas of Complexity, Hausmann, Hidalgo et al. 2014, <https://mitpress.mit.edu/books/atlas-economic-complexity>, and the technical aspects will not be repeated here.

¹⁰ Obviously, in post-communist societies, the knowledge and capabilities pertaining to the technological aspects of production are more advanced than those related to organization, and particularly market access and operation. In mainstream economics, where development is essentially viewed as the accumulation of capital, physical and

conditions can be represented as the reassembly and upgrading of productive knowledge into competitive privately run and owned systems.

However, with the passage of time this reassembly becomes more difficult as linkages to international partners and markets become lost, and as productive capabilities dissipate, especially with the aging and growing obsolescence of the unemployed skilled workforce. In this context, foreign investment helps development by reassembling resources, adding capital, and technological and managerial skills, and helping to build institutions supportive of markets. However, within this paradigm it also becomes clear that they too may be less able to help with the passage of time.

The availability of capabilities that are, however, dispersed and dissipating needs to be taken into account in designing industrial policies for Serbia. The policy ought to take into account the opportunities offered by the available disassembled and dispersed capabilities, particularly as these capabilities are dissipating with time. Second, these capabilities give a particular weight to the potential that may be harbored in Serbia's SME sector.

Comparative Sector Export Performance

Even though the strong export performance has been broad-based as described, some areas of apparent strength and others of weakness do emerge. However, before assessing individual sector competitiveness, both in this section, where we only “horse-race” the observed export performances, and in the next, where we consider the factors of competitiveness, it is important to take industrial organization into consideration. In a fully transformed economy, company size and market power would be the main aspects to consider—clearly, everything else equal, larger companies are likely to have better access to global resources and capital (although too much market power can result in lack of competitiveness). However, in Serbia the characteristics of ownership (“ownership type”), which are anyway closely associated with size, are probably even more important than size itself, because they are linked to access to resources as well as technology and know-how, over and beyond that determined by size. It matters greatly whether a sector is comprised of traditional sector companies still controlled by the state, traditional companies privatized to insiders, *de novo* companies built by domestic entrepreneurs, or by internationally well-established companies. While there are always exceptions, traditional sector companies are likely to struggle if they have not been privatized to international owners with access to markets and capital, both because of the political economic difficulties of restructuring state-owned or insider privatized companies, because they are likely to be loaded with heavy financial overhangs and because they are likely to have less access to global markets and technology. The performance of companies that have been privatized to less clearly well-established foreign owners, or in which domestic capital has taken full control from insiders, is less predictable¹¹.

human, as well as the acquisition of technology, and where market operation is a given—an economy in transition recession operates inside its production possibility frontier (PPF).

¹¹ In analyzing competitiveness we should also keep in mind the presence of a self-selection bias: well-established international companies entered sooner and more decisively where comparative advantages were clearer, on condition that the political-economic situation did not represent a barrier. The state and insiders, on the other hand, have been “stuck” with the more difficult cases.

The analysis is further complicated by the fact that large employers, generally foreign owned, are recipients of large investment subsidies, usually granted per new employee. We do not have data on this per company, so we have to be cautious in our interpretations.

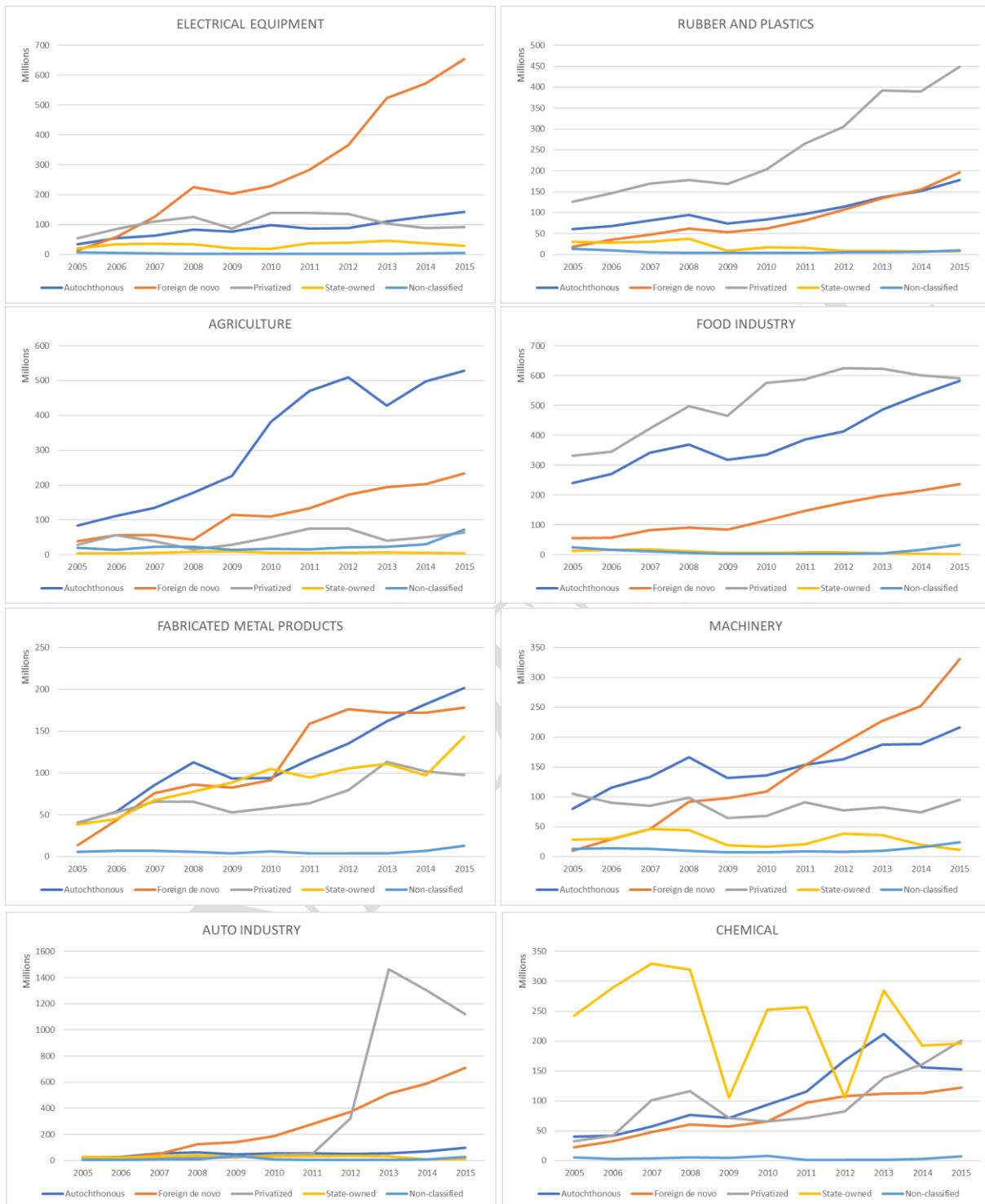
Hence, we do not only look at the competitiveness (how much an industry has gained market share) exhibited by an industry, but also the robustness of the competitiveness as measured by how sustained the export growth has been, and by whether both foreign and domestically owned companies show a strong performance. The majority of the sectors with large contributions to total export growth (4 p.p. or more) show robust competitive performance: electrical equipment - 8.2 p.p, rubber and plastics (R&P) - 6.5 p.p, the agribusiness sector (both agriculture - 6.2 p.p, and food - 6.9 p.p.), fabricated metal products (FMP) - 4.3 p.p, and machinery - 4 p.p. The performance for each of these sectors is shown in Graph 8 broken down by ownership type. Only in the case of the electrical equipment industry, which shows a very strong foreign company performance, domestic *de novo* companies show a somewhat weaker performance, but it nevertheless appears to be steadily recovering since 2011. Knowledge intensive market services, consisting mostly of professional services, and high-tech knowledge intensive services, consisting mostly of IT services, should also be mentioned in this group, contributing respectively 4.1 p.p. and 6.2 p.p.

The competitiveness of the two remaining sectors with large contributions to export growth—automobiles (21 p.p.) and chemicals (4.8 p.p.) is less clear cut. These are industries that depend heavily on single, probably subsidized, large companies, and they do not show a pattern of sustained export growth, as is shown on Graph 8. The automobile industry made by far the greatest contribution to the growth of exports thanks largely to the coming on line of FIAT's 500 model. However, these exports peaked in 2013, and have struggled since. The chemicals industry is heavily dependent on *Petrohemija* and its exports actually show an erratic performance, with the strong growth in 2009-2016 largely due to an exceptionally low base year.¹²

Among the remaining industries, a few are interesting given their relatively strong export performance and openness for new enterprise entry: apparel, wood processing, furniture production, and possibly paper and paper products. Also, although showing positive market gain, the performance of the two sectors classified as high-technology ones (pharmaceuticals, and computers, electronics and optical equipment) do not appear to hold much promise for the time being either.

¹² It is of utmost importance that the perspective and sustainability of both these sectors be better understood, and this should take into account the costs and benefits of securing their competitiveness. They merit investment into in-depth analyses engaging specific global expertise, far surpassing the scope and resources of this study.

Graph 7 The Export Performance of Sectors Broken Down by Ownership Type (2005-2015)



Source: CEVES Staff calculations based on Customs and SBRA data

Exports v. GDP (GVA)

Table 5 GVA and Contribution of Export to GVA of selected sectors

	GVA 2016		Trend		CAGR	Export as % of GVA	Export Growth (16/09) as % of GVA (09)	Net Export Growth (16/09) as % of GVA (09)
	mil RSD	%	1995-2016	2009-2016	2009-2016	2016		
GDP	4,261,927	100.0			0.7	50.2	30.5	9.3
GVA	3,511,003	82.4			0.9			
A - Agriculture, forestry, and fishing	276,387	6.5			1.3	42.8	23.4	14.4
C - Manufacturing	666,059	15.6			2.4	224.1	160.4	33.6
High-technology	27,372	0.6			-2.1	196.8	45.5	-126.6
21 Basic pharmaceutical products	13,207	0.3			-2.8	192.2	41.4	-129.2
26 Computer, electronic and optical products	14,165	0.3			-1.1	201.1	51.7	-122.8
Medium-high-technology	141,071	3.3			8.7	419.4	669.3	147.8
20 Chemicals and chemical products	44,512	1.0			8.8	208.6	361.3	-130.8
27 Electrical equipment	20,410	0.5			2.3	681.6	581.4	214.1
28 Machinery and equipment	28,907	0.7			3.0	279.0	240.7	-5.9
29 Motor vehicles	44,209	1.0			23.3	598.0	2,361.5	931.5
30 Other transport equipment	3,032	0.1			-7.3	481.6	3.6	-272.6
Medium-low-technology	206,086	4.8			3.7	186.2	105.4	28.1
19 Coke and refined petroleum products	39,264	0.9			13.5	68.6	39.3	-4.6
22 Rubber and plastic products	54,574	1.3			3.1	221.7	220.8	100.5
23 Other non-metallic mineral products	29,674	0.7			-4.5	63.5	21.0	-10.3
24 Basic metals	18,602	0.4			-16.8	677.5	192.7	-50.8
25 Fabricated metals products	54,269	1.3			1.8	167.5	107.5	52.9
33 Repair and installation of machinery and equ	9,702	0.2			10.4			
Low-technology	291,529	6.8			0.1	159.0	84.2	31.8
10 Food products	136,692	3.2			-0.3	134.3	63.7	32.8
11 Beverages	30,451	0.7			-3.5	70.6	12.8	-0.5
12 Tobacco products	9,651	0.2			-7.1	385.3	453.2	375.8
13 Textile	6,849	0.2			-0.6	297.5	228.3	-217.2
14 Wearing apparel	27,523	0.6			4.8	239.3	101.2	50.7
15 Leather and related products	8,311	0.2			-2.9	464.7	235.1	91.2
16 Wood and products of wood	16,050	0.4			0.7	153.0	103.6	87.7
17 Paper and paper products	19,195	0.5			1.6	204.4	137.6	-37.7
18 Printing and publishing	12,195	0.3			2.9	0.3	0.1	-0.3
31 Furniture	13,972	0.3			0.7	119.9	37.9	-20.3
Other manufacturing	10,641	0.2			6.8	148.9	130.0	92.7
B, D-F Other Industry and Construction*	433,469	10.2			-0.3	12.9	1.3	2.4
G-U Services	2,135,088	50.1			0.6	25.7	13.0	7.2
Knowledge intensive market services	158,172	3.7			1.4	75.6	39.7	8.9
High-tech knowledge intensive services	198,023	4.6			1.9	51.1	47.0	37.9
Knowledge intensive financial services	130,614	3.1			-2.0	4.3	1.1	4.3
Other knowledge intensive services	509,197	11.9			0.7	5.2	1.0	0.8
Less knowledge intensive market services	1,063,803	25.0			0.7	24.0	12.1	12.1
Other less knowledge intensive services	75,278	1.8			-0.5	0.0	0.0	0.0

Source: SORS

* B - Mining; D - Electricity, gas and steam; E - Water supply, sewerage, and waste management; F - Construction

Knowledge intensive market services -- Water transport, Air transport; Legal and accounting activities; Activities of head offices, management consultancy activities; Architectural and engineering activities, technical testing and analysis; Advertising and market research; Other professional, scientific and technical activities; Employment activities; Security and investigation activities;

High-tech knowledge intensive services -- Motion picture, video and television programme production, sound recording and music publishing activities; Programming and broadcasting activities; Telecommunications; computer programming, consultancy and related activities; Information service activities; Scientific research and development;

Knowledge intensive financial services -- Financial and insurance activities (section K)

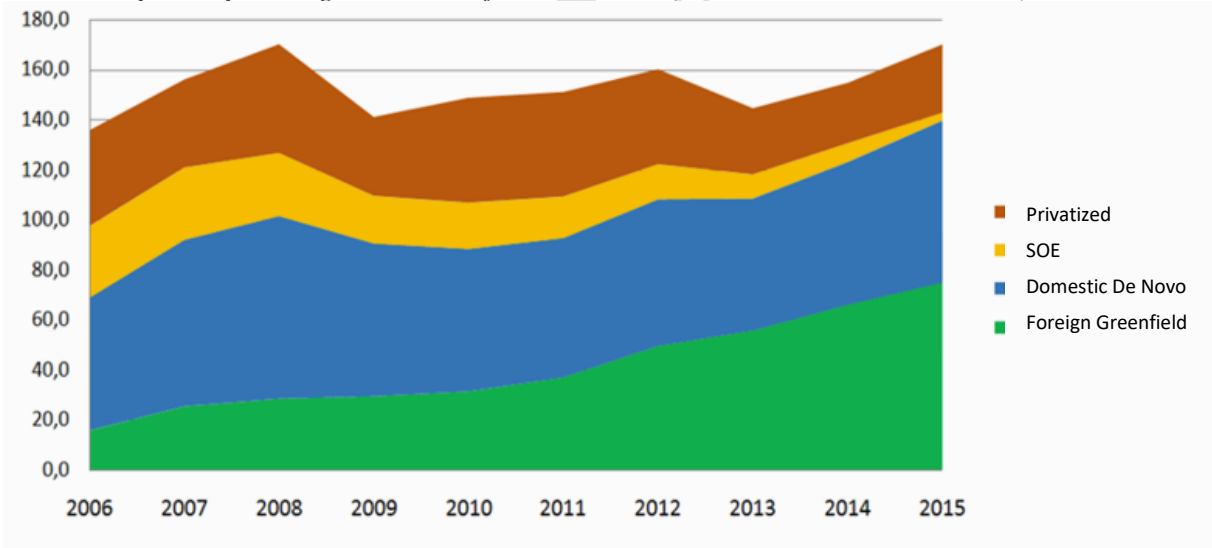
Other knowledge intensive services -- Publishing activities; Veterinary activities; Public administration and defence, compulsory social security (section O); Education (section P), Human health and social work activities (section Q); Arts, entertainment and recreation (section R).

Less knowledge intensive services -- Wholesale and retail trade; Repair of motor vehicles and motorcycles (section G); Land transport and transport via pipelines; Warehousing and support activities for transportation; Postal and courier activities; Accommodation and food service activities (section I); Real estate activities (section L); Rental and leasing activities; Travel agency, tour operator reservation service and related activities; Services to buildings and landscape activities; Office administrative, office support and other business support activities; Activities of membership organisation; Repair of computers and personal and household goods; Other personal service activities (section S); Activities of households as employers of domestic personnel; Undifferentiated goods- and services-producing activities of private households for own use (section T); Activities of extraterritorial organisations and bodies.

The post-crisis export performance appears as a tip of the economic iceberg—mostly a manifestation of the new economy, of its tradeable, and most competitive part. As is well known, total GDP growth performance has been much, much more subdued. Table 5 shows the GDP (GVA) performance of the economy by the same sectors of aggregation as those discussed for exports. This performance has been so much weaker for because of three factors.

1. One is, of course, that this is a period in which the economy has been undergoing structural adjustment. Those sectors that had thrived under domestic-demand led growth of until 2008, especially construction, transport and other domestically oriented services and industries severely shrunk in post-crisis period and do not, it appears, show clear signs of recovery.
2. The second factor is in the see-sawing but downward heading performance, ultimately demise, of the un-transformed traditional sector. Companies that were not fully shifted from state ownership or the “company under restructuring” limbo (with the exception of utilities, the armaments industry and some mines) into new hands have largely exited the economy. While this is barely visible in the structure of exports by ownership, because few state-owned enterprises (SOE) exported much at the beginning of the observed period anyway, we illustrate it in Graph 8 with the performance of the evolution of total revenues by ownership in the sectors of machines and electrical equipment. Clearly, originally state-owned companies declined from together contributing 16% of the revenues of the sector down to 3%.

Graph 8 Operating Revenues of M&E sector (constant 2015 RSD billion)



3. However, the third factor appears to be an incongruence between national account and foreign trade figures. The sort of growth of GDP shares of exports and net exports shown in Table 5 in many cases are hard to imagine, with as low growth rates of the GVA of the sector. This is an issue that merits further urgent attention. Hence, we de-emphasize GDP and sector value added figures in the remainder of this study.

Factors of Competitiveness, Selected Sectors

At this high level of aggregation, it is useful to start from the premise that fundamental to the competitiveness of any industry is the availability of necessary skills or unskilled workforce at competitive costs. Furthermore, depending on the industry, more, or less access to capital is needed, as well as to land or other specific resources, to global markets, and possibly also to a local ecosystem of support or intermediation services. Finally, infrastructure and public-sector services, as well as the regulatory environment also matter, but they have been amply dealt in other analyses and we do not treat them here.

However, whether a company has access and to what kinds of factors, and how much it is able to make of them, depends not only on the country environment, but also on the characteristics of the company, and especially, as discussed in Chapter IV, its size and ownership type. For simplicity, in further discussion we will by “foreign owned companies” refer to companies with the general characteristics of being owned by larger, well established international companies, and we will refer by “SMEs”, to companies facing all the limitations that these companies usually face and exacerbated by the absence of ownership linkages to globally positioned companies. Therefore, we can generalize that foreign companies have no difficulties with access to capital and global markets (including both to purchase inputs, or market their products), whereas for SMEs, both these factors represent major barriers and obstacles to the international expansion of their business.

The further discussion is therefore focused on skills, access to land and natural resources, known as well as a discussion of the niches found by SMEs, and the main challenges they face.

High Skills to Cost Ratio Overall (but barely so in competition with NMS)

The implosion of Serbia’s economy over the 1990s and the gradual but final demise of a large part of the traditional economy over the past fifteen years has lowered wages to levels substantially below the historical expectations and related living standard needs of its population. Serbia has one of the lowest (after BiH and Macedonia) employment rates in Europe, and while unemployment rates have come down (11.8%), in large part this is because of the growth of informal and other forms of precarious employment, as well as a rapid decline in working age population and permanently elevated levels of inactivity. Coping mechanisms have been developed at the level of households/families as wages from employment are complemented with pension and other government transfers to family members, as well as with revenues from assets (land and housing) which are relatively evenly and broadly distributed, and remittances and assistance from family abroad.

This means, first, that the quality and skills of Serbia’s labor force in general are higher than what would be expected at their cost, offering a general competitive advantage to its economy, that is furthermore particularly present in some profiles, but not all.

We first turn to the discussion of the availability of skills, including the paradoxical issue that key productive skills are simultaneously cited as the greatest competitive advantage and as a key limitation to the expansion of skill-intensive industries, then we discuss their productivity and costs. We can differentiate between four kinds of skills (as well as unskilled labor) relevant to most manufacturing industries: technology and engineering skills such as electrical, mechanical or material processing; skilled technicians/operators/craftmanship; process management of manufacturing, purchases, sales, inventory, quality control, etc., aimed at

maximizing resource and equipment utilization and minimizing costs; and, finally, skills linked to downstream value adding related to market penetration, development and branding.

The technology and technical knowledge that ex-socialist countries are best known for, generally plays the most important role in medium-high and medium-low technology industries, and this is confirmed by our research to date discussed below.¹³ We did not have the opportunity to explore Serbia's clearly weaker performance in the high-tech industries, but our hypothesis is that competitiveness in these industries requires a higher level of sophistication and much greater insertion in the global R&D ecosystem than Serbia's higher education and research institutions are able to provide. Moreover, to the extent that industries are oriented to broad consumer markets, whether they are high- or low- tech, they require massive know-how and resources in downstream (market development) activities, which in Serbia are in short supply.

The agribusiness sector is discussed separately, both because of its importance to Serbia and because at present it depends so heavily on access to fertile land. Finally, the performance of resource dependent industries other than food and agriculture and wood and furniture is beyond the scope of this study.

(a) Strong tradition of engineering and technical/craftmanship skills: available but not abundant

Our research strongly suggests that there is a field of strong engineering and technical skills in the mid-to-high and mid-to-low technology industries that underpins the evident competitiveness of at least the electrical, mechanical, metals, and rubber and plastics industries. In foreign and domestic companies interviewed in these industries, the skills, resourcefulness and flexibility of the engineering and technical staff are usually raised first as their main competitive advantage. However, at the same time, the availability of skilled labor is also one of the first issues to be raised when it comes to the limitations faced by these companies. We take these issues, and the paradox, in turn.

Knowledge, experience and resourcefulness in mechanical design and construction as well as metal processing are clearly an old tradition, and key to Serbia's competitiveness in the metals, and mechanical industries, but also in good measure to the success of the R&P industry.¹⁴ The latter's main comparative advantage, as has been underlined by many interlocutors, lies above all in excellent abilities when it comes to producing varied and sophisticated (metal) tools and equipment for the production of rubber and plastic products.

Mechanical, electrical and technology engineering education in Serbia is strong. While not as practical and applied as it would be desirable, it provides a very solid foundation so that experienced staff can then easily pass practical knowledge on. Hence, foreign companies are typically able to transfer production supervision and management to local staff soon after establishment. Companies producing products such as home appliances (Gorenje), wind generators (Siemens), engine parts (Albon/Agena), and pneumatics (Tigar Tyres) have either

¹³ The textile industry has a broad range of technologies, some of which can be considered high-tech and those do not appear to be in Serbia's portfolio.

¹⁴ Even within the overall broad diversification and relative similarity of the Yugoslav republics' structures, Serbia was preeminent among them in the production of food and rubber products, and it shared a top position with Slovenia as regards machines (but not electrical equipment and appliances), and with BiH as regards metal processing.

completed or are in the process of transferring to Serbia respectively product design and development (the first three), and injection molds construction (the later), and some now also do strategic sourcing from Serbia.

However, the advantage may be even stronger at the level of technicians and craftsmen. These skills largely refer to the capacity to creatively and if needed flexibly handle metal, produce metal tools, gears, and other parts used in the production of a variety of products—from R&P, through large constructions and parts used in the construction or heavy transport equipment industries, to conventional or automated mechanisms and machines. Foreign managers have commented that Serbian workers are able to go beyond the direct process they have been tasked with, to contribute creatively. The Micheline factory in Pirot is capable of introducing a new production line in a much shorter time than it takes its other global locations.¹⁵

It is also not unusual to find very small outfits (sometimes with less than 10 employees, most of them engineers), that are able to come up with niche design solutions to produce relatively demanding machines based entirely on sourced inputs, often imported from abroad. Some of them compete with global leaders. For example, using highly demanding mechanical engineering solutions, Stax from Čačak produces completely customized machines and systems for packaging paper products. Another example is Svetlost Teatar that has evolved from a combination of technical skills and the ability to handle sophisticated system implementation, which enables it to set up complex theatre installations across the world. On the other hand, there are also interesting domestic companies in the field electrical equipment, which as well base their competitiveness on knowledge and skills. For example, Buck offers turnkey solutions to certain specialized institutions (e.g. clean rooms) when it comes to illumination by both designing and installing sophisticated illumination systems using minimal energy, while Enel enables automation of various industrial machines and systems by manufacturing and setting up customized command and distribution cabinets. In fact, many (if not most) of the enterprises shown earlier in the Graph 7 produce items that require at least good technical skills, and often sophisticated engineering know-how.

The availability of high quality engineering know-how is also evident, in the strongly growing exports of IT and other professional services. We can assume that they share many of their characteristics with what we do know about small de novo technology oriented domestic companies, only they have the further advantage of needing very little capital to operate. An in-depth study of this area is very overdue.

(b) Low Mobility and “Sparsity” of Skilled Labor: Key to Advantage/Disadvantage Paradox

However, the availability of the above described skills is not plentiful. For nearly 30 years the large labor force trained in these skills in the traditional sector has been dissipating, and their experience has been losing relevance. The best way to describe the availability of such resources is that they have become “sparse”: there are well skilled people, but they are distributed over relatively wide territories. The advantage of their availability is that with time and investment, they can train others and increase the envelope of availability incomparably faster than a country developing such skills “from scratch”. We do observe that the majority of employers in these four industries everywhere appear to be systematically engaged in

¹⁵ We did not interview Micheline leadership, but this information has been confirmed by two different sources connected to the company.

training new labor. However, very large sophisticated operations cannot be set up or expanded in one location overnight.

In understanding this issue, it is important to take into account that the low (by historical expectation standards) wages keep internal labor mobility at extremely low levels, and especially for people with less than college education. People live and work as part of households with complex income structures. If they leave the household, they tend to leave the country altogether, as it is unlikely that they will be able to find work that pays enough for the establishment of a new household, particularly not at the beginning of a career.

Paradoxically, the lack of mobility may keep wages from raising. Employers can exert competitive pressure only on the wages of those offerors that would not need to relocate in order to work for the higher wage. Those are already employed by the company. Now, companies looking to expand are also relatively sparsely distributed, so many offering the skills have no buyer to offer them to either. Under such circumstances, Serbia's labor market should be viewed as a set of islands in which employer and employee engage in bilateral bargaining, while the unemployed or underemployed in other territories offer a reminder to those bargaining that they are lucky to have a job. In some areas, however, industry may be becoming sufficiently dense as to begin to resemble a competitive market.

(c) Deep Regional Differences in Labor/Industrial Structure – Need to be Better Understood

The result is a deep differentiation in regional labor conditions that needs to be given further detailed analytical attention. We do observe substantial regional differences in the density of employment of certain kinds, and while wages tend to be higher where there are larger numbers of employers, also the supply of new skilled labor seems to be growing faster there. In particular, there are indications that where a certain density of quality employers has been reached, the likelihood of better vocation school engagement and greater student interest in learning is also higher.

(d) Process Management and Downstream Activities Skills: A Competitive Disadvantage

Process-management skills -- ensuring that products reliably meet required standards, that the necessary inputs are supplied on time, that production is organized efficiently, with minimal use of resources or standing time of capital equipment, and that the business is run smoothly overall -- are indispensable for international competitiveness. In fact, it is these skills and other environmental factors that raise the productivity of the otherwise highly qualified technical staff to acceptable standards, per unit cost, or not. As mentioned, however, these skills are in short supply in Serbia's imploded and obsolete economy. Foreign employers report that they generally need to make initial investments in building mid-management capacity, and they often bring experienced Serbian-speakers from the diaspora. This weakness goes relatively deep because management schools, although numerous, do not offer adequately trained graduates. This problem is a much more serious obstacle to the growth and development of SME than of foreign companies, as SMEs lack resources to train or source mid-management from abroad.

(e) Market Penetration and Development Skills—A Competitive Disadvantage

When it come to downstream activities – understanding and adjusting to consumer preferences, penetrating and developing the market, developing a brand, these activities require both sophisticated skills and substantial investment of capital in building accumulated knowledge and global connections. Skilled professionals in these areas in Serbia are only gradually developing. When producing for the international market, foreign investors tend to keep those operations in their headquarters. For domestic producers, however, the absence of these skills in Serbia, and the high cost of developing them, are a major obstacle in the internationalization of consumer goods. It is even questionable how many of these producers even understand that their productivity and earnings could be substantially increased if investments were to be made in downstream activities.

While a producer of specialized machines may be able to simply prove its capabilities to potential customers, producers of consumer goods deal with an unknown and uninformed customer. In the furniture industry, for example, designing to market can raise value added by 30% and branding can add another 40%. We can only imagine how much could Serbia's raspberry export revenues be increased with adequate marketing and branding, but as we discuss below, this would first require a major integration of the downstream functions in the raspberry value chain.

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(f) *Low Labor Costs Make up for Lower Productivity, Barely*

The level of wages overall and by skill type can be compared between Serbia and other European countries in Table 6.¹⁶ It can also be seen that wages in Serbia are even quite large when compared to GDP per capita, as this ratio is bigger than for an average EU country (especially for a category of Professionals).

Table 6 Mean Annual Earnings of Various Categories of Staff in Industry – Serbia and other European Countries (EUR)

	GDP pc	Total	Managers	Professionals	Technicians	Clerical support workers	Service and sales workers	Skilled manual workers	Machine operators	Elementary occupations
Switzerland	65.300	71.403	112.029	90.188	75.905	62.803	68.618	61.425	60.924	57.826
Norway	73.300	66.373	106.492	89.306	76.381	56.068	54.331	54.957	57.619	49.436
Denmark	47.100	63.934	103.508	84.881	64.835	52.162	55.648	52.005	50.686	50.138
Ireland	42.200	49.264	73.295	66.549	55.524	38.803	38.737	43.132	42.598	37.136
Netherlands	39.300	49.112	85.051	62.374	54.437	42.370	38.394	36.902	37.387	30.940
Finland	37.600	48.447	101.523	65.208	50.508	38.948	38.581	40.066	40.617	38.123
Belgium	35.800	48.360	94.503	65.486	51.664	44.703	40.699	39.824	40.947	36.440
Germany	36.200	47.526	106.435	76.585	57.067	40.639	31.614	37.995	37.948	30.395
Sweden	44.600	46.548	78.047	59.376	49.815	38.857	38.181	39.425	39.123	34.354
Luxembourg	89.500	46.312	124.866	80.966	60.163	42.445	35.972	39.367	41.904	32.874
Iceland	39.800	45.433	79.763	61.777	47.155	37.181	35.018	42.729	38.513	33.066
Austria	39.000	44.772	101.099	68.260	55.110	41.322	36.577	37.791	38.630	31.929
United Kingdom	35.300	42.323	70.670	53.842	41.664	29.013	30.837	33.708	30.515	27.829
France	32.400	38.311	76.774	63.155	39.333	29.742	25.876	28.717	28.930	24.785
Italy	26.700	35.829	124.231	49.623	40.062	34.100	36.904	29.715	29.691	27.593
EU 28	27.600	33.416	67.296	52.883	40.844	31.655	23.527	26.059	24.607	18.753
Spain	22.300	30.022	64.625	44.320	36.228	26.901	23.183	25.771	26.027	20.930
Greece	16.400	23.624	53.657	32.237	27.679	20.460	19.954	22.724	22.207	16.850
Cyprus	20.700	21.716	51.762	31.911	27.177	18.059		20.482	21.590	15.606
Slovenia	18.200	21.702	48.217	34.671	26.045	20.348	18.323	18.065	18.082	15.116
Malta	19.800	19.901	40.208	29.009	22.254	16.383	15.962	17.654	17.378	14.073
Portugal	16.600	14.105	41.572	30.283	19.969	14.020	13.123	11.173	10.866	9.742
Estonia	15.000	13.850	25.837	21.660	15.763	12.525	8.634	12.170	11.728	9.731
Czech Republic	14.900	12.245	28.886	19.402	14.203	10.820	7.944	10.343	10.058	7.942
Slovakia	14.000	12.161	29.144	18.430	14.134	10.896	8.806	10.250	9.968	7.449
Poland	10.700	11.340	24.477	15.924	12.943	9.651	7.048	9.504	9.944	7.342
Croatia	10.200	11.137	27.184	20.691	13.398	11.558	8.922	9.383	9.760	7.774
Latvia	11.900	10.130	16.366	14.123	11.435	9.004	6.524	8.948	8.784	7.017
Hungary	10.700	10.006	25.880	19.843	12.244	9.230	8.658	8.005	7.890	5.797
Lithuania	12.500	8.928	17.316	11.550	9.680	7.702	5.601	7.587	8.026	5.599
Serbia	4.700	6.637	11.163	11.363	8.295	6.347	5.406	5.885	6.254	5.103
Romania	7.500	6.217	15.998	10.431	8.064	5.898	3.783	5.572	5.569	3.769
Macedonia	4.100	5.998	12.610	9.182	7.514	6.022	4.758	4.631	4.649	4.148
Bulgaria	5.900	5.366	12.461	9.203	7.576	4.701	3.093	4.796	4.659	3.223

Source: Eurostat Structure of earnings survey (2014)

Three observations can be made. Among the countries shown, only Romania, Macedonia and Bulgaria have a lower overall wage level than Serbia (but Bosnia and Herzegovina, Albania and Montenegro are not shown). Second, the competitiveness of wages is proportional to the level of skill: salaries of highly educated staff in EU countries are higher by a larger factor than the salaries of mid- and low- skilled staff. For example, average wages of managers in the EU28 are higher than in Serbia by a factor of 6.02, those of technical experts by a factor of 4.92, those of machine operators by a factor of 3.93, and those of low- and un-skilled workers by a factor of only 3.67 times. This proportionality is likely to reflect a few factors: the relative abundance of more skilled employees, the fact that there is a natural floor to salaries set by the historical expectations mentioned above as well as a reservation wage of the unskilled probably set by alternative income sources (principally agriculture and agriculture and remittances). It is

¹⁶ Source: Eurostat (Structure of Earnings 2014, for the whole Industry Sector).

interesting, however, that compared to Serbia's immediate competitors Romania, Macedonia and Bulgaria, wages of all skill levels and profiles are in fact higher (and substantial higher in the case of unskilled and highly skilled employees) and lower only in the case of managers. This merits further exploration

Of course, good skills at low cost are not enough to ensure competitiveness—the productivity of labor needs to be high enough to justify the costs. However, comparisons of productivity need to be made very carefully. In some cases, for example in consumer goods industries such as furniture, or apparel, it is possible to produce functionally similar products in a very broad range of quality, design, and ultimately price/cost. Moreover, it may be necessary to also control for capital equipment and other costs.

Nevertheless, most of the products exported by the mid-high or mid-low technology industries do not have much of a quality and reliability range. In these industries, an “engineering hour”, or an “hour of CNC machining” is a cost input assumed of standard quality and productivity internationally. In other words, a company will be contracted to produce products consuming an assumed number of engineering and operator hours, and paid for those. If, instead, they need more time—this will reduce the effective wage and profit, not the contracted hourly price. We are told that the mechanical/electrical „engineer-hour” in Serbia ranges around 25 EUR per hour, only somewhat lower than the engineer-hour in Poland and Croatia, marginally lower than in Romania and possibly higher than in Bulgaria. This compares with 100 EUR in Germany and US\$125 in the US. An hour of CNC machining, which includes the operator's and programmer's wages as well as the amortization of the machine costs about 20 EUR (depending on the sophistication of the machine and operation), well under half of the cost in advanced Europe. One global company producing electrical equipment estimates that outsourcing production to Serbia is about 30% cheaper overall than outsourcing to China. They do not estimate there is a significant cost or productivity difference between northern Vojvodina and Southern Hungary. Another international company considers that inputs in Serbia are somewhat cheaper, to make up for the extra costs of doing business in Serbia.

There appears to be more evidence in support of the latter view: in the analyzed industries overall employee costs tend to be somewhat lower in Serbia than in NMS competitors but not much—just enough to make allowances for the costs imposed by the more unpredictable business environment. Moreover, employees are typically less paid in the case of even the best domestically owned companies compared to foreign ones, making allowances for *de facto* lower overall system productivity in these companies.

Average industry productivity, measured in terms of value added per unit of employee costs is not a very reliable measure for the reasons listed above. However, it merits mention that in the case of the fast-growing rubber and plastics industry, Serbia is among the top European countries.

The Competitiveness of Foreign Companies

The sustained strong export performance exhibited by a large proportion of the foreign owned companies in Serbia suggests their operations are profitable. However, as is well known, large investors in Serbia are recipients of substantial explicit subsidies and other investment incentives. This opens the important question of the underlying competitiveness of these industries—would they be sustainably competitive in the absence of subsidies?

A reliable empirical answer to this question requires detailed research and access to data on the subsidies which we do not presently have. Moreover, the answer may be different for different kinds of industries. In the case of the medium-high and medium-low technology industries that have been researched in depth we have strong reasons to believe that those that have been transferring more sophisticated parts of their operations (most of those interviewed) would also be competitive if and when the subsidies were removed. For one thing, Siemens, a company with some of the largest operations, has made it its choice not to take subsidies in the first place. Second, these companies have been making substantial capital and know-how development investments that are likely to go well beyond the value of the subsidies. It is useful to think of the subsidies in these cases as the compensation for new employee training—investment in human capital that later pays off long term, and it can be considered justified that the Serbian state covers these costs for lack of providing such training as part of the guaranteed education system.

Nevertheless, the situation could be different with investments in production that is largely based on unskilled labor and relatively unsophisticated capital equipment, as is the case in the production of electrical cables, and most apparel. We have not had the opportunity to research such examples. However, clearly in such cases the risk is greater that part of the subsidy did not go into sunk costs (there is little need for investment in human and physical capital), and that it rather operates as a current wage subsidy, distorting the competitiveness of the ongoing operation. Moreover, as wages at the low end of the skill scale are relatively less competitive, it could easily be the case that without the subsidy the industry would not be competitive at all.

Med-Tech Level Niches Found by Domestic SMEs

SMEs are highly unlikely to be able to secure the capital needed to invest in capital equipment and upstream and downstream market development activities that are needed to start large-scale production. They are also very likely to lack access to global markets, especially where reputation and branding plays an important signaling role, and they are more likely not only to lack the capital but also the knowledge/skills/connections necessary to build this access. Finally, they are very likely to lack the knowledge necessary to scale up production when/if the opportunity arises. (Knowledge here refers not only to technology, but to process management and corporate governance. The latter often are the bigger obstacles.)

Nevertheless, Serbian SMEs have obviously been able to increasingly find production niches for international markets. We have observed two kinds of situations. One is where the product needed is in its entirety or in a substantial part adapted to the needs of a single customer: made to order, or customized. The other possibility is that scale matters relatively less for costs than aspects of product differentiation (quality, design, branding) that allow for substantial cost reduction and competing on price. Of course, a particular and very important case of the latter is in Serbia's production of food, especially fruits and vegetables, which is overwhelmingly by small producers both at the farm and processing levels. This is discussed separately in the discussion of land.

In the first case, a product of “international quality” requires some adaptation and customization to the individual needs of the buyer, and this can be done by the much cheaper yet qualified local labor. Examples of this kind of circumstance are: in the plastics industry--the subsector producing wrapping and packaging, especially for the domestic food industry; in the mechanical and electrical industries--cooling and refrigeration equipment which is used in most

industries but needs to be adapted to the specific premise layout or product characteristics, or lifting and transporting equipment, or electrical installations. This is particularly frequent in demand for packaging consumer products, as the mentioned case of Stax exemplifies. The champion among these examples is in metal processing: the production of customized metal tools for different industries, i.e. tools that are specially made for different manufacturing purposes.

Table 7 summarizes the relative importance of all the mentioned success factors for large-scale versus small-scale or customized production, as well as availability of these factors to large vs. MSM enterprises.

Table 7 Key Factors of Success for Large- and Small-Scale Production v. Access to Factors by Company Size

	FACTOR RELEVANCE		FACTOR ACCESSIBILITY	
	Series size		Company size	
	Large series	Small series and individual	Large companies	MSM companies
Capital	+	-	+	-
Access to global supply sources and networks	+	-/+	+	-
Capacity for integrated process management	+	-/+	+	-
Work&knowledge, experience, skills				
Engineers				
Process management and design	+	+/-	+	-
Product design and elaboration	+	+	+	+
Product manufacturing technology design	+	+/-	+	+
Operators				
Highly qualified operators of high-tech processes and assembly (CNC, etc.)	-	+	+	+
Qualified operators in processes and assembly	-/+	+/-	+	+
Unqualified laborers*	+	-	-/+	-/+
Energy	+	+/-	+/-	+/-
Proximity to buyer	-	+	-	+
Inclusion in global sales and distribution network	+	-	+	-

Clearly, a company producing a product to a specific customer's specifications, such as machines designed to produce or package specific parts or products, needs to use incomparably more engineering and technical labor per unit of output than if it were producing it in large scale. The parts can to a large extent be sourced out, and therefore relatively little capital equipment may be needed, although typically the company will have some in-house parts production capacity, or a closely collaborating supplier producing some basic parts for it, specific to the company's solutions. At the same time, when a small domestic company has the necessary capabilities to make parts or machines for a foreign buyer, it is extremely important for it that its set-up be flexible, and that its operations be close enough to the customer (physically and culturally) because this kind of customer service requires close collaboration. These are advantages that favor Serbia's SME companies.

At the other extreme is the production of mass produced goods—in which as many parts and procedures have been standardized so that production can be highly automated. In large scale production, engineering knowledge is invested in the product and production process design stage. This production is for the unknown buyer, for the retail store shelf. Capital needs to be invested to study the requirements of the buyer ahead of time. Capital is furthermore invested in the design both of the product and of the production process, so that it later can be mass produced meeting the desired standards of reliability and quality with as little expense on expensive engineering and technical knowledge as possible. There is no room for mistakes. Foreign companies usually conduct these preparatory stages in their home countries. After that, production can be organized largely by process management experts (of the kind that are in short supply in Serbia) and relatively few engineers, employing low-skilled labor in countries where it is cheaper. Serbia's low-skilled labor is of course more inexpensive than in most European countries, but in relative terms, it is less inexpensive (as shown in Table 6) than more highly skilled labor.

Of course, many products are not fully produced to customer specification, but neither are fully standardized and mass produced. Many products require some customization and adaptation, before a medium- or large-size series is produced. That sort of production will require some of the characteristics of both described extremes. And it is in the production of these kinds of products that Serbia stands to benefit the most from foreign investment. For, the investor will engage and develop a technically trained workforce, but also transfer process management and large market access know-how.

Domestic SMEs have also been able to compete with global companies in low-tech consumer goods, from food, through clothing, paper, furniture—in which a product can be made to serve a function at lower cost because of lower quality standards, design and/or branding than international ones. Such goods may also be somewhat protected by transport costs (as is partly the case with plastics and furniture). These producers, especially if they rely on local brand loyalty, or local intermediation networks that are too costly to penetrate for foreign competitors, have been able to establish themselves firmly within the country and the CEFTA region. However, further internationalization is likely to be a challenge. It is in this context that the already mentioned case of the wood furniture industry is interesting. This furniture tends to be produced with little or no investment in design, little investment in downstream activities, and it competes on solid quality in the low-price niche. Functionally undistinguishable furniture can differ in price manyfold. However, it remains to be seen whether these exports can continue

to expand more substantially without specialization and some kind of SME integration, or intermediation, that would facilitate downstream activity development.

Land, Plentiful but Fragmented and Hard to Access

Access to land, be it for industrial development, agriculture, or forestry, or for mineral resources is much more limited in Serbia than is recognized in the usual policy discourse, and our investigation has persuaded us this is a serious obstacle to competitiveness and growth. Significant portions of the total agricultural land are under central government ownership, and partially disposed of by local governments. Moreover, significant portions are under the ownership of public utilities. Access to this land is often not transparently decided, nor is it efficiently used. Furthermore, a significant portion of the land developed for industrial use in pre-transition times has been taken out of function by protracted bankruptcy and other ownership resolution procedures that affect an all too large portion of the traditional economy. New entrepreneurs report difficulties in expanding their operations, even when often they may have a functionally adequate piece of industrial land next door. In the remainder of this section we focus on issues of agricultural land, but we emphasize that for Serbia's competitiveness all aspects of land and public property accessibility need to be urgently better understood and reformed.

Serbia's greatest traditional comparative advantage lies in its favorable climatic conditions, and plentiful, naturally fertile, arable land. The country has been an exporter of agricultural products-- meat, fruit and grain--since the XIX century. Today its considerable agricultural potential is evident in that it is among top 10 European net exporters of agricultural and food products.

Box 1. Structure of Land Ownership

There are two kinds of agricultural environment in Serbia. One is Vojvodina's, a flatland with 1.83 mil ha of arable land (by comparison, the Netherlands has around 1.1 mil ha) whose soil, overwhelmingly consisting of chernozem, and moderate continental climate offer ideal conditions for both large-scale and intensive agriculture, throughout a wide range of products. The other is Serbia south of the Sava river, with 2.03 ha of arable land mostly on hilly terrain. Land ownership in both these regions is fragmented, not only because the average landholding is small, measuring on average only 6ha, but also because each hectare is further divided into a couple of non-contiguous land plots. The fragmentation is much higher south of the Sava, generally making this land appropriate mainly for fruit production, intensive cattle herding, and extensive cattle herding on mountainous terrain.

A deeper analysis of the fragmentation of land in Serbia is out of the scope of this study, but industrial policy should be designed in the light of the low likelihood that structural and political economic barriers can be overcome to significantly unify and enlarge landholdings currently in private ownership.

It should be noted that until recently foreigners were not allowed to purchase agricultural land in Serbia. Had this possibility been opened up earlier, it would probably not have made a substantial difference—as land of significant size is hard to come by.

However, much of the arable land lies uncultivated (11% in total, out of which 80% south of Vojvodina), the average yields per ha of cultivated land are low (37% lower than the EU average, for the same product portfolio) and the assortment of products is relatively low-value, and/or with low value added down the value chain. The fundamental reasons for this are the very high fragmentation of both primary production and processing, with much of this fragmented chain operating in the traditional, subsistence, rather than commercialized realm. A trade intermediation network capable of effectively integrating this fragmented structure has not developed yet, or is only gradually developing. Yet, without more effective channels of product collection from producers, and its distribution to markets, it is hard to imagine the transformation of Serbia's agribusiness from a supply-driven to a demand-driven industry. It is even harder to imagine the proactive positioning in international markets.

Approximately 30-50% of food production (depending on type of food) is consumed in kind or commercialized through green or informal markets. This food can be safely assumed to be produced by traditional methods. Traditional farming is gradually being modernized and commercialized, as evidenced, for example, by the fact that a growing proportion of the meat produced comes from slaughterhouses, and from larger animals¹⁷. However, the modernization process is substantially held back by the fragmentation of land, and the fact that many of the small holdings are held by households that have neither the means nor clear motivation to upgrade their operations, as their work is based on what we call "marginal labor". This refers to labor invested by households usually to produce fruit to complement other sources of income. This is a complementary, and often rather comfortable, source of income. However, the income and the land size and family structure are not necessarily conducive to transforming these activities into larger scale commercial undertakings (not least, labor that would be hired for this work is in fact rather expensive).

Conquering the Downstream Value Chain Segment: Key Challenge for SMEs

Finally, key questions for the long-term growth of industries that are currently recovering based on SME growth is that SMEs individually do not have the capacity to position themselves on the global market. This is less of an issue in the case of customized production, where SMEs aim to reach global customers one by one, although even for them it would be far more desirable to work together in presenting their industry's capacity. However, in the case of Serbia's food industry, especially fruits and the large mass of frozen raspberries produced by 80 thousand households and exported by some 200 companies—this is a major case in point.

Without all these producers and intermediaries organizing their collective action one way or another, Serbia cannot strategically direct its production and marketing of fruit. Instead, it entirely depends on the vagaries of the market, and the risk that some other more organized country of producers will displace it. The situation is very similar, if less extreme, with Serbia's producers of wood furniture, and the fashion industry. Both industries are successfully internationalizing, more so in the region but also elsewhere. However—in their cases even more than in the case of fruits and vegetables, the absence of domestic or foreign wholesale intermediaries that would be specialized in performing an intermediation function and therefore able to consolidate and position the industry on global markets is striking.

¹⁷ As the country has tended to autarky in meat production, for reasons explained in the relevant chapter, and as the population of Serbia is declining, this means that the number of cattle has been declining even faster.

Given that there is also very little in the way of direct collaboration, let alone clustering, of producers in their approach to their companies' medium- to long-term strategies, these industries for the time being remain limited to reacting and surviving on the global market. A more proactive positioning and marketing would require organized and dedicated champions—most probably a collaboration of domestic and international organizations/companies.

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