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FOREIGN TRADE MULTIPLIER OF SERBIA

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Abstract. *The adequate concept of Serbia foreign trade multiplier represents the key to the future growth and the overcome of loaded pay-balance issues. The possibility of multiplying effect of export growth on gross national income is still pressed by numerous limitations, whereas the successful solution of the problem of insufficient current transactions requires synchronized application of proper export policy and the effort to bring the import round to the rational level. This paper analyses the current effects of foreign trade multiplier in Serbia and it indicates the possible ways of improving its positive effects.*

Key Words: *Foreign trade multiplier, export, import.*

In the contemporary conditions of the openness of national economies and their constant competing, it is being constantly emphasized how important the export in each commerce is. Namely, the growth of export influences the increase of aggregate demand and thus triggers the process of multiplying effects that lead to the increase of balanced income. In terms of commerce growth and external balance, it is very important to have foreign demand for the country's goods. It is very important to stress the difference in the output on the domestic and foreign markets. That is why there is a trend in every country to create stimulative measures and persistent export increase methods. Insufficient export, which is not competitive, is a burning issue in our country. Each year is marked by the deficit in the current transactions and this is threatening to macroeconomic stability, thus causing payment and balance crisis. A more rational approach to the import activities and efficient mechanisms of export stimulations is thus seen as inevitable.

The concept of foreign trade multiplier explains the influence of export on the multilevel income increase in particular national economy. Applying the foreign trade multiplier formula and the analysis of export growth influence on national income, requires

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previously defining the size of marginal propensity to save, to consume and to import. The key to calculating these measures are the data about the distribution of gross domestic product. The following table represents the fluctuation of Serbia gross domestic product, divided in years, as well as the fluctuation of most important aggregates on both offer and use. What we can conclude from the chart is the low level of saving in our country, which is understandable, since our income is rather low. Also, the import, over the years, is twice the export. The latest available data about use of GDP of Serbia are for 2007, however, it does not subtend analysis of foreign – trade multiplier's effects and does not operate on actuality of derived results.

Table 1 Gross domestic product (GDP) of Serbia and use of GDP for the period 2000 - 2007 (in bln. RSD)

	2000	2001	2002	2003	2004	2005	2006	2007
Gross domestic product	384.23	762.19	972.90	1133.03	1384.25	1687.83	1980.23	2362.85
Consumption	326.64	695.55	916.79	1018.83	1207.91	1475.84	1725.02	2003.92
- govornment sector	34.08	70.10	105.76	124.31	155.23	194.83	232.32	289.87
- households sector	292.56	625.45	811.03	894.52	1052.68	1281.01	1492.69	1714.04
Saving	57.59	66.64	56.11	114.2	176.34	211.99	255.21	312.77
Gross fixed capital formation	448.84	81.29	120.50	188.87	265.71	319.86	412.75	552.27
Import	664.73	323.64	415.77	495.61	726.43	834.49	1036.86	1285.83

Source: *Statistical office of the Republic of Serbia,* www.statserb.sr.gov.yu

Empirical research showed that reaching a particular development level and particular national income lowers the marginal propensity to import (m), which indicates less significance of foreign trade within the sector commerce structure. In such a way the USA, a big country rich in resources, with developed and diverse offer, depend less on international exchange, the result of which is a rather low marginal propensity to import in the States in comparison with other countries. In the USA m equals 0.27, in Germany it is 0.50, in Great Britain it is 0.64. It is only Japan where, of all G 7 members, the level of m is lower than it is in the USA. [2, pp. 8-9] It is because Japan mostly imports raw materials and they spend their income on domestic production, not on import.

The sole fact that above mentioned countries are more developed than ours and gross domestic product is lower in Serbia brings up the conclusion that the marginal propensity to import in Serbia is greater compared to above mentioned countries. If we take into account the changing of import and changing of national income for a chosen year (2007), with realistic data (export in 2007. valued at 1285.83 bln. RSD, and in 2006. 1036.86 bln. RSD, giving ΔM = 248.97 mlrd. RSD; Gross National Income in 2007 was 2363.85.RSD, and in 2006. 1980.23 bln. RSD, so that ΔY = 382.62 bln. RSD), we come to the value of marginal propensity to import:

$$m = \Delta M/\Delta Y = (M_{2006} - M_{2007})/(Y_{2006}-Y_{2007}) = 248.97/\ 382.62 = = 0.66 \sim 0.7$$

This value will later be used in analyzing the effects of foreign trade multiplier, assuming that the value is acceptable for our country. Thus, we have to bear in mind the fact that this value has been calculated according to a single year data and that it can vary from one year to another, whereas the same calculations in developed countries use complex econometric modules and long-term database.

Starting with the real values of savings and gross national income for the chosen year (2007) [6], we can calculate the marginal propensity to save:

$$m = \Delta S/\Delta Y = (S_{2006} - S_{2007})/(Y_{2006}-Y_{2007}) = 57.56/\ 382.62 = 0.14 \sim 0.1$$

This value will be accepted in further analysis as a sample value for our country. Parameter of 0.1 in value is acceptable and understandable, due to the low level of income and the fact that most of it goes on consumption.

Since the sum of marginal propensity to save, to consume (c) and import has to be one according to the definition, the marginal propensity to consume in Serbia used for further calculation of foreign trade multiplier will be:

$$c = 1 - m - s = 1 - 0,7 - 0,1 = 0,2$$

Application of multiplier formula (k_A) on the example of Serbia provides the insight into the current state, and moreover points at several useful conclusions regarding possible traits of improving foreign trade policy. In order to provide comparison in analyzing process, foreign trade relations of Serbia with the countries of the similar level and with the more developed countries have been taken into consideration. However, this division on developed and same level countries should not be taken for granted. In analysis of the foreign trade multiplier effect we use all the marginal propensity to save, to consume and to import calculated in our country (c=0,2; s=0,1; m=0,7).

The first case analyses the effects of autonomous export growth of a hundred monetary units per national income and deficiency in current balance, where the export has been conducted with a country of almost equal development level. The results gained are presented in the following table.

Table 2 Effects of autonomous export of Serbia to countries of similar development level

	Serbia (A)							**Country that has a similar level of development (B)**						
	ΔC	**ΔS**	**ΔM**	**(ind.) ΔX**	**(aut.) ΔX**	**Δ (X-M)**	**ΔY**	**ΔC**	**ΔS**	**(ind.) ΔM**	**(ind.) ΔX**	**(aut.) ΔM**	**Δ (X-M)**	**ΔY**
	c=0.2	**s=0.1**	**m=0.7**					**c=0.3**	**s=0.1**	**m=0.6**				
1.					100	100	100					+100	-100	-100
2.	20	20	70	-60	100	-40	50	-30	-10	-60	70	+100	30	-60

The value of Serbia foreign trade multiplier (k_A – coefficient of foreign – trade multiplier in country A; s_A- marginal propensity to save in country A; m_A – marginal propensity to import in country A; m_B – marginal propensity to import in country B; s_B – marginal propensity to save in country B) [2] in this case equals:

$$k_A = 1/(s_A + m_A + m_B s_A/s_B) = 1/(0.1+0.7+0.6*0.1/0.1) = 1/1.4 = 0.71$$

Immediately upon the first iteration, the positive effects of increased export on the national income and the current balance have been lowered down. Due to the induced growth of import of 70 units, our country will note down a deficiency in its account in the second period of 40 units. A foreign trade partner notes down a deficiency of 100 units in the first period (which is equal to autonomous export of our country). However, this decrease will mostly hit the import of that country (our export), and the cumulative effect on the account of the importing country will be a surplus in the second period. The value of

foreign trade multiplier is less than one, due to high marginal propensity to import and its amount is 0.71 monetary units, which means that one monetary unit of autonomous export leads to the growth of national income for 0.71 monetary units. Export increases the income, even more if the import inclination is lower. [9, p. 44]

In the second case there is the analysis of the effects of foreign trade relations between Serbia and a developed country and the results are presented in the following table.

Table 3 Effects of autonomous export of Serbia to a developed country

	Serbia (A)							Developed country (B)						
	ΔC	ΔS	ΔM	(ind.) ΔX	(aut.) ΔX	Δ (X-M)	ΔY	ΔC	ΔS	(ind.) ΔM	(ind.) ΔX	(aut.) ΔM	Δ (X-M)	ΔY
	c=0.4	s=0.1	m=0.5					c=0.4	s=0.3	m=0.3				
1.					100	100	100					+100	-100	-100
2.	20	10	70	-30	100	0	90	-40	-30	-30	70	+100	0	-70

The value of Serbia foreign trade multiplier in this case equals:

$$k_A = 1/(s_A + m_A + m_B s_A/s_B) = 1/(0.1+0.7+0.3*0.1/0.3) = 1/0.9 = 1.11$$

In the second case, the positive effects of autonomous export of our country are lost in the second iteration, or period, already. However, the decrease of income of 100 units in a foreign country hits its import (our export) less, since the marginal propensity to import is lower, so there is equilibrium in the domestic current balance and no deficiency as it has been the case above. The value of foreign trade multiplier of our country is 1.1 and it is greater than in the first case.

The afore analyzed tables show the undoubted advantage of participating in the foreign markets of developed countries, and this should be the imperative in the future export orientation. However, the question is whether the emphasized need to export is indeed the only problem of Serbian foreign trade. In order to find out answers to this question, it is necessary to analyze the third hypothetical (thus, optimistic) case of Serbian foreign trade. Namely, table 4 represents the results obtained by participating in the market of a developed country, thus decreasing the import level of Serbia.

Table 4 Effects of autonomous export of Serbia to a developed country with correction of marginal propensity to import

	Serbia (A)							Developed country (B)						
	ΔC	ΔS	ΔM	(ind.) ΔX	(aut.) ΔX	Δ (X-M)	ΔY	ΔC	ΔS	(ind.) ΔM	(ind.) ΔX	(aut.) ΔM	Δ (X-M)	ΔY
	c=0.4	s=0.1	m=0.5					c=0.4	s=0.3	m=0.3				
1.					100	100	100					+100	-100	-100
2.	40	10	50	-30	100	20	110	-40	-30	-30	50	+100	-20	-90
3.	44	11	55	-27	100	18	117	-36	-27	-27	55	+100	-18	-81
4.	46.8	11.7	58.5	-24.3	100	17.2	122	-32.4	-24.3	-24.3	58.5	+100	-17.2	-73.9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

The value of foreign trade multiplier in Serbia in this case would be:

$$k_A = 1/(s_A + m_A + m_B s_A/s_B) = 1/(0,1+0,5+0,3*0,1/0,3) = 1,43$$

As opposed to the current situation in Serbia, where the effects of export growth on the national level dry in the second period, lowering of the import dependence would have a continuous positive effect on export growth, thus providing a greater intensity of foreign trade multiplier. The autonomous export growth of 100 monetary units in the second period would lead to the increase in national income of 110 monetary units. Taking the current situation in Serbia into consideration, that would mean that if the country provides the increase of (autonomous) export of 5%, the national income would rise for 2% and the decrease in foreign trade deficiency of 1.2% and all these are far from insignificant results. The process of multiplying effect of export on national income would continue with even greater intensity over periods to come, up until the level of autonomous export is greater than inducted savings, inducted import and decrease in export due to the less income from abroad.

The results of afore conducted analysis draw several useful conclusions. Due to the multiplying effect of the export on national income, necessary stimulative measures and persistent strategies to increase rather modest domestic export. There are two main reasons that stress the necessity of domestic export increase. First, it is not possible to provide volume economy on domestic market, and this leads to not maintaining one of the most important reasons for strengthening competitive position of domestic products in the world. Also, insufficient basic production inputs, let alone the satisfaction of the citizens' needs, lead to the increase in import, thus causing the need to increase export in order to preserve foreign trade in balance. However, one of the key problems is that, apart from low competitive features, Serbian export is characterized by unappealing sector structure. Namely, domestic export is characterized by products of low production phase, mainly raw materials and semi-products. The existing commerce structure does not provide basis for the increase of export, so the input of direct investments is the main source of new investments that could eventually lead to the change in production and export structure. In order to achieve this, it is necessary to improve investment climate in the country with additional stimulation of foreign direct investments in the areas that could be the turning point of export in the years to come. Serbia still does not have a strong influx of direct investments, and all the privatized companies with foreign ownership usually become net importers. [3, p.498] Apart from the stated, it is necessary to provide stronger state support in terms of improving financial potential of the institutions and agencies whose active participation would improve Serbia's exporting position (Foreign Investment and Promotion of export Agency, Crediting and Export Insurance Fund). Moreover, it is necessary to forecast significant means for promotion of domestic commerce abroad and even stronger financing of research and the development of domestic companies.

Greater value of marginal propensity to import decrease the level of multiplier, value of 0.7 in our country is rather high thus causing the multiplier to be of a value less than one in the first case. This leads to the conclusion that the high dependency of the country on import is a huge problem, just like a low level of export, especially when taking into account the import structure where only final consumer goods participate on a great scale. Irrational approach to export is a great threat to our country, especially for the products that could be our export possibility, such as agricultural products and healthy food. The main trait of our payment balance in the period after the year 2000 is the increase in foreign trade deficiency and current transactions deficiency as well. It has risen from 7.4% of GDP in 2001 to record 17.6% in 2007, thus threatening to disturb our macroeconomic stability. The current decrease trait is not something to be optimistic about. Namely, the deficiency fell to 15% of total gross domestic product in the last quarter of 2008, whereas

it has dropped to 11.6% in the first quarter of 2009, or 162 million EUR, or 2.1% of GDP in the second quarter of 2009. [5, p. 22] Instead of deficiency being low to be a stimulus of successfully organized foreign trade policy and effort to cut down on import, our current situation unfortunately just witnesses of the depth of the country's crisis and its influence on the low domestic demand.

Third possible analysis conclusion meets certain limitations. Namely, if the import limitation in the foreign country is lower, the value of multiplier in the domestic country would be greater. The example of our country would then assume that the positive effects of export increase would be greater only in the case the target exporting market is a developed country. Reassuring fact is, thus, that the priority export market of our country is European Union. Over 50% of our export is being realized on this market. With the market of over 500 million people and nonpondered increase rate over 2000-2007 of 3.9% (a bit lower than the average world trade increase of 4.4%) and positive prospects of further growth (especially among new members), EU should remain the key exporting market of our country. EU market is significant for our exporters because it provides the possibility of exporting a greater number of products without customs clearance, including a certain number of goods exported with preferential status. However, limiting factor for all these conveniences is inadequate exporting offer and low competing level of domestic companies in export. It is necessary to put certain efforts in order to adjust Serbian export to structural and dynamic characteristics of the world import demand. Low technological level of domestic export leaves no possibility to participate fully with competing parties on the world market. That is why Serbia acquires foreign trade sufficiency with less developed countries within CEFTA agreement but the deficiency in the exchange with developed ones. The situation is similar in other countries as well. For example, Slovenia has a foreign trade deficiency in the exchange with other EU countries, but sufficiency in the exchange with other ex-Yugoslavia countries.

The usefulness of the conclusion stated, leading to the applying the concept of multiplier cannot, thus, be denied. However, under the light of current payment and balance issues and current situation, we can not neglect the fact that there is a deficiency in the exchange with EU, whereas CEFTA (Central European Free Trade Agreement) region is one of rare markets where Serbia has a constant exchange sufficiency .

Table 5 Value of foreign trade exchange of Serbia with EU and CEFTA countries for the period 2005 – 2007 in bln. RSD

	2005			2006			2007		
	Export	Import	**Surplus**/ *Deficit*	Export	Import	**Surplus**/ *Deficit*	Export	Import	**Surplus**/ *Deficit*
EU	168,593	347,710	*179,117*	233,861	419517	*185,656*	270,027	535,948	*265,921*
CEFTA	82,025	49,957	**32,068**	130,032	74,056	**55,976**	165,579	83,468	**82,111**
Albania	1,435	-	**1,435**	2,205	-	**2,205**	4,692	-	**4,692**
Bosnia and Herzegovina	50,035	19,903	**30,132**	49,782	23,030	**26,752**	60,777	30,077	**30,700**
Macedonia	17,406	11,465	**5,941**	19,971	16,490	**3,481**	25,447	14,751	**10,696**
Montenegro	-	-	-	41,346	10,145	**31,201**	55,384	7,752	**47,632**
Croatia	13,149	18,589	*5,440*	16,728	24,391	*7,663*	19,279	30,888	*11,609*

Source: *Statistical office of the Republic of Serbia, www.statserb.sr.gov.yu*

Apart from Croatia, Serbia has a constant sufficiency growth with other CEFTA members in the period observed. That trait continues, so in the first eight months of 2009, Serbia reached a sufficiency of 1.29 billion RSD and it represents an increase of 40.7% in comparison to last year. [16] In that sense, the recommendations regarding foreign trade multiplier, while neglecting others, should not be taken for granted. Economic reality imposes certain priorities regarding organizing foreign trade policy- the use of all positive impulses from the market and preserving the positive condition in the exchange with the countries mentioned and all with the aim of decreasing current transactions deficiency, and only then finding the possibility of increasing export growth and its effects on strengthening gross national income.

The rigidity of theoretical analyses based on the model with foreign repercussions of foreign trade multiplier should be corrected by introducing the fact that the model itself represents a constant border rate over a longer period of time, as well as insufficiently competing export of Serbia. The reasons are those of geographical structure of Serbia's export and import, and the foreign trade balance to EU and CEFTA. In order to properly use all these advantages this analysis stresses, it is important to constantly improve the competing aspect of Serbia's export. That approach would provide significant product disposal in the countries with stable growth of GDP (EU countries). At the same time improved competitive export could enable export growth in the markets with high import border rate (CEFTA countries, for example). In short, these conclusions should not be taken for granted since the global economic crisis has taken its toll both on negative increase rate and lowering export border rate in almost all foreign trade partners of Serbia.

It is not questionable that the export multiplies the growth of GDP. But, due to poor competing aspect of export there is still no possibility for Serbia to dispose its products on prospective markets, but only those that accept that kind of quality of goods and services. Unfortunately, price is the main factor in competing and it does not give any significant results in terms of lowering foreign trade deficiency. It is the strategic orientation to export that could, by using strategic solutions, turn the comparative advantages into competing superiority, since competition is not inherited but constantly created and improved.

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SPOLJNOTRGOVINSKI MULTIPLIKATOR SRBIJE

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Adekvatno koncipirana spoljnotrgovinska strategija Srbije osnov je budućeg rasta i prevazilaženja nagomolanih platnobilansnih problema. Mogućnosti multiplikativnog dejstva porasta izvoza na porast bruto društvenog proizvoda još uvek su opterećene brojnim ograničenjima, dok uspešno prevazilaženje problema deficita tekućih transkacija zahteva sinhronizovano dejstvo adekvatno koncipirane izvozne politike i napora koji bi uvoz doveli u granice racionalnog. U radu se analiziraju tekući efekti spoljnotrgovinskog multiplikatora Srbije, uz ukazivanje na moguće načine pospešivanja intenziteta njegovog pozitivnog dejstva.

Ključne reči: *spoljnotrgovinski multiplikator, uvoz, izvoz.*