International Trade and Migration: Why Do Migrants Choose Small Countries?

Igor Fedotenkov

Bank of Lithuania, Economics department, Lithuanian Institute of
Agrarian Economics

25. May 2015

International Trade and Migration: Why Do Migrants Choose Small Countries?

Igor Fedotenkov [1]

2015-05-25

Abstract

This paper analyses the link between migration and sizes of countries. It explains why larger countries (in terms of population) have lower shares of migrants in their populations. First, the data is analysed; next, a macroeconomic model with international trade and migration, explaining the stylised facts, is developed. The model includes country size, which gives rise to cheaper country-specific goods produced in a large country relative to the goods produced in a smaller country. Higher wages in the small country spur immigration to it.

---

[1] Economics Department, Bank of Lithuania
Totorių g. 4, LT-01121 Vilnius, Lithuania
E-mail: I. Fedotenkov: i.fedotenkov@gmail.com, ifedotenkov@lb.lt

1 Introduction

Migration is becoming a very important phenomenon in the modern world. It changes labour endowments from the relatively labour rich to the labour poor countries, and has important influences on production, wages and interest rates. Indeed, borders are becoming more open for migration; education and globalisation help to overcome linguistic and cultural barriers. Population ageing forced developed countries to open their borders not only for immigrants from other developed countries, but also from the rest of the world. An interesting phenomenon, readily observable in the data, but relatively unexplored in the academic literature, is that smaller countries (in terms of population) often have higher shares of migrants in their population. For instance, according to the World Bank data, people born outside of Andorra constituted 71.68 percent of its population in 2010; in Spain this share was only around 13.84 percent. A negative correlation between country sizes and shares of migrants is also observed when microstates[2] are excluded from the analysis. This paper addresses the question of why this is the case and explains the phenomenon with a macroeconomic model with international trade and endogenous migration.

One may argue that higher percentages of migrants in smaller countries are rather obvious: If a few migrants come to a large country, such as Spain or Germany, their input to the percentage of the migrants in the country is very small. But if they come to a small country, such as Liechtenstein, the impact on the migrants' share in the population is higher. However, larger countries may accommodate more migrants. Furthermore, the total number of migrants in a large country (not percentage) is likely to be greater. According to the conventional models, this creates larger migration networks, helps to overcome informational barriers, and make job finding easier (Comola and Mendola 2015). On the contrary, migrants disproportionally migrate to smaller countries. This phenomenon is the focus of this paper.

The idea underlying why small countries accumulate higher shares of migrants in our model comes from the fact that a smaller country size results in a smaller number of country-specific goods produced in the country. This raises their price, relative to the country-specific goods produced in a larger country, and therefore increases the productivity of production factors employed in the industry producing that good. As a result, the smaller country attracts mobile production factors, including migrants if a certain condition is satisfied. This condition will be derived later in the paper, and it will depend on the weight of the country-specific goods in utility functions.

Goods and services produced in small countries are often not identical to those in large countries nearby. For example, small countries provide offshore financial services, venues for gambling and a number of other goods and services restricted in the large countries. Many tourists visiting Italy also go to San Marino due to its status as an independent country. The Vatican provides a country-specific service to devout Catholics. Due to its favorable geograph-

---

[2]States with fewer than 500,000 people.

ical location, the Netherlands provide a hub service for German imports and exports. Andorra is a popular ski resort that also attracts many tourists with its tax-reduced shopping. Undoubtedly, the ability to produce and provide country-specific goods and services has a large impact on the welfare of agents. Moreover, as first suggested by Armington, (Armington 1969), even the same goods, produced in different countries, from the consumer's point of view, are two different goods, and cannot be considered as perfect substitutes.[3] The imperfect substitution of country-specific goods was confirmed in a number of empirical papers (Blonigen and Wilson 1999; Reinert and Roland-Holst 2012; Shiells, Stern, and Deardorff 1986; Shiells and Reinert 1993). We employ this idea to explain why smaller countries tend to have larger shares of migrants in their populations.

The link between country size and international trade has been studied rather extensively. Keesing (1968) argued that small countries have "a comparative disadvantage in many important manufacturing industries, uncompensated by a comparative advantage in others" and suggested that this could be due to scale advantages. In a more recent paper, Rose (2006) analysed 200 countries over forty years and found the opposite: there is no visible scale effect; however, in general, small countries are more open to international trade. Balassa (1969) reconsidered the findings of Keesing (1968) and suggested that small countries tend to specialise in one or several export products. Furthermore, he found evidence that small countries have an advantage in intermediate manufactured goods and a disadvantage in the final goods.

In a theoretical model, Ray (1977) and Either and Ray (1979) showed that small countries gain from trade more than large countries, but argued that they have not considered monopoly power and economy of scale, which may reverse the results. Amiti (1998) developed a model with two countries, two sectors and two production factors, which predicts that if the sectors are different in terms of factor intensities only, the large country exports capital intensive goods and the small country exports labour intensive goods. If the industries differ in terms of transport costs, the large country will specialise in the goods with high transport costs. In a recent empirical paper, Amin and Haidar (2014) studied the number of documents required for exports and imports. They found that smaller countries, in general, require less documents, and are, therefore, more open to international trade, the dependence between trade facilitation and country size being nonlinear. In another recent paper, Amin and Islam (2014) showed that small countries import more intermediate inputs relatively to large countries.

Apart from international trade, our model features an endogenous migration between the countries. There is vast literature on migration. The Russian scientist Mikhail Vasilyevich Lomonosov in his 1761 work On the preservation and enhancement of Russian people ("O sochranenii i razmnozhenii rossijskogo naroda") claimed that emigration to Poland was a significant phenomenon in

---

[3]Loosely speaking, consumers treat apples produced in Germany and Italy as two different goods.

reducing population size in Russia. He argued that the reasons for this emigration were economic (larger welfare) and a wish to escape military conscription. As a measure to prevent emigration he suggested reducing taxes in the Russian regions bordering Poland. Nowadays this phenomenon retains its importance. For example, Sweden's news in English (http://www.thelocal.se/, 26 Jul 2012) reports that many young Swedes are going to Norway for work, increasing unemployment among local Norwegians. Another recent example of international migration is the labour flow from Eastern to Western Europe after the expansion of the European Union in 2004. For example, emigration from Lithuania was studied in detail by Elsner (Elsner 2013a; Elsner 2013b). Modern migration is also determined by welfare. Pedersen et al. (2008) showed that the GDP per capita and unemployment rates, have a strong and statistically significant influence on migrants' decisions in choosing a country to live in. Furthermore, countries with higher levels of GDP per capita and smaller unemployment face smaller emigration and higher immigration. The recent findings of Geis et al. (2013) confirmed that the determinants of personal income, such as wages and unemployment rates, have a strong and statistically significant influence on migrants' decisions in choosing a country to live in. In this paper we link country size with the economic performance of the countries, which determines migration, and explain higher shares of migrants in smaller countries.

The literature, which analyses migration from the economic point of view, also includes Sjaastad (1962), who considered migration as an investment with its costs and returns. He showed that the portion of emigrants in population is the highest for young agents, and declines for older age groups. He explained this phenomenon with a need to invest in new skills, if agents decide to migrate. Tiebout (1956) raised the hypothesis that taxes and public expenditures affect individual migration decisions. This hypothesis has been studied intensively in recent years. Among these works is a paper by Borjas (1999) who found that the size of welfare benefits has a significant influence on the location choices of migrants in the United States. However, Liebig and Sousa-Poza (2006) argued that tax rates have no significant impact on migration decisions in Switzerland. Migration at the level of the European Union was studied by De Giorgi and Pellizzari (2009). They found a significant (but limited) influence of state welfare on migration decisions. In a recent paper by Jackson et al. (2013) a distinction among education levels of migrants was made. They showed that governmental health and education spending has a positive impact on the education levels of migrants, while larger unemployment and retirement benefits attract more unskilled agents. We do not explicitly model taxes and government expenditures; however, we make the assumption that agents are mobile and prefer to live in a country where they obtain larger life-time income. This assumption is in line with the enumerated papers, but in contrast to them we also introduce country size in the model; we explain why small European countries are, in general, richer than large countries, and, as a result, they attract more migrants.

Wittman (2000) argued that a wise public policy increases the wealth of the citizenry, increases productivity, and improves military apparatus. This attracts migrants, and leads to a geographical expansion of the country. This

could be the case in the past, or nowadays in the less economically developed regions. But, according to the CIA world factbook, in August 2014 the top 10 richest countries and territories in the world were: Qatar, Liechtenstein, Macau, Bermuda, Monaco, Luxembourg, Singapore, Jersey, Norway, Falkland Islands. These countries and territories are very small. All of them have populations less than 6 million. In 7 territories from this list, population size does not exceed 1 million. In this paper we aim to explain this phenomenon.

Sometimes the enumerated wealthy small countries serve as an example for Scotland and other regions seeking independence. It is argued that becoming a small country will lead to an increase of wealth in these regions. In this paper we suggest that this may be the case if independence allows these regions to produce country-specific goods, which cannot be produced now because of legislation or other constraints. However, political decentralization does not lead to an increase in wealth by itself.

As mentioned above, we employ the Armington approach to model country-specific goods. The monopolistic competition model developed by Melitz (2003) allows for trade with country-specific goods as well. However, in the benchmark Melitz's model, country size is determined by the number of firms, border opening for international trade being equivalent to an increase in country size. In order to distinguish between domestic and international trade, Melitz assumes that there are fixed costs for firms entering the international market, with the result being that only the most efficient firms may export their goods. Application of this model does not explain the empirical fact that smaller countries have higher shares of migrants in their populations. A possible extension to capture this phenomenon would be to assume that elasticity of substitution between imported and domestic goods is lower than between different domestic goods, leading to the same Armington approach in a more general framework.

The paper is organised as follows: In the next section empirical results are presented; section 3 develops a theoretical model; section 4 discusses the results and suggests possible extensions; section 5 concludes.

2   Empirical results

In this section World data are analysed. The data come from the World Bank Statistics for the year 2010, because at the moment when the paper is written, the data for shares of migrants in populations are available for 2010 only. The data for GDP PPP per capita was also taken from the World Bank statistics, but as some observations are unavailable, for a number of countries missing observation were filled from the CIA world factbook 2010.[4] All the data and empirical analysis are available on the author's personal webpage.

---

[4]Namely: Aruba, Andorra, Argentina, American Samoa, Cayman Islands, Faeroe Islands, Greenland, Guam, Isle of Man, Liechtenstein, Monaco, New Caledonia, Korea, Dem. Rep., French Polynesia, San Marino, Somalia, Syrian Arab Republic, Turks and Caicos Islands, Virgin Islands (U.S.).

Fig. 1 presents a scatterplot of the logarithms of population sizes and logarithms of shares of migrants in the world. From the figure it is clear that there is a negative dependence between country size (in terms of population) and the share of migrants in it. More formally, we consider the following model:

Fig. 1: log(Share of migrants) vs log(Population)
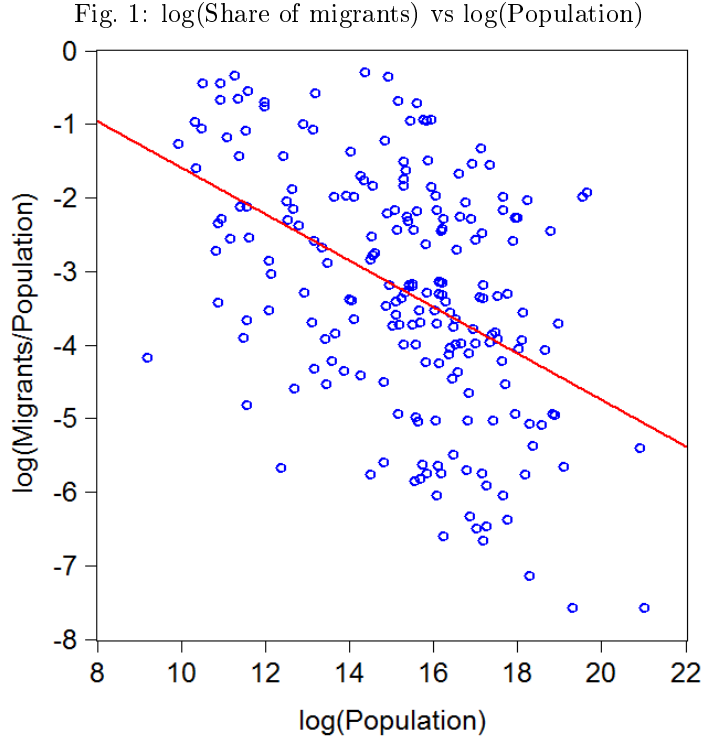
$$\log M_j = \beta_0 + \beta_1 \log Pop_j + \epsilon_j, \qquad j = 1, ..., N, \tag{1}$$

where M_j denotes the share of migrants in the population, Pop_j is the total population in the country, ϵ_j is an error term.

Table 1 presents the estimation of the model (1) for three cases: The first column presents estimation results for the whole world. A country's size in terms of land, and also population is sometimes supposed to be an endogenous variable, and it depends on such a factor as the level of democracy (Alesina and Spolaore 1997; Alesina 2003) who showed that in general, higher level of democracy reduces country sizes. Indeed, migration to a country may depend on its level of democratisation as well. This causes a problem of endogeneity in the model. In order to account for it, in the second column we present the estimates of the same equation for countries which were OECD, EU or Schengen Area members in 2010. We suppose that in these countries the level

of democracy does not affect the size of the countries and the fact, that, for example, Lithuania is smaller than Germany cannot be explained by a higher level of democracy in Lithuania.

Indeed, some large OECD countries, such as Australia, Canada, US regulate migration in a rather specific way. In order to check the robustness of our results to this regulation, we also estimate the model for the European countries only. Namely, we take countries which are in the EU or Schengen area. The estimation results are presented in the third column of Table 1.

Table 1: Share of migrants in population

	World	OECD∪EU∪Shengen	EU∪Shengen
Intercept	1.5646 (0.6640)**	0.8908 (1.4147)	-0.0956 (1.4139)
log(Pop)	-0.3157 (0.0430)***	-0.2178 (0.0875)**	-0.1545 (0.0901)*
Obs	209	41	31
R^2	0.2069	0.1369	0.0922

* $p < 0.1$
** $p < 0.05$
*** $p < 0.01$ significance level

In all the columns the coefficients corresponding to $log(Pop)$ are negative and significant at 10% significance level, indicating that countries with smaller populations tend to have larger shares of migrants.

It is very unlikely that migrants prefer to live in a small country only taking its size into account. Probably there are factors which correlate with the country size and shares of migrants in population. One such a factor is likely to be income. First, notice that GDP PPP per capita is, indeed, larger in small countries. Formally the model is written in the equation (2). Its estimates are presented in Table 2. As expected, the estimates indicate that small countries are, in general, richer than large countries. All the estimates of ν_1 are significant at the 10% significance level.

$$\log(GDP\ PPP/cap) = \nu_0 + \nu_1 \log Pop_j + \epsilon_j, \qquad j = 1, ..., N., \qquad (2)$$

In order to check if higher incomes attract migrants to the country we specify such a model

$$\log M_j = \phi_0 + \phi_1 \log(GDP\ PPP/capita) + \epsilon_j, \qquad j = 1, ..., N., \qquad (3)$$

Its estimation results are presented in Table 3. All the coefficients are highly significant. The results confirm that migrants prefer to flow to richer countries. This is a very intuitive result.

As we have examined aggregate data, we cannot exclude possible other factors, affecting shares of migrants in the populations, income and total populations. There can be factors, such as diverse historical developments and different

Table 2: log(GDP PPP/capita)

	World	OECD∪EU∪Shengen	EU∪Shengen
Intercept	10.4703 (0.5691)***	11.5711 (0.6003)***	11.7526 (0.7185)***
$\log(Pop)$	-0.0875 (0.0368)**	-0.0750 (0.0371)*	-0.0862 (0.0458)*
Obs	209	41	31
R^2	0.02654	0.0947	0.1090

* $p < 0.1$
** $p < 0.05$
*** $p < 0.01$ significance level

Table 3: Share of migrants in population

	World	OECD∪EU∪Shengen	EU∪Shengen
Intercept	-9.8862 (0.6827)***	-19.7044 (2.9280)***	-17.3649 (2.5677)***
$log(\frac{GDP\ PPP}{capita})$	0.7255 (0.0740)***	1.6494 (0.2822)***	1.4276 (0.2465)***
Obs	207	41	31
R^2	0.3191	0.4669	0.5363

*** $p < 0.01$ significance level

levels of tolerance, which may affect both population sizes and numbers of migrants. But the illustrated data allow us to see that, in general, smaller countries are wealthier and have larger shares of migrants in their populations. In the next section we provide an economic explanation for this phenomenon.

3   The model

There are two countries in the model, each country produces a country-specific good. To distinguish between them, one of the countries will be called Home country (country H), the other Foreign country (country F). Following Armington (Armington 1969), goods produced in the countries are not necessarily perfect substitutes. This approach is commonly used in the copious economic literature, including Duarte and Obstfeld (2008), Amdur (2010), van Ewijk and Volkerink (2012). The countries trade with each other. We denote the number of agents in country H as L, the number of agents working in country F being $\tilde{L}$. Agents inelastically supply one unit of labour. Initially, we suppose that agents are immobile between the countries; further we consider another extreme case, when agents are fully mobile.

The two countries initially differ with two aspects: country sizes (labour endowments) and country-specific goods.

3.1 Firms

For simplicity, we assume that there is no capital in the model,[5] thus, production functions are simply equal to the labour employed

$$Y = L, \tag{4}$$

$$\tilde{Y} = \tilde{L}. \tag{5}$$

Then wages are equal to their marginal returns:

$$w = 1, \tag{6}$$

$$\tilde{w} = p. \tag{7}$$

Wages are denominated in the goods produced in the Home country; p being the price of foreign goods in terms of goods produced in country H.

3.2 Households

Agents consume and invest in goods produced in different countries, which are not perfect substitutes. We model imperfect substitution between country-specific goods by assuming that agents consume composite (final) goods, which are composed of two country-specific intermediate goods, and can also be considered as a consumption bundle.

$$U = U(\Phi(c, c^{'})); \tag{8}$$

$$\Phi(c, c^{'}) = (\gamma c^{1-1/\theta} + (1-\gamma)c^{'1-1/\theta})^{\frac{\theta}{\theta-1}}, \tag{9}$$

where U is a strictly increasing utility function, $\Phi(\cdot, \cdot)$ is a function which composes country-specific intermediates: c (Home country) and $c^{'}$ (Foreign country) into the final goods. There is only one final good in both countries. Parameter γ allows for different weights of country-specific intermediates in the composite good, $\gamma \in (0, 1)$. θ determines an elasticity of substitution between country-specific intermediates, $0 < \theta < \infty$, $\theta \neq 1$ and the CES function reduces to the Cobb-Douglas case if $\theta \to 1$. Such a construction of final goods ensures that country-specific goods are imperfect substitutes.

Agents maximise their utilities by choosing the amounts of country-specific goods to make the final good. From the utility maximisation, which is equivalent to $\Phi(c, c^{'})$ maximisation, we find that for wages in the Home country, which are equal to unity, it is possible to buy

$$\pi := \gamma^{\frac{\theta}{\theta-1}} \left[1 + p^{1-\theta} \left(\frac{1-\gamma}{\gamma} \right)^{\theta} \right]^{\frac{1}{\theta-1}} \tag{10}$$

---

[5]Inclusion of capital to the model does not change the results; however, it complicates the analysis because then overlapping generations shall also be introduced to define capital owners (old generation). If we assume that capital belongs to "capitalists" which are outside of the model, the model becomes unclosed and/or more complicated due to changes in market clearing conditions.

composite goods, with the optimal intermediate inputs:

$$c = \frac{\pi}{1 + p^{1-\theta}\big((1-\gamma)/\gamma\big)^{\theta}}, \tag{11}$$

$$c^{'} = \frac{\pi}{p + \big(p\gamma/(1-\gamma)\big)^{\theta}}, \tag{12}$$

and analogously optimal intermediate inputs for agents living in the foreign country are equal to $\tilde{c} = pc$ and $\tilde{c}^{'} = pc^{'}$.

3.3 Market clearing conditions

The model is in equilibrium when agents maximise their utilities; furthermore, all markets clear.

Goods markets clear when agents from both countries completely consume production outputs.

$$Y = Lc + \tilde{L}\tilde{c}, \tag{13}$$

$$\tilde{Y} = Lc^{'} + \tilde{L}\tilde{c}^{'}. \tag{14}$$

Substituting equations (11) and (12) into (13) and (14) and dividing equation (13) by (14) we get:

$$\tilde{w} = p = \frac{1-\gamma}{\gamma}\left(\frac{Y}{\tilde{Y}}\right)^{\frac{1}{\theta}} = \frac{1-\gamma}{\gamma}\left(\frac{L}{\tilde{L}}\right)^{\frac{1}{\theta}}. \tag{15}$$

Differences in wages between the countries arise due to different labour endowments. A larger country (in terms of labour force) produces more goods than a small country, and those country-specific goods are cheaper. This drives wages in the large country down relatively to the small country. A smaller elasticity of substitution between country-specific goods enlarges the differences between wages. Furthermore, differences in wages are affected by the weight of goods in composite good construction γ. The larger the share of country-specific goods in the composite good, the more expensive those country-specific goods are, and this raises incomes in the country.

Suppose that Home country is the large country; $\tilde{w} > w$ holds when

$$\frac{L}{\tilde{L}} > \left(\frac{\gamma}{1-\gamma}\right)^{\theta}. \tag{16}$$

This condition to hold, γ shall be not close to unity, i.e. goods produced in the small countries shall have a sufficiently large weight in the composite good.[6] The fact that small countries are in general richer than the large countries implies that they do manage to produce useful country-specific goods.

---

[6] In a more general model, with other production factors apart labour, such as capital, and country-specific production functions, this condition becomes much more complicated. In such a case, it also depends on the technological parameters, Armington elasticity of substitution and allocation of other production factors.

3.4 Migration

In this subsection we suppose that agents may freely migrate between the two countries. In order not to mix it with the case without migration we will use time indexes 0, for the period when migration does not take place, and suppose that at time 1, the borders are opened for costless migration. Then, utilities of agents received in different countries shall equalise. In the absence of social securities, higher wages allow agents to reach a further isoquant curve; therefore, the equality of utilities is equivalent to the equalities of wages expressed in one goods: $p_1 = \tilde{w}_1 = w_1 = 1$. Thus, equation (15) can be rewritten as

$$\frac{L_1}{\tilde{L}_1} = \left(\frac{\gamma}{1-\gamma}\right)^{\theta}. \tag{17}$$

Suppose that shares of country-specific goods as inputs to the composite goods are the same ($\gamma = 0.5$). Then equation (15) implies that wages in the country with a smaller number of labour force are higher than in the large country. When the countries open their borders for migration, labour tends to flow to the small country. However, it is likely that γ is not equal to 0.5. Consider such an example: Suppose that France is the Home country, and Monaco is the Foreign country. Machinery, chemicals, cars, electronics, textiles and food produced in France probably shall have higher weight in composite good construction for agents living in both countries than gambling, banking and tourism services produced in Monaco. The sufficient condition for migration from France to Monaco is given in (16). When this condition is satisfied, wages in France are initially lower than in Monaco, and when the borders open, there is migration from France to the small country.

3.5 Policy suggestions

Policy suggestions for small countries, following from this analysis can be as follows. First of all, a smaller elasticity of substitutions between the country-specific goods increases wealth in smaller countries. Therefore, a production of such goods, which cannot be produced in large countries, is a good idea for them. The second suggestion for small countries is to restrict migration, since a larger number of migrants reduces the welfare of the natives. An increase of complementarity of country-specific goods benefits the large country only in the way that emigration from it may lead to an increase of wages due to a reduced labour supply. However, if migration between the countries for some reasons is not perfect, an increase of complementarity between country-specific goods, leading to a decline in the price of goods produced in the large country (equation (15)), is not profitable for the large country; therefore, they are interested in increasing the substitutability of country-specific goods. This is reminiscent of the tension between San Marino and Italy in 1951, when San Marino decided to open casinos in its territory and Italy established a blockade of the small country, forcing San Marino to renounce their decision.

Another policy suggestion, which comes to mind, is that if large countries politically decentralise or even split, the new smaller countries will become wealthier. But such a suggestion shall be treated with caution. First of all, such a political decentralisation is likely to reduce the share of those country-specific goods in the composite goods (γ), because the smaller countries may produce a smaller variety of country-specific goods, therefore, they shall import the rest. This will have a negative effect on wages. Furthermore, for a positive effect, the country-specific goods in the new countries shall be different. Infinite elasticity of substitution will not lead to desired results. But even if $\theta < \infty$, it is not clear why there is a need for a political decentralisation. If region-specific goods can be produced in one country, the analysis made in the previous section may hold for regions, instead of the countries, implying that relatively small regions producing valuable goods are richer than their neighbours. Regions can also invest in their region-specific brands, so that, from the consumer point of view, goods produced in two different regions would not be the same. Promotion of such region-specific brands does not imply a political decentralisation.

An example of such "regionalism" can be seen in Italy: balsamic vinegar from Modena, Sicilian *cannoli*, *mozzarella di bufala campana* are region-specific brands known far from Italy. The brands are usually protected by various quality and origin assurance labels such as DOC, DOCG, DOP, IGP, etc. Could these brands be better known if these regions become more politically decentralised? I do not think so. The separation from a large country seems to be reasonable when independence may allow the region to produce goods, which are valuable but for some reasons, such as legislation and traditions, cannot be produced in the large country. Examples of such goods could be: offshore financial services, tax-reduced shopping, casinos, etc.

4   Conclusions

This paper developed a simple stylised model with international trade, to explain why small countries often have a higher percentage of migrants in their populations. The model uses the fact that smaller countries produce fewer country-specific goods, and their price is higher relatively to the goods produced in the large countries, if a certain condition, which requires the existence of sufficient demand for goods produced in smaller economies, is satisfied. This raises wages and attracts migrants to the smaller countries. As a result, countries with limited population tend to have larger shares of migrants. However, we argue that a political decentralisation of a large country does not automatically lead to an increase in welfare and attraction of migrants, because the decentralised territories will need to find their specialisation. This can be the case, if after a political decentralisation, the regions start producing goods, which could not be produced in the large country due to legislation, traditions and other factors.

Acknowledgments

Conflict of Interest

References

Alesina, A. (2003). The size of countries: Does it matter? *Journal of the European Economic Association 1* (2-3), 301–316.

Alesina, A. and E. Spolaore (1997). On the number and size of nations. *The Quaterly Journal of Economics 112* (4), 1027–1056.

Amdur, D. (2010). International cross-holdings of bonds in a two-good DSGE model. *Economics Letters 108* (2), 163–166.

Amin, M. and J. Haidar (2014). Trade facilitation and country size. *Empirical Economics 47* (4), 1441–1466.

Amin, M. and A. Islam (2014). Imports of intermediate inputs and country size. *Applied Economics Letters 21* (11), 738–741.

Amiti, M. (1998). Inter-industry trade in manufactures: Does country size matter? *Journal of International Economics 44* (2), 231–255.

Armington, P. (1969). A theory of demand for products distinguished by place of production. *International Monetary Fund Staff Papers 16* (1), 159–178.

Balassa, B. (1969). Country size and trade patterns: Comment. *The American Economic Review 59* (1), 201–204.

Blonigen, B. A. and W. W. Wilson (1999). Explaining Armington: What determines substitutability between home and foreign goods? *Canadian Journal of Economics 32* (1), 1–21.

Borjas, G. J. (1999). Immigration and welafare magnets. *Journal of Labor Economics 17* (4), 607–637.

Comola, M. and M. Mendola (2015). Formation of migrant networks. *Scandinavian Journal of Economics 117* (2), 592–618.

De Giorgi, G. and M. Pellizzari (2009). Welfare migration in Europe. *Labour Economics 16* (4), 353–363.

Duarte, M. and M. Obstfeld (2008). Monetary policy in the open economy revisited: The case for exchange-rate flexibility restored. *Journal of International Money and Finance 27* (6), 949–957.

Elsner, B. (2013a). Does emigration benefit the stayers? Evidence from EU enlargement. *Journal of Population Economics 26* (2), 531–553.

Elsner, B. (2013b). Emigration and wages: The EU enlargement experiment. *Journal of International Economics 91*(1), 154–163.

Ethier, W. and A. Ray (1979). Gains from trade and the size of a country II. *Journal of International Economics 9*, 127–129.

Geis, W., S. Uebelmesser, and M. Werding (2013). How do migrants choose their destination country? An analysis of institutional determinants. *Review of International Economics 21*(5), 825–840.

Jackson, A. L., D. L. Ortmeyer, and M. A. Quinn (2013). Are immigrants really attracted to the welfare state? *International Economics and Economic Policy 10*(4), 491–519.

Keesing, D. B. (1968). Population and industrial development: Some evidence from trade patterns. *The American Economic Review 58*(3), 448–455.

Liebig, T. and A. Sousa-Poza (2006). The influence of taxes on migration: evidence from Switzerland. *Cambridge Journal of Economics 30*, 235–252.

Melitz, M. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica 71*(6), 1695–1725.

Pedersen, P., M. Pytlikova, and N. Smith (2008). Selection and network effects - migration flows into oecd countries 1990-2000. *European Economic Review 52*, 1160–1186.

Ray, A. (1977). Gains from trade and the size of a country. *Journal of International Economics 7*, 67–72.

Reinert, K. and D. Roland-Holst (2012). Armington elasticities for United States manufacturing sectors. *Journal of Policy Modeling 14*(5), 631–639.

Rose, A. (2006). Size really doesn't matter: In search of a national scale effect. *Journal of the Japanese and International Economies 20*, 482–507.

Shiells, C. R. and K. A. Reinert (1993). Armington models and terms-of-trade effects: Some econometric evidence for North America. *The Canadian Journal of Economics 26*(2), 299–316.

Shiells, C. R., R. M. Stern, and A. V. Deardorff (1986). Estimates of the elasticities of substitution between imports and home goods for the United States. *Weltwirtschaftliches Archiv 122*, 497–519.

Sjaastad, L. A. (1962). Investment in human beings. *Journal of Political Economy 70*, 80–93.

Tiebout, C. (1956). A pure theory of local expenditures. *Journal of Political Economy 64*(5), 416–424.

van Ewijk, C. and M. Volkerink (2012). Will ageing lead to a higher real exchange rate for the Netherlands? *De Economist 160*(1), 59–80.

Wittman, D. (2000). The wealth and size of nations. *The Journal of Conflict Resolution 44*(6), 868–884.