

International Trade and Inequality: A Comparative Study Between Czech Republic and Poland

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ABSTRACT

Income inequality as one of the dimensions of economic inequality has been a serious social problem both in developed and developing countries. It also attracts attention both in popular and academic writing and in public debates. One of the arguments shows that trade liberalisation is linked to an increase in income inequality in high-income countries, and reduces inequality in low-income countries. The Czech Republic and Poland, as among the high-income countries, have not seen rising levels of income inequality during the financial crisis in 2008-2009 and are also among the lowest levels of income inequality. This research uses the theory of international trade and the concept of income inequality as an analytical tool. The objective of this research is to examine the reason for why both countries have not seen rising in their level of income inequality during the financial crisis in 2008-2009 and to further investigate the relations between international trade and level of income inequality by using comparative analysis and the quantitative methods of descriptive statistical analysis. This paper shows that besides a decrease in trade turnover that leads to a lower level of income inequality when it is measured by Gini Coefficient, the macroeconomic policies also play crucial part in low level of income inequality in the Czech Republic and Poland.

Keywords: International Trade; Income Inequality; Poland; Czech Republic; Gini Coefficient

ABSTRAK

Ketimpangan pendapatan sebagai salah satu dimensi ketimpangan ekonomi telah menjadi masalah sosial yang serius baik di negara maju maupun negara berkembang. Isu ini turut menarik banyak perhatian baik dalam penulisan populer dan akademis hingga dalam debat publik. Salah satu argumen menunjukkan bahwa liberalisasi perdagangan memiliki keterkaitan dengan peningkatan ketimpangan pendapatan di negara-negara berpenghasilan tinggi, dan mengurangi ketimpangan di negara-negara berpenghasilan rendah. Republik Ceko dan Polandia, sebagai negara yang termasuk dalam kategori berpenghasilan tinggi, tidak mengalami peningkatan tingkat ketimpangan pendapatan selama krisis keuangan tahun 2008-2009 dan juga termasuk di antara negara dengan tingkat ketimpangan pendapatan yang paling rendah. Penelitian ini menggunakan teori perdagangan internasional dan konsep ketimpangan pendapatan sebagai alat analisis. Penelitian ini bertujuan untuk mengkaji terkait alasan dibalik kedua negara tidak mengalami peningkatan tingkat ketimpangan pendapatan selama krisis keuangan tahun 2008-2009 dan untuk menyelidiki lebih lanjut hubungan antara perdagangan internasional dan tingkat ketimpangan pendapatan dengan menggunakan analisis komparatif dan metode kuantitatif analisis statistik deskriptif. Hasil penelitian ini menunjukkan bahwa selain penurunan volume perdagangan yang menyebabkan tingkat ketimpangan pendapatan yang lebih rendah jika diukur dengan Koefisien Gini, kebijakan makroekonomi juga berperan penting dalam rendahnya tingkat ketimpangan pendapatan di Republik Ceko dan Polandia.

Kata Kunci: Perdagangan Internasional; Ketimpangan Pendapatan; Polandia; Republik Ceko; Koefisien Gini

Introduction

Economic inequality has been a serious social problem both in developed and developing countries. It also attracts attention both in popular and academic writing and in public debates.¹ Bader and Bieri also explained that it experienced growth in the early 1980s and became higher after the financial crisis.² According to Brzeziński, economic inequality has many dimensions such as income inequality, wealth inequality, wage dispersion, inequality of opportunity, and relative poverty.³ In this paper, the author would like to address mainly the issue of income inequality by relying on the Gini Coefficient Index. As described by Haughton and Khanker, Gini coefficient is a widely used index to measure inequality.⁴ In addition to that, according to Urata and Narjoko, income inequality can be examined in several ways such as by comparing an average per capita income between two or more countries and examining whether the gap has widened or narrowed over time.⁵

During the latest financial crisis which is also well-known as the American and European crisis in 2008-2009, it was seen as the culmination of events that changed the global economic constellation.⁶ This period was also seen as the “Great Trade Collapse” in which the world quickly reduced trade in the third quarter of 2008 to the second quarter of 2009. This latest global financial crisis had an impact on trade both globally and more specifically for developing countries in Europe, which in terms of decreasing GDP, was the most negatively impacted economy in the world. Trade in developing countries in Europe is more influenced by other regions of the world; exports for more than half of this economy fell more than 50 percent between the third quarter of 2008 and the first quarter of 2009.⁷

In addition to that, during this time, many high-income countries have experienced rising economic inequality especially in their level of income inequality such as the United Kingdom, Germany, Austria, Belgium, Ireland, and Spain. However, unlike those countries, the Czech Republic and Poland, as among the high-income countries, have not seen a rise in their level of income inequality during the financial crisis and are also among the lowest level of income inequality in recent years.⁸ Therefore, it leads us to the question: what distinguishes the Czech Republic and Poland compared to other high-income countries?

According to Harrison et al., a number of new mechanisms have been explored through which trade can influence income inequality in recent years.⁹ One of the arguments presented by Julien, Nicolas, and Jaime shows that trade liberalisation is linked to an increase in income inequality in

¹ Joseph E Stiglitz, *The Price of Inequality: How Today's Divided Society Endangers Our Future* (New York: WW Norton & Company, 2012); Thomas Piketty, *The Economics of Inequality* (Cambridge, MA: Harvard University Press, 2015); Branko Milanovic, *Global Inequality: A New Approach for the Age of Globalization* (Cambridge, MA: Harvard University Press, 2016), <https://www.piie.com/system/files/documents/milanovic20160509ppt.pdf>.

² Christoph Bader and Sabin Bieri, “Global Inequality Briefing Paper” (Bern, 2017), [https://www.shareweb.ch/site/Poverty-Wellbeing/Documents/Briefing Paper Global Inequalities_FINAL VERSION.pdf](https://www.shareweb.ch/site/Poverty-Wellbeing/Documents/Briefing%20Paper%20Global%20Inequalities_FINAL%20VERSION.pdf).

³ Michał Brzeziński, “Is High Inequality an Issue in Poland?,” *IBS Policy Paper*, vol. 1, 2017, https://ibs.org.pl/app/uploads/2017/06/IBS_Policy_Paper_01_2017_en.pdf.

⁴ Jonathan Haughton and Shahidur R Khandker, *Handbook on Poverty and Inequality* (Washington, DC: The World Bank, 2009).

⁵ Shujiro Urata and Dionisius A Narjoko, “International Trade and Inequality” (Tokyo: ADBI Working Paper, No. 675, 2017), <https://www.adb.org/sites/default/files/publication/230591/adbi-wp675.pdf>.

⁶ Dinda Audriene and Agust Supriadi, “Transformasi Ekonomi Global Di Mata Sri Mulyani Indrawati,” *CNN Indonesia*, August 2016, <https://www.cnnindonesia.com/ekonomi/20160810120049-78-150406/tranformasi-ekonomi-global-di-mata-sri-mulyani-indrawati>.

⁷ Robert C Shelburne, “The Global Financial Crisis and Its Impact on Trade: The World and the European Emerging Economies,” *United Nations Economic Commission for Europe-Discussion Papers Series 2* (2010): 1–3, https://unece.org/fileadmin/DAM/oes/disc_papers/ECE_DP_2010-2.pdf.

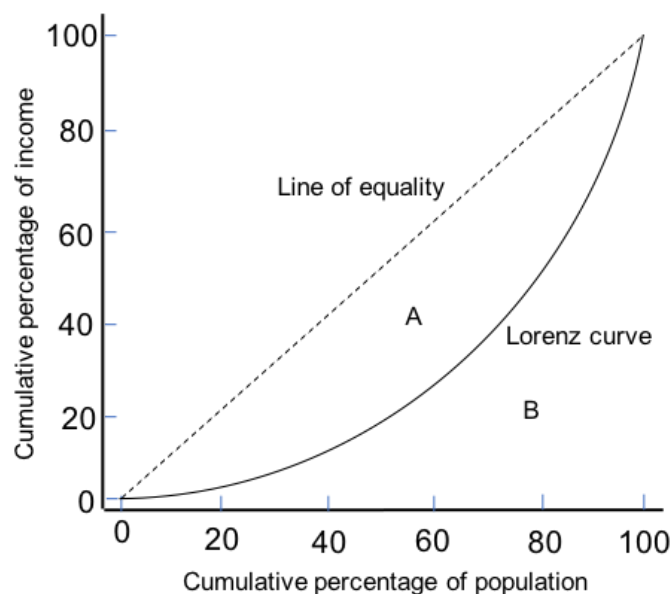
⁸ OECD, “Income Distribution (Edition 2018),” OECD Social and Welfare Statistics, 2019, <https://doi.org/10.1787/aba5c02d-en>.

⁹ Ann Harrison, John McLaren, and Margaret McMillan, “Recent Perspectives on Trade and Inequality,” *Annual Review of Economic 3*, no. 1 (2011): 261–89, <https://doi.org/10.1146/annurev.economics.102308.124451>.

high-income countries, and it reduces inequality in low-income countries.¹⁰ The objective of this research is to examine the reason for why both countries have not seen a rise in their level of income inequality during the financial crisis in 2008-2009 and to further investigate the relations between international trade and level of income inequality. Additionally, it can be seen as we compare the Czech Republic and Poland with the other high-income countries, as they also experienced a decline in their trade turnover during the financial crisis, however, they also have seen rising in their level of income inequality unlike the Czech Republic and Poland. This paper argues that besides a decrease in trade turnover that leads to a lower level of income inequality when it is measured by Gini Coefficient, the macroeconomic policies also still play a crucial part in the low level of income inequality of the Czech Republic and Poland ever since the economic transformation.

Literature Review

Inequality as a concept is often mistaken and seen as poverty, in fact, inequality and poverty are distinctive but intertwined concepts. National poverty levels are generally measured as the percentage of the population that has income or wealth below a benchmark thought to represent the minimum need for an individual to flourish.¹¹ Inequality is a vast concept than poverty in that it is defined over the entire population, and not only focuses on the proportion of the population living under a certain poverty line. The easiest measurement of inequality sorts the population from poorest to richest. A popular measure of inequality is the Gini Coefficient, which consists of a 0-1 scale in which 0 is representing perfect equality and 1 represents perfect inequality, however, it is typically in the range of 0.3 to 0.5 for per capita expenditures. It is based on the Lorenz curve¹² illustrated in figure 1, a cumulative frequency curve that compares the distribution of a specific variable (for example, income) with the uniform distribution that represents equality.¹³



¹⁰ Julien Gourdon, Nicolas Maystre, and Jaime De Melo, "Openness, Inequality and Poverty: Endowments Matter," *The Journal of International Trade and Economic Development* 17, no. 3 (2008): 343-78, <https://doi.org/10.1080/09638190802136978>.

¹¹ E. Wesley F. Peterson, "Is Economic Inequality Really a Problem? A Review of the Arguments," *Social Sciences* 6, no. 4 (2017): 1-25, <https://doi.org/10.3390/socsci6040147>.

¹² Fernando G. De Maio, "Income Inequality Measures," *Journal of Epidemiology and Community Health* 61, no. 10 (2007): 849-52, <https://doi.org/10.1136/jech.2006.052969>.

¹³ Haughton and Khandker, *Handbook on Poverty and Inequality*. (2009)

Figure 1. The Lorenz Curve Framework*Source: compiled by author*

Income is seen as the new earnings that are constantly being added to that pile of wealth. Therefore, income inequality is seen as the extent to which income is distributed in an uneven manner. It is basically how the new earning is getting distributed. Levels of income inequality can also be measured by using the Gini coefficient. The Lorenz curve demonstrates the percentage of total income obtained by the aggregate percentage of the population. In a totally equal society, the 25% of the “poorest” population would gain 25% of the total income, the 50% of the “poorest” population would gain 50% of the total income and the Lorenz curve would displace the path of the 45° line of equality. As inequality rises, the Lorenz curve diverges from the line of equality; the 25% of the “poorest” population may gain 10% of the total income; the 50% of the “poorest” population may gain 20% of the total income and so on.

This framework can also be used to produce a single summary statistic of the income distribution. The Gini coefficient of 0 reflects a perfectly equal society in which all income is equally shared; in this case, the Lorenz curve would follow the line of equality. The more the Lorenz curve diverges from the equality line, the higher the value produced from the Gini coefficient. A coefficient of 1 (or 100%) represents a perfectly unequal society wherein all income is earned by one individual. However, it is unable to distinguish various types of inequality. Lorenz curves may crosscut, reflecting distinct income distribution patterns, nonetheless, producing a very comparable Gini coefficient value. Thus, the Lorenz framework makes it difficult for the comparisons of Gini coefficient values and may confuse the hypothesis test of the income. Despite these limitations, the Gini coefficient is best seen as simply one of the many frameworks available for the operationalisation of income inequality.¹⁴

Furthermore, according to Branko Milanovic, an economist that specializes in inequality, he explained income inequality in his book “*Global Inequality: A New Approach for the Age of Globalization*”, by describing the “economic big bang”. Formerly, the incomes of countries were assemblage together, however, with the industrial revolution, the differences erupted, and the countries have “drift” further away from each other, pushing some countries on the path to higher incomes while others remain where they had been for thousands of years. Global inequality has increased, first rapidly, then more deliberately, but approximately continued since the Industrial Revolution. Furthermore, according to him, in 1820, the highest income countries in the world, which are Great Britain and the Netherlands, were only three times higher than the lowest, such as India and China. Today, the gap between the richest and poorest nations is like 100:1. The gaps are getting bigger each year. The industrial revolution created a lot of inequality between countries but today globalisation and international trade are accelerating it. Most economists agree that both globalisation and international trade have helped the world’s poorest people, but it has also helped the rich a lot more.¹⁵ In accordance with that, Richard Freeman described, “the triumph of globalisation and market capitalism has enhanced the standard of living of billions while collecting billions among the few.”¹⁶

Other economists indicate something labelled as “skill-biased technological change” as one of the causes for global inequality. The jobs created in a modern economy are more technology-based, normally demanding new skills. Workers who have the education and skills to do the job are growing rapidly, while others are lagging behind. Therefore, in a way, technology has become a complement for skilled workers but a replacement for many unskilled workers. The end result is widening, the gap

¹⁴ De Maio, “Income Inequality Measures,” (2007)

¹⁵ Branco Milanovic, *Global Inequality: A New Approach for the Age of Globalization* (Cambridge, MA: The Belknap Press of Harvard University Press, 2016), 127.

¹⁶ Richard Freeman, “The Great Doubling: The Challenge of the New Global Labor Market,” *Draft, Harvard University*, 2006, https://eml.berkeley.edu/~webfac/eichengreen/e183_sp07/great_doub.pdf. (accessed March 5, 2019)

between not just the poor and the rich, but also the poor and the working class. As economies develop and as manufacturing jobs move overseas, low skill low pay and high skill high pay work are the only jobs left. People with little skills lagged in terms of income.¹⁷

International trade illustrates the voluntary exchange of goods, capitals, and services involving two or more countries. This theory also refers to a trade liberation or trade openness between a country and its partner countries. International trade includes all processes of economic transactions that cross borders and are regulated in the mechanism of International Law. The trading process involves individuals, groups and governments.¹⁸ Trade liberalization basically concerns the elimination or reduction of trade barriers in the form of tariffs, namely taxes or duties that must be paid on an import as well as non-tariff barriers (NTB) in the form of licensing rules and quotas so that in other words it aims to encourage free trade. Trade liberalization includes protectionist measures to assist domestic producers and businesses, technical barriers to trade, provision of subsidies, and strict sanitation and phytosanitary requirements.¹⁹ There are various types of trade liberalisation as outlined in the form of partnership cooperation, whether it is between countries such as China Australia Free Trade Agreement (ChAFTA)²⁰, between country and region such as Indonesia European Union Comprehensive Economic Partnership Agreement (I-EU CEPA) and ASEAN-Korea Free Trade Agreement (AKFTA), and partnership cooperation between regions such as ASEAN-EU Free Trade Agreement.²¹ Furthermore, regarding the international trade that will be discussed, it is going to focus on the trade turnover as the result of the total export and import, net exports (current account balance), main export and import commodities from the Czech Republic and Poland.

In accordance with Richard's argument that international trade while increasing the standard of living for some people at a deliberate rate, unfortunately, it concentrates more for few people. Hence, it leads us to the question of why countries are still engagingly involved in exercising export and import? It is broadly believed that trade liberalisation causes a competitive environment which produces quality products conveying economic growth.²² The whole world, effectively, is involved in the market system, and no alternative is seen for that. Unfortunately, this also leads to serious problems of quality, environmental damage, financial instability, large-scale migration, unemployment and damage to cities; and that for all these problems, regional bound states are truly incapable, unsuitable, and not motivated to resolve them.²³

Furthermore, in line with Branko Milanovic's explanation regarding of Great Britain as the highest income countries, during the 1990s, historians mainly appeared to have the same opinion with Patrick O'Brien's view that trade, although it is surely substantial for the early modern growth of England, was far from adequate to explain the phenomenon. In his article "Imperialism and the Rise and Decline of the British Economy, 1688–1989", he explained that the government also played a

¹⁷ Harrison, McLaren, and McMillan, "Recent Perspectives on Trade and Inequality," (2011)

¹⁸ Rum Riyanto, "The International Trade Theories," *Kementerian Keuangan Badan Pendidikan Dan Pelatihan Keuangan*, December 2013, <https://bppk.kemenkeu.go.id/content/artikel/sekretariat-badan-artikel-the-international-trade-theories-oleh-rum-riyanto-2019-11-05-3b17499a/>. (accessed August 26, 2022)

¹⁹ Jana Titievskaia, "EU Trade Policy" (EPRS: European Parliamentary Research Service, 2019), <https://doi.org/10.2861/583720>. (accessed August 26, 2022)

²⁰ John Robert Verianto Korwa, "The China-Australia Free Trade Agreement (ChAFTA): Its Implications for Australia-United States Relations," *Jurnal Ilmiah Hubungan Internasional* 15, no. 1 (2019): 41–53, <https://journal.unpar.ac.id/index.php/JurnalIlmiahHubunganInternasiona/article/view/2981/2723>.

²¹ Dwi Adiyanti, "Efek Liberalisasi Di ASEAN Bagi Indonesia Sebagai Negara Dunia Ketiga," *Jurnal Ilmiah Hubungan Internasional* 12, no. 2 (2016): 143–57, <https://journal.unpar.ac.id/index.php/JurnalIlmiahHubunganInternasiona/article/view/2650/2289>.

²² Sathesh V Aradhya, Tauhidur Rahman, and Kumaran Seenivasan, "Impact of International Trade on Income and Income Inequality," 2007, <https://doi.org/10.22004/ag.econ.9999>.

²³ Susan Strange, *State and Market* (London: Pinter Publishers, 1988), 242.

crucial supporting role.²⁴ The essence of the effect of international trade is one of the roots of the contest within the multi-aspect argument on early modern economic growth and hence unavoidably the departure of the Industrial Revolution in Western Europe. This is undoubtedly one of the most substantial debates in the economic history of the early modern periods. Moreover, according to Ann Coenen, apparently, no scholar strongly declares that a flourishing international trade could have had an unfavourable outcome for the economic growth.²⁵

There have been many studies conducted about the relations between trade liberalisation and the level of income inequality. Similarly, this study will analyse the comparative case between two countries which are the Czech Republic and Poland. Furthermore, due to income inequality caused by many factors, the choice of variables results in a variety of findings. According to the one who supports international trade as one of the contributors to the level of income inequality proves that international trade leads to a lower income inequality in developing countries and higher in developed countries if using a Gini Coefficient as a variable.²⁶ On the other hand, international trade increases inequality in developing countries but it reduces inequality in developed countries if using panel data as a variable.²⁷ According to Richardson in his paper, he describes the relations between trade and technology on income inequality. Focusing on developed countries, he found that there was a moderate contribution to income inequality from trade and a reduction in median wage, while the most significant contribution on income inequality comes from technology development.²⁸

Martin Ravallion argues that trade does not affect inequality but fosters economic growth.²⁹ However, the trade will harm the poor if only the benefit of the trade activity falls into the hands of non-poor people. Moreover, this argument is well supported by the fact that access to new technologies favours skilled and educated workforce rather than unskilled laborers.³⁰ It is also important to realise the factors that determine the impact of trade liberalisation on income and its distribution. Whether trade has a positive influence or not depends on the pattern of growth followed by the countries and global economic policy. Some economists say that the risks and costs of international trade or the participation of countries to trade liberalisation during recessions affect the developing countries more while the benefits from it during the global economic bloom is not equally distributed.³¹ According to the Stolper-Samuelson theorem and following the predictions of neoclassical Heckscher-Ohlin trade models, trade liberalisation by developed countries leads to increasing income inequality and as the reverse expected trade liberalisation in developing countries to reduce income inequality through an increase in the relative demand for unskilled labour.³²

In addition to that, more explanations carried out by Jaumotte, Lall, and Papageorgiou, according to them, globalisation has two branches which are trade openness and financial openness. Both of the branches have an only small impact on income inequality. Trade openness is linked with a decline in income inequality whereas financial openness and direct foreign investment are specifically

²⁴ Patrick O'Brien, "Imperialism and the Rise and Decline of the British Economy, 1688-1989," *New Left Review* 238 (1999): 62.

²⁵ Ann Coenen, *Carriers of Growth?: International Trade and Economic Development in the Austrian Netherlands* (Leiden: Brill, 2014), 11.

²⁶ Gourdon, Maystre, and De Melo, "Openness, Inequality and Poverty: Endowments Matter," (2008)

²⁷ Aradhyula, Rahman, and Seenivasan, "Impact of International Trade on Income and Income Inequality," 2. (2007)

²⁸ J David Richardson, "Income Inequality and Trade: How to Think, What to Conclude," *Journal of Economic Perspectives* 9, no. 3 (1995): 33–55, <https://doi.org/10.1257/jep.9.3.33>. (accessed April 3, 2019)

²⁹ Martin Ravallion, "Growth, Inequality and Poverty: Looking Beyond Averages," *World Development* 29, no. 11 (2001): 1803–15.

³⁰ Giovanni L. Violante, "Skill-Biased Technical Change," *The New Palgrave Dictionary of Economics* 2 (2008): 1–6.

³¹ Ravallion, "Growth, Inequality and Poverty: Looking Beyond Averages," 1803–15. (2001)

³² Aradhyula, "Impact of International Trade on Income and Income Inequality." 3.

linked to increases. This limitation due to the role of technological progress has a larger impact than globalization on inequality as a whole.³³

Furthermore, the drivers of inequality have been classified by Christoph and Sabin based on UNDP, they differentiated trade liberalisation as a part of “exogenous drivers” along with other drivers such as technological change, economic neoliberalism, financial globalisation, the debt system, and postcolonial relations. Trade liberalisation is seen as a part of largely exogenous drivers which means it is not determined by domestic policies.³⁴

Factor endowments such as the amount of land, labour, capital, and entrepreneurship are also seen playing a significant role on the level of income inequality. According to Julien, Nicolas, and Jaime, factor endowments have a strong correlation in explaining the conditional effects of trade openness and income inequality. The result proved that the openness to trade is linked with a rise in income inequality in high-income countries with highly skilled workers while decreasing inequality in low-income countries with less highly skilled workers.³⁵ Nonetheless, all of these findings indicate that there has been no strong mutual agreement towards the contribution of international trade, or specifically the liberalisation or openness to trade on income inequality. Moreover, as already described, during the latest financial crisis, the trade turnover of both developed and developing countries in Europe including the Czech Republic and Poland experienced a decline while at the same time income inequality becomes higher at least in a large set of high-income countries. Therefore, a comparative study should be conducted in order to know to what extent international trade may or may not contribute to the relatively low level of income inequality in both the Czech Republic and Poland.

Methodology

In order to answer the research question as follows: Why have the Czech Republic and Poland not seen income inequality rise during the financial crisis in 2008? And to what extent international trade contributes to the low level of income inequality of both countries? This research incorporates three parts. Firstly, it provides the conceptual framework and literature review from the relevant previous studies. This section begins by presenting a conceptual framework as a guide to facilitate an overall background and as a tool to test the hypothesis. The theory of international trade and the concept of income inequality aim to help understand and analyse the problem.

Secondly, it consists of a comparative analysis using a joint method of agreement and difference. This part examines the trade turnover (total export and import) and net exports (current account balance) as independent variables. This section also displays the main export and import commodities from both countries as variables in comparing these two countries. Other factors that might be considered as independent variables such as factor endowments (e.g., land, labour, capital, entrepreneurship), foreign direct investment, and technological changes will not be included. The Gini Coefficient as the dependent variable is used to measure the level of income inequality. In addition to that, this part also elucidates the macroeconomic policies of both countries. Finally, the last part comprises quantitative methods of descriptive statistical analysis by using all the secondary data above to examine the relations of international trade in contributing to the change of level of income inequality before and after the financial crisis in both countries by looking at the trend within the period of 2006-2015.

³³ Florence Jaumotte, Chris Papageorgiou, and Subir Lall, “Rising Income Inequality: Technology, or Trade and Financial Globalization?,” *International Monetary Fund Working Paper No. WP/08/185*, 2008, <http://dx.doi.org/10.2139/ssrn.1175363>. (accessed April 16, 2019)

³⁴ Bader and Bieri, “Global Inequality Briefing Paper.” 7. (2017)

³⁵ Gourdon, Maystre, and De Melo, “Openness, Inequality and Poverty: Endowments Matter.”

Analysis

This study examines to what extent international trade contributes to the level of income inequality which is formulated as the accumulation of the total export and import. As follows, this part will elucidate the income inequality level of the Czech Republic and Poland before and after the financial crisis in 2008 by displaying the trends in the past (2006-2015). Then, it will showcase these two countries' economic performance. Followed by the trend of trade turnover between the Czech Republic and Poland and their trade partners before and after the financial crisis in 2008. Finally, it will disclose the current trade structure of the Czech Republic and Poland.

a. Income Inequality Overview

This section begins by providing the income inequality level of the Czech Republic and Poland followed by their income distribution. This section provides an overview of the Czech Republic and Poland's level of income inequality when measured by Gini coefficient.

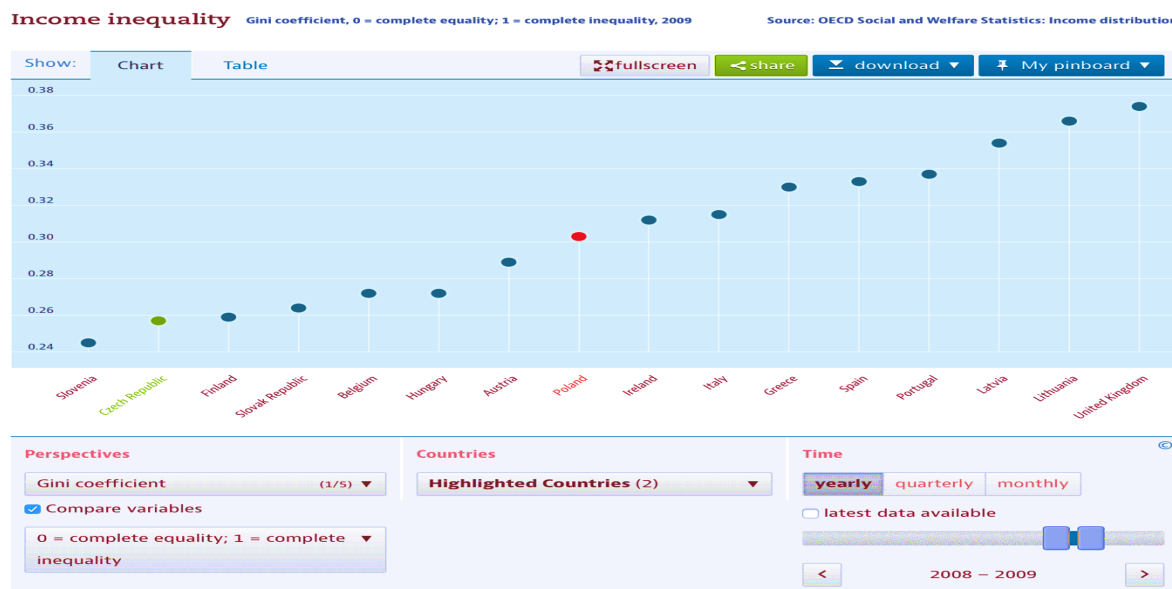


Figure 2. Income inequality chart in 2008-2009
 Gini coefficient, 0=complete equality; 1=complete inequality, 2009
 Source: OECD Social and Welfare Statistics: Income distribution

Based on figure 2, it clearly shows that most of the European countries experienced rising on their level of income inequality during the financial crisis when it is measured by the Gini coefficient. However, it is not the case for the Czech Republic, Poland, Ireland, Finland, Italy, Portugal, and Latvia. The Czech Republic and Poland, like the Netherlands, Sweden, Austria, Finland, Denmark, Belgium, Slovak Republic, and Slovenia, are also countries with the lowest income inequality level in recent years as we can see on figure 3.

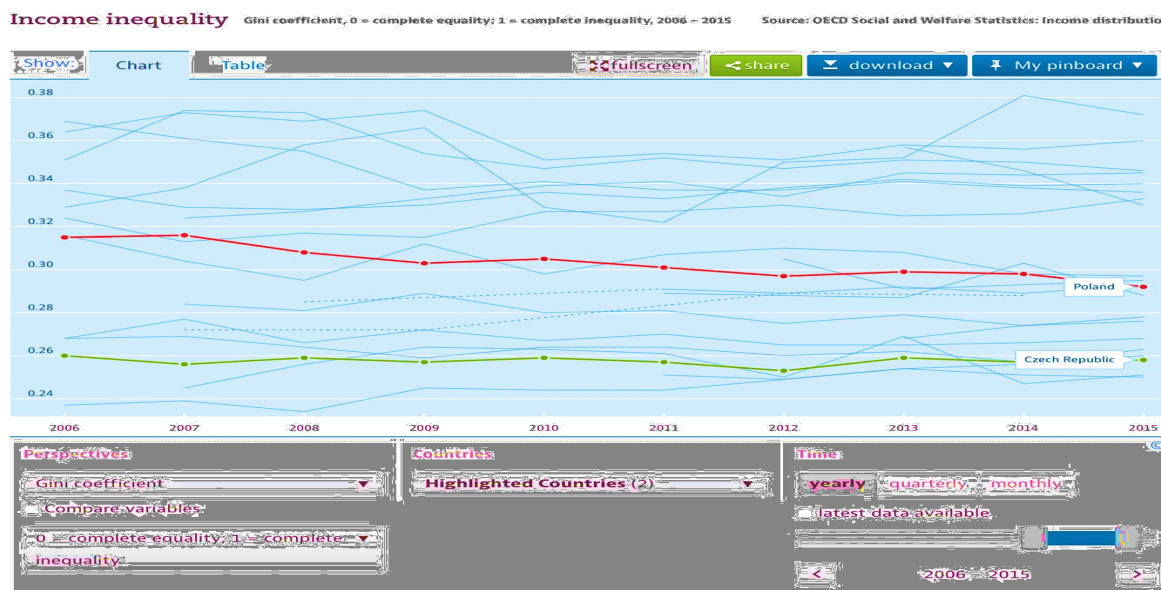


Figure 3. Income inequality chart in 2006-2015
 Gini coefficient, 0=complete equality; 1=complete inequality
 Source: OECD Social and Welfare Statistics: Income distribution

In the case of Poland, although income levels in Poland tend to be lower compared to more advanced EU countries, the level of economic inequality is not striking. Income inequality has not demonstrated an increasing trend and remains stable in recent years.³⁶ In line with these, as we can see from figure 4 and table 1, redistribution after taxes and transfer also reduces the level of income inequality. It shows there is a huge difference in the level of income inequality when it is measured by net Gini instead of gross Gini as it is based on the market.

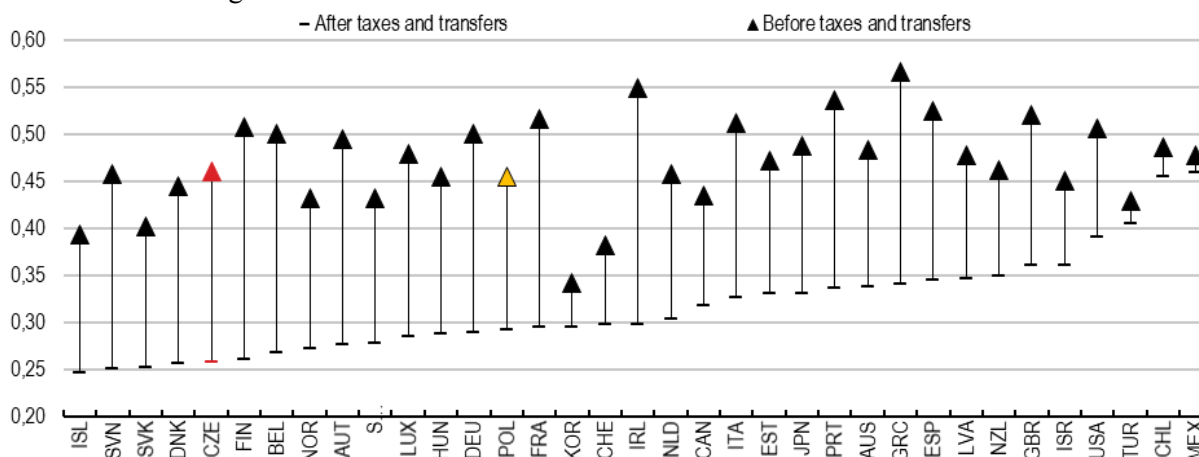


Figure 4. Redistribution reduces inequalities (Gini Coefficient, 2015 or latest year)
 Source: OECD (2018), OECD Income Distribution (database).

Table 1. Income Distribution (Gini Coefficient, 2015 or latest year)

Country	Abbreviation	After taxes and transfers (net GINI)	Before taxes and transfers (gross GINI)
Iceland	ISL	0,246	0,393
Slovenia	SVN	0,25	0,457
Slovak Republic	SVK	0,251	0,402

³⁶ Brzeziński, "Is High Inequality an Issue in Poland?". (2017)

Denmark	DNK	0,256	0,444
Czech Republic	CZE	0,258	0,46
Finland	FIN	0,26	0,507
Belgium	BEL	0,268	0,5
Norway	NOR	0,272	0,432
Austria	AUT	0,276	0,495
Sweden	SWE	0,278	0,432
Luxembourg	LUX	0,284	0,479
Hungary	HUN	0,288	0,455
Germany	DEU	0,289	0,5
Poland	POL	0,292	0,455
France	FRA	0,295	0,516
Korea	KOR	0,295	0,341
Switzerland	CHE	0,297	0,382
Ireland	IRL	0,298	0,549
Netherlands	NLD	0,303	0,457
Canada	CAN	0,318	0,435
Italy	ITA	0,326	0,512
Estonia	EST	0,33	0,471
Japan	JPN	0,33	0,488
Portugal	PRT	0,336	0,536
Australia	AUS	0,337	0,483
Greece	GRC	0,34	0,566
Spain	ESP	0,345	0,525
Latvia	LVA	0,346	0,478
New Zealand	NZL	0,349	0,462
United Kingdom	GBR	0,36	0,52
Israel	ISR	0,36	0,45
United States	USA	0,39	0,506
Turkey	TUR	0,404	0,429
Chile	CHL	0,454	0,486
Mexico	MEX	0,459	0,478

Source: OECD (2018), OECD Income Distribution (database).

b. The Czech Republic and Poland's Economic Performance

This section will focus on the sample and variables that will be discussed in the analysis. As for the sample, the study will focus on the Czech Republic and Poland with the time series starting from 2006 to 2015. As for the dependent variable used here, it is the Gini Coefficient (Net GINI) and for the independent variable used is the trade turnover as the result of the total export and import and net exports (current account balance). Other factors that might be considered as independent variables such as factor of endowments, foreign direct investment, and technological change will not be included. To give a general overview, it will start with a brief explanation of these two countries' economic performance.

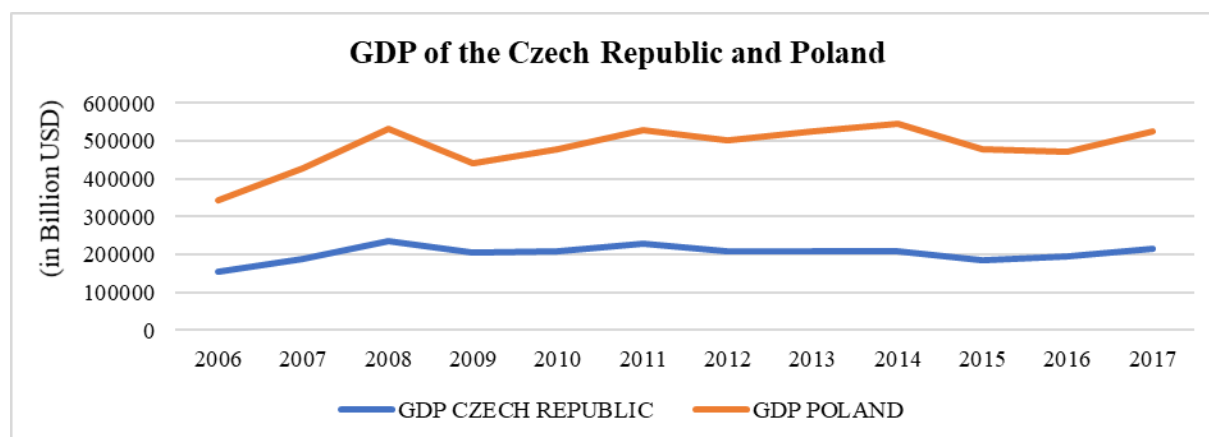


Figure 5. Total GDP of Poland and the Czech Republic

Source: Imf.org

For the past years, both the Czech Republic and Poland have had a relatively stable GDP, as they are continuously rising. As for the Czech Republic even though in 2008Q4 – 2009Q2, due to entering the recession the growth had to slow down.³⁷ However, since 2009Q3 until 2015 it was still the fastest growing economy compared to other European Union member countries. In 2015, the Czech's GDP growth was 4,4%, with a total of 186 billion USD making the Czech economy the highest growth in Europe. As for Poland, it was also the only EU member country which successfully escaped during the great recession in 2007–2009 and displayed an impressive economic performance.³⁸ In 2014, the total GDP reached its peak at 545 billion USD.

The Czech Republic has improved flourishingly towards the average OECD incomes since the early 1990s. As it is building on its geographical location and along with a vigorous industrial base, the country has opened its markets and successfully attracted foreign direct investments. Following the Velvet Revolution in 1989, the economy has become extremely integrated with global value chains. Growth has been vigorous, though resilient. Following stagnant progress in the wake of the 2007 financial crisis, the Czech Republic has continued its concurrence towards OECD and EU average incomes. The economy is flourishing, driven by internal and external demand.

The Czech Republic has adopted many of the best policy practices in the field of macroeconomic and structural policy. The mix of sound macroeconomic policies, especially prudent debt policies, is based on strong institutions that contribute to high business and consumer trust. Thus, this country is an attractive location for investment. The Czech Republic displays a sustainable business environment, for example, sustainable management and market competition to remain sustainable in the long run, economic growth must create opportunities for all parts of the population and the benefits of prosperity to be distributed equitably throughout the community. Despite having low inequality, the Czech Republic lags behind the OECD behind the country's average in terms of income and wealth. Furthermore, this country is one of the most equal OECD communities in terms of disposable income. Quality and poverty have remained very low in the past decade.³⁹

Despite having one of the lowest levels of income inequality in the EU, however, the risk of poverty greatly depends on parental background in the Czech Republic. The income of the richest 20%

³⁷ Sher Verick and Iyanatul Islam, "The Great Recession of 2008-2009: Causes, Consequences and Policy Responses," *Consequences and Policy Responses*, 2010, 62, <https://doi.org/10.2139/ssrn.1631069>.

³⁸ Maria Drozdowicz-Bieć, "Reasons Why Poland Avoided the 2007-2009 Recession," *Instytut Rozwoju Gospodarczego (SGH). Prace i Materiały* 86, no. 2 (2011): 39–66, http://kolegia.sgh.waw.pl/pl/KAE/struktura/IRG/publikacje/Documents/pim86_2.pdf.

³⁹ OECD, "OECD Economic Surveys: Czech Republic," 2018. Overview. 9–11, <https://www.oecd.org/economy/surveys/Czech-Republic-2018-OECD-economic-survey-overview.pdf>.

of the population was about 3.5 times higher than the incomes of the poorest 20% in 2016. This ratio has continued steadily since 2005. Stability in the level of inequality conveys the fact that real disposable household income has developed approximately equally across the income distribution in recent years. Together with low and declining unemployment and the share of people at risk of poverty or social exclusion, this shows a relatively inclusive economic growth. Low inequality in the Czech Republic can be justified by relatively evenly distributed market incomes, i.e. income received by households before taxes and social transfers. The gap between market income inequality and disposable income inequality (i.e. after taxes and transfers) is comparable to the EU average, indicating the Czech tax-benefit system functions in line with the EU average in terms of decreasing inequality.⁴⁰

The ascent of the Polish economy is extraordinary. After the transition from communism, Poland's GDP per capita growth was fast and stable on average around four percent per year. In less than fifteen years, Poland succeeds in moving from middle to high-income status. The economy is developing rapidly: two-parts perspiration (investment) and one-part inspiration (innovation). And welfare was shared. Employment and income growth were broad-based, and lagging regions have been catching up. Throughout these changes, the coefficient of income inequality-the Gini-has not increased.

Poland has one of the smallest Gini coefficients among countries that have turn into high-income since 2000 that is also known as the “new high-income countries” (HICs). It also has one of the smallest internal regional diversity in GDP per capita. This report reviews Polish experience together with five dimensions. The five dimensions of the pentagon of policies and institutions are governing, sustaining, connecting, growing, and including.



Figure 6. The Pentagon of Policies to Assess Poland's Experience

Source: worldbank.org

The overall lesson from Polish experience is the importance of a shared vision for sustainable reform. After shifting from communism, there was a general agreement over the vision for the country: a market economy represented by solidarity, with policies and institutions arranged to quickly catch up with its neighbours to the west. Following the economic transformation, Poland had the right institutions such as rule of law, property rights, democratic accountability, and basic market institutions. International trade and foreign direct investment, product and price liberalisation are also regulated in basic market institutions. Having similar vision and responsibility towards the economic transformation so called as a market economy, during the EU accession with other new high-income

⁴⁰ European Commission, “European Commission Staff Working Document: Country Report Czech Republic” (Brussels, 2018), <https://ec.europa.eu/info/sites/default/files/2018-european-semester-country-report-czech-republic-en.pdf>.

countries, Poland maintains firmness and convenience in its policy by proving good macroeconomic policies which are stable and resilient.

Moreover, as the only EU member country that successfully marked positive growth of its economic development even during the global crisis in 2008, Poland also successfully managed to integrate to global and regional markets, while at the same time settling local competition. Resources are also more efficiently redistributed between companies, within companies, and across sectors due to the market competition.⁴¹

c. Trade Turnover of the Czech Republic and Poland

This section conveys the trade turnover of the Czech Republic and Poland from 2006 to 2015. This section provides an overview of the bilateral trade conditions between the Czech Republic and Poland and their trade partners before and after the financial crisis in 2008. Based on figure 7 and 8, we can see that overall both countries experienced fluctuating trade turnover within the period of 2006 – 2015.

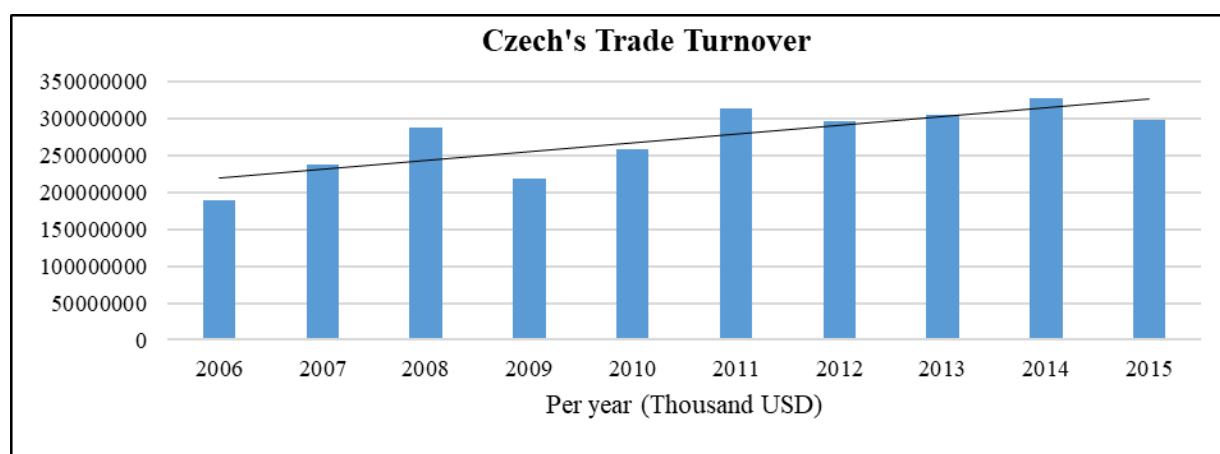


Figure 7. Total Trade of the Czech Republic with All Its Trade Partner

*Source: Trademap.org

*US Dollar Thousand

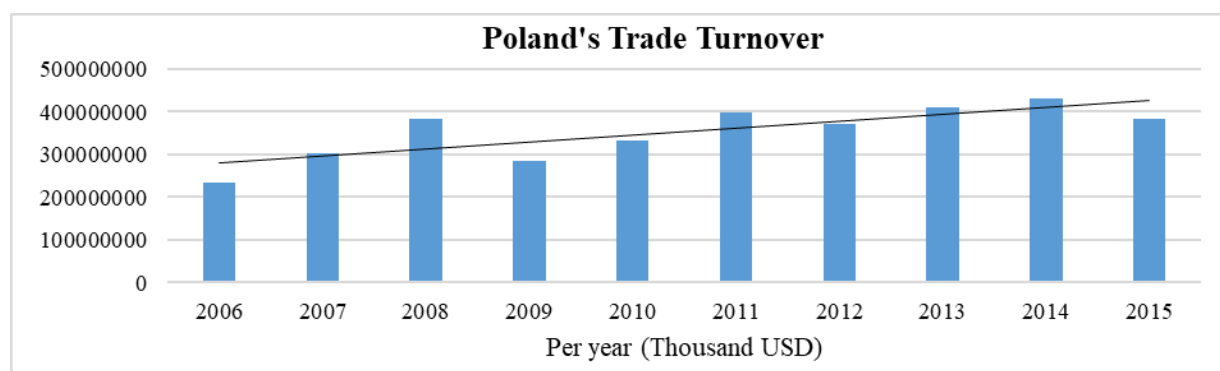


Figure 8. Total Trade of Poland With All Its Trade Partner

*US Dollar Thousand

⁴¹ Enrique Aldaz-Carroll et al., "Lessons from Poland, Insights for Poland: A Sustainable and Inclusive Transition to High Income Status" (World Bank Group, 2017), <https://documents1.worldbank.org/curated/en/356601511863984029/pdf/121694-REVISED-PUBLIC-WB-calosc-www.pdf>. (accessed May 1, 2019)

Source: Trademap.org

In terms of both countries' trade turnover, they experienced the same changing. The graph illustrates the trade turnover from 2006 to 2008 experienced an increase but in 2009 it experienced a decrease then subsequently experienced rising again until 2012 also experienced a decline again and within a period of two years from 2013 to 2014 experienced an increase again but again experienced a decline in 2015.



Figure 9. Total Trade of All Four Countries with All Their Trade Partner
US Dollar Thousand
Source: Trademap.org

d. Level of Income Inequality in the Czech Republic and Poland

This section conveys the level of income inequality of the Czech Republic and Poland from 2006 to 2015. This section provides an overview of the level of income inequality of the Czech Republic and Poland before and after the financial crisis in 2008.

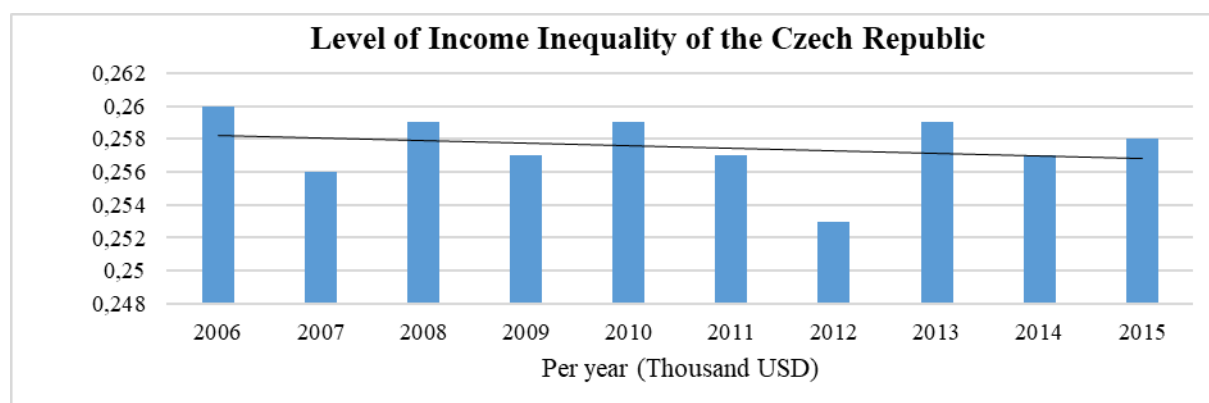


Figure 10. Level of Income Inequality of the Czech Republic
*0–1 scale (0 representing perfect equality and 1 representing perfect inequality)
**Gini (disposable income, post taxes and transfers)
Source: <https://data.oecd.org>

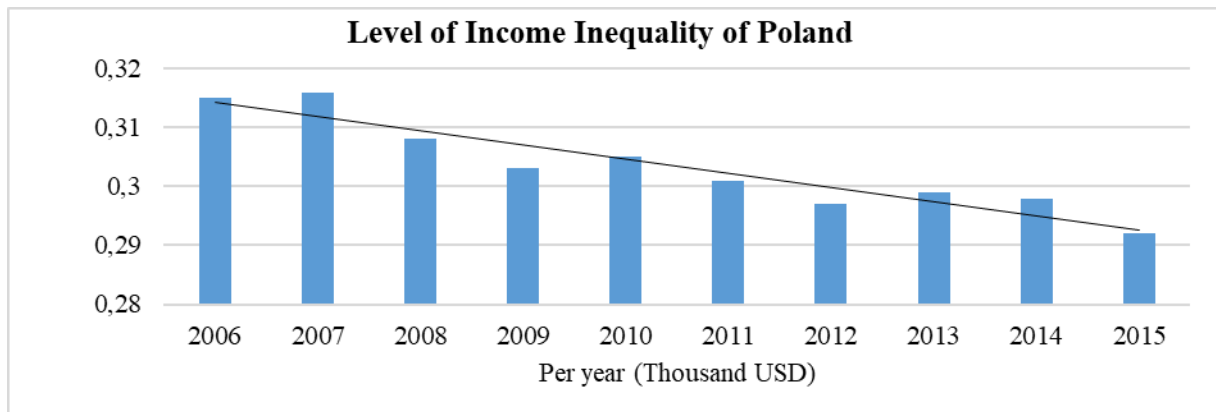


Figure 11. Level of Income Inequality of Poland

*0–1 scale (0 representing perfect equality and 1 representing perfect inequality)

**Gini (disposable income, post taxes and transfers)

Source: <https://data.oecd.org>

As for the level of income inequality, the Czech Republic has experienced fluctuating in its statistics within the period of 2006 – 2015, during the financial crisis in 2008 the graphic illustrates that it has decreased. In 2012, the level of its income inequality reached its lowest point at 0.253. As for Poland, the chart clearly shows the level of income inequality in Poland steadily declining as it is reflected by the trend line. During the financial crisis not so different from the Czech Republic it also declined. In 2015, the level of income inequality reached its lowest number at 0.292.

During the period of 2008–2009 which is also known as the financial crisis, the hypothesis has been proven right. As the trade turnover of both countries experienced a decline, the level of income inequality of the Czech Republic and Poland have not seen rising. Generally speaking, during the latest financial crisis and one year after the crisis, the hypothesis has been proven right. At the time the trade turnover experienced increase, the level of income inequality of both countries will also rise just like when the trade turnover experienced a decrease, the level of income inequality will also decline.

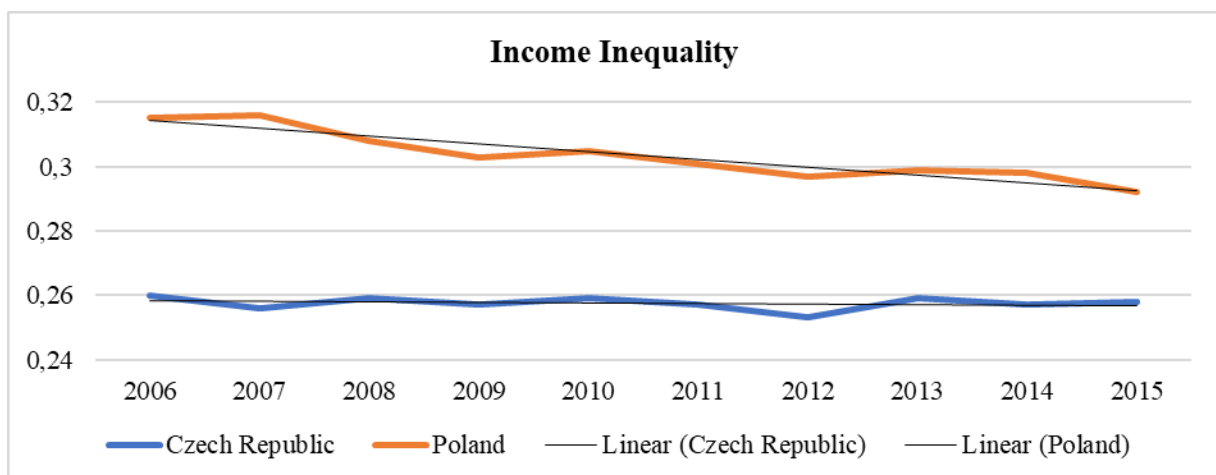


Figure 12. Level of Income Inequality of the Czech Republic and Poland

*0–1 scale (0 representing perfect equality and 1 representing perfect inequality)

**Gini (disposable income, post taxes and transfers)

Source: <https://data.oecd.org>

However, starting from 2011 onwards, the hypothesis is no longer applicable and relevant as it is hard and complicated to rely solely on this statement. Therefore, the macroeconomic policies of both

countries play a crucial part in the changing level of income inequality in the Czech Republic and Poland especially in recent years when the level of income inequality remains relatively stable.

e. Net Export/Current Account Balance

This section conveys the net export or also known as current account balance of the Czech Republic and Poland from 2006 to 2015. This section provides an overview of the Czech Republic and Poland's current account balance position before and after the financial crisis in 2008. The current account balance is the value of exports minus the value of imports. The results can show the direct contribution of trade activities to national income.

Table 2. Net Exports/ Current Account Balance of the Czech Republic and Poland

Year	Czech Republic	Poland
2006	1,711,512	-16,061,195
2007	4,078,295	-25,387,499
2008	4,253,193	-38,618,615
2009	8,034,785	-12,928,531
2010	6,450,256	-17,062,642
2011	11,578,305	-21,086,456
2012	16,695,919	-11,826,513
2013	18,998,344	-1,765,875
2014	21,053,991	-2,210,498
2015	16,477,937	4,764,683

Source: trademap.org (database)

As for the current account balance, the Czech Republic continuously experienced rising in its surplus and reached its peak in 2014 at US\$ 21 billion and had a moderate decline in 2015. Unlike with Poland, the net exports remained fluctuating and unfavourable for Poland as it was continuously experienced a deficit within the period of 2006–2014. Until 2015, Poland experienced a surplus with a total of US\$ 4.7 billion.

f. Main Export and Import Commodities of the Czech Republic and Poland

This section conveys the trade structure of the Czech Republic and Poland. This section provides an overview of the Czech Republic and Poland's position in the international division of labour and their level of economic development.

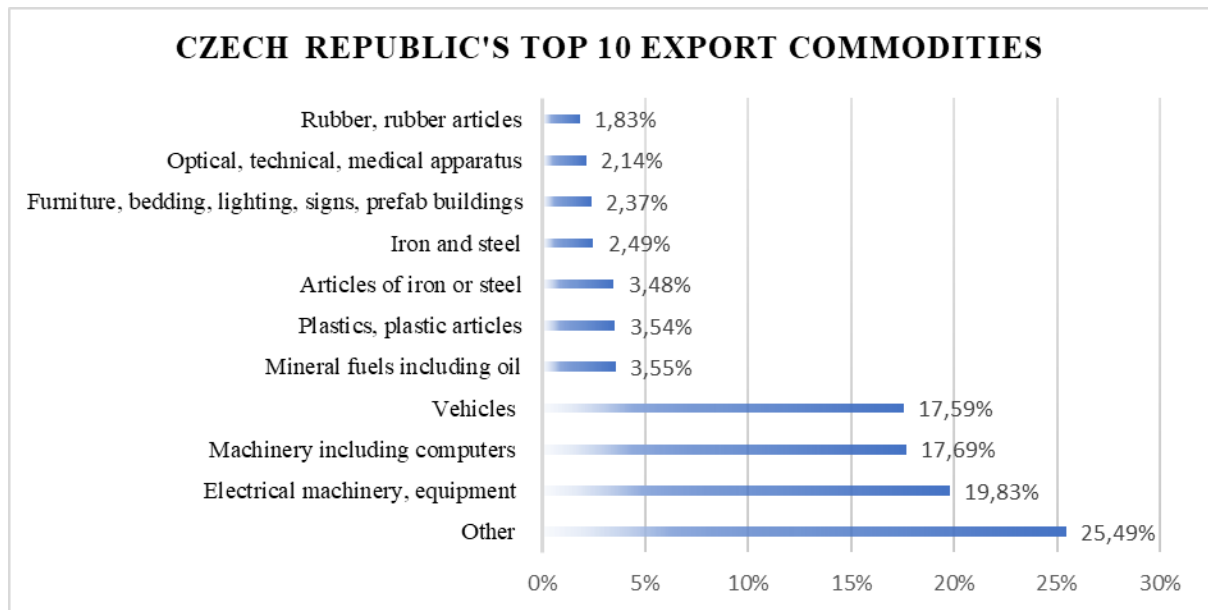


Figure 13. Czech Republic's top ten export commodities

Source: trademap.org, 2022

Czech commodities exports to its partners are dominated by manufacturing products, followed by fuel and mining products, and agricultural products (see figure 13). Similarly, Czech commodities imports to its partners are dominated by manufacturing products, followed by fuel and mining products (see figure 14).

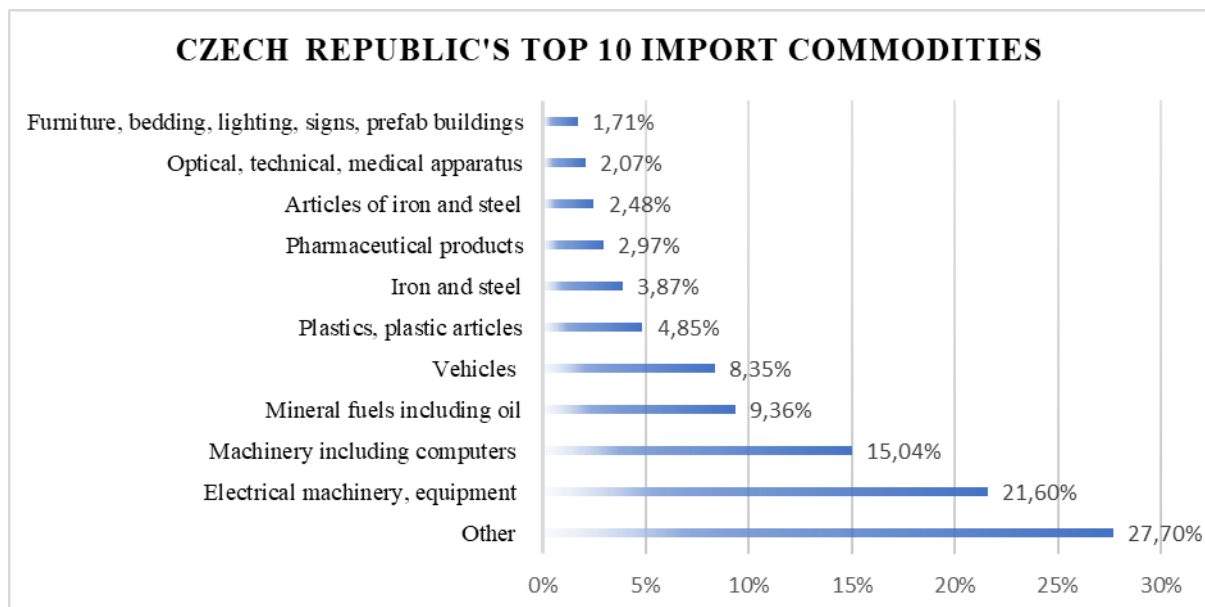


Figure 14. Czech Republic's top ten import commodities

Source: trademap.org, 2022

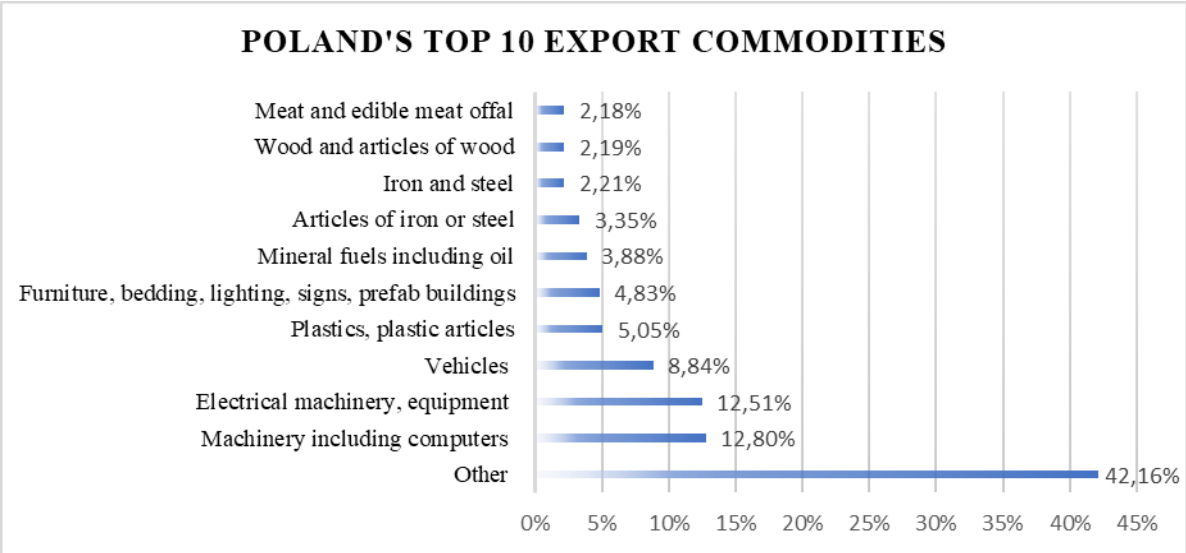


Figure 15. Poland’s top ten export commodities
Source: trademap.org, 2022

The Polish commodities exports to its partners are heavily dominated by manufacturing products, followed by fuel and mining products, and agricultural products (see figure 15). Meanwhile, Polish commodities imports to its partners are dominated by manufacturing products, followed by fuel and mining products (see figure 16).

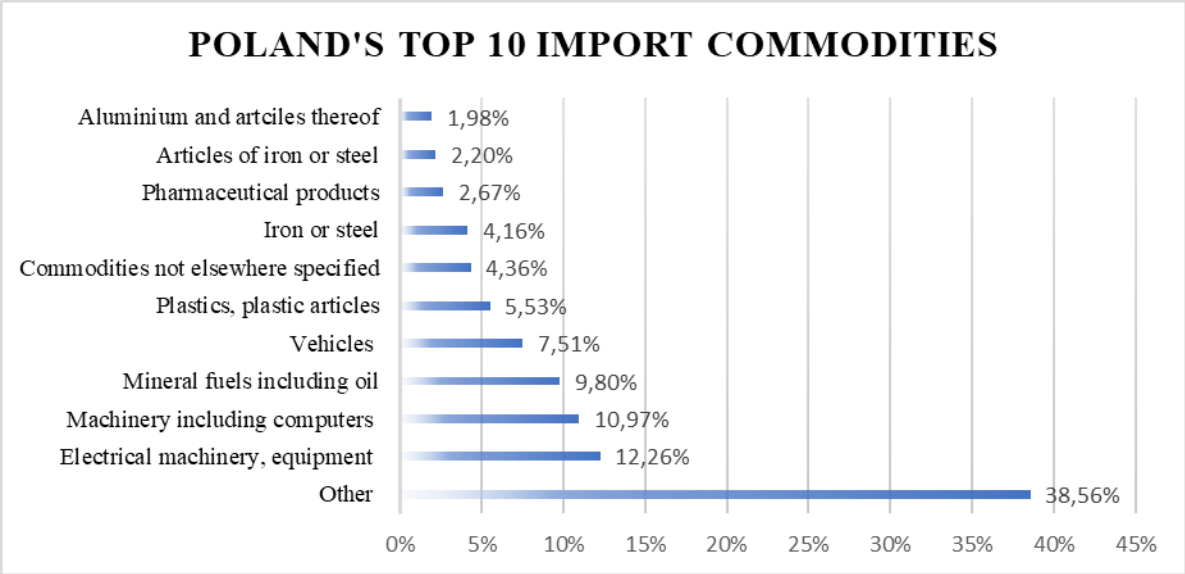


Figure 16. Poland’s top ten import commodities
Source: trademap.org, 2022

With regard to the main export and import commodities from both countries it shows that both countries have similar commodities as their main commodities on primary products such as mineral fuels including oil and as for the non-primary products such as vehicles, machinery including computers, electrical machinery, equipment, plastics, plastic articles, furniture, bedding, lighting, signs, prefab buildings, articles of iron or steel, iron, steel, and pharmaceuticals. This also clearly shows that both countries are currently in demand for highly skilled workers for their growing industries. As the figures showed that most of the industries for the main export and import commodities are the type of industries which required high-skilled workers. It also seems that in the

case of the Czech Republic has shown a sign of polarisation in which the demand for high-skilled is increasing while at the same time to a lower extent demand for low skilled workers.⁴²

Conclusion

Income inequality as a dimension of economic inequality has been a serious social problem both in developed and developing countries. During the latest financial crisis which is also well-known as the American and European crisis in 2008-2009, many high-income countries have experienced rising on their economic inequality especially in their level of income inequality such as the United Kingdom, Germany, Austria, and Belgium. However, unlike those countries, the Czech Republic and Poland, as among the high-income countries, have not seen a rise in their level of income inequality during the financial crisis and are also among the lowest level of income inequality in recent years. A number of new mechanisms have been explored through which trade can influence income inequality in recent years. One of them argues that trade liberalisation is linked to an increase in income inequality in high-income countries, and it reduces inequality in low-income countries.

To find out the reason that distinguishes the Czech Republic and Poland have not seen rising on their level of income inequality during the financial crisis in 2008-2009 and are also among the lowest level of income inequality in recent years compared to other high-income countries, the research identifies the problem and formulates the research questions as follows:

Why have the Czech Republic and Poland not seen income inequality rise during the financial crisis in 2008? And to what extent international trade contributes to the low level of income inequality of both countries? The objective of answering the research questions is to further investigate whether international trade contributes to the level of income inequality from both countries.

By using the level of income inequality as a dependent variable and international trade (trade turnover) as an independent variable, this research finding shows that during the financial crisis both Poland and the Czech Republic experienced a decline in their total trade with all their trade partners and their level of income inequality. In addition to that, within two years after the financial crisis, both Poland and the Czech Republic experienced rising in their total trade with all their trade partners and their level of income inequality.

Nonetheless, in general as for the case of Poland, we can clearly see from the trend line that the trade turnover has experienced rising and in contrast to that, the number of income inequality has experienced a decline and remains stable. In the case of the Czech Republic, overall the trade turnover has experienced rising, however, the number of income inequality has experienced fluctuation within the period of 2006–2015.

Furthermore, as for the Czech Republic and Poland, it is seen that international trade was not playing a significant part in determining the low level of income inequality in both countries. In fact, it is seen that the macroeconomic policies from both countries play a significant part in the changing level of income inequality in the Czech Republic and Poland. In the case of Poland, the pentagon policies are still seen as the determining factor of the reason why Poland has experienced a decline in its level of income inequality. This policy has a significant contribution to the change in the level of inequality ever since the economic transformation from a planned economy into a market economy.

There are three limitations to this research due to data limitations. First, this research excludes technological changes. Second, this research neglects the factor endowments (e.g., land, labour, capital, entrepreneurship) and solely rely on the contribution of international trade as an entire on income inequality. Third, it also eliminates foreign direct investment on the model.

⁴²European Centre for the Development of Vocational Training “Prospects for the Czech Republic,” 2015, https://skillspanorama.cedefop.europa.eu/sites/default/files/EUSP_AH_CzechRepublic_0.pdf. (accessed June 26, 2019)

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