

Benefits of Concluding the Trade Agreement between the EU and Australia

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Abstract Australia is a developed country with higher GDP per capita than Slovenia. In this context, it is of great interest to Slovenian exporters. Slovenian export to this market is growing, while imports lags behind. The price elasticity of Slovenian exports of goods to Australia is 0.9, while the income elasticity is 4.6. The price and income elasticities of goods from Australia are higher than the corresponding elasticities of Slovenian exports. Despite the higher price elasticity of Australian goods imported by Slovenia, according to the price elasticity of Slovenian exports to the Australian market, even with the same mutual price reduction the Slovenian surplus continues to rise as a result of its initial high level. Slovenian exports are also at risk of losing their potential position on the Australian market due to the intensive integration of Australia into trade partnerships with developed Pacific economies, particularly Japan and South Korea. The effect of these agreements on Slovenian exports has been growing over recent years.

Ključne besede: • international economics • price elasticity • international trade • trade liberalization

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1 Introduction

Approaching the end of the second decade of this century, intensive negotiations on a free trade agreement (FTA) between the European Union and Australia were underway to remove or substantially reduce the existing barriers to trade between members of the two markets. In April 2017, the European Commission published a comprehensive study entitled 'Ex-ante study of the EU-Australia and EU-New Zealand Trade and Investment Agreements' (European Commission, Directorate-General for Trade, 2017), which presents various aspects of the expected impact of the FTA with Australia on the European and Australian economies. The study maintains the assumption that the United Kingdom is an integral part of the EU. The results of the study show that the impact of the prospective FTA will be positive. According to different assumptions, a EU Member State's GDP is going to increase by 2.1 billion euros to 4.9 billion euros and the Australian GDP is going to increase by 2.7 billion euros to 4.2 billion euros.

The University of Adelaide published a collection of articles entitled '*Potential Benefits of an Australian - EU Free Trade Agreement: Key Issues and Options*' (Drake-Brockman, J., Messerlin, P., et al., 2018). The authors noticed that when the United Kingdom entered the then European Economic Community (EEC) in 1973, Australian foreign trade switched to Pacific countries (Puig, G. V., 2018, p. 3–7). Here came to force the complementarity between the raw materially well-supplied Australia and rapidly developing Asian countries lacking a stable supply of raw materials. The remaining Australian exports to the EU concentrated on the United Kingdom (50%), the Netherlands, Germany, France and Belgium (another 46%). Australia has reached a level of economic development where services account for 84% of added value (Drake-Brockman, J., 2018) and is of the right size for the release of trade in services with the EU, has the appropriate quality of regulation and is suitable for setting up branches of European firms ('hub quality'). Given its capabilities, the Australian economy, with some exceptions, has failed to enter into the world production chains and holds considerable reserves in the area of integration of services in these chains (Pomfret, R. and Sourdin, P., 2018).

In this article, we analyse the effects of the mutual reduction of prices or tariff rates in the potential FTA between Australia and the EU from the perspective of the small EU Member State – Slovenia. The price and income elasticity of trade between Australia and Slovenia, as well as the impact of external trade distortion due to Australian trade agreements with Japan and South Korea, is estimated by panel analysis on the Standard International Trade Classification (SITC) sectors.

2 Open questions about external trade liberalization in the modern world

Adam Smith begins his *The Wealth of Nations* (1776) with notation that the greatest advancement of the productive powers, and most of the skill, and prudence with which

the work is conducted or done, seems to be contributed to by the effects of its division. He goes on to say that this division of labour, from which so many advantages derive, was not originally the fruit of any human wisdom, such as presupposes and plans that enable general prosperity. Rather, it was an inevitable, though very slow, and gradual consequence of some inclination in human nature, which has no apparent extensive benefit: an inclination to trade, bargain and exchange one thing for another. Finally, Adam Smith concludes that just as the power of exchange is what causes the division of labour, so the extent of this division must always be limited by the extent of that power or, in other words, by the extent of the market. When the market is very small, no one gets an incentive to devote themselves to a single activity, because they cannot exchange all the surplus of their work, too much for its consumption, for the needed surpluses of others.

With his theory, Adam Smith rejected the reasoning of mercantilists, who saw in international trade not the possibility of the division of labour, but the possibility of the accumulation of surpluses, wealth and political power (Mun T., 1664). If they succeeded, however, in the conditions of the golden monetary base, they found themselves experiencing inflation and consequently saw a reduction of surpluses, wealth and power (Allen W., 1991). Mercantilism has returned in the last 20 years with the systematic implementation of the exchange rate and social and environmental dumping, which is taken into account and attempts are made to eliminate it when concluding contemporary free trade agreements. Hence, the special chapters of free trade agreements aimed at protecting the environment and social cohesion (European Commission, Directorate-General for Trade, 2017).

Even if countries do not pursue a mercantilist foreign trade policy, international trade does not necessarily lead to an optimal division of labour, specialisation, economies of scale and the optimisation of prosperity at the level of all countries involved in this trade. Constraints are supply-side monopolies and demand-side monopsonies, as well as external economies or diseconomies. The corrections, however, are customs, and when implemented we are talking about so called “second best” solution (Bhagwati, J., 1964). Customs duties also serve as a protection for young industry and as a source of fiscal revenue, but the main reason for their introduction is, however, their impact on the coverage of imports by exports. Customs duties are the main lever of the classic mercantilist foreign trade policy. Economic theory shows that the introduction of customs in a small country causes a reallocation of factors of production and the entry of less efficient producers. Production volume increases and consumption decreases. If a country is large enough to be able to influence world prices with tariffs, the situation can improve when competitors do not respond to its tariff increase with countermeasures (Babić, M., 1986). Otherwise, a customs war ensues with a reduction in trade, division of labour and prosperity. A typical example was the reaction of countries that increased protectionism in the wake of the economic depression after 1929 (Kindleberger, C. P., 1973; Pollard, S., 1991). Eliminating the causes and the

consequences of the recurrence of the customs war led to the adoption of the Bretton Woods Agreement (December 1945) and the General Agreement on Tariffs and Trade - GATT (January 1948). Both were adopted within the emerging United Nations and strongly influenced by the theories of Johan Mynard Keynes (Patinkin, D., 1991, Babić, M., 1986).

The multilateral abolition of customs duties by establishing different levels of economic integration of countries has even greater effects on economic activity and prosperity than a bilateral reduction or abolition of customs protection. In this connection, Ballasa's Theory of Economic Integration (1961) developed and took shape. Mutual multilateral abolition of customs creates a free trade zone (for example, EFTA). If countries harmonise customs protection against the rest of the world, it is a customs union (so Germany began to integrate in the 19th century). If free movement of factors of production is allowed between countries, it is a common market, and if countries also coordinate economic policy, it is an economic community (for example, the European Union).

An even higher level of integration is a monetary union with a common currency. A typical example is the Eurogroup. International economic integration has three effects: (1) liberalisation increases the volume of exports, employment and prosperity, (2) substitution replaces parts of the domestic supply with supply from imports from countries within integration and (3) distortion displaces the supply of countries outside economic integration (and replaces it with less efficient supply from countries of economic integration). The increase in the volume of mutual trade within integration depends on the change in prices caused by the abolition of customs duties and on the elasticity of supply and demand for this change in prices. The greater the overall effect, the greater the share of trade between countries before their economic integration (less distortion), the lower the share of exports and imports in the gross domestic product of a country entering economic integration (the greater the effect of economic integration on production in that country and less on its imports) and the greater the difference in costs between the Member States of emerging economic integration in the production of the same goods - the greater the impact of economic integration on the division of labour (Babić, 1986).

Regardless of whether a country benefits from the liberalisation of its international trade by bilateral or multilateral reduction of customs protection or by entering into various forms of economic integration, these effects are not evenly distributed among its inhabitants or more or less influential social groups. With the liberalisation of foreign trade, some groups gain (exporters, consumers), while others lose (less efficient suppliers of goods on the domestic market, which are now facing more effective competition). Historically, the most well-known conflict in this regard developed in the United Kingdom during the debate on the Corn Laws. Regulating the price of cereals by restricting their imports had a long tradition in the country, dating back to the 15th

century, but created social conflict with laws passed in 1815 in favour of landowners who, during Napoleon's continental blockade, became accustomed to high grain prices. The validity of the laws lasted in various modalities until 1846. In a debate among economists, they were defended by Thomas Malthus, while their most ardent opponent was David Ricardo. The results of the discussion about Corn Laws had shown that a certain influential group, if strong and well organised enough, can change the position of a given country in international trade for a longer period of time (Hilton B., 1991).

We have already mentioned that modern mercantilism represents a serious obstacle to the conclusion of the FTA. A certain degree of caution, or accuracy, is needed when liberating foreign trade with a country pursuing a policy of exchange rates and social and ecological dumping. A country that at the cost of external social or environmental diseconomies creates a surplus in foreign trade forms a special market distortion for a partner country that has entered into such a relationship. One of the partners in foreign trade sells (exports) at prices that do not reflect production costs – a narrower definition of dumping (Viner, J., 1923, Ethier, W. J., 1982). In the case of social and ecological dumping, prices are reduced at the expense of employee poverty or at the expense of deteriorating natural living conditions in the exporting country. This dumping is made possible by inadequate regulation of the labor market or environmental management standards. In exchange rate dumping, trade partner sells complex industrial products that belong to the earlier stages of the product life cycle (Vernon, R., 1966), and require knowledge, or trained workers, at prices that do not provide workers with an income at which, measured in foreign currencies, they will be able to maintain and renew their human capital (adequate rest, additional training, health, housing, cultural and safety standards, upbringing and education of children, etc.). In addition to the policy of undervalued domestic currency exchange rates, this living standard is provided by the non-tradable sector (education, health and similar sectors, which are limited to the domestic market due to the nature of their activities) of the exporting country (Ballasa, B., 1964; Samuelson, P.A., 1964). In fact, we are talking about indirect subsidies of the tradable sector and on the other hand about indirect taxation of the non-tradable sector.

In a country that is a victim of modern dumping, the damage or loss of production and prosperity is unevenly distributed, but the negative effects accumulate in a reduction in market shares and a gradual more or less rapid economic lag and job losses. In this case, dumping must be eliminated (punished by taxes or quantitative restrictions), or it does not make sense for a country to enter into international trade liberalisation. In fact, anti-dumping measures are also effective in the context of trading in differentiated goods (Moraga-Gonzales, J.L., Viaene, J.M., 2015). Special chapters of FTAs are designed to protect the environment, social cohesion and fair competition. That is also the case in the proposed FTA between the EU and Australia (European Commission, Directorate-General for Trade, 2017). Recent analyses already show the efficiency of FTAs' labour mobility and environmental protection clauses in promoting growth in trade (Rana, A. T., 2017).

We should note that the measures described by Paul Krugman as a strategic corporate policy supported by state subsidies (Krugman, P. A., 1990) are not part of dumping but a form of human capital engagement in a dynamic process of increasing potential gross domestic product by setting up production (the author cites the example of aircraft production), which without these state aids would not exist. In this way, a country generates growing returns and exploits economies of scale in the world market. In the late twentieth century, three competitive models of development policy or three national systems of innovation evolved: the European – based on subsidies (Jovanović, M. N., 2005), the Japanese – based on subsidies, loans, cooperation and information (Freeman, C., 1987) and the US – based on public procurement, in particular for defense purposes, and subsidies or tax reliefs for research activities at universities (Nelson, R. R., 1987)¹. The Japanese model was in different modalities also implemented by other Far East countries. Liberalization of international trade increases the effects of development policy measures. A typical example of a successful development policy related to the liberalisation effect of economic integration is the successes of some smaller Member States of the European Union: Finland, Austria, Ireland (Bolatto, S. and Sbracia, M., 2016) and Slovenia (Križanič, F., Hodžič, S., Vojinović, B., 2021). Slovenia has also managed to increase its productivity by intensively working towards joining global value chains, which are the result of conducting the European innovation system developed in old Member States. Engaging in such a path is elaborated by Jan Hagemeyer (2018).

The stable growth of international trade in goods after the Second World War stimulated a rapid increase in the volume of economic activity and a large increase in productivity based on accelerated technological progress in manufacturing (Syrquin, M., 1991). With income growth, demand shifted from agricultural products to industrial products and services (Houthakker, H.S., 1957). The latter have become an important part of reproductive demand, while the share of primary commodities in this demand has declined. With the further growth of income, the share of industrial products in the personal demand has decreased, a process described in Engel's law (Engel, E., 1895), and economic growth began to take place upon the increase in the demand for services. According to Moshe Syrquin (1991), this process took place in economically developed countries between 1960 and 1980. The theory of economic development in three phases: primary (agriculture), secondary (industry) and tertiary (services) had been finalised by Walt Whitman Rostow (1962). This theory has important implications for the study of foreign exchange. Namely, according to Adam Smith, services are not subject to international trade. He said that the work of a manufactured worker remains and is realised in some special object or sales item, which lasts at least some time after the work is done, and that on the other hand, the work of a house servant does not remain and is not realized in any special object or sales goods. His tasks usually die down the moment they end. He also said that the work of the ruler, their judges, military officers, the army and navy, priests, lawyers, doctors, and all possible scholars, bourgeois, musicians, opera singers, dancers, etc., is of the same nature (Smith, A., 1776). In the

period before the information revolution, services appeared in the balance of current accounts as so called 'invisible exports' or 'invisible imports'. Data on foreign exchange earnings or expenditure showed that they were made to consumers abroad or that they were obtained by a domestic resident. We also cover them statistically in the same way today, but since the 1980s, the technological basis has changed, and the expansion or general use of information and telecommunications technologies has enabled the easy implementation of a whole range of services in international trade. Christopher Freeman and Charlotte Perez, emphasizing the potential of connecting services with industry and the emergence of new types of services, describe this development: the factory as a laboratory, creating computer networks and connections in research, consulting, etc. (Freeman, C., Perez, C., 1987). International trade in services has become possible in a wide variety of areas to cover final (personal, government, investment) and reproductive consumption. Restrictions on trade in services are non-tariff: recognition of diplomas, differences in state regulation (especially permits), differences in standards and restrictions on the cross-border movement of persons. The services were included in the Uruguay Round (1986-1993) of the GATT and, in an expanded form, also in the Doha Round, launched in 2001 (Hinrich Foundation, 2019). In any case, the export of services is linked to the export of the factor of production that enables it, and this is largely work. Due to transport costs, state regulation, cultural and other differences related to employee movement, some goods (goods and services) still have a nature of non-tradables (Woodland, A. D., 1968). Among these goods the share of services remains higher than in the total gross domestic product, despite all changes in the technological basis.

International trade takes place not only with goods but also with factors of production. If, before the Second World War, the majority of the international movement of capital was in a financial form (loans, shares, bonds, etc.), after the Second World War, the share of foreign direct investment (taking over ownership of production assets and land or taking over majority stakes of companies in another country) began to increase. The motives for the growth of foreign direct investment were first systematically addressed by Charles Kindleberger (1968), who discovered that it is a matter of achieving economies of scale, acquiring specific knowledge in production and marketing, diversifying the investor's capital structure, and avoiding market distortions. An important limiting circumstance of cross-border capital movements (in the form of direct investments or financial transactions) is risk assessment (Grubel, H., 1991). The conclusion of trade agreements reduces these risks and increases the potential for cross-border capital movements.

Finally, the specific topic of studying the impact of trade agreements between the EU and Australia raises the question of the position of agriculture in the Member States, and in our case, especially in Slovenia, in terms of very good natural conditions and correspondingly large advantages for agricultural production in Australia. There are two arguments for the protection of domestic agricultural production. The first is the

importance of food supply for normal social reproduction (in this sense, a stable supply of agricultural products has a large external economy and can be considered an important part of economic infrastructure, similar to water and energy supplies). The second argument is the inherent instability of the food market. It is described by Kaldor's cobweb theorem (spider web theorem) in which supply always follows changes in demand with a delay of one year (Kaldor, N., 1934). The condition for long-term market stability is greater elasticity of demand than elasticity of supply, and the implicit conclusion is the duty of the state to intervene in market conditions with subsidies. These subsidies result in surpluses of food produced in the temperate zone, which are marketed worldwide without an economic basis and can cause serious problems in the structure of the agricultural sector of individual countries (Jovanović, M. N., 2005). Temporary, very cheap market surpluses of some Australian agricultural products placed in Slovenia can also play a similar role. The level of Slovenian self-sufficiency of food will decrease, and in the event of a shortage of these goods in the world, Slovenia is going to be hit by an inevitable and deep stagflation crisis.

3 Trade between Australia and Slovenia

Australia is an economically highly developed country. With more than 49 thousand euros GDP per capita, representing a 137% higher level than the comparable GDP in Slovenia (Table 1). It also holds nearly a quarter (24.5%) higher GDP per capita than Germany, half (49.8%) higher than the average of the Eurozone countries and a good two-thirds (68.8%) higher than the EU average. So, measured in GDP per capita, Australia is also economically more developed than Slovenia's main trading partners. With 25 million inhabitants, stable growth of real GDP (more than 2% per year), low unemployment rate (5.6% in 2017) and low inflation (between 1% and 2% annually) the Australian market is of real interest to the Slovenian economy, which is particularly involved in exports in sectors with differentiated goods (demand for these goods grows with increasing per capita income). Otherwise, the share of GDP that Australia allocates to R&D is similar to Slovenia's. Australia has a deficit in external trade (by 2017, the current account deficit had shrunk to 2% of GDP from almost 5% of GDP in 2015) while the exchange rate of the Australian dollar to the euro has remained roughly unchanged since 2014. Australia has concentrated its trade with the EU in five Western European countries and has the opportunity to increase the volume of its trade through greater geographical diversification, which would, theoretically, also result in a greater volume of exports and imports in the exchange with Slovenia.

We can see in Table 1 that Slovenia emerged from the last financial crises² after 2013 and, from 2014 to 2017, recorded average economic growth of more than 3% per annum. This growth was associated with a large surplus in external trade and its current account (almost 7% of GDP in 2017). Slovenia is part of the Eurozone, which faced deflationary pressures culminating in 2015. In 2017, Slovenia had lower inflation and a slightly larger unemployment rate than Australia.

Table 1: Main indicators of the Australian and Slovenian economies

		2013	2014	2015	2016	2017
Population (millions)	Australia	23	24	24	24	25
	Slovenia	2	2	2	2	2
Real GDP growth (%)	Australia	2,2	2,6	2,5	2,6	2,3
	Slovenia	-1,0	2,8	2,2	3,2	4,8
GDP per capita (thousand euros)	Australia	48,9	46,3	46,3	46,9	49,3
	Slovenia	17.700	18.235	18.830	19.589	20.819
Unemployment rate (%)	Australia	5,7	6,1	6,1	5,7	5,6
	Slovenia	10,1	9,7	9,0	8,0	6,6
Current account (% of GDP)	Australia	-3,4	-3,1	-4,7	-3,1	-2,3
	Slovenia	3,3	5,1	3,8	4,8	6,2
Inflation (%)	Australia	2,5	2,5	1,5	1,3	2,0
	Slovenia	0,7	0,2	-0,5	0,5	1,7
R&D investment in GDP (%)	Australia	2,2	-	1,9	-	-
	Slovenia	2,6	2,4	2,2	2,0	1,9
Australian dollar for 1 euro		1,378	1,472	1,478	1,488	1,473

Data sources: European Commission, Directorate-General for Trade; IMF Data – prices, Production and Labour; ECB exchange rates; World Bank Open Data, Indicators; Statistical Office of the Republic of Slovenia, b; Bank of Slovenia, 2019, Bulletin

As we can see in Table 2 and Table 3, Slovenian exports to Australia significantly increased from 2008 to 2017. In this period, exports of goods rose by 234% while from 2014 to 2018 exports of services rose by 88%. Among the Slovenian exports of goods, the most important share on the Australian market belongs to machinery and transport equipment, followed by manufactured goods classified chiefly by material and chemical products. All these are differentiated products, and their producers invest heavily in R&D in Slovenia, which is why an additional favourable effect of the liberalisation of foreign trade is an expected increase in Slovenian exports in Australia (Kawabata, Y., Takarada, Y., 2015; Dewit, G., Leahy, D., 2016). In the services sector, the largest share of Slovenian exports belongs to tourism and transportation. Both have been increasing in recent years. Slovenian exports of services related to telecommunications are to some extent also recognised.

Table 2: Slovenian exports of goods to Australia

Thousand euros	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Food and live animals	519	824	449	546	722	646	885	859	1203	1263
Beverages and tobacco	198	187	201	215	223	218	221	588	325	107
Raw materials other than fuels	1	0	0	1	0	13	0	0	0	0
Mineral fuels and lubricants	0	0	0	0	0	0	0	0	0	0
Oils, fats and waxes of animal and vegetable origin	20	9	50	14	40	20	52	48	55	72
Chemical products	2962	3288	5100	8630	8665	18387	12648	15189	13138	12336
Products classified by material	8201	8207	8063	8948	8360	8830	10691	11004	9900	14567
Machinery and transport devices	13948	7929	12029	15127	40967	46037	41162	39842	48692	64366
Various products	3812	1113	2024	3326	3758	3436	3675	5283	9142	6235
Exports together	29661	21557	27916	36807	62735	77587	69334	72813	82455	98946

Data sources: Statistical Office of the Republic of Slovenia, a

Table 3: Slovenian exports of services to Australia

Millions of euros	2014	2015	2016	2017	2018
Transport	2,7	1,8	2,4	3,9	3,9
Travels	5,6	6,4	7,2	8,8	13,1
Compensation for the use of intellectual property	1,1	0,2	0,1	1,2	0,2
Telecommunications, computer services	0,8	1,3	0,6	0,8	1,9
Professional and business consulting	0,5	0,3	0,0	0,1	0,0
Total exports of services	11,7	10,8	15,0	19,9	22,0

Data sources: Bank of Slovenia, Financial Statistics, Economic Relations with the Rest of the World

Table 4: Slovenian imports of goods from Australia

Thousand euros	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Food and live animals	309	126	65	51	33	55	88	108	44	138
Beverages and tobacco	180	95	147	86	26	22	0	3	142	315
Raw materials other than fuels	4808	509	4188	3686	1411	2923	22	561	38	46
Mineral fuels and lubricants	0	0	0	0	0	0	0	0	0	0
Oils, fats and waxes of animal and vegetable origin	11	16	20	0	8	8	3	4	0	0
Chemical products	99	364	421	337	307	138	173	154	145	160
Products classified by material	59	184	362	378	254	84	142	168	768	287
Machinery and transport devices	1557	1059	741	961	544	1282	516	693	955	1514
Various products	763	164	547	150	120	529	188	215	400	639
Exports together	7786	2517	6491	5649	2703	5041	1132	1906	2492	3099

Data sources: Statistical Office of the Republic of Slovenia, a

Slovenian imports of goods from Australia fell by 60% between 2008 and 2017, in particular, imports of food and raw materials (Table 4). In 2017, Slovenian imports of goods from Australia represented only about 3% of Slovenian exports of goods to the Australian market. Exports of Australian services to the Slovenian market increased by

39% from 2014 to 2018 (Table 5); nevertheless, in 2018, Slovenia had an 85% surplus of exports over imports of services in its trade with Australia. The proposed FTA between the EU and Australia also envisages facilitating the exchange of services: the unification of regulation and freer flow of persons performing services (European Commission, 2017). Given its relatively superior economic development and thus the development of its service sector, trade liberalisation will allow Australia to reduce the service trade deficit with Slovenia (Cole, M. T., Guillin, A., 2015).

Table 5: Slovenian imports of services from Australia

Millions of euros	2014	2015	2016	2017	2018
Transport	0,5	0,6	0,3	0,7	0,3
Travel	0,3	0,2	0,2	0,2	0,2
Compensation for the use of intellectual property	0,1	0,2	0,2	0,2	0,1
Telecommunications, computer services	0,3	0,4	0,4	0,3	0,2
Professional and business consulting	0,3	1,1	1,2	0,1	0,2
Total exports of services	2,3	3,4	3,3	3,3	3,2

Data sources: Bank of Slovenia, Financial Statistics, Economic Relations With the Rest of the World

We can conclude that Slovenia has exploited the economic development and growth of GDP in Australia to increase its exports of goods and services to this market. On the other hand, Australia's interest in the Slovenian economy is small and is still declining.

4 The factors of Slovenian trade with Australia

To evaluate the effects of an FTA between the EU and Australia on the trade between Australia and Slovenia, we have estimated the factors affecting Slovenian exports and imports of goods with Australia. Among these factors are the relative prices (supplemented for the exchange rate). The reduction of tariff rates is considered to have the same effect as a change in relative prices.

4.1. Methodology

How are the growth rates of Slovenian exports and imports in trade with Australia influenced by changes in relative prices and the exchange rate? How are these growth rates influenced by changes in economic growth, and how are they influenced by changes to the institutional framework? These primary questions were estimated via panel analysis for nine SITC sectors for the period from 2008 to 2017. Among the SITC sectors, we have taken into account only the ones in which trade between Australia and Slovenia existed³.

Slovenian exports to Australia are described by the equation:

$$\left(\frac{eau_t}{eau_{t-1}} - 1\right) = f \left\{ \frac{[ppi_{au_t} / (ppi_{si_t} * exr)]}{[ppi_{au_{t-1}} / (ppi_{si_{t-1}} * exr)] - 1} + \left(\frac{gdp_{au_t}}{gdp_{au_{t-1}}} - DUM + u \right) \right\}$$

Slovenian imports from Australia are described by the equation:

$$\left(\frac{iau_t}{iau_{t-1}} - 1\right) = f \left\{ -\frac{[ppi_{au_t} / (ppi_{si_t} * exr)]}{[ppi_{au_{t-1}} / (ppi_{si_{t-1}} * exr)] - 1} + \left(\frac{gdp_{si_t}}{gdp_{si_{t-1}}} - 1\right) + u \right\}$$

- eau_t is the value of Slovenian exports to Australia by SITC sectors; these sectors are indicated by: ‘?’, and eau_{t-1} represents Slovenian exports on the Australian market in the previous year.
- iau_t is the value of Slovenian imports from Australia by SITC sectors, and iau_{t-1} represents Slovenian imports from Australia in the previous year.
- ppi_{au_t} is the Australian producer price index by SITC sectors (designated: ‘?’), and $ppi_{au_{t-1}}$ is the value of this index in the previous year.
- ppi_{si_t} is the Slovenian producer prices index by SITC by sectors (designated: ‘?’), and $ppi_{si_{t-1}}$ is the value of this index in the previous year.
- exr is the exchange rate of the Australian dollar (in dollars per one euro), and exr_{t-1} is this exchange rate in the previous year.
- gdp_{au} is the Australian real GDP, and $gdp_{au_{t-1}}$ is the Australian real GDP in the previous year.
- gdp_{si} is the Slovenian real GDP, and $gdp_{si_{t-1}}$ is the Slovenian real GDP in the previous year.
- DUM is a dummy variable that marks the entry into force of the Australian FTA with Japan and the Australian FTA with South Korea.
- u is the unexplained residual, dependent on data errors, inadequate equation specification and the random nature of some changes of the dependent variable.

The equations were estimated on annual data that were tested for unit root relationships. In this test, the hypothesis that the series has a single root was rejected. The specificities of individual SITC sectors that could affect the bias of the final result (heteroskedasticity) were eliminated by the introduction of weights (cross-section SUR). The results of our analysis are limited to the period 2008 – 2017; however, the equations are estimated at growth rates, which shortens the period to 2009 - 2017.

4.2. Data

The data needed for the econometric analysis of the factors of trade between Australia and Slovenia were collected from the Statistical Office of the Republic of Slovenia, Australian Official Statistics, from information from the Australian Ministry of Foreign Affairs and Trade, from the European Central Bank and IMF data. Slovenian producer prices were ranked in the SITC sectors from the level of individual products (product groups) and according to their volume in the trade between Slovenia and Australia from 2008 to 2017. According to the Combined Nomenclature, products were further grouped to appropriate NACE_2 industries⁴, for which data about producer prices exist. The sum of the weighted values of products, or groups of products, under the Combined Nomenclature represents the producers' price of a given SITC sector for Slovenia – estimated according to the structure of its trade with Australia. We assume that this is a structure of goods that Slovenia can export or import to a greater extent with the South Pacific region and with Australia in particular. The Australian producer prices were calculated as a weighted average by the structure of SITC sectors (weights are the same as in the calculation of Slovenian producer prices) based on producer prices for individual products, or groups of products, as published by the Australian Statistical Office. The Australian Statistical Office publishes quarterly producer price indices for 175 products, or groups of products. For the period 2008 to 2017, we converted them into annual data by calculating the arithmetic means.

We calculated the price competitiveness variable by dividing the index of producer prices of SITC sectors in Australia with the producer price index of SITC sectors in Slovenia and with the exchange rate of the Australian dollar against the euro. We then calculated the index with the base 2008 = 100. Economic growth is, in our estimations, represented by annual growth rates of real GDP in Australia and Slovenia. The change in the institutional framework is represented by a dummy variable with zeros from 2009 to 2014 and a number 1 in 2015, 2016 and 2017. In 2015, Australian trade agreements with Japan and South Korea came into force (Australian Government, Department of Foreign Affairs and Trade, 2019).

4.3. Elasticity of Slovenian trade with Australia

Table 6 and Table 7 show the equations that explain the growth rates of Slovenian exports and imports in trade with Australia for the period 2009 to 2017. The last lines of

the tables show the sectors that were considered in our estimations. In the row above is a determination coefficient (R^2) indicating the percentage of growth (or decline) in exports, or imports, that was explained by the equations.

The next row above presents a Durbin-Watson statistics (DW) result, which, if it has a value of around 2, indicates that there is no first-order autoregression in the given equation. The explanation of the growth of Slovenian exports and imports in trade with Australia is good. The determination coefficient (R^2) ranges from 46% to 80%, while DW statistics are close to 2.

Table 6: Factors of Slovenian exports to Australia

GROWTH RATES	Explanatory Variable	Regression Coefficient (t-statistics)
	Constant	0.0665 (1.7)
Competitiveness	$\frac{\text{Australian producer prices}}{\text{Slovenian producer prices} \cdot \text{exchange rate}}$	0.9145(-1) (10.2)
Economic growth	Australian real GDP	4.6437 (3.3)
Institutional change	Australian FTA with Japan and with South Korea	-0.0412 (-2.6)
Explanation – R^2	80.1	
DW	2.3	
SITC sectors included in the analysis	Food and live animals, beverages and tobacco, chemical and related products, manufactured goods classified chiefly by material, machinery and transport equipment, miscellaneous manufactured articles	

Data source: own calculations

The lines of Table 6 and Table 7 display the independent variables (constant, relative producer prices corrected for the exchange rate, real GDP, dummy variable indicating institutional change) that influence the dependent variables (growth of Slovenian exports, or imports, to or from Australia). For each variable, the regression coefficient of influence is shown. In the case of delays of such influence (time lags), the number of years is signed in brackets next to the regression coefficients. In the case of the ‘competitiveness’ variable, the regression coefficient shows price elasticity, and in the case of the ‘economic growth’ variable, the regression coefficient shows income elasticity. In the case of the ‘institutional change’ variable, the regression coefficient shows the impact of the change in the institutional environment on the growth rates of Slovenian exports to Australia. In the brackets under the regression coefficients the t-values are presented, indicating the statistical significance of each explanatory variable’s influence on the dependent variable.

In Tables 6 and 7 we can see that the price elasticity of Slovenian exports of goods to Australia is 0.9, while the income elasticity of these exports is 4.6, and that Slovenian exports are decreasing upon the implementation of the Australian FTA with Japan and South Korea. The price and income elasticities (5.3 and 7.5, respectively) of Slovenian imports from Australia is higher than the corresponding elasticity of Slovenian exports. This means that in segments where trade with Australia is taking place, the Slovenian economy is a more flexible partner. Our analysis confirms that higher price elasticity (the elasticity of trade) is characteristic of smaller and more open economies (Brooks, W. J., Pujolas, P. S., 2019), and that economically less developed countries have greater elasticity of trade than economically more developed countries (Imbs, J., Mejean, I., 2017). The increase in Slovenian exports and the drop in Slovenian imports in trade with Australia in the decade following 2008 was obviously the result of faster economic growth in Australia than in Slovenia⁵, and to a lesser extent also the consequence of improved Slovenian price competitiveness⁶.

Table 7: Factors of Slovenian imports from Australia

GROWTH RATES	Explanatory Variable	Coefficient (t-statistic)
	Constant	0.9371 (5.3)
Competitiveness	$-\frac{\text{Australian producer prices}}{\text{Slovenian producer prices} \cdot \text{exchange rate}}$	-5.2568(-1) (-4.4)
Economic growth	Australian real GDP	7.4575 (1.2)
Explanation – R ²	46.1	
DW	2.3	
SITC sectors included in the analysis	Food and live animals, crude materials, inedible, except fuels, chemical and related products, manufactured goods classified chiefly by material, machinery and transport equipment, miscellaneous manufactured articles	

Data source: own calculations

4.4. The impact of a mutual reduction of prices in Australia and Slovenia and the impact of a possible end to Slovenian discrimination on the Australian market on Slovenian trade

The model equations were used to simulate consequences of the increase in the relative prices of Australian producers relative to Slovenian producer prices and adjusted for the exchange rate and vice versa. In the case of a concluded FTA, we expect the same effect as a mutual reduction in prices would have. We also simulated the effect of Australia's trade agreements with Japan and South Korea on the ousting of the Slovenian economy from the Australian market.

The results of a possible 1% reduction in relative prices for the Slovenian economy (the reasons may be different, from the reduction of customs duties related to the abolition of customs to a changing exchange rate, inflation rate, productivity and also to changing tastes) are shown in Table 8. The total effect on the increase in Slovenian exports to the Australian market is just under one million euros, mostly concentrated on exports of machinery and transport equipment. The increase represents 1% of Slovenian exports to this country's market. Measured as a percentage, the increase in exports is highest for beverages.

Table 8: Impact of 1% improvement in Slovenian price competitiveness on the Australian market on Slovenian exports of goods to Australia

Thousand euros	First year	Second year	Impact in percentages
Food and live animals	9	9	1
Beverages and tobacco	2	2	2
Raw materials other than fuels	0	0	0
Mineral fuels and lubricants	0	0	0
Oils, fats and waxes of animal and vegetable origin	0	0	0
Chemical products	131	156	1
Products classified by material	99	101	1
Machinery and transport devices	486	639	1
Various products	41	49	1
Exports together	767	955	1

Data source: own calculations

Table 9: Impact of a 1% improvement in Australian price competitiveness on the Slovenian market in Slovenian imports of goods from Australia

Thousand euros	First year	Second year	Impact in percentages
Food and live animals	8	12	9
Beverages and tobacco	0	0	0
Raw materials other than fuels	6	33	72
Mineral fuels and lubricants	0	0	0
Oils, fats and waxes of animal and vegetable origin	0	0	0
Chemical products	15	20	13
Products classified by material	14	26	9

Thousand euros	First year	Second year	Impact in percentages
Machinery and transport devices	44	70	5
Various products	19	44	7
Imports together	106	205	7

Data source: own calculations

The results of a possible 1% reduction in relative prices for the Australian economy on the Slovenian market are shown in Table 9. In this case, Slovenian imports will increase by a total of 205 thousand euros or 7%. The effect will be greatest in the import of machinery and transport equipment and in the import of various products, as well as in the import of raw materials other than fuels. There would be a 72% increase.

A mutual 1% reduction in prices relevant for Slovenian trade with Australia - for example, due to the mutual abolition of customs duties related to the conclusion of an EU-Australia trade agreement - would improve Slovenia's trade balance with this country (Table 10). The reason for the improvement in Slovenia's trade balance is a large surplus before the change in prices and therefore in the different basis on which this change is measured. Greater price elasticity of Slovenian imports than exports is less important in trade with Australia. Slovenia's trade balance would improve the most in the field of machinery and transport equipment, in chemical products and in products classified by material. The total effect after two years would be 0.75 million euros.

Table 10: Impact of mutual reduction of prices by 1% on Slovenian trade balance with Australia

Thousand euros	2016	2017
Food and live animals	1	-3
Beverages and tobacco	2	2
Raw materials other than fuels	-6	-33
Mineral fuels and lubricants	0	0
Oils, fats and waxes of animal and vegetable origin	0	0
Chemical products	116	136
Products classified by material	85	75
Machinery and transport devices	442	569
Various products	22	5
Together	661	750

Data source: own calculations

The changed institutional framework of Australia's operation on the world market after the entry into force of its free trade agreements with Japan and South Korea had, in 2017, a full effect of almost 14 million or 14% less Slovenian exports to Australia than it would have been without this change (Table 11). The effect is by far the largest in the

sale of machinery and transport equipment (9 million euros after an adjustment period of two years) and measured as a percentage in the sale of beverages (27%) and chemical products (18%). Slovenian exporters have a clear interest (Baldwin, R., Robert-Nicoud, F., 2015) in normalising their position on the Australian market and will, without reservation, support the FTA between the EU and Australia.

Table 11: Impact of Australia's free trade agreement with Japan and South Korea on Slovenian exports to Australia

Thousand euros	2016	2017	Impact in percentages
Food and live animals	-79	-127	-10
Beverages and tobacco	-19	-29	-27
Raw materials other than fuels	0	0	0
Mineral fuels and lubricants	0	0	0
Oils, fats and waxes of animal and vegetable origin	0	0	0
Chemical products	-1240	-2236	-18
Products classified by material	-924	-1450	-10
Machinery and transport devices	-4519	-9035	-14
Various products	-385	-717	-11
Exports together	-7166	-13594	-14

Data source: own calculations

5. Concluding remarks

Since 2008, Australia has been losing its position on the Slovenian market. At the same time, Slovenia has run a strategy to promote economic growth based on exports, which has also resulted in creating trade surplus in the Australian market.

The price elasticity of Slovenian exports of goods to Australia is 0.9, while the income elasticity is 4.6. The price (5.2) and income (7.5) elasticity of Slovenian imports from Australia is higher than the corresponding elasticity of Slovenian exports.

In the case of a decrease in customs rates by 1%, Slovenian exports to Australia would increase by nearly one million euros (around 1%). Among the groups of goods according to the SITC classification, the effect will be the largest (over 0.6 million euros) in machinery and transport devices. On the other hand, Slovenian imports from Australia would increase by 0.2 million euros, or 7%, in the event of a 1% reduction in Slovenian customs rates on these imports. The impact will again be greatest in the import of machinery and transport devices.

Despite the higher price elasticity of Slovenian imports from Australia, according to the price elasticity of exports to these markets, the Slovenian surplus of trade influenced by the same mutual price reduction (for example, by 1%) is still increasing, reaching nearly 0.8 million euros in the second year after the price change.

Slovenia is losing its potential position on the Australian market due to the intensive integration of Australia into trade partnerships with developed Pacific economies, particularly Japan and South Korea. The effect of these agreements on Slovenian exports has been growing over the years. In 2017, it amounted to 14% of Slovenia's potential exports.

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Notes:

¹ The Boeing-Airbus WTO dispute has shown that in 2005 the WTO started to involve in state aid regulation among various national innovation systems (BBC News, 2005).

² In Slovenia, the financial crisis after 2008 took place as a double-bottomed crisis.

³ Sectors of the SITC (Standard International Trade Classification maintained by United Nations) taken into account are: food and live animals, beverages and tobacco, crude materials, inedible, except fuels, mineral fuels, lubricants and related materials, animal and vegetable oils, fats and waxes, chemical and related products, manufactured goods classified chiefly by material, machinery and transport equipment, miscellaneous manufactured articles, commodities and transactions.

⁴ According to statistical classification of economic activities in the EU, products are classified in NACE (La *Nomenclature statistique des activités économiques dans la Communauté européenne*) sectors.

⁵ After 2008, Australia was not exposed to discriminatory measures by the European Commission and did not experience a double bottom crisis.

⁶ Slovenian producer prices were declining between 2013 and 2015 (Statistical Office of the Republic of Slovenia, b).

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