The Effect of Globalisation for Economic Growth of Developing Countries

This paper aims to evaluate what effect globalisation has on economic growth of developing countries. Globalisation is measured by economic, political and social dimensions of KOF Globalisation index, also the overall globalisation score of the same index. In cases of economic and overall globalisation, trade balance was considered. Empirical analysis was done using two-step system GMM model. The results show that overall globalisation has immediate negative impact on growth, while economic dimension of globalisation has a negative impact in a short run, but a positive impact on economic growth in the long run.

Keywords: economic growth, developing countries, KOF Globalisation index, GMM model.

Introduction

Economic growth is one of the key macro-economic indicators of the well-being of an economy; because of that, it is also one of the mostly discussed topics both by scholars and policy makers. Despite vast interest, the list of growth determinants is still not finite and key growth determinants are yet to be found – new theories are being created and new growth determinants are being added to the empirical research every day. This search of key growth determinants is even more difficult considering another widely
discussed topic nowadays – globalisation. Due to the complexity, multidimensional perspective and constant evolution, globalisation act as one of the most important reasons for rapidly changing economic environments of countries.

Even though both economic growth and globalisation are widely analysed, unanimous opinion about their relation is not yet found. While it is usually agreed, that globalisation impacts economic growth via three spheres – economics, politics and culture – more dimensions or relation channels can be distinguished; moreover, the effect that each of these globalisation dimensions have on economic growth, differs from study to study. Moreover, empirical analysis is usually concerned only with economic dimension of globalisation, while other dimensions remain neglected.

Research object – the effect of globalisation on economic growth.

The aim is, applying an econometric analysis, determine the impact of globalisation on economic growth in developing countries.

The research methods: comparative analysis of literature, statistical analysis, econometric analysis and system GMM method.

The objectives of the article are:

1) To analyse concepts of globalisation, economic growth and their theoretical relation.

2) To analyse and compare previous research done on relation of globalisation and economic growth in developing countries.

3) To collect and discuss statistical data needed to econometric analysis.

4) To analyse econometric results and compare them with previous empirical research.

Concepts of Globalisation and Economic Growth

Economic growth is one of the main questions of interest in macroeconomics and in evaluation of the well-being of countries. Therefore, a number of different ideas and theories were created while trying to determine, what the key drivers and advantages of the growth are.

Historically, economics was based mostly on experience and the way how scholar observes surrounding world, therefore theories were more based on general ideas. After economics became a separate discipline, they became more specific – for example, Keynes introduced theory of growth based on aggregate demand. Chirwa and Odhlambo (2016) notice, that in history of theories of economic growth, two important shifts were marked by introduction of neoclassical growth theory and the endogenous growth theory. While the first ones presented new approach towards growth and included human capital as an important factor, endogenous growth theorists contributed by inclusion of productivity and technological changes into growth equations (Romer, 1994; Fagerberg & Verspagen, 2003). For the purpose of this paper, it has to be noted, that some growth theories are not applicable worldwide, especially in case of less developed countries.

Considering growth of developing countries, two theories should be mentioned. The first one was introduced by Rosenstein-Rodan (1957). This author advocated for the so called “big-push” from outside world as a key factor of growth for developing countries. The main idea of this “push” is that only big foreign investment into infrastructure, education, healthcare or other areas can cause
significant economic growth in developing countries. Clearly this shows not only growth dependence on foreign aid, but also on external shocks. This way author also emphasize importance of country’s attractiveness (education system, safety and other factors) and, in a way, openness to the world. Very similar ideas were later developed by Sen (1999) as he advocated that education, safety, stability and other factors also have significant impact on economic growth not only as they increase well-being of people but, at the same time, on the growth of country. It is obvious, that while these ideas by Sen (1999) and Rosenstein-Rodan (1957) make sense in weaker countries, abovementioned things do not play such an important role in developed world and are rarely used in empirical research.

Discussing economic growth theories in general, one of the most noteworthy ideas about growth were introduced by Solow (1956) and Swan (1956). Scholars analysed how capital accumulation, labour growth and technical progress are affecting the growth of countries. This model was later improved by adding other factors, such as human capital, as one of the growth determinants, to the model (Mankiw, Romer & Weil, 1992). Such factor addition is common in empirical research about growth, too. For example, authors use investment rate (Bleaney, Gemmell & Kneller, 2000; Anyanwu, 2014), institutional quality and foreign aid (Easterly, Levine & Roodan, 2003), urban and rural population (Anyanwu, 2014; Wang, Li & Fang, 2018), import of technology (Mihut & Plesoiianu, 2014) and other variables in addition to the more common growth determinants, distinguished by growth theories: labour growth, consumption or human capital (Turner, Tamura & Malholland, 2013; Anyanwu, 2014; Mihut & Plesoiianu, 2014). The most widely discussed growth determinants now are innovations and technological progress. In these theories it is argued, that growth is highly affected by the technological gap, which exists in between countries; meanwhile, technological progress increases productivity, which boosts income per capita and therefore – well-being of the country. However, despite the theories and the empirical research, the list of the determinants of economic growth is not finite and the key drivers of growth are yet to be found, due to rapidly changing living conditions and international environment.

One of the biggest changes, or one of the main reasons of the changes, is globalisation. Globalisation and its speed are, as Choi (2018) states, “one of the most hotly discussed topics” (p. 1) by both theorists and practitioners. While the World Trade Organisation (WTO, 2008) claims, there is no exact definition of globalisation, it is generally understood that it is a “worldwide expansion of the market and technology” (Choi, 2018, p. 1). Moreover, it is agreed, that globalisation is a multidimensional, multi-scalar and cyclical process (Georgantzas, Katsamakas & Solowiej, 2019; Martens & Figge, 2014). Mukherjee and Krieckhaus (2012) notice, that complexity of this phenomenon is one of the rare instances when a unanimous opinion exists about globalisation.

Historically, three main schools of thought exist towards globalisation: 1) hyperglobalizers, 2) sceptics, and 3) transformationalists (Held, McGrew, Goldblatt & Perraton, 1999; Neag & Bucăta, 2015). For hyperglobalizers globalisation is a new process when nation states are unnatural and lose their power due to decentralization. Moreover, since
main drivers of globalisation are capitalism and technological progress, only bigger globalisation is possible in the future. Sceptics, on the other hand, claim, that globalisation is not a new process and use trade flow data from XIX century as their supporting argument. They see globalisation as an unequal and differentiated process, where nation states still have power and conflicts are inevitable in the future. According to sceptics, globalisation is nothing more than regionalisation and trading blocs (Held et al., 1999). Finally, transformationalists claim, that globalisation is an old process which gains unprecedented forms, rate of growth and amount nowadays. Those, who belong to transformational school of thought, argue, that due to globalisation, national governments have to restructure and modernize to keep power. According to them, the future of the world is unclear since globalisation is transforming the international arena in unseen ways (Held et al., 1999; Neag & Bucără, 2015).

From the point of view of sceptics and transformationalists, the best way to track globalisation is to measure trade flows and movement of people. These two ways of measurement indeed dominated discussions about globalisation, since they helped capturing nature of globalisation during the first two waves of globalisation: before the First and after the Second World Wars (Bhandari & Heshmati, 2005). However, the third wave of globalisation, which started with the introduction of Internet around 1990s, involves not only trade of goods and people movements. It “has been driven by the new set of factors, such as deregulation of financial services, emergence of modern transportation and

<table>
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<tr>
<th><strong>Index</strong></th>
<th><strong>Scope</strong></th>
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<tbody>
<tr>
<td>Cultural Globalisation Index (Kluver &amp; Fu, 2004)</td>
<td>2002–2004; 10 countries</td>
<td>Cinematic films, television programming, volume of imported print publications, penetration / availability of foreign satellite channels</td>
</tr>
<tr>
<td>Globalisation Index (Centre for the Study of Globalisation and Regionalisation at University of Warwick, 2005)</td>
<td>1982–2004; 119 countries</td>
<td>Economics, social and political spheres</td>
</tr>
<tr>
<td>KOF Index of Globalisation (Dreher, 2006)</td>
<td>1970–2017; 203 countries</td>
<td>Economics (actual flows &amp; restrictions), political engagement, social globalisation (personal contact, information flows, cultural proximity)</td>
</tr>
<tr>
<td>New Globalisation Index (Vujakovic, 2010)</td>
<td>1995–2005; 70 countries</td>
<td>Economic, political, social spheres</td>
</tr>
<tr>
<td>Revisited KOF Index (Gygli, Haelg, Potrafke &amp; Sturm, 2019)</td>
<td>1970–2016; 203 countries</td>
<td>Economic, social, political, cultural dimensions</td>
</tr>
</tbody>
</table>
communication technologies, collapse of Eastern Bloc and demonstration of the success stories of the East Asian economies” (Bhandari & Heshmati, 2005, p. 5). Due to such increased complexity of the phenomenon it was no longer possible to capture globalisation by looking only to one dimension of this process.

During the past 20 years, scholars distinguish up to seven dimensions of globalisation; the most commonly used are three: economics, politics and culture (Keohane & Nye, 2000; Sahlberg, 2004; Arvanitidis, Kollias & Messis, 2016, Dreher, 2006; Kilic, 2015). Therefore, while measuring globalisation, it should be taken in mind, that a certain country can be less globalized in economics but very globalized in terms of culture or political sphere, and that plays major role in well-being of that country (Arvanitidis et al., 2016). However, this complexity was not addressed until 2000, when the need for index, capturing all areas of globalisation, appeared in Martens et al. (2015). Since then, variety of indices were introduced for this purpose (Table 1).

One of the most commonly used indices was A.T. Kearney/Foreign Policy Magazine Globalisation index, introduced in 2001 and calculated annually until 2006. Although index is no longer renewed, it still is considered one of the most important globalisation indices historically, since number of other attempts to measure globalisation were based on its structure (Martens et al., 2015; Kluver & Fu, 2004). Now the most commonly used index is KOF Globalisation index, introduced in 2006 and still continuously revised on an annual basis. In 2015, more than 100 studies were using KOF globalisation index to measure globalisation (Potrafke, 2015), and authors of other globalisation indices note, that their globalisation indices are at least partly based on KOF index (Weiß et al., 2018; Gygli et al., 2019).

**Theoretical Relation between Globalisation and Economic Growth**

Since both globalisation and economic growth are complex concepts, the relations between them are also not always straightforward.

Based on theory and some empirical findings, Husain (2000) suggests four links between economic growth and globalisation: 1) international trade; 2) labour flows; 3) financial integration; and 4) technical change. However, author mainly discusses economic dimension of globalisation and some cultural aspects (technical change, in a broad sense, can be included into cultural dimension of globalisation). Therefore, in the opinion of the authors of this paper, relations between economic growth and globalisation are better depicted by adding other channels (Figure 1).

From the Figure 1, globalisation can affect economic growth through three channels: economics, politics and cultural or social sphere. The idea from Husain (2000), that while globalisation has positive impact on economics, politics and culture, it will have positive impact on economic growth, remains. Important feature is that these three spheres have effect on each other, for example, belonging to international organizations can have effect on economical channel (tariffs, international trade flows or other). These linkages are important, since, “most dimensions of globalisation are strongly related to each other” and “it is not obvious that all dimensions of globalisation affect the
overall effects of globalisation in the same direction” (Dreher, 2006, p. 1092).

Looking to empirical research, in general it is agreed that no country can survive without international relations nowadays, but exact effect that globalisation has on economies is not yet unanimously found. For example, some authors (Ulasan, 2012; Klein, 2003; Dreher, 2006) find that globalisation has positive impact on growth due to fostering technological advancement, economies of scale, specialization or productivity. Alternatively, other authors (Batra & Slottje, 1993; Leamer, 1995; Bourdon, Mouel & Vijil, 2000; de Matteis, 2004) find negative relation between openness to outside world and economic growth. Reasons for such results are due to increased competition and thus – worsened conditions for local firms; some also mention unbalanced structure of being open (“bad ratio” of imports and exports), increased poverty, social injustice, insecurity (Stiglitz, 2002, 2004).

To illustrate the variety of studies about economic growth and globalisation in developing countries, examples of Paudel (2014), Rahnama, Fawaz and Gittings (2017), Kilic (2015) and others can be discussed. For example, Paudel (2014) explored level of dependency developing countries have on their natural resources and having a sea boarder (or being landlocked). Author tested this relation for sample size of 197 countries, including 34 low income developing ones, for the period of 1996–2009. The results after pooled ordinary least squares and random effects models showed, that being landlocked, as expected, “confirm the findings of previous studies <…> hampers economic growth, especially among the developing countries” (Paudel, 2014, p. 356). Author also concluded, that trade openness (economic dimension of globalisation) increases economic growth.

Meanwhile, Rahnama et al. (2017) explored developing countries with dividing them into low-income developing country (LIDC) and high-income developing country (HIDC) groups. Their sample size consisted of 111 countries in total and covered period of 1970–2010. By employing dynamic panel and later – general method of moments (GMM), authors tested what is the relation between foreign

**Fig. 1. Relation between globalisation and economic growth**

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**Table:**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Economics</strong></td>
<td>(int. trade, aid, tariffs, …)</td>
</tr>
<tr>
<td><strong>Politics</strong></td>
<td>(int. organizations, …)</td>
</tr>
<tr>
<td><strong>Culture/Social</strong></td>
<td>(internet, tourism, foreign population, ecology, …)</td>
</tr>
</tbody>
</table>

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**Diagram:**

- Globalisation
  - Economics
    - (int. trade, aid, tariffs, …)
  - Politics
    - (int. organizations, …)
  - Culture/Social
    - (internet, tourism, foreign population, ecology, …)
  - Economic Growth

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**Fig. 1**

- Relation between globalisation and economic growth

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**Notes:**

- Looking to empirical research, in general it is agreed that no country can survive without international relations nowadays, but exact effect that globalisation has on economies is not yet unanimously found.
- For example, some authors (Ulasan, 2012; Klein, 2003; Dreher, 2006) find that globalisation has positive impact on growth due to fostering technological advancement, economies of scale, specialization or productivity. Alternatively, other authors (Batra & Slottje, 1993; Leamer, 1995; Bourdon, Mouel, & Vijil, 2000; de Matteis, 2004) find negative relation between openness to outside world and economic growth. Reasons for such results are due to increased competition and thus – worsened conditions for local firms; some also mention unbalanced structure of being open (“bad ratio” of imports and exports), increased poverty, social injustice, insecurity (Stiglitz, 2002, 2004).
- To illustrate the variety of studies about economic growth and globalisation in developing countries, examples of Paudel (2014), Rahnama, Fawaz and Gittings (2017), Kilic (2015) and others can be discussed. For example, Paudel (2014) explored level of dependency developing countries have on their natural resources and having a sea boarder (or being landlocked). Author tested this relation for sample size of 197 countries, including 34 low income developing ones, for the period of 1996–2009. The results after pooled ordinary least squares and random effects models showed, that being landlocked, as expected, “confirm the findings of previous studies <…> hampers economic growth, especially among the developing countries” (Paudel, 2014, p. 356). Author also concluded, that trade openness (economic dimension of globalisation) increases economic growth.
- Meanwhile, Rahnama et al. (2017) explored developing countries with dividing them into low-income developing country (LIDC) and high-income developing country (HIDC) groups. Their sample size consisted of 111 countries in total and covered period of 1970–2010. By employing dynamic panel and later – general method of moments (GMM), authors tested what is the relation between foreign
aid and economic growth, taking degree of trade openness (economic dimension of globalisation) as one of the control variables. Rahnama et al. (2017) aimed to prove that effect foreign direct investment has on growth is different between LIDC and HIDC and this hypothesis was confirmed. According to empirical findings, foreign aid has positive impact on economic growth in HIDC and negative impact on growth in LIDC. Meanwhile economic dimension of globalisation proved to positively impact growth in both groups.

For the purposes of this work, the study of Kilic (2015) is especially interesting. This author employed a database of 74 developing countries for period 1981–2011 and applied an econometric panel data model of fixed effects and tested how different dimensions of globalisation affects economic growth. Author argues, that as globalisation is “a component of creating opportunities for countries’ economies and effecting their economic growth in a positive way thanks to these opportunities for some, it causes poverty and injustice income dispersal and it also affect the economic growth in negative ways for others” (Kilic, 2015, p. 1). Author employs the KOF index, proposed by Dreher (2006), which encompasses three dimensions of globalisation – economic, social and political –, and allows to compare their differences. After running Granger causality test and fixed effects, Kilic (2015) found, that: 1) “bidirectional relationship between economic globalisation and economic growth existed and a one-way relationship between social globalisation and economic growth existed” (Kilic, 2015, p. 9); 2) economic and political globalisation has positive impact on economic growth; 3) social globalisation decreases economic growth.

Finally, Frimpong, Lazarova and Gaymerah (2019) explored how anti-corruption instrument affects economic growth in 13 developing countries, belonging to Southern African Development community. Authors employed panel fixed effects and difference-in-difference models while testing this relation and found that anti-corruption instrument would have positive effect on economic growth only when supported by strong institutional base; otherwise no statistically significant effect is noticed. Authors also used several control variables in their empirical model, which included trade openness (found to have no stat. sign. effect), FDI (also no stat. sign. effect), gross fixed capital formation (positive stat. sign. effect) and labor force (positive stat. sign. effect).

Keeping in mind these empirical analyses, several general conclusions can be made. First, authors tend to use only economic dimension of globalisation in their research, which means they do not capture all aspects of globalisation. Second, authors do not pay big attention to globalisation as possible key factor for growth in developing countries; such factors as natural resources or foreign aid are tested more frequently. And third, results tend to show positive impact economic globalisation has on growth in developing countries.

Data and Methodology

In this paper, the augmented neoclassical growth model will be taken as basis, following Solow’s model, improved by Mankiw et al. (1992). Authors took Solow’s approach with economic output fostered by capital, labour and technological growth, but added human capital as a trial to fix problems with magnitude predictions and result bias in cases of population growth.
and savings, which were present in the textbook Solow model. The most important assumption, made by Mankiw et al. (1992), was that growth rates for all determinants are decreasing. This separated their model from endogenous growth models, which assume that returns of factors are not decreasing over time. Following these ideas, the general model for testing impact of globalisation on economic growth of developing countries, is the following:

\[ G = f(GLOB, CAP, LAB, HCAP, LAND, INSTITUT, AID) \]  

where \( G \) is growth, \( GLOB \) – globalisation, \( CAP \) – capital, \( LAB \) – labour force, \( HCAP \) – human capital, \( LAND \) – landlockedness, \( INSTITUT \) – growth determinants, related to institutionalism, and \( AID \) – foreign aid.

Globalisation is included into the model due to the purpose of this paper. This variable is proxied in 4 different ways: 1) only political, 2) only social dimension of globalisation, 2) economical dimension of globalisation with respect to trade balance of a country, 4) and an overall globalisation with respect to trade balance of a country. It is expected, that political and social dimensions will have no statistically significant impact for growth, while overall globalisation and its economic dimension should have positive statistically significant impact of economic growth when trade balance is positive.

Capital, labour and human capital are included into the model because of the ideas of the growth model of Mankiw et al. (1992). They reflect growth of fixed assets of the countries labour growth as well as changes in human capital. It is also worth mentioning, that human capital is one of the most complex variables used in the model. The reasons for that are twofold. First, human capital can be understood not only as education but also as healthcare, experience, creativity or all abovementioned things combined. This introduces breadth to the concept itself as well as creates difficulties in statistics gathering and numerical evaluation. And second, while trying to avoid broadness, there is a high probability of skipping other important aspects. For example, if one chooses to express human capital via education sphere, it also must be chosen, which aspect of education is the most important: the investment into it, number of teachers per pupil, enrolment of students or completion of certain education level. Moreover, there is also a question of which level of education – primary, secondary or tertiary – is crucial for the economy and which outweighs its opportunity costs, because students usually do not work and do not create additional value to the country during their learning period (Didžgalvytė & Osteikaitė, 2018; Mankiw et al., 1992).

Model also includes geographical position of the country, more precisely – does the country have direct access to the sea or not. This determinant was included because of results of previous empirical researches, which showed that landlocked countries tend to experience slower economic growth than those countries with the direct access to the sea (Paudel, 2014). This issue is also important because there are less than 50 landlocked countries in the world and majority of them belong to developing countries or economies in transition. Moreover, geographical position, although important, is often left out of growth literature (Paudel, 2014).
Another variable, included in the model, is foreign aid. Despite the importance of aid and the fact that it was studied extensively, “there has been neither a theoretical consensus nor consistent empirical evidence that concluded whether the relationship between foreign aid and economic growth in less developed countries is positive, negative or non-existent” (Rahnama et al., 2017, p. 154). Reasons behind such result disparity can be numerous: endogeneity or heterogeneity of data, shortage and little reliability of statistics, or chosen econometrical models. Moreover, results differ depending on what country classification is used in the analysis – whether developing countries were treated as one group or they were separated into subcategories – as “it is reasonable to expect that the relationship between foreign aid and economic growth may vary conditional on country characteristics such as income per capita and the stage of economic development” (Rahnama et al., 2017, p. 154). However, the main reason why it is also hard to reach consensus about what effect aid has on economic growth is because aid itself is not a necessary condition for growth; the condition for growth is how the aid is used in the country. In this place two main viewpoints exist in empirical research: 1) the concept of “big push”, which argues for “scaling up foreign aid in order to reduce poverty rate by half” (Harb & Hall, 2019, p. 4); and 2) constraints of absorption, which argues that only part of aid will be used effectively due to corruption, physical and human capital and other restrictions in the receiving country, therefore aid providers have to consider what amount of aid is needed and can be successfully absorbed.

Finally, the institutional group of variables include institutional determinants that

<table>
<thead>
<tr>
<th>Variables</th>
<th>Name in estimations</th>
<th>Proxy</th>
<th>Source of data</th>
</tr>
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<tbody>
<tr>
<td>Dependent economic growth</td>
<td>growth</td>
<td>Change of GDP per capita (current US$)</td>
<td>World Bank</td>
</tr>
<tr>
<td>Independent Globalisation</td>
<td>glob_trade, globe_trade, globs, globp</td>
<td>KOF index</td>
<td>KOF database</td>
</tr>
<tr>
<td>Controls</td>
<td>land</td>
<td>Is country landlocked (binary)</td>
<td>World Bank</td>
</tr>
<tr>
<td>Capital</td>
<td>cap</td>
<td>Gross fixed capital formation (% of GDP)</td>
<td></td>
</tr>
<tr>
<td>Labor</td>
<td>lab</td>
<td>Econ. active people ages 15–64</td>
<td></td>
</tr>
<tr>
<td>Human capital</td>
<td>hcap</td>
<td>Government expenditure, total (% of GDP)</td>
<td></td>
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<tr>
<td>Government effectiveness</td>
<td>eff</td>
<td>Latitude</td>
<td></td>
</tr>
<tr>
<td>Institutional quality</td>
<td>corrup</td>
<td>Control of corruption (−2.5 to 2.5)</td>
<td></td>
</tr>
<tr>
<td>Foreign aid</td>
<td>aid</td>
<td>Net ODA per capita (current US$)</td>
<td></td>
</tr>
<tr>
<td>Trade balance</td>
<td>trade</td>
<td>Exports minus imports (binary)</td>
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<tr>
<td>Political rights</td>
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<td>Political rights index (1 to 7)</td>
<td>Freedom House</td>
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<td>Civil rights</td>
<td>civil</td>
<td>Civil rights index (1 to 7)</td>
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have impact on economic growth due to increasing complexity of international environment and need for effective rules in the country. Following the institutional theory, institutions are “understood as the rules of the game in a society” and are among key determinants of long-term economic growth” (Silve & Plekhanov, 2018, p. 335). There are also some authors who consider institutions as reflection of political situation in a country and claim that economic growth and development cannot be achieved without democracy (Acemoglu, Naidu, Restrepo & Robinson, 2018) or that democracy is crucial for economic growth in a very long term. However, in majority of empirical research, analysed in this paper, authors use more than only political determinants to test the importance of “rules of the game” and test how quality of institutions in the country interacts with other growth determinants, for example, in a case of foreign interventions, how good institutional quality, interacted with foreign aid, affects growth. In general, it is expected that institutions, if work properly, can increase effectiveness of human and physical capital use. This, in turn, would foster economic growth (Silve & Plekhanov, 2018; Chirwa & Odhiambo, 2016). Therefore, in this paper four institutional determinants are included: 1) government effectiveness; 2) political rights; 3) corruption; and 4) civil rights. Description and sources of variables and their proxies are shown in Table 2.

To test the relation between growth and globalisation in developing countries, two-step system GMM was applied for 125 developing countries (according to the taxonomy proposed by the United Nations (2018) in World Economic Situation and Prospects), in period of 1970–2017. Logics of the model testing is the following: first, impact of economic dimension (with respect to trade balance), political dimension, and social dimension of globalisation is tested. Then, in the fourth model, the impact of overall globalisation (with respect to trade balance) is tested. In cases, where immediate statistically significant impact was found, test will be repeated for diminishing effects and effects with one-year lag.

### Results and Discussion of Empirical Analysis

The results of first four empirical models show, that only economic and overall globalisation impact growth of developing countries statistically significantly, while taking into account trade balance of the country. This effect is, however, negative and small. Political and social dimensions

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Result of initial estimations</th>
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<tbody>
<tr>
<td><strong>Economic</strong></td>
<td><strong>Political</strong></td>
</tr>
<tr>
<td>Result</td>
<td>−0.003144 (0.0714) *</td>
</tr>
<tr>
<td>Other statistically significant variables</td>
<td>const growth (−1) land</td>
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Note: Numbers in parentheses show p-values. *, **, *** – significance at 10 %, 5 % and 1 % levels respectively.
of globalisation, on the other hand, have no statistically significant impact on economic growth (Table 3).

Such result agrees with the previously made hypotheses. However, it was expected that globalisation of economic sphere, given that trade balance is positive, will foster growth rather than diminish it. This would go in line with results of previous authors (Kilic, 2015; Paudel, 2014; Rahnama et al., 2017) who found positive links between economic sphere of globalisation and economic growth. The difference of result sign could be explained by usage of different time periods and set of countries as well as methodology, also by different controls in the model.

The negative impact itself, at the same time, can be explained by vulnerability of developing countries, meaning that their domestic conditions (for example, dominating economic sector, legal system and so on and so forth) are not strong enough to “win” against the outside influences. Therefore, domestic producers lose their market share, and, despite the positive trade balance, economic growth is hindered. Negative impact of overall globalisation, meanwhile, can signal that poverty and inequality that increase due to globalisation (Stiglitz, 2002, 2004) adds up to the economic impact.

Since only immediate effect of economic and overall globalisation seemed to have statistically significant impact on growth in developing countries, it was also checked if this impact exists (and if it becomes positive) with the lag of one year or if the impact diminishes with time (Table 4). The results show that economic dimension starts to have a positive impact on economic growth (with positive trade balance) with a lag, meanwhile, overall globalisation loses that impact. To test if the impact diminishes was not possible due to insignificance of the coefficients.

All in all, the following conclusion about effects of overall and economic globalisation can be done: going back to the “big push” theory by Rosentein-Rodan (1957), developing countries require an outside help to develop (grow) further; that is, they require assistance which must be received by appropriate domestic conditions. And although there are theories about how that assistance is a way for more developed countries to gain something (influence, trade, etc.), it differs from globalisation significantly, as globalisation in general cannot be accounted for as a tool for development assistance. However,

<table>
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<tr>
<td><strong>Economic (–1)</strong></td>
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<tr>
<td>Result</td>
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<td></td>
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<tr>
<td>Other statistically significant variables</td>
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</tbody>
</table>

*Note: numbers in parentheses show p-values. *, **, *** – significance at 10 %, 5 % and 1 % levels respectively.*
being economically open is valuable for developing countries in the longer run, as economic globalisation sphere includes not only trade but also financial money flows, such as investment, as well as international investment or trade agreements, which cannot be fully absorbed by countries instantly and the effect, therefore, is also seen only in later years.

While looking at other variables, employed in the models for developing countries, there is a trend of general economic growth in all cases (constant is statistically significant and positive) which agrees to general trend of growing world economies (World Bank, 2019). Another factor which was statistically significant, was the historical economic growth. This is also logical, since this variable accounts for all historical factors that are doing an impact on present economic growth. Also, government expenditure for education is also statistically significantly affecting economic growth with a two-year lag in one of the models (Table 3). This agrees to the idea that government expenditure for education is not effective immediately, but the results are positive in a longer period.

In several cases the fact if a country is landlocked was also positively affecting economic growth and requires deeper analysis since this affect contradicts previous evidence (Paudel, 2014). It is generally accepted that landlocked countries have a disadvantage while trading “due to higher transportation costs raised by distance and infrastructure quality in their neighbours” (Paudel, 2014, p. 341). However, although being landlocked seems as a burden for economy of a country from the transportation cost point of view, in case of developing countries it can also be seen as a “safety net” – higher transportation costs for export also means the same for import and it can be assumed that this helps for domestic producers to grow stronger; moreover, being landlocked means that country has borders with more countries (physical distance is smaller and therefore, following the gravity theory, trading is easier). In addition to this, in some cases being landlocked helps for economy because country is less likely to experience extreme shocks, for example, natural disasters, that can hinder growth and development.

Finally, in all models several years were statistically significant, namely 2009 and 2013–2016. This signals that recent economic crisis also had a significant impact on economic growth of developing countries used in the sample, as well as other external shocks.

Conclusions and Recommendations

Globalisation and economic growth are both complex concepts, related through economic, political and cultural or social channels. One of the major issues about both phenomena is the way of expression – determinants in case of growth and components in case of globalisation. In both cases, scholars (Kluver & Fu, 2004; Dreher, 2006; Vujakovic, 2010; Weiß et al., 2018; Anyanwu, 2014; Wang et al., 2018; Gygli et al., 2019) tend to add new aspects to increase precision of the measurement, however, work is far from done. While growth economists now give biggest attention to technological progress and innovation as main drivers of growth, those who are analysing globalisation focus on improving globalisation indices by adding new features.

Keeping in mind this, as well as complexity of both concepts, in this paper it
was argued that the best way of analysing globalisation effects is to take the phenomenon as a whole; however, remembering that some dimensions of globalisation can be more important than others, impact was also analysed for separate dimensions. For this, a data base of 125 developing countries for period of 1970–2017 was used. Estimations showed, that separate dimensions of globalisation have bigger impact on economic growth than overall globalisation for developing countries – economic globalisation with respect to trade balance initially has a negative impact but it becomes positive in the longer run, overall globalisation, meanwhile, was found to have a negative impact on growth.

These results mostly did not agree with analysed in previous works; however, they are logical because of the following reasons. In the case of developing countries with positive trade balance, economies are growing due to expansion of trade relations, agreements and investment, which come into force not immediately. At the same time, overall globalisation for developing countries also means several foreign influences interrupting vulnerable domestic systems.

Some limitations and suggestions for future research also must be named. Firstly, some variables had relatively small number of observations (cases of human capital, corruption and labour force). If better proxies were found, it would increase precision of the results. For example, human capital could be proxied by pupil enrolment level, corruption – by corruption perception index or other measures. Secondly, the model of growth, which was taken as a basis in this research, is not new in comparison to the most recent ones and might not give needed attention to newly acknowledged growth drivers, such as innovations. Thirdly, although country taxonomy according to the development level is internationally recognised, it might be useful to use a different way of categorizing the countries, following examples of Paudel (2014), Rahnama et al. (2017) and other authors. One of the alternative ways could be using income level or some more complex taxonomy criteria, for example, combination of income level and belonging to major economic organisations. This would add possibilities for more accurate country analysis and model construction while choosing controls.

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The paper submitted April 1, 2019
Prepared for publication June 1, 2019
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GLOBALIZACIJOS ĮTAKA BESIVYSTANČIŲ ŠALIŲ EKONOMIKOS AUGIMUI
Santrauka

Ekonomikos augimas yra viena seniausiai nagrinėjamų ekonominių temų, aktuali ir teoriniu, ir praktiniu atžvilgiu. Tuo tarpu globalizacija šiuo metu yra bene dažniausiai analizuojamas reiškinys. Vis dėlto, nepaisant susidomėjimo, nėra visuotinai pripažistamos nuomonės apie tai, kokia įtaką globalizacija daro šalių ekonomikos augimui, ypač atsižvelgiant į šalių išsvystymo lygį. Šiame straipsnyje siekiama įvertinti, kokią įtaką globalizacija daro besivystančių šalių ekonomikos augimui. Globalizacija straipsnyje išreikšta atskiromis sritimis – ekonomine, politine, socialine. Taip pat vertinamas bendro šalies globalizacijos lygio poveikis.


Empirinio tyrimo rezultatai parodė, jog socialinė ir politinė globalizacija statistiškai reikšmingos įtakos šalių ekonomikos augimui neturi, bet ekonominė ir bendra globalizacija, atsižvelgiant į šalies prekybos balansą, šalies ekonomikos augimą veikia statistiškai reikšmingai. Bendra globalizacija ekonomikos augimą mažina, tuo tarpu ekonominė globalizacijos dalis iš pradžių augimą veikia neigiamai, bet ilgalaikė laikotarpio poveikis pasidaro teigiamas.

Tyrimo apribojimai: 1) kintamųjų, susijusių su žmogiškuoju kapitalu, korupcija ir darbo jėga, trūkumas; 2) tirtas modelis sudarytas remiantis papildyta neoklasikinė ekonomikos augimo teorija, kuri kitų ekonomikos augimo teorijų kontekste gali būti laikoma praradusia aktualumą; 3) besivystančios šalys tirtos kaip bendras šalių blokas. Atliekant tolesnius tyrimus apie globalizacijos poveikį ekonomikos besivystančių šalių augimui, vertėtų šalis skirstyti neatitinkamai pagal išsvystymo lygį ar kitus kriterijus.