

Size and prosperity – are large countries richer?

The paper discusses differences between large and small countries regarding prosperity and other economic aspects. Countries are defined as large when GDP and population are large and when they can influence other countries economically. Prosperity is defined as GDP pc.

Keywords: large and small countries, prosperity, income distribution, economic policy, growth, trade policy.

Straipsnyje diskutuojama apie mažas ir dideles valstybes, atkreipiant dėmesį į jų gerovę ir kitus ekonominius aspektus. Šalys didelėmis traktuojamos tada, kai jų BVP ar populiacija yra dideli ir kai jos daro tiesioginę įtaką kitoms pasaulio ekonomikoms. Gerovė straipsnyje apibūdinama kaip BVP vienam šalies gyventojui.

Raktiniai žodžiai: didelės ir mažos valstybės, gerovė, pajamų pasiskirstymas, ekonominė politika, augimas, prekybos politika.

JEL Classifications: E01/E52/E62/F41/I30/O40/O47/F13/F14.

Introduction

When Swedish mass media are reporting from the G7 countries meetings (USA, Japan, Germany, United Kingdom, France, Italy, Canada), they are often speaking about the largest and richest countries in the world. In the Swedish newspaper Göteborgs-Posten, an article about the debts of Haiti, the G7 are described as the seven richest industrial countries. With other words, media gives the impression that large countries are automatically even rich ones, without discussing what could be meant with “large” and “rich”. In this paper, we will discuss relations between the size of a country and its prosperity or richness. The **purpose** is therefore firstly

to define size or largeness and prosperity or average standard of living in a country. Secondly, we want to investigate, whether statistical relations between these features could be found in the form of correlations and regressions. Thirdly, we are discussing the differences between “large” and “small” countries. A country can be defined as “large”, not only when it has a large population and a large GDP, but even when the world economy is influenced by changes within this country. Furthermore, a large country can influence the world economy by its internal economic policy.

Regarding the sources, the following can be mentioned. Using the World Economic Forum (WEF, 2011) as our main source, the data material comprises

142 countries. It can be mentioned that the United Nations Development Programme (UNDP, 2010) shows data for at least 169 countries. While WEF includes Taiwan, the UNDP excludes this country.

As the title of the paper indicates our research **aim** is to investigate whether large countries are more prosperous or richer than small ones. Our methods are both descriptive and analytical. Regarding the descriptions, we are presenting figures to express size and prosperity of countries. Furthermore, a country is seen as large, if it can influence the world markets. It is called “small” if it cannot influence world markets. To analyze the differences between large and small countries, we use standard economic theory, based on P. R. Krugman, M. Obstfeld (2009) and other authors, e.g. K. E. Case et al. (1999).

Definitions and descriptions

In this part of the paper we present some definitions and descriptions.

Size and prosperity

This paper defines the size of a country by two variables: GDP and total population. Because practically all countries have their own national currencies, when comparing GDP, we need a factor to converge national currencies into international ones, often the US\$. There are two methods. Firstly, we use the exchange rates to express all national currencies in US\$. Secondly, we express national economic figures in purchasing power parities (PPP). Different countries have usually different price levels and by using PPP as a factor of currency conversion, the differences because of different price levels are eliminated. Usually,

in international economic statistic data material, the US\$ is used as a measure of reference. Therefore, figures in exchange rates and in PPP for the USA are the same. Yet, in practically all other countries, quite large differences in GDP between figures measured in exchange rates and measured in PPP can be observed. When GDP for a country measured in exchange rates (GDP_{Exr}) is larger than GDP measured in PPP (GDP_{PPP}), the intuitive conclusion is that the price level in that country probably is higher than in the USA. On the other hand, when GDP measured in PPP in a country is larger than GDP measured in exchange rates, the conclusion is that the price level in this country is lower than in the USA. Furthermore we can observe that countries with relative low GDP per inhabitant (GDP_{pc}) – or poorer countries – often have a higher GDP in PPP than measured in exchange rates. This implicates that the price levels in poorer countries often are lower than in rich ones.

Prosperity can be expressed in many ways. We have chosen GDP per inhabitant (GDP_{pc}), especially when expressed in PPP, as a measure of average standard of living and therefore prosperity. Yet, the following problem must be mentioned. In all countries, incomes are more or less unequally distributed. Using the Gini coefficient as a measure of income distribution, e.g. in UNDP (2010) we can observe large differences between countries. Therefore we have chosen to include the Gini-coefficient in our material. Gini coefficients can be between 0 and 100. A conventional interpretation is the following one. As lower (higher) the Gini coefficient, as more equal (unequal) is the income distribution. Sweden has a Gini coefficient of 25, while the one for the USA is about 40. Therefore the conclusion is that Sweden has a more equal

income distribution than the USA. According to D. N. Weil (2009), the income distribution is important for the long term development of the economy.

Regarding the literature, the following can be mentioned. While the second aspect of size of the economy – to be able to influence the rest of the world by national economic changes – is often discussed in the literature (e.g. Krugman & Obstfeld, 2009; Case, Fair, Gärtner, Heather, 1999, and other authors), the first aspect of size GDP and population – and their relations to prosperity, expressed as GDP pc, is not often discussed. In fact, we could not find in the literature any correlations and regressions for GDP and population on one hand and GDP pc as a measure of prosperity on the other hand.

Total GDP, GDP pc and population

In this section we present the total GDP in purchasing power parities (PPP), the population and the GDP pc in PPP for the 142 countries mentioned in WEF (2011). Furthermore, we have a look at the 10 largest economies, measured in GDP PPP and the G7 countries (USA, Japan, Germany, United Kingdom, France, Italy and Canada). Table 1 shows the figures.

As table 1 illustrates, among the 142 countries, the 10 largest ones have 63 % of total GDP PPP, while the population of these countries is 55 %. This implicates that the 10 largest countries in the sample on average have a somewhat higher GDP pc PPP than the total number of countries. While the GDP PPP of the G7 countries is almost 40 % and the population 11 % of the 142 countries, the GDP pc PPP of the G7 countries is approximately 3,5 as large as the one of the 142 countries. On average, the G7 countries are obviously richer than most of the other countries in the world.

Some statistical relations: correlation coefficients and regression equations

In this section we will present the coefficients of correlations for GDPPPP, GDPEXr, GDPpcPPP, GDPpcEXr, Population (POP) and the Gini coefficient (Gini) (table 2). We will show two regressions equations: (1) GDPpcEXr as the dependent variable to be explained and GDPEXr, population and the Gini coefficient as the independent variables, (2) GDPpcPPP as the dependent variable to be explained and GDPPPP, population and the Gini

Table 1

GDP PPP, Total population, GDP pc PPP, 2010

Countries	GDPPPP	Population	GDPpcPPP
142	73459,4	6527,1	11253
10 largest	46540,7	3615,7	12872
10 largest % of 142	63,4	55,4	114,4
G7	29329,8	742,2	39358
G7 % of 142	39,9	11,4	348

Note: GDP PPP: Gross Domestic Product in Purchasing Power Parities, billions of international dollars, Total Population: in millions, GDP pc PPP: Gross Domestic Product per head of population in PPP, the 10 largest countries: USA, China, Japan, India, Germany, Russia, United Kingdom, Brazil, France, Italy.

Source: Author’s construction based on WEF (2011).

coefficient as the independent variables (table 3).

As table 2 shows, some interesting correlations can be observed. Some of them are intuitively convincing, while others are more of a surprise. Let us have a look at those correlations, which have P-values below 5 %. GDP and GDP pc are expressed both in exchange rates (GDPExr and GDPpcExr) and in PPP (GDPPPP and GDPpcPPP).

We can observe that the correlation coefficient between population and GDP-PPP is quite large (0,655). This means that a country with a large population even has a big GDPPPP. This is intuitively convincing, because a large population usually implicates a large labour force and a large supply of and demand for workers. Even the correlation coefficient between population and GDPExr is positive, but somewhat lower (0,452).

We discussed above that GDP and other variables, like GDP pc, can be expressed in exchange rates (Exr) or in purchasing power parities (PPP). GDPExr and GDPPPP have the highest correlation coefficient in our material (0,963). This

means that countries with large GDPExr even have large GDPPPP. Even the correlation coefficient between GDPpcExr and GDPpcPPP is quite high (0,520). The statistical relation between GDPPPP and GDPpcPPP is positive, but lower (0,179). Countries with high GDPPPP have high GDPpcPPP.

A high (low) Gini coefficient means high (low) inequality of the income distribution. Table 2 shows that the correlations between the Gini coefficient and GDPpcPPP and GDPpcExr are negative (-0,342 and -0,221). This can be interpreted in the following way. As higher (lower) the Gini coefficient and as more unequal (equal) the income distribution, as lower (higher) GDPpc, both measured in exchange rates and purchasing power parities. This is perhaps somewhat of a surprise. Yet, as D. N. Weil (2009) argues, human capital, influenced strongly by health care and education, is the most important factor of production in economically highly developed countries. Furthermore, D. N. Weil (2009) mentions that countries with more equal income distributions have more human

Table 2

Pearson correlation coefficients and P-value for GDPPPP, GDPExr, Population, GDPpcPPP, GDPpcExr and the Gini coefficient

		GDPPPP	POP	GDPpcPPP	GDPpcExr	GDPExr
POP	corr	0,655				
	P-Value	0,000				
GDPpcPPP	corr	0,179	-0,085			
	P-Value	0,033	0,317			
GDPpcExr	corr	0,070	-0,054	0,520		
	P-Value	0,411	0,526	0,000		
GDPExr	corr	0,963	0,452	0,244	0,111	
	P-Value	0,000	0,000	0,003	0,189	
Gini	corr	-0,072	-0,030	-0,342	-0,221	-0,100
	P-Value	0,421	0,734	0,000	0,013	0,263

Source: Author's construction based on WEF (2011).

Table 3

Regression equations: GDPpc as dependent variable, GDP, population and Gini coefficient as independent variables, coefficients, t-value and P-value

Equation 1	Constant	GDPExr	POP	Gini
GDPpcExr	54965	4,23	-32,6	-954
T	3,3	1,52	-1,26	-2,4
P	0,001	0,13	0,211	0,018
Equation 2	Constant	GDPPPP	POP	Gini
GDPpcPPP	36729	4,12	-35,3	-560
T	6,34	3,96	-3,31	-4,05
P	0	0	0,001	0

Source: Author's construction based on WEF (2011).

capital and a higher potential for high GDP pc.

In table 3 we present two regression equations: (1) GDPpcExr as the dependent variable and GDPExr, population and the Gini coefficient as the independent variables, and (2) GDPpcPPP as the dependent variable and GDPPPP, population and the Gini coefficient as the independent variables.

Both equations are investigating the relation between the size of the economy, expressed as GDP and population, and the equality of the income distribution on one hand and the GDP pc or living standard on the other hand.

We start the discussion with the *second regression equation* because of the (absolutely) higher T-values. All three independent variables are significant with respect to the dependent variable. According to the figures as higher the GDPPPP of a country, as larger is its GDPpcPPP. With other words, countries with large GDPPPP have high standard of living. This supports the idea that large countries are even rich ones. Yet, the effect of population on GDPpcPPP is negative: countries with higher population have lower GDPpcPPP or liv-

ing standard. The effect of the size of a country on its prosperity is not quite clear.

Obviously, among the independent variables in the second equation, the Gini coefficient has the highest T-value (in absolute terms). The interpretation is the following one: as more unequal (equal) the income distribution, as lower (higher) the GDPpcPPP.

As the figures for the *first regression equation* show, only the Gini coefficient has a significant influence on GDPpcExr. GDPExr has a positive and population has a negative effect on GDPpcExr, which yet is not significant.

Our general conclusions, based on the two regression equations are the following ones. While inequality in income distribution has a significant negative effect on standard of living, the effects of the size variables is more ambiguous. GDP seems to have a positive effect on prosperity, while the size of the population influences prosperity negatively.

Finally, in an earlier paper (Schuller, 2009) we found a negative, but not significant correlation between the Gini coefficient and GDP pc.

Size, economic policy and the influence on the rest of the world

This part of the paper consists of arguments regarding the differences between large and small countries, based on standard economic theory.

Imports, exports and the trade feedback effect

Modern economies are more or less open, i.e. they import and export. Usually, in relative terms, foreign trade is larger for small than for large economies. Economic openness is often measured as foreign trade relative to GDP. Yet, trade is measured in a different way than GDP. While GDP can be measured as the sum of value added, trade of goods and services is measured as the sum of material inputs and value added. In principle, therefore exports or imports can be larger than GDP. Another explanation for a very large foreign trade

is the fact that imports can be re-exported. Some countries have facilities such as large harbors and warehouses and are able to import goods which are then exported to other countries.

GDP is either measured in purchasing power parities (PPP) or in exchange rates (Exr). When we investigate the average standard of living in a country, we use PPP. Regarding foreign trade, bills are paid in international currencies, like the US\$ or the Euro. When a country has to pay for its imports, the buyers have to acquire foreign currency. Swedish importers have to sell Swedish krona (SEK), to be able to buy e.g. US\$. When discussing foreign trade, the exchange rate is the factor of currency conversion.

In the next tables, we present figures for GDP and foreign trade for the 10 largest economies in the world measured in exchange rates (table 4). Furthermore, we present the countries which have the largest foreign trade in percent of GDP (table 5). With the exception of the

Table 4

The 10 largest economies in the world, GDP, imports and exports of goods and services, 2010, exchange rates US\$

	GDP	MGS%GDP	XGS%GDP	MUS\$	XUS\$	X - M
USA	14657,8	15,9	12,2	2330,6	1788,3	minus
China	5878,3	27,0	29,7	1587,1	1745,9	plus
Japan	5458,9	15,5	16,6	846,1	906,2	plus
Germany	3315,6	39,9	45,2	1322,9	1498,7	plus
France	2582,5	28,3	25,6	730,8	661,1	minus
UK	2247,5	31,8	28,1	714,7	631,5	minus
Brazil	2090,3	12,0	11,1	250,8	228,1	minus
Italy	2055,1	28,8	26,5	591,9	544,6	minus
Canada	1574,1	31,2	28,8	491,1	453,3	minus
India	1538,0	28,6	21,2	439,9	326,1	minus

Note: Countries are ranked according to GDP. GDP, exports (XUS\$) and imports (MUS\$) are measured in billions of exchange rate US dollars; MGS: Import as % of GDP; XGS: Export as % of GDP; X - M: balance of exports and imports of goods and services.

Source: Author's construction based on WEF (2011).

Table 5

The 10 economies in the world with largest exports and imports of goods and services, relative to GDP, exchange rates US\$, 2010

	GDP	MGS	XGS	MUS\$	XUS\$	X - M
Hong Kong	225,0	219,2	226,2	493,2	509	plus
Singapore	222,7	182,7	208,2	406,9	463,7	plus
Puerto Rico	96,3	140,4	118,5	135,2	114,1	minus
Luxembourg	55,0	113,3	159,1	62,3	87,5	plus
Belgium	465,7	100,0	105,7	465,7	492,2	plus
Slovak Republic	87,5	83,5	81,0	73,1	70,9	minus
Malaysia	238,0	82,7	97,2	196,8	231,3	plus
Ireland	204,3	80,8	103,9	165,1	212,3	plus
Hungary	129,0	80,4	88,3	103,7	113,9	plus
Netherlands	783,3	79,9	87,2	625,9	683	plus

Note: Countries are ranked according to MGS. GDP, exports (XGS) and imports (MGS) are measured in billions of exchange rate US dollars (XUS\$, MUS\$), X - M: the balance of exports and imports.

Source: Author's construction based on WEF (2011).

Netherlands, these countries are economically relatively small, if the average GDP of the 142 countries in our sample is used as a measure. Yet, as our tables show, some of these countries have larger foreign trade – in absolute terms – than several of the 10 largest economies. We can even observe, that the “Big Four” USA, China, Japan and Germany are the largest exporters and importers in absolute terms in the world.

Comparing the two tables (4 and 5) with each other, we can observe that 7 of the largest economies have import surpluses, i.e. the value of imports of goods and services exceeds the value of exports (X - M). Regarding the 10 countries with the largest foreign trade relative to GDP, we can observe that 8 of them have an export surplus, i.e. their export value exceeds their import value.

Why are small economies usually more open than large ones? An explanation could be the following one. While large economies have large internal markets, so that national firms can exploit economies of scale on national markets, firms in small

economies need the foreign markets to produce quantities at falling average costs.

But there is even another aspect. Small economies are often even geographically small and close to other countries. There are smaller distances to other countries and markets and foreign markets are easier to reach. The Gravity model of trade sees distance as an important factor of trade (see e.g. B. Ingham, 2004).

Usually in the standard models it is assumed that imports to a country have a positive relation to national income. When a country has a strong growth of national income, it probably will demand larger amounts of foreign goods and services. This in turn has a stimulating effect on foreign economies – the trade feed-back effect (Case, Fair, Oster, 2009). Yet, we can be sure that the trade-feedback effect in the small country is neglected. Large economies by raising their imports have large effects on world markets. Suppose the GDP of the USA is rising with 10 %, this will have probably a considerably positive effect on the world economy. National

incomes in the rest of the world will rise and import to these countries from the USA will grow. When the USA is suffering a business circle downturn instead, the rest of the world probably will be influenced negatively.

According to the model of comparative advantage, countries export commodities with low opportunity costs and import commodities with high opportunity costs. Exports and imports will influence the common price relations. When large countries trade with small ones, probably the common price relations will be closer to the ones of the large countries, with the consequence that the small country will make larger welfare gains because of trade, compared with the large one. It is possible that while the small country can specialize on commodities with comparative advantages, the large country probably must continue to produce goods with comparative disadvantages, because the production capacity of the small country is not large enough to satisfy the total demand.

In a static sense small countries gain more from international trade than large ones. In a dynamic sense it is possible that the large country, which continues to produce commodities with comparative disadvantages, i.e. relative low productivity, can develop their production capacities to higher productivity and after some time achieve comparative advantage, which would mean a change of the structure of trade. Smaller countries then perhaps would lose their comparative advantages and have to develop new industries.

Economic policy – the large and the small country

In this section we will present some simple ideas about economic policy, based on

basic macroeconomics (see e.g. Case et al., 2009; Pelkmans, 2006). We discuss two types of general economic policies to influence the macroeconomic situation (employment and unemployment, price stability and inflation and economic growth): monetary policy and fiscal policy.

Monetary policy means the change of national interest rates and the supply of money and credit. Even exchange rate policy is seen as an aspect of monetary policy, because there are close relations between the rate of interest and the supply of money on one hand and the exchange rate on the other hand. Assuming perfectly elastic international financial capital flows, which means that marginal differences in international interest rates are leading to huge capital flows, the exchange rate system is of importance for the macroeconomic effects of both monetary and fiscal policy.

The theory of economic policy often assumes that there is either too high inflation or too high unemployment. In the first case the recommendation is to raise the interest rate and to lower the supply of money. It is expected that aggregate demand will fall. Then even inflationary pressure will fall. In the case of too high unemployment, monetary policy should lower interest rates and raise the supply of money and credit to raise aggregate demand.

If a country has fixed exchange rates, in extreme cases monetary policy can only be used to hold exchange rates fixed in a credible way and not to influence aggregate demand (see, e.g. Pelkmans: The Fleming-Mundell model, 2006). If instead a country has flexible exchange rates, expansionary monetary policy – by lowering interest rates and raising the supply of money – will lead to outflows of financial capital, depreciations of the national currency and to raising international competitiveness.

Exports are expected to rise and imports – to fall, with raising aggregate demand in the country as a consequence.

Raising interest rates and falling money supply will lead to inflows of financial capital and to appreciations of the national currency, falling exports, raising imports and to a deterioration of international competitiveness.

There will be differences between large countries and small countries. The influence on aggregate demand will in relative terms have a smaller influence on international trade in the large country compared with the small one. If the marginal propensity to import in the large country is smaller than in the small one then the multiplier in the large country will be larger and the effect of economic policy stronger than in the small country. Furthermore, when a small country, which is not able to influence the world markets, is using expansionary monetary policy, because of falling interest rates in the case of flexible exchange rates the effect will probably be depreciation of the national exchange rate and an improvement of international competitiveness. In the case of the large country, which is lowering the national interest rate, this will probably influence even the rest of the world. Interest rates will not only fall in the large country, but even in the rest of the world, i.e. consumption and investment will raise both in the large country and in other countries. Furthermore, a trade feed-back effect is possible: the large country is stimulating its national economy by expansionary monetary policy, raising its national income and stimulating its import from the rest of the world, which in turn will stimulate macroeconomic expansion in the rest of the world and rising imports from the large country.

Regarding **fiscal policy** by changing tax rates and public expenditures for goods and services, the government can influence macroeconomic demand. Even in this case the system of exchange rates is important for the macroeconomic effect of fiscal policy. Probably fiscal policy will even influence the national interest rate. Let us have a look at only expansionary fiscal policy, i.e. lowering tax rates and rising public expenditures. We would expect rising national interest rates and inflows of international financial capital. When exchange rates are fixed, expansionary fiscal policy would be strengthened by international capital flows.

When exchange rates are flexible, the raise of the national interest rate and the inflow of financial capital could lead to an appreciation of the national currency, which could deteriorate the international competitive position of the economy.

Even in the case of fiscal policy we can argue for international effects of the economic policy of the large countries, but not of the small ones. The first effect can be related to different sizes of marginal import propensities in large and in small countries. The second effect has to do with whether there is an international effect of national economic policy or not. If the exchange rate of the large country is fixed, expansionary fiscal policy will not only raise national aggregate demand, but even stimulate international trade and the rest of the world. If the exchange rate of the large country is flexible, expansionary national fiscal policy can lead to appreciation of the exchange rate of the large country. This will improve the international competitive position of the rest of the world, rising exports, but because of rising national incomes even to rising imports from the large country.

Economic growth and its impact on exports, imports and terms of trade

In this section we discuss economic growth and its impact on exports, imports and the terms of trade (ToT). Economic growth is here defined as the growth of production possibilities. Terms of Trade (ToT) is defined as a country's relation between export and import prices and shows how much exports have to be sacrificed so that a country can afford to buy a certain quantity of imports. An improvement of the ToT would mean that a country has to sacrifice fewer amounts of export goods to buy the same amounts of import goods, while a deterioration of ToT implicates that more exports have to be sold to buy the same amount of import. An improvement of ToT, with other things equal, means for a country rising economic welfare, while a fall in ToT, with other things equal, means that welfare will fall.

Economic growth can be balanced or biased (see Krugman & Obstfeld, 2009). Balanced growth means that the production possibilities of all sectors in the economy are growing in the same way, while biased growth implicates that some sectors are growing more strongly than other ones. The textbook models are about economies with two sectors, producing an export good and an import competing good. Both goods are consumed in the domestic economy and the rest of the world.

Suppose that growth is biased towards the export good and export production is rising more than import competing production. In the small economy, the supply of export goods will rise, but because of the size of the economy, international prices will be unchanged. Assuming unchanged import prices, the ToT for the

small economy will be unchanged. In this case growth of export production will implicate growth of national income.

Yet, the situation in a large economy is different. If the economic growth is biased towards the export industries, the supply of exports on the world markets can rise significantly, and export prices will fall (see Krugman & Obstfeld, 2009). Then in the large country ToT will fall. In extreme cases, export biased growth can lead to falling national income (see the case of immiserizing growth, Bhagwati, in Krugman & Obstfeld, 2009).

Even the ToT of small economies can deteriorate, but not as a consequence of something that happens in the small economy. When a small economy exports the same goods as a large one with export biased growth, the ToT of the large economy and the small one falls.

Does this mean that growth in large economies *always* has the potential of lowering national income? Not necessarily: if growth in the large country is biased towards import competing industries, imports will fall. Import prices fall and ToT improve. The national welfare of the large country will rise. Yet, the situation for the rest of the world probably will deteriorate.

Size and tariff policy: small countries and large countries – the optimal tariff

In this section we will discuss trade policy and its possibly different effects on large and small economies. To limit the argumentation, we will only discuss tariffs on imports.

Suppose a large country raises its tariffs on imported goods. The domestic price of the goods will rise for the buyers and the demanded quantity will fall.

Being a large country, falling imports will lead to falling prices on the world market. If import prices are falling, the ToT of the large country will rise, if export prices are unchanged or are falling less than import prices. For the large country, there exists a possibility of rising domestic welfare. Though the domestic buyers have to pay a higher price for the imports, the country as such will pay a lower import price. There are three groups of decision makers in the large country: consumers, producers and the government, represented by the customs authorities. According to P. R. Krugman and M. Obstfeld (2009), and B. Ingham (2004), the following welfare gains and losses can be identified. Consumers in the large country will lose welfare because they pay a higher price. Part of the consumers' loss is redistributed to producers as producers' gains. Another part of the consumers' loss is redistributed to the customs authorities. Yet, as standard models show, the consumer's loss is larger than the producers gain and the customs revenues. Finally, the foreign exporters "pay" by being forced to accept a lower price from the large country. There are with positive and negative welfare effects for the tariff imposing large country. Under certain circumstances the large country can make net welfare gains. These welfare gains in the large country can be explained in the following way. By imposing tariffs, imports decrease, import prices are falling and the ToT are rising. P. R. Krugman and M. Obstfeld (2009) show that for the large country there exists an "optimum" tariff, which maximizes domestic welfare. Yet, this tariff must be rather small.

As mentioned, in the large country several effects of an import tariff can be observed. Some of these effects are redistributive: from domestic buyers to

domestic producers and customs authorities and from foreign producers to domestic customs authorities. Some effects are efficiency losses: instead of buying cheap imports the country produces some of the goods at home at high costs. Furthermore consumers are losing consumer's surplus, i.e. they buy less at higher prices.

By imposing an optimum tariff the large country is able to increase its welfare. Yet, this is yet not happening automatically. There are some problems with this policy. First of all, if the tariff is too high even the large country can make losses. Secondly, foreign producers are financing the domestic welfare gain. It can be shown (see, e.g. Ingham, 2004), that the foreign welfare loss is larger than the domestic welfare gain. This could lead to co-operation among the foreign producers and to retaliation. In a world perspective one would not recommend raising tariffs as a welfare-increasing policy for the large country.

What about the small country? As mentioned before, a small country is defined as not being able to influence international prices. A tariff in a small country therefore will lead to higher prices at home, but to unchanged world market prices. Even in this case we can speak about efficiency and redistributive effects of the tariff policy. Consumers lose welfare which in part is redistributed to the domestic producers and the customs authority. Production costs in the country are rising because some of the cheap imports are substituted by expensive domestic production. Finally, consumers lose consumer's surplus because they buy less at higher prices. In the small country according to the standard models of trade policy the domestic consumers are paying for the tariff effects. It can be shown, that consumers are losing more

than what producers and customs authorities are gaining. Because the small country cannot influence international prices and therefore cannot improve its ToT by tariff policy and the tariff effects are paid by domestic consumers, the optimum tariff for the small country is zero.

Summary and conclusions

In this paper we investigated the question, whether large countries are richer than small ones. A country is defined as “large”, when it has a large GDP and a large population in an international comparison and when it can influence world markets by its internal economic actions. Countries are seen as “rich”, when they have a high GDP pc, i.e. a high average standard of living. Some correlations and regressions show, that positive relations between GDP and GDP pc exist, while the relations between population and GDP pc are negative. Furthermore, we could show that the income distribution is important: as more unequal income distribution, expressed by a high Gini coefficient, as lower GDP pc.

Usually small economies are more open than larger ones, i.e. exports and imports of goods and services are relative to GDP stronger than in large countries. The largest exporters and importers in the world in absolute terms yet are four large economies: the USA, China, Japan and Germany, but some smaller economies – like the Netherlands – are large international traders. Though it is quite usual to relate foreign trade to GDP, it must be remembered that exports and imports are measured in a different way, compared with GDP.

Besides some quantitative aspects we discussed even whether there are differences between large and small countries

regarding economic policy, growth and trade policy. These discussions are based on standard models presented in textbooks. Regarding economic policy expressed as monetary and fiscal policy we argued that large countries not only can influence their own economies, but even the rest of the world. The question could be asked whether – in the case that large countries have the same problems as small ones – the economic policy of the large countries could help even the small ones to achieve their macroeconomic goals.

How does economic growth – i.e. growth of production possibilities – influence large and small countries? Here the question was asked about biased growth, i.e. a situation, when production possibilities either are rising in the export or the import competing sectors. Usually in the small country neither balanced nor biased growth have negative consequences for their ToT and therefore for economic welfare. Export biased growth in the large country can lead to falling ToT and therefore could have negative effects on welfare. If growth is import competing biased in the large economy, import will fall and the terms of trade will improve.

We even argued that the positive welfare effect of international trade because of comparative advantages probably is more important for small countries than for large ones. Furthermore, the industries of the small countries need the international markets to a higher degree than the ones of large countries to exploit economies of scale.

Finally we discussed the question of trade policy by looking at import tariffs in small and in large countries. The conclusions of the standard models are the following ones: small countries always lose welfare, when imposing import tariffs because

the losses for the national consumers are larger than the gains for national producers and customs authorities. Being small, these types of countries cannot influence their terms of trade.

In the case of the large economies, however, there is the possibility of national welfare improvement by an import tariff. In this case imports and import prices will fall. If the tariff is not too large (an “optimum” tariff) the large country can make welfare gains. Unfortunately, these gains are on expense of the rest of the world, which according to the standard models will make welfare losses, which are larger

than the possible gains for the large tariff imposing country. We will therefore finish with a warning regarding this type of policy: first of all in a large country, there is a *possibility* of welfare gains on the expense of the rest of the world and secondly, these countries can by retaliation destroy possible welfare gains. History yet shows that this type of trade policy has worsened international crises in the past.

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DYDIS IR GEROVĖ – AR DYDIS APSPRENDŽIA ŠALIES GEROVĘ?

S a n t r a u k a

Straipsnyje aptariama, kuo skiriasi didelės ir mažos valstybės, kuomet omenyje turime gerovę ir kitus ekonominius aspektus. Didelės šalys apibūdinamos, kaip turinčios didelį BVP ir populiacijos lygį ir galinčios daryti įtaką kitoms pasaulio rinkoms per savo vidines ekonomines sąlygas ir politikas. Pirmoje

darbo dalyje pateikiama nuomonė ar didelės šalys yra turtingesnės nei mažos. Valstybė laikoma tuo turtingesne, kuo jos BVP vienam gyventojui yra didesnis. Paprastai šalys su aukštu BVP lygiu pasižymi ir aukštu BVP vienam gyventojui lygiu. Tačiau pastebima, kad šalys su didesne populiacija pasižymi

mažesniu BVP vienam gyventojui lygiu. Dėl šios priežasties ryšys tarp šalies dydžio ir turtingumo nėra visiškai aiškus.

Taip pat pabrėžiama, kad egzistuoja stipri statistinė priklausomybė tarp pajamų pasiskirstymo ir BVP vienam gyventojui: kuo didesnė pajamų pasiskirstymo nelygybė – išreiškta Gini koeficientu – tuo BVP vienam gyventojui yra mažesnis.

Antroje straipsnio dalyje, kuri remiasi standartiniais modeliais, aptariamas galimas didelių ir mažų valstybių, ekonominės politikos, augimo ir prekybos politikos poveikis kitoms valstybėms. Šioje dalyje apžvelgiama dešimties didžiausių pasaulio ekonomikų tarptautinė prekyba. Paprastai, kai norima palyginti valstybių gerovę, naudojamas BVP išreikštas perkamosios galios paritetu, siekiant išvengti skirtingų kainų lygių šalyse poveikio. Tačiau šalių eksportas ir importas pateikiami JAV doleriais. Apžvalga atskleidė, kad kai kurios didžiausios ekonomikos yra ir didžiosios tarptautinės prekiautojos. Tačiau buvo pastebėta, kad mažos valstybės dažnai taip pat turi svarią tarptautinės prekybos apimtį, o kai kurios jų įvardinamos net ir kaip labai didelės tarptautinės prekiautojos. Galima pateikti kelis argumentus, kodėl mažos valstybės turi sąlyginai dideles užsienio

prekybos apimtis: pirma, mažos šalys užsienio rinkas išnaudoja mažo ekonomijai pasiekti; antra, mažosios šalys dažnai yra geografiškai ir kultūriškai artimos užsienio rinkoms.

Yra ir tokių mažų ekonomikų, kurių eksporto ir importo mažai yra didesni nei pats BVP. Tam yra keli paaiškinimai: pirma, užsienio prekyba yra matuojama skirtingai nei, kad BVP; antra, mažos šalys su dideliais uostais, sandėliais ir kitomis infrastruktūromis gali pereksportuoti prekių importą į kitas šalis.

Akivaizdu, kad didelės valstybės gali daryti įtaką ne tik savo, bet ir užsienio ekonomikoms. Jei mažosios valstybės turi identišką makroekonominę problemas, kaip ir didžiosios, gali kilti klausimas, ar didžiųjų valstybių ekonominė politika būtų efektyvi ir mažosiose. Kalbant apie ekonominį augimą, didžiosios valstybės, kai kuriais atvejais, gali patirti gerovės nuostolių. Be to, modeliuose aiškinama, kad didelės valstybės gali daryti teigiamą įtaką gerovei įvesdamos optimalius tarifus, kurie privalo būti nedideli. Mažų valstybių optimalūs tarifai lygūs nuliui, tad reziumuojant galima pasakyti, kad tarptautinė prekyba veikiausiai yra daug svarbesnė mažosioms nei didžiosioms ekonomikoms.