

How real is the risk of the CEE economies falling into the *middle-income trap*?

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Abstract

The aim of this study is to evaluate, whether the risk of the CEE economies falling into the *middle-income trap* is genuine. The article presents a short history of how the term *middle-income trap* became popular among economists, journalists and policy makers since its introduction almost 10 years ago (Chapter 1). This is followed with a summary of the five most popular interpretation types of what the *middle-income trap* is (Chapter 2). Next, based on the literature review, a list of factors that make countries *stuck* in the *trap* is presented and discussed (Chapter 3). As the empirical and theoretical foundations of the *middle-income trap* concept are challenged by researchers nowadays, a short survey of the critical literature is also presented (Chapter 4). The article concludes with a novel interpretation of the *middle-income trap* and a new term – the *convergence trap* – is introduced and explained (Chapter 5). Last a short discussion is presented on whether the CEE region is in danger of falling into the *trap** (Chapter 6).

*Please note that this is not a finished paper – it is still a work in progress.

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Chapter 1. What are the origins of the *middle-income trap*?

A short tale on how the concept became the new *hot thing* among policy makers around the world.

The term *middle-income trap* was (indirectly) introduced by Garret (2004). He observed that the growth rates of middle-income countries have been in stagnation since the 1980s. In his work, he assumed that this occurred due to their inability to compete with, on the one hand, high-income countries (which are competitive due to high-quality knowledge economy and institutions) and, on the other hand, low-income countries (which are competitive in low-skilled tasks at the lowest possible cost).

The term was defined for the first time by Gill and Kharas (2007). In their report *An East Asian Renaissance* they presented an interpretation of the *middle-income trap* as the case of middle-income countries being squeezed between low-wage poor-country competitors that dominated in mature industries and rich country innovators that dominated in industries undergoing rapid technological change. They pointed out that after decades of strong economic growth, East Asia might find it difficult to maintain its impressive pace of convergence due to lack of economies of scale. They suggested that strategies based on factor accumulation would, most likely, deliver gradually deteriorating results. Gill and Kharas (2007) further pointed out that Latin America¹ and Middle East are examples of the middle-income regions that for decades had been unable to *escape* this *trap*.

After Gill and Kharas (2007), there has been an explosion of the usage of this term in academic research. As of today², on IDEAS RePEc³, there are as many as 54 scientific articles with the phrase *middle-income trap* in their title. In addition, on Google Scholar⁴, there are 277 articles with *middle-income trap* in its title. Among many, the most recognisable academic

¹ In most scientific papers (i.e.: Jankowska et al., 2012; Felipe et al., 2014) the same group of countries (originally used for comparative analysis by Gill and Kharas, 2007) is being used, namely Latin American (as the *victims*) and East Asian (as the *escapees*).

² 10th March 2015.

³ IDEAS RePEc is considered to be probably the largest economics bibliographic database on the Internet. See more: <https://ideas.repec.org/>.

⁴ Google Scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines. See more: scholar.google.com.

papers are: Egawa (2013), Eichengreen et al. (2013)⁵, Islam (2014), Kharas and Kohli (2011), Kohli and Mukherjee (2011), Liu et al. (2012), Vivarelli (2014), Wu (2014), Yilmaz (2014), Yiping (2014), Zhang et al. (2012) and others.

The majority of international institutions have also conducted their own research on the topic. Not surprisingly, the organization that uses the term the most is the World Bank (i.e.: Agenor and Canuto, 2012; Agenor et al., 2012; Agenor and Canuto, 2014; Agenor and Dinh, 2013A; Agenor and Dinh, 2013B; Bulman et al, 2014; Falaen et al., 2014; Gill and Kharas, 2007; Im and Rosenblatt, 2014; Jimenez et al., 2012; Lin and Treichel, 2012). The second institution with the most frequent usage of the *middle-income trap* concept is the Asian Development Bank (i.e.: Felipe et al., 2012A; Felipe et al., 2012B; Felipe et al. 2014). The third would be the OECD (i.e.: Gurria, 2013; Jankowska et al., 2012A; Jankowska et al., 2012B; Koen et al., 2013; Pezzini, 2014; Tanaka, 2014). The International Monetary Fund also has its own publication, where it analyses the *middle-income trap* occurrence (Aiyar et al., 2013). It also uses the term in some of its country concluding statements and various briefs (i.e.: IMF, 2014).

Other international institutions don't offer their own interpretation of the *middle-income trap*, but use the concept in their work. Examples are African Development Bank (i.e.: Brixiova and Kangoye, 2013; Fraser-Moleketi, 2015; Kaberuka, 2013A; Kaberuka, 2013B; Kaberuka, 2013C), European Commission (Bogumił and Wielądek, 2014) and European Bank for Reconstruction and Development (Berglof, 2013 and 2014). Perhaps the only international development institution that does not research the *middle-income trap* is the Inter-Development American Bank⁶.

The United Nations has also published its own two reports focused on the *middle-income trap*. First was the *Report of the Secretary General: Development cooperation with middle-income countries* (UN, 2013A). This publication was followed by a two-day plenary discussion of the IInd Committee during the 68th General Assembly in New York. Second report (UN, 2013B) was the main subject of the 2013 Seoul Debates' discussions.

⁵ This is the most cited scientific paper when it comes to using thresholds for *middle-income trap*.

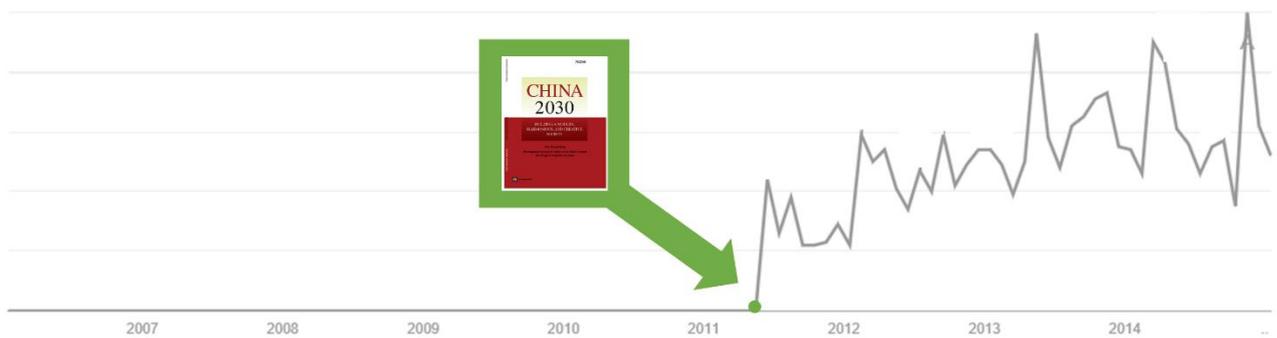
⁶ No results have been found while screening for materials for this paper by using their search engine or Google.

The term also served as an inspiration for some books. Kohli and Sood (2010), Lee (2013), Peerenboom and Ginsburg (2014), She (2012), Spence (2011) and Woo et al. (2012) are perhaps the most noticeable examples.

The *middle-income trap* is a catchy and easy to interpret concept, which makes it very useful in public policy discussions. As a result, the term is the *hot thing* in the media – is vividly mentioned by politicians and was popularized by leading economic magazines and notable journals (i.e.: Financial Times, Forbes, Times, The Economist, The Wall Street Journal).

Most scientific articles point out that the term was coined and popularized by Gill and Kharas (2007). However, it was not that popular among neither policy makers nor think tanks up until 2011 (Chart 1.).

Chart 1. Popularity of the term *middle-income trap* in the media



Source: own elaboration, based on Google Trends⁷ (2015). Note: The reported numbers reflect the number of queries for a particular term, relative to the total number of searches done on Google over time. They don't represent absolute search volume numbers, because the data is normalized and presented on a scale from 0 to 100. When we don't have enough data, 0 is shown.

It was in that year when the China 2030 program was initiated by the former President of the World Bank, Robert Zoellick. It was later followed by the report published in 2012 under the title: *China 2030: Building a Modern, Harmonious, and Creative High-Income Society*⁸. Not only did this report re-introduce⁹ the *middle-income trap* issue to the general public, but it also

⁷ As of 10th March 2015. See: <http://www.google.pl/trends> .

⁸ The report was prepared by the World Bank and the Development Research Center of the State Council, People's Republic of China.

⁹ The report points out that the *middle-income trap* was first defined by Gill and Kharas (2007).

illustrated the concept of it with an influential graph illustrating the *middle-income trap*, which was later re-used by Agenor and Canuto (2012). Nowadays it has become the graph most frequently used by the media¹⁰.

Today, the term is constantly gaining in popularity. More and more countries are identified as potential *victims* to the *middle-income trap*. Economies that are perceived by the media as *candidates* to get *stuck* no longer come from the emerging market group (i.e.: the BRIC countries, Indonesia, Malaysia, Vietnam) alone, as some economists also point to countries with the upper-middle-income level (i.e. from the CEE region, such as Poland) or even high-income countries (such as Greece).

¹⁰ This chart, along with its variations, is also the most frequently searched on Google Images.

Chapter 2. What do we mean when we say *middle-income trap*?

Overview of the interpretations of what the *middle-income trap* is in the literature.

There is no universal definition of the *middle-income trap*. Many different interpretations of this phenomenon are popular among researchers. This is a source of confusion as some countries are seen as *stuck* in the *trap* by some researchers, while judged as having managed to *escape* by others. For example, Poland is *trapped* according to Agenor and Canuto (2012) and Felipe et al. (2012A, 2012B), avoided the *trap* according to Ayiar et al. (2013) and Eichengreen et al. (2013), and has entered the *zone of difficulties* according to Bukowski et al. (2013). The literature on the *middle-income trap* has been repeatedly reviewed (most recent reviews are: Pruchnik and Toborowicz, 2014; Radło and Ciesielska, 2013 and Stanifko, 2013).

Generally, we can divide the interpretations of the *middle-income trap* phenomena into five categories:

1. **Non-empirical, descriptive interpretations** (i.e.: Gill and Kharas, 2007; Kharas and Kohli, 2011; Ohno, 2009),
2. **Fixed income thresholds** (i.e.: Ayiar et al., 2013; Eichengreen et al., 2013; Spence, 2011),
3. **Relative income thresholds** (i.e.: Agenor and Canuto, 2012; Bukowski et al., 2013; Im and Rosenblat, 2013; Robertson and Ye, 2013; the World Bank, 2012),
4. **Time thresholds** (i.e.: Felipe et al., 2012A),
5. **Indices** (i.e.: Hawksworth, 2014; Woo et al., 2012).

The first group consists of non-empirical, descriptive interpretations of what the *middle income trap* is. Most notable examples are Gill and Kharas (2007), Kharas and Kohli (2011)¹¹ and Ohno (2009). In general¹², they define the *trap* as a situation, when countries are no longer able to maintain strong convergence by using the same *primitive* growth engines, most notably

¹¹ A simple and even more powerful illustration of what a *middle-income trap* is was suggested by Kharas and Kohli (2011). The authors compared the *middle-income trap* to the bunkers that lie and wait for golfers. They argue that not every player falls into them, but every golfer should worry about them.

¹² Ohno (2009) has a slightly different definition as he argues that countries that fell into the *middle-income trap* are *stuck* at the 2nd stage of industrialization (transformation). This occurs because they didn't manage to *upgrade* their human capital.

low wages. They are unable to compete with advanced countries that are not price-competitive but rather quality-competitive (which requires high-tech innovation). Furthermore, they are unable to compete with low-income countries that have even lower wages. As a result, they find themselves *stuck* in the middle – hence, the *middle-income trap*. The main advantage of this interpretation is its universal usefulness. The *trap* here is not *fixed* to a certain level of income, index, relative level of income, etc. It can be applied to various economies that are (or can be) *stuck* in the *trap*.

An example: according to this definition, we can say that both China (GDP per capita at 6 807 USD, PPP current prices¹³) and Poland (GDP per capita at 13 648 USD, PPP current prices) can be *stuck* in the *trap*. After 25 years of rapid transition, Poland is believed to be the leader of convergence in the CEE region (i.e.: Berglof, 2014; Roaf et al., 2014; Winiecki, 2012). However, economic growth in Poland so far has been mainly fuelled by: i) increases in total factor productivity driven mainly by the release of *productivity reserves*¹⁴, ii) low wages combined with highly educated workforce, which made Poland a very attractive base for outsourcing, logistic centres and factories, iii) integration with the European Union labelled as the *convergence machine*¹⁵ (which resulted in inflow of funds, new businesses and institutional *level up*)¹⁶. At the same time, Poland lags in competitiveness, innovation and value added in comparison to i.e.: the Baltic States¹⁷ (average GDP per capita around 16 565 USD), Czech Republic (GDP per capita 19 844 USD) or Slovakia (GDP per capita 18 065 USD), while wages in Poland are higher than in Bulgaria (GDP per capita 7 498 USD), Romania (GDP per capita

¹³ Unless mentioned otherwise, all statistics are from the World Bank database (the World Development Indicators, 2015).

¹⁴ In the literature we can identify three productivity reserves. The first one was a rapid growth of effectiveness in private companies, as opposed to state ones (which was possible after the market reforms that introduced privatization). The second one was inter-sector re-allocation in economy, while the third one was attributed to the transfer of technologies and know-how from abroad. The first two sources of productivity growth were, in a way, one-off phenomena (these were *productivity reserves*). Productivity growth based on absorption of foreign innovations rapidly improved productivity during the last 25 years of transition, but doesn't guarantee its growth in the long run. In time, imported technologies stop being productivity growth engines. After diminishing technological advantages, further productivity growth can only be determined by new domestic solutions – internal innovations.

¹⁵ See: Gill and Raiser (2012).

¹⁶ Simultaneously to the advancing economic integration we observed the tightening and harmonizing of the Polish law, institutions and infrastructure with European standards and requirements. All these changes accelerated the process of transformation in Poland, acting in the economic, social and political dimensions at the same time (i.e.: Piątkowski, 2012).

¹⁷ Estonia, Latvia and Lithuania.

9 499 USD) and Ukraine (GDP per capita 3 900 USD). Thus, many domestic economists (i.e.: Bukowski et al. 2013; Bukowski et al. 2014; Geodecki et al. 2013; Petru, 2014; Pruchnik and Toborowicz, 2014; Radło and Ciesielska, 2013; Staniłko, 2013) as well as economists from international institutions such as European Commission (i.e.: Bogumił and Wielądek, 2014) point out that – in this regards – Poland may get *stuck* in-between. At the same time China might find itself *stuck* between more advanced Asian country like Malaysia (GDP per capita 10 538 USD) or less advanced India (GDP per capita 1 498 USD).

The second group consists of empirical interpretations that provide a certain level of income as a threshold for the *middle-income trap*. Most cited articles from this group are Ayiar et al. (2013), Eichengreen et al. (2013) and Spence (2011).

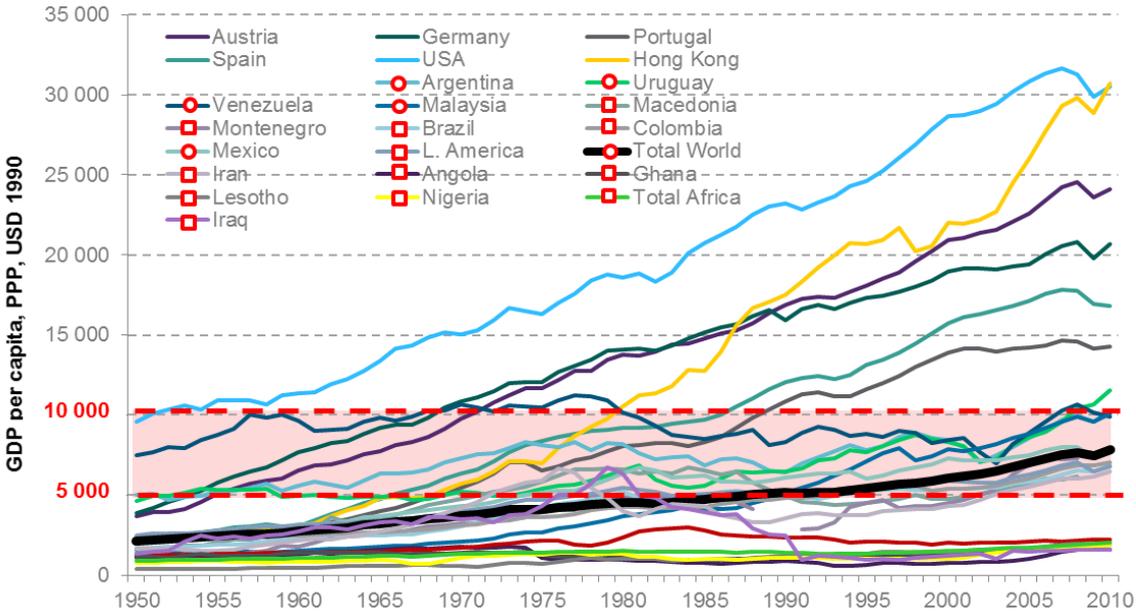
Chronologically, Spence (2011) was the first to suggest a *fixed threshold for the middle-income trap*. Based on his empirical findings, he suggested a range between 5 000 USD and 10 000 USD per capita income as the stage of development where the transition to higher-income levels becomes challenging. An illustration (using most recently available data) of this concept is shown in Chart 2.

Eichengreen et al. (2013) suggested another threshold. Their NBER paper is perhaps the most cited scientific article on the *middle-income trap*. In their research, they studied middle-income countries¹⁸ that in the past half century had enjoyed average GDP growth of at least 3.5% for several years. They defined an economic sudden slowdown¹⁹ as a decline in the 7-year average growth rate by at least 2 percentage points. Eichengreen et al. (2013) identified two peaks between which the likelihood of such slowdowns is most probable: between 10 000 and 11 000 USD per capita (PPP, constant 2005 prices) and between 15 000 and 16 000 USD per capita (PPP, constant). An illustration of this interpretation of the *middle-income trap* is presented below (Chart 3.).

¹⁸ Defined as having income of at least 10 000 USD in 2005 constant international prices.

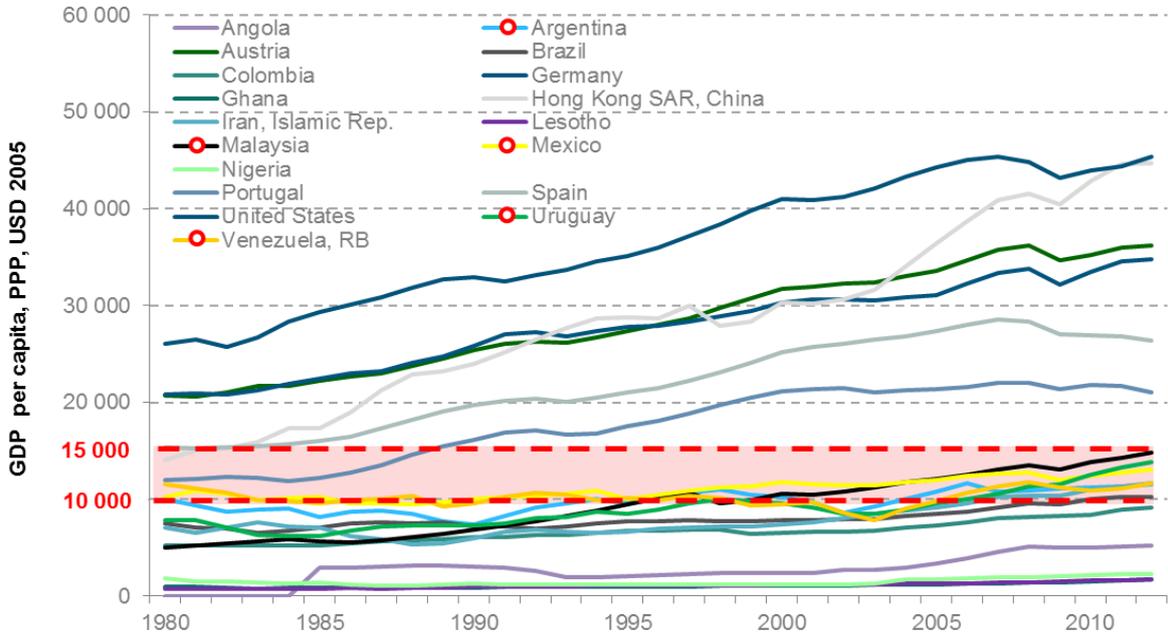
¹⁹ In more detail, Eichengreen et al. (2013) define a growth slowdown episode as one in which three conditions are satisfied: (i) growth in the preceding period is greater than or equal to 3.5 percent per annum; (ii) the difference in growth between the current and preceding period is greater than or equal to 2 percentage points per annum; and (iii) the country's per capita income exceeds 10 000 USD in 2005 constant international prices. This work, in turn, is symmetrically based on Hausmann, Pritchett, and Rodrik's (2005) analysis of growth accelerations.

Chart 2. Spence (2011)



Source: own elaboration, World Development Indicators (World Bank, 2015), Maddison Project Database (2015), World Penn Table (2015).

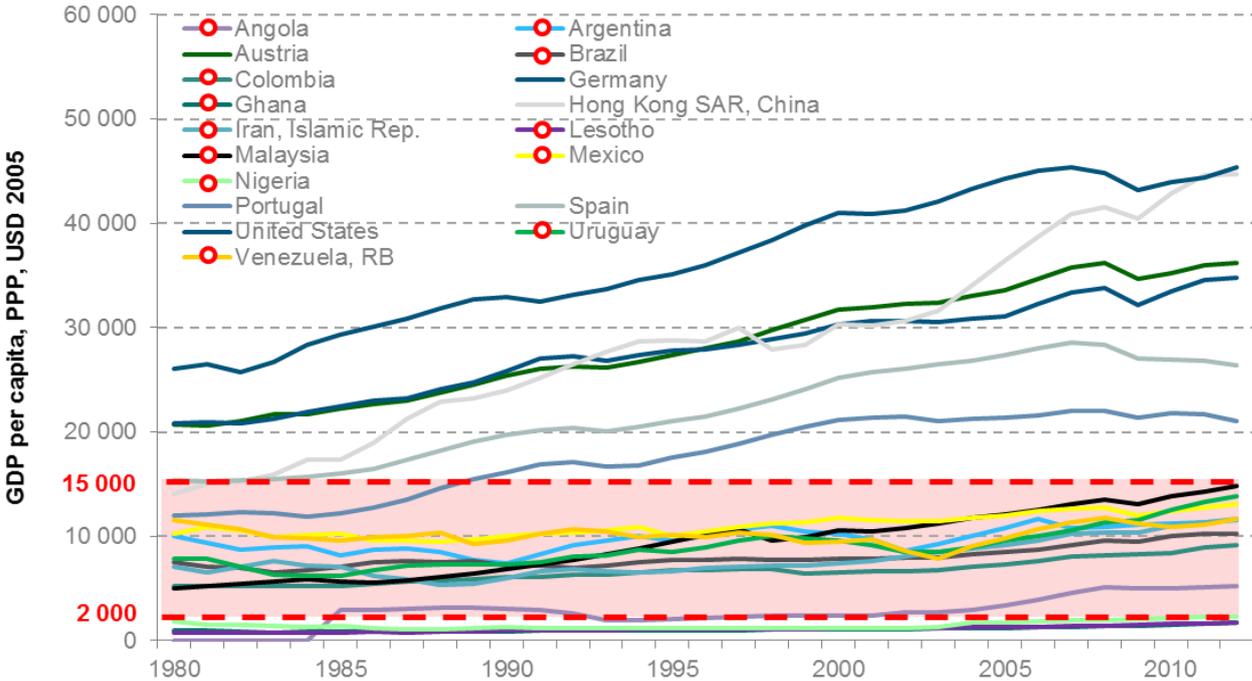
Chart 3. Eichengreen et al. (2013)



Source: own elaboration, World Development Indicators (World Bank, 2015), Maddison Project Database (2015), World Penn Table (2015).

Last but not least is the work done by Ayiar et al. (2013). The authors examined the *middle-income trap* as a special case of growth slowdowns and explored the determinants behind them. They interpret growth slowdowns as sudden and sustained deviations from the growth path predicted by a basic conditional convergence framework. Based on this assumption, they suggest two thresholds: first at the level of 2 000 USD per capita (PPP, constant 2005 prices) for low-income countries and second at the level of 15 000 USD per capita (PPP, constant 2005 prices) for middle-income countries. They argue that the main reason for this choice is that the GDP per capita classification generated by these particular cut-off points is extremely close to the GNI per capita classification employed by the World Bank. An illustration of this interpretation of the *middle-income trap* is presented below (Chart 4.).

Chart 4. Ayiar et al. (2013)



Source: own elaboration, World Development Indicators (World Bank, 2015), Maddison Project Database (2015), World Penn Table (2015).

In general, an advantage of these empirical interpretations is their clarity and the supporting empirical work. By using a *fixed* threshold, it is easy to judge whether a country has managed, or not, to *escape* the *middle-income trap*. However, we can assume than in the future all countries will surpass the thresholds. As a result – using today’s definition – all

countries will become high-income countries. This, however, does not mean that all will become advanced economies in relative terms. For example, according to Trading Economics²⁰ in the year 2050 China is expected to increase its GDP per capita levels to 34 146 USD (PPP). This is well above thresholds for a *middle-income trap* set by Spence (2011), Eichengreen et al. (2013) and Ayiar et al. (2013). At the same time, however, the USA is expected to reach the level of 58 386 USD per capita (PPP). This will mean that China will be still a medium-income country in relative terms (in 2050, according to Trade Economics, Chinese GDP per capita will be at the level of 58.5% of USA).

The third group consists of studies that use a *catch-up* benchmark for relative income levels.

The five most interesting contributions in this regard were perhaps made by Agenor and Canuto (2012), Bukowski et al. (2013), Im and Rosenblat (2013), Robertson and Ye (2013) and the World Bank (2012). In all these articles, USA is used as the benchmark country. The rationale behind using USA is the following: i) it is a high-income country, ii) for many researchers it represents the technological frontier of the world and iii) it is perceived as a country with a long-term balanced growth (Jones, 2002).

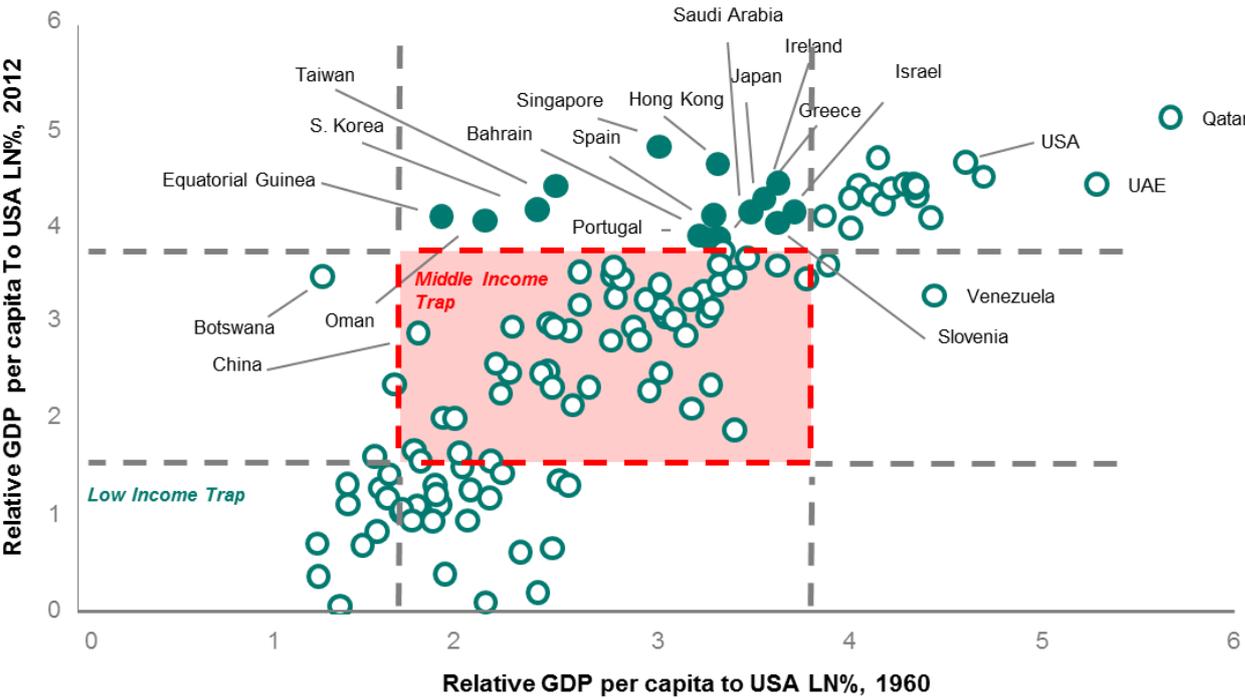
In the China 2030 report (World Bank, 2012), for the first time a benchmark country (USA) is used to determine whether a country is *stuck* or not in the *middle-income trap*. The threshold is set between 5% and 45% of the US GDP per capita. Based on this research, it was estimated that of 101 middle-income economies in 1960, only 13²¹ became high-income by 2008. The same interpretation was later used and popularized by Agenor and Canuto (2012). The new chart (updated data) is presented below (Chart 5.)²². This is the most commonly used chart representing the *middle-income trap* concept in the media (i.e.: The Economist) and online (most popular result of the *middle-income trap* in google images).

²⁰ Trading Economics forecasts are constructed based on their own analysts' expectations and technically projected using an autoregressive integrated moving average (ARIMA) model. More: <http://www.tradingeconomics.com/forecast/gdp-per-capita-ppp>.

²¹ Those countries were: Equatorial Guinea, Greece, Hong Kong, Ireland, Israel, Japan, Mauritius, Portugal, Puerto Rico, the Republic of Korea, Singapore, Spain, and Taiwan.

²² The data is updated to 2012, instead of 2008. This resulted in a slightly different set of countries that managed to avoid the *middle-income trap*: Bahrain, Equatorial Guinea, Greece, Hong Kong, Ireland, Israel, Japan, Portugal, the Republic of Korea, Saudi Arabia, Singapore, Slovenia, Spain and Taiwan.

Chart 5. World Bank (2012)



Source: own elaboration, World Development Indicators (World Bank, 2015), Maddison Project Database (2015), World Penn Table (2015).

Im and Rosenblat (2013) also used USA as the benchmark country but took a different approach. They constructed two transition matrices using two alternative relative income groups. In both cases they divided countries into five relative income groups. In the first set of transition matrices, countries were classified as follows: those with incomes less than 0.15 of the US income; those between 0.15 and 0.30 of the US income; those between 0.30 and 0.45 of US income; those between 0.45 and 0.60 of US income; and those with income above 0.60 of US income. In the second set, the classification was as follows: those with incomes less than 1/16 of US income; those between 1/16 and 1/8 of US income; those between 1/8 and 1/4 of US income; those between 1/4 and 1/2 of US income; and those with income above 1/2 of US income. They concluded that the probability of being a middle-income country and staying as such is lower than the probability of being a low- or high-income country and remaining in those relative income bracket groups. They found that the second lowest category (in Matrix II) appears to be more downwardly mobile than upwardly mobile. This implies that some

countries might not only be *stuck* in the *middle-income trap* but can be even downgraded. The findings of the study of Im and Rosenblatt (2013) are presented in the table below (Table 1.).

Table 1. Transition matrixes

Transition Matrix I		Transition Matrix II	
GDP per capita relative to USA	Probability of moving to higher category	GDP per capita relative to USA	Probability of moving to higher category
<0.15	5%	<1/16	7%
0.15-0.3	17%	1/16-1/8	16%
0.3-0,45	29%	1/8-1/4	18%
0.45-0.6	34%	1/4-1/2	15%

Source: own elaboration, based on Im and Rosenblatt (2013).

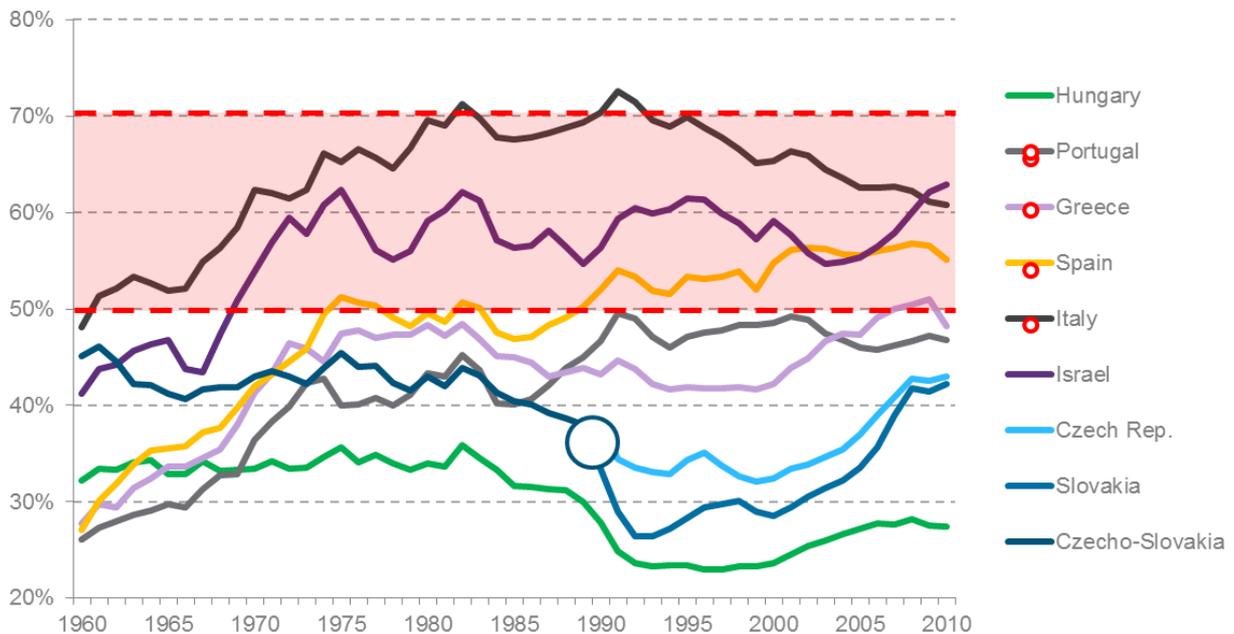
Another interesting study was conducted by Robertson and Ye (2013). Based on the work of Aten, Heston and Summers (2012) they set up a table of middle-income countries (middle 40% ranked by PPP, USD). This corresponded to the range of 8% and 36% of the US GDP per capita (PPP, international USD; this is close to the 5% and 45% suggested by the World Bank in the China 2030 report). According to this definition, in 2007 there were 46 middle-income countries (out of 189 countries in total). Based on their empirical work, out of those 46 countries, 19 are *stuck* in the *trap*²³.

Last but not least in the group was a study conducted by Bukowski et al. (2013). The authors set up a *zone of difficulties* at the range of between 50% and 70% of the US GDP per capita. They argue that the *zone of difficulties* should be set up separately for different regions, depending on economic history, income levels and aspirations of the selected country (or countries). In their work, they concentrate on Poland, and set up the *middle-income trap* range between 50% and 70% of the US GDP per capita (PPP, constant prices). Out of the three articles that represent the relative benchmark threshold, this one is the most simplistic – it is not based on solid

²³ The countries that are *stuck* in the *middle income trap* according to this definition: Botswana, Bulgaria, Costa Rica, El Salvador, Guatemala, Honduras, Iran, Iraq, Jordan, Lebanon, Mexico, Peru, Panama, Romania, South Africa, Syria, Thailand, Tunisia and Turkey.

empirical research nor literature review. However, it is also the most easy to interpret by policy makers. The illustration of this concept of the *middle-income trap* is presented below (Chart 6.).

Chart 6. Bukowski et al. (2013)



Source: own elaboration, World Development Indicators (World Bank, 2015), Maddison Project Database (2015), World Penn Table (2015).

The fourth group consists of articles where the definition is based on the number of years a country takes to move from one income category to another. Such an approach was suggested by Felipe et al. (2012A). They identified the threshold as 28 years in the lower middle-income group (range between 2 000 and 7 500 USD per capita, PPP, constant prices 1990; average pace of growth at 4.8% annually) and 14 years in the upper middle-income group (7 500 and 11 500 USD per capita, PPP, constant prices 1990; average pace of growth 3,5% annually). A country exceeding these threshold numbers of years would be classified as a country that is *stuck* in the *middle-income trap* (a total of 42 years). According to Felipe et al. (2012A) in their sample of 38 lower middle-income countries and 14 upper middle-income countries in 2010, 35 in total could be identified as countries that were *stuck* in the *trap*.

The fifth group consists of articles that constructed original indices in order to evaluate whether a country fell into the *trap* or not. Here, the two most common indices are the *Catch-Up Index* and the *ESCAPE Index*.

Woo et al. (2012) proposed a *Catch-Up Index (CUI)* in order to observe whether or not a country is in the *middle-income trap*. They suggested that a country is *stuck* when it shows no tendency to converge to the living standard of the global economic leader (USA) - meaning it stays at 50% of the living standards of the global leader for 20 years or more. The index has a rather simple construction. CUI is designed by dividing the country's income level by the US income level. If CUI is higher than 55% - the country has high-income. If it is below 20% - the country has low-income. Between 20% and 50% - the country is a middle-income one. The authors claimed that if China will not change its policies it will fall into the *middle-income trap* and will share the same fate as Malaysia (which he classified as a country that is currently *stuck* in the *trap*).

A more complex *ESCAPE Index* was suggested by PWC in 2014. A team of economists led by Hawksworth (2014) designed the *ESCAPE Index* in order to give an indication of how well different emerging markets were placed to *escape* the *trap*. The index combines 20 key indicators across five dimensions: i) economic growth and stability, ii) social progress and cohesion, iii) communications technology, iv) political, legal and regulatory institutions v) and environmental sustainability. According to the *ESCAPE Index*, countries that are on the right track to *escape* the *trap* are China, Chile, Malaysia and Saudi Arabia, while countries such as Brazil, India, Indonesia, South Africa and Turkey constitute the *fragile five* that will be *stuck*. It is important to notice, that while those indices are an interesting attempt to *tame* the *middle-income trap*, they are very simplistic. None of the indices went through a strict statistical testing. They also give different results (i.e.: they classify China differently).

Chapter 3. Why do countries fall into the *middle-income trap*?

Overview of factors that make countries fall into the *trap*.

Similarly to lack of consensus on *what the middle-income trap is*, the question *why countries fall into the trap is still an open one*. Researchers point to many different factors. Most cited in the literature is the lack of productivity growth, suggested by Eichengreen et al. (2013). It seems that a consensus is emerging around this explanation. However, there are strong discrepancies as to *why* there is lack of productivity growth. Here, researchers point to a wide range of factors such as i) institutions, ii) inequality, iii) output structure, iv) export structure, v) trade linkages, v) infrastructure, vi) access to finance, vii) education, viii) labour market, ix) demographics and x) public policy²⁴.

Felipe et al. (2012A) suggested that there is no *key factor that makes countries stuck in the trap* – this can be attributed to a variety of conditions. They argue that: i) low level of diversification of the economy, ii) low level of human and physical capital, iii) weak legal and institutional conditions, iv) prevalence of low sectoral development relationships with other sectors and v) low diversification of exports and export of low-processed goods increase the probability of a country to become *trapped*.

On the other hand, Jankowska et al. (2012) suggested that countries could be locked in the *middle-income trap* due to their lack of ability to adapt to rapid urbanization. They applied a *production space* approach to a sample of Asian and Latin American countries²⁵ estimating the impact of diversification into new sectors (extensive, widening strategy) and of increasing a country's export share into current highly sophisticated sectors (intensive, deepening strategy). The authors found that countries managed to increase the number of industries in which they reveal a comparative advantage. However, significant differences in the evolution of the countries' product spaces emerged, with a country like Korea standing out and others like Brazil and Mexico lagging behind.

²⁴ The list of factors present in the literature is much longer: some economist also point to factors such as CO2 emissions for example.

²⁵ Using similar groups of countries as in Gill and Kharas (2007).

Jankowska et al. (2012) concluded that Latin American countries are *stuck* in the *middle-income trap* due to their industrial structure that couldn't adapt to excessive urbanization, caused by the direct inflow of rural labour to service sectors. They pointed out that urbanization in the Asian countries was more gradual and coordinated (the Asian countries were moving up the value chain of production *step by step*). Furthermore, the authors argued that a proper economic strategy is also a very important factor.

Eichengreen et al. (2013) estimated that countries got stuck in the trap because of lack of productivity. In their work they found that what increased the probability of growth slowdowns were: i) high rate of investment before reaching the critical level of development (threshold), ii) undervalued domestic currency and iii) a relatively low portion of high-tech (high value added) products and services in exports. In more detail, Eichengreen et al. (2013) estimated that 85% of growth slowdown is due to total factor productivity (TFP), while only 15% to capital accumulation.

Agenor and Canuto (2012, 2014), similarly to Eichengreen et al. (2013), pointed out that productivity slowdowns are a major cause of middle-income traps, but offer different explanation. In their first work (Agenor and Canuto, 2012), they argue that factors that determine productivity growth include individual decisions to acquire skills, access to different types of public infrastructure, and knowledge network externalities. As such, they argue that i) lack of access to advanced infrastructure²⁶, ii) weak enforcement of property rights²⁷, and iii) dysfunctional labour markets²⁸ can increase the probability of falling into the *middle-income trap*.

In their later work (Agenor and Canuto, 2014) they pointed to the role of access to finance and product innovation. The authors argued that an easy access to finance for innovative activities can in turn help countries climb the ladder to high-income status. They stressed that an inadequate access to finance has an adverse effect on innovation, directly (through the

²⁶ They argue that improving access to advanced infrastructure boosts productivity and wages in the design sector, which draws more labor and triggers a shift in labor supply, magnifying – at least temporarily – the benefits associated with exploiting the existing stock of ideas.

²⁷ They point out that a poorly functioning system to administrate patents and enforce property rights may create a deadweight loss for the economy and make it more likely for countries to be caught in the *middle-income trap*.

²⁸ According to the authors, exacerbating the misallocation of talent, labor market distortions may make it more likely that the economy will end up in a lower-growth equilibrium.

financing of fewer R&D projects) as well as indirectly (as fewer individuals may choose to invest in the skills necessary to work in R&D field). A more general approach how financial liberalization and *middle-income trap* are related was chosen by Yiping et al. (2014). They found out that, for a middle-income country, repressive policies on credit, bank entry, securities market and the capital account significantly inhibit economic growth.

Ayiar et al. (2013), similarly to Felipe et al. (2012), pointed out that not only does the economic structure determine whether a country gets stuck in the trap but institutional (and other) conditions are also equally important. In their work they examined how the level of: i) institutions, ii) infrastructure (communication and roads), iii) regional integration (measured by trade), iv) demography, v) macroeconomic environment and policies, and v) economic structure (output composition) determine the chances of falling into the *trap*. They recognized that all are important factors with most important being: i) poor quality of the legal system and poor enforcement of contracts and property rights, ii) excessive growth of the public sector and overregulation of markets (labour, product and credit markets), iii) low share of high-tech goods in exports and iv) unfavourable demographics (high age dependency ratio). In their work they constructed a rather simple yet powerful *Trap Map* for middle-income countries which shows potential risks.

Egawa (2013) argued that income inequality is also a factor that increases the possibility of getting stuck in the trap. In order to assess the relationship between income inequality and the *trap* the Kuznets hypothesis and the basic-needs approach were used. The author suggested that a low-income country can accelerate its economic growth with the worsening of income distribution as an engine. However, a middle-income country will experience a decreasing growth rate if it fails to narrow the income gap between the top and bottom income groups. Furthermore, his work suggested that basic-needs approach is also applicable in practice, and that improved access to secondary education is important. Similar conclusion, that persistent and high inequality (the *inequality trap*) can result in the *middle-income trap*, was presented in work done by Islam (2013).

In the most recent research conducted by Bulman et al. (2014) most of the above mentioned factors suggested by previous studies are confirmed as important – with few notable

exceptions. They agree with the growing consensus that factors like: i) productivity growth, ii) proper macroeconomic management, iii) openness, iv) income equality and v) industrialization characterise the *escapees* from the *trap*. However, the authors don't find evidence supporting Agenor and Canuto (2014) that innovation increases growth in middle-income countries. Similarly, they don't see clear association with education and growth in the same income group (contrary to findings by i.e.: Egawa, 2013).

Chapter 4. Is there such a thing as the *middle-income trap*?

Overview of the criticism of the *middle-income trap* concept in the literature.

As the *middle-income trap* concept becomes more and more popular among economists, media and policy makers, some challenge its existence pointing to lack of solid empirical evidence and theoretical foundation. What opened the debate whether there is such a thing as the *middle-income trap* was not a scientific paper but an article published by The Economist. In the *Middle-income claptrap*, it pointed out that – perhaps – there was no reason to single out the middle-income levels as potential *traps* could be found at any income level. This article started a vivid discussion among researchers who wanted to test the concept empirically. Most cited in this regard are Im and Rosenblatt (2013) who point out that - although the *middle-income trap* is useful for guiding policy discussion – there is no statistical evidence for its existence. The same year, Robertson and Ye (2013) also tested the concept empirically and came to an opposite conclusion. However, later research (i.e.: Bulman et al., 2014; Felipe et al., 2014) supports the findings by Im and Rosenblatt (2013) that – empirically - there is no such thing as the *middle-income trap*.

Im and Rosenblatt (2013) find little evidence supporting the existence of the *middle-income trap*. The authors explore both the absolute and relative thresholds of the *traps*. With transitional matrix analysis, they find little support for the idea. However, they also stress that the concept is useful for guiding policy discussions. Here they note that it recognizes the particular challenges faced by countries at that stage of development. Furthermore, it calls attention to the limited number of middle-income countries that have been fully successful in attaining a truly developed country status. However, the authors suggest that a certain amount of realism might be added to the discussion²⁹.

²⁹ Im and Roseblatt (2013) point out that the identification of the small group of fast middle-income *escapees* can lead to a form of *outlier worship*. The objective to grow at 7 or 10 percent could lead to unsustainable policies that eventually create the *trap*-like pattern of dismal growth that the middle-income countries are trying to avoid in the first place. Gradualism may be more sustainable and less risky – especially for upper middle-income countries.

In their most recent study, Felipe et al. (2014) also doubt the existence of the *middle-income trap*³⁰. They suggest that the concept of the *middle-income trap* is problematic because it is not defined and it has not been studied theoretically. They test the existence of the *middle-income trap* (meaning they try to see whether economies are *stuck*) and don't find sufficient evidence for its existence. They cite the first example of a group of countries presented in Gill and Kharas (2007) to stress that while the East Asian economies grew faster and (as a result) moved up across income groups faster, this does not mean that Latin American countries don't move up as well. In fact – the authors argue – they do, but at a slower pace.

Similarly to Im and Rosenblatt (2013), Bulman et al. (2014) are also sceptical of the existence of the *middle-income trap*. They argue that countries that used to grow fast (in general) continue to grow fast and they don't get *stuck* at any certain level of income. However, they also notice that this doesn't mean that there are no countries that are *trapped* at the middle-income level. On the contrary, Bulman et al. (2014) find that middle-income countries that did not *escape* remain stagnant with low growth at all levels of relative income. They also notice that in general transitioning from middle-income to high-income is challenging.

Based on a recent NBRE paper, Pritchett and Summers (2014) also suggest that *middle-income trap* makes little economic sense. The authors argue that while more and more countries are included into the *middle-income trap stuck* group, what is actually happening is that their growth pace is reverting to its mean. As a result, as some policy makers might see their domestic economies *trapped* they might implement policies to address the challenges of the XXI century, while for some countries, there are still XIX century problems to address. In particular, Pritchett and Summers (2014) point out two reasons why the *middle-income trap* is overstated. First, they point out (similarly to Felipe et al., 2014 and others) that conceptually it is difficult to understand what *middle-income trap* truly means. Second, they provide new empirical evidence, that rapid growth is a much more powerful predictor of the likelihood of deceleration than level of income.

³⁰ This is particularly interesting as in 2012 the same authors published two articles with their own definition of the *trap*.

On the other hand, Robertson and Ye (2013) find strong empirical evidences for the existence of the *middle-income trap*. They provided their own, statistically testable, definition of the phenomenon. According to them, we should talk about the *trap* when long-term forecasts of income levels show no tendency to converge to the wealthy group of countries or diverge below the middle-income band. They found that growth trajectories of a large number of current middle-income countries are consistent with what would be expected if they were in the *middle-income trap*. As a result, the authors argue, the concept stands up to scrutiny in a statistical sense.

Chapter 5. Is what we think of *middle-income trap* a '*middle-income*' trap, or is it more a '*convergence*'-trap?

Personal intake on the subject.

As previously noted, more and more countries are listed by economists, think-tanks and the media as potential victims of the *middle-income trap*. Nowadays, the most popular countries that are believed to be *stuck* in the *trap* are the former BRICS³¹ countries (most notably China³² and India³³), Malaysia³⁴, Poland³⁵, Turkey³⁶ and Vietnam³⁷. Lack of clear definition of the phenomenon makes the confusion all that easier to last and increase. It is common that a country can be used as an example of being *stuck* in the *trap* by one definition or as an example of an *escapee* according to another (which was pointed out earlier). Furthermore, as argued by Im and Rosenblatt (2013) and Pritchett and Summers (2014), the *middle-income trap* can misguide policy makers to implement inadequate strategies.

Thus, taking into consideration the discussion and criticism of the phenomenon in the literature, a very important question emerges: did the *middle-income trap* outlive its usefulness?

I don't think so. What most likely is happening is what is happening in any scientific field, such as chemistry or physics. A new phenomenon was identified (first by Garret, 2004), it was later described with a higher precision (Gill and Kharas, 2007) and finally empirically presented as a stylised fact (World Bank, 2012). The outcome is hardly a surprise – more and more researchers started to design their own definitions and interpretations of what the *middle-income trap* is. And as these definitions and interpretations varied, so did the results. Later, those interpretations were rigorously tested. Sometimes they passed the test – sometimes they didn't. I do agree, however, that the *middle-income trap* might have evolved into something

³¹ See i.e.: CNBC, 2013; Egawa, 2014.

³² See i.e.: World Bank, 2012; The Economist, 2011.

³³ See: i.e.: Kharas, 2010; Kohli, 2009, The Economic Times, 2013.

³⁴ See i.e.: Jimenez et al., 2012; Flaaen et al., 2014; The Malaysian Insider, 2014; Kanapathy et al. 2014.

³⁵ See i.e.: Geodecki et al. 2013, Petru, 2014.

³⁶ See i.e.: Reuters, 2014; IMF, 2014.

³⁷ See i.e.: Ohno, 2009.

else. The term *middle-income trap* suggests that it is related to arbitrarily-set levels of income – which is not necessarily most important in the concept.

Perhaps a new term to describe the phenomenon such as a *convergence-trap* will be more universal and more applicable. This definition can be used when describing what is happening in countries such as Brazil, China, Poland, Russia and Turkey or even more developed countries such as Greece (or other *PIGS* countries). In that sense, the *convergence-trap* might happen in any region, at any (relative or nominal) income level and at any time in the future.

Let's again consider the example of Poland and China in order to demonstrate the sense of what a *convergence-trap*³⁸ is. These are countries with very different income levels, different economic structure, etc. Both are presented as potential *middle-income trap* candidates by economists and by the media. Although the countries are very different, they are in a very similar situation.

Let's start with Poland. Polish economy went through strong economic changes in the early 1990s. As a result, it was growing very fast³⁹ and managed to converge in real and nominal terms (Gill and Raiser, 2012; Piątkowski, 2012). These reforms in the 1990s were strongly supported by the public, which was tired of the anomalies and inefficiencies of the communist central planned system (Winiecki, 2012). More reforms were introduced later, in the late 1990s and early 2000s. Those were possible because a new goal for the entire nation emerged – to join the European Union. This objective – in a way – replaced the old *let's-get-rid-of-the-communism* one. Thus, new and sometimes painful (for certain groups of interest) reforms were pushed through. As a result of these changes, Poland is now a leader in the CEE group in terms of transition. Poles are now richer than Bulgarians, Hungarians, Romanians or Ukrainians. They are also poorer than British, French, Germans, and other EU10 countries. According to the OECD and the World Bank Poland is also classified a high-income country. We can say,

³⁸ The term convergence trap was used before most notably by: Petrakis and Stamatakis (2005) and Berthelemy (2005). However, it is not popular as of today (10th March 2015) as there is only one article with the *convergence trap* in its title on the IDEAS RePEc.

³⁹ Between 1991 and 2013, Polish GDP grew on average at a pace of 4,19% (total) and 4,16% per capita per annum (own elaboration, based on World Bank, World Development Indicators, 2015).

thus, that Poles are at the middle-income level in terms of relative income within the European family.

However, it is not the relative middle-income that is troublesome. The challenge is that after 25 years of growth, the *old growth engines* are running out of steam. New policies are necessary, such as further institutional development, increasing transparency and domestic innovation. Further privatization and deregulation are also required. This is hardly new to any economist. However, some of those changes are not easy to be made for the most simple yet frequently forgotten reason - they require the support of the nation. And if we look at the nation in Poland, it is tired of game-changing reforms.

Poles don't see the need for changes. What they see is that they agreed to painful changes in the early 1990s and (little bit less) painful changes in late the 1990s and early 2000s. They see that thanks to these reforms everyone has benefited. They see themselves as a Western nation, member of the prestigious European Union, NATO and UN. And they see that Poland never had it so good over the last 500 years (Piątkowski, 2012), that Poland was resistant to the financial crisis and that it will grow fast in the next few years (according to official projections). They see no need for reforms. As a result, they elect government that don't want these, either. A government that will only ensure that *business is as usual*.

Thus, I think, in the long run, Poles may be victims of their own success. There is no external goal for the nation that would – most probably – make Poles support any reforms. This is not an issue just for Poland. The whole CEE region has a very similar sentiment towards economic changes as noted by the European Bank for Reconstruction and Development (Berglof 2013 and 2014). Lack of reforms will not be very painful in the next few years. But it will be very painful in the next 25 years. As a result, Poland can be *stuck* where it is. It is a *trap* – but not of relative or nominal income level – but rather of welfare.

In that sense, China is similar. Reforms started in late 1970s⁴⁰ and China – within its own region – is where Poland is right now⁴¹. Chinese are richer than Hindus (as Poles are richer

⁴⁰ Between 1977 and 2013, the Chinese economy grew on average at a pace of 9,79% (total) and 8,67% per capita (own elaboration, based on World Bank, World Development Indicators, 2015).

⁴¹ Of course, China started from a different income level and had different economic strategy, etc. But the key message here is: reforms were undertaken, which initiated growth engines that for decades made fantastic growth

than Romanians) and poorer than Japanese (as Poles are poorer than Germans). Projections are also optimistic for the next few years. Chinese never had such good relative standards of living and the ruling party isn't interested in radical changes. At the same time, economists point out that further liberalization of the economy and deregulation is necessary (among other changes). But there seems to be no – let's call it – *public capital*, that can be turned into *investment* in the form of necessary reforms. In that sense, the *middle-income trap* is not about income. It is rather about welfare and the feeling of success – a general mind-set. It is a *convergence-trap*.

and convergence possible, and that these engines, though very different to the engines of the Polish economy, are also running out of steam.

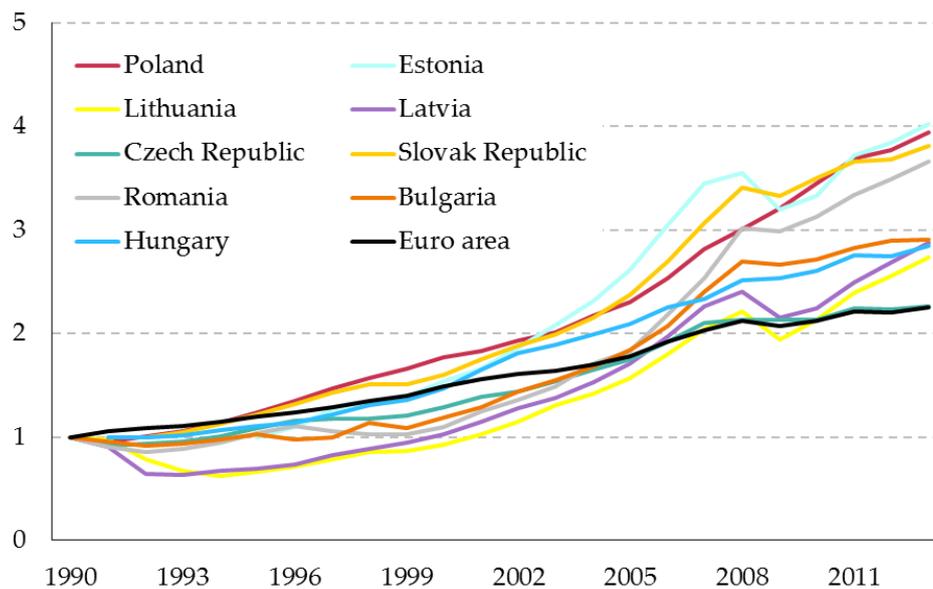
Chapter 6. How real is the risk of the CEE economies falling into the middle-income trap?

Discussion.

When viewed in a broader perspective a large group of countries in Central and Eastern Europe (CEE) has undoubtedly made a remarkable progress in terms of economic development over the last decades (Chart 7.). Back in 1995, the CEE's GDP per capita in PPP terms was merely at one third of the EU average level, whereas nowadays the ratio is about one half. We can identify two major engines powering the convergence process:

1. **The first one is a pack of free-market reforms implemented at the beginning of the 1990s.** Transformation of the economy and the establishment of foundations for its further development based on privatization, liberalization and stabilization freed the economic potential of the CEE countries, which had been suppressed for decades, and set up solid and transparent rules for doing business in the region (Roaf et al., 2014).
2. **EU accession was the other growth engine.** The World Bank economists (Gill, 2012, Stojkov and Zalduendo, 2012) dubbed the EU as 'the convergence machine', emphasizing that the EU enlargement supported the convergence process in the CEE. Simultaneously to the advancing economic integration, we have observed harmonization of regulations, institutions and infrastructure with European requirements. Additionally, unlike other continents, Europe has not observed the so called 'Lucas paradox' as finance was 'flowing downhill' from richer to poorer countries. Therefore, since the late 1990s, large FDI inflows have contributed to further efficiency improvements as well as technology (innovation) and know-how transfers. This was especially important as the CEE countries' were characterised by low domestic savings, which could have constrained domestic investment (Stojkov and Zalduendo, 2012). All these changes have accelerated the process of transformation in the region by acting in the economic, social and political dimensions at the same time (Piątkowski, 2013). Furthermore, the success of the CEE countries has been achieved with generally responsible fiscal policy, which is manifested by the ratio of public debt to GDP in the region of around 40%.

Chart 7. CEE economic growth (1990=1; GDP per capita, PPP current USD)



Source: own elaboration, World Development Indicators (World Bank, 2015), Maddison Project Database (2015), World Penn Table (2015).

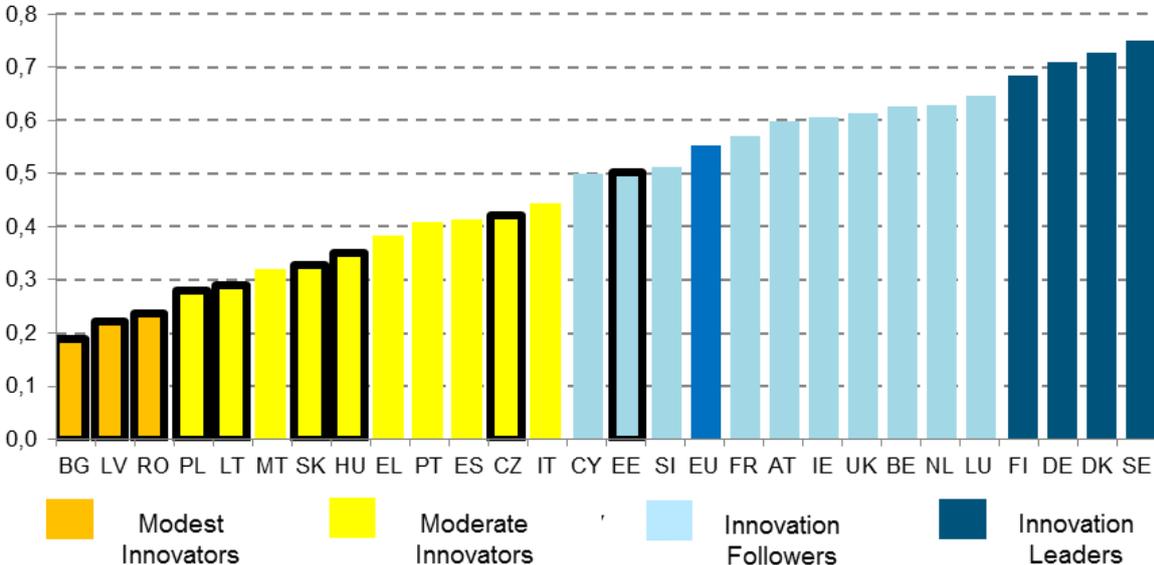
All CEE countries have already reached the status of at least a middle income country. They are now striving to progress to the highest rank (i.e. high income country). And although according to some classifications, some of them have already achieved this goal (Czech Republic, Estonia, Latvia, Slovakia and Slovenia are counted as ‘advanced economies’ by the IMF; Czech Republic, Estonia, Poland, Slovakia and Slovenia are ‘high-income’ OECD members), it is clear that further convergence cannot be achieved by simply replicating past efforts and relying on the proven ways. Initial review of studies and statistics suggests, that the three main challenges for CEE region are:

1. low level of innovation,
2. unfavourable institutional setup,
3. unfavourable demographics.

Even though the CEE region has made a significant progress in terms of innovation activity over the last two decades, it still lags major EMU economies. The share of GDP spent on R&D in the region amounts to merely around 1%. This is well below the Lisbon Strategy's goal (3% of GDP) or the average EMU level (2.1% of GDP). According to the Innovation Scoreboard,

Estonia is the only country from the CEE qualified as the *Innovation Follower*, with innovation performance above or close to that of the EMU⁴². Other countries from the CEE are qualified as *Moderate* or *Modest Innovators*, i.e. the worst categories in the ranking. The reason might be that institutional support for innovation is inefficient (highly bureaucratic), insufficient (previously mentioned low expenditures on innovation), and, instead of promoting domestic innovation, it rather promotes imitation (Kapill et al., 2013). For example, in Poland the import of innovations is exempt from tax yet there are no tax incentives for the development of domestic R&D.

Chart 7. Innovation Union Scoreboard



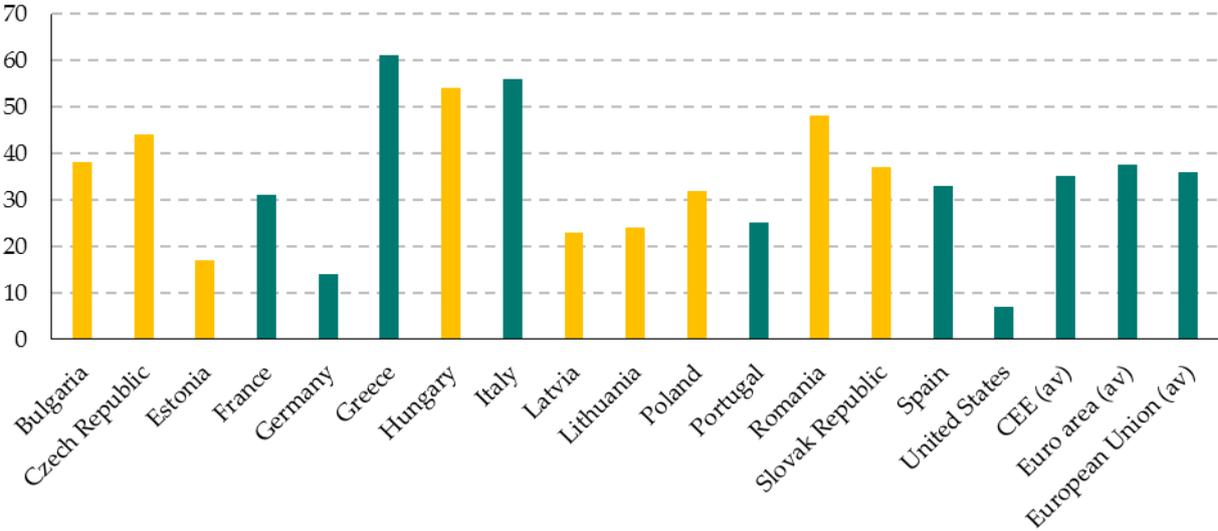
Source: own elaboration, Innovation Scoreboard (European Commission, 2015).

Even though strong and mature institutions have been developed in the CEE since 1990, further reforms are required (Chart 8.). The region has made a significant progress in improving regulations and the environment for doing business. The average Doing Business 2015 rank of the CEE countries amounts to 35 with Estonia scoring the highest (17) and Hungary the lowest (54). Yet, there is still much to be done. The institutional weaknesses of the region are mostly related to the process of closing business and contracts enforcement, which might be explained by inefficiencies of the judicial systems. However, the effective

⁴² Estonia spends around 2.2% of GDP on R&D.

second chance policy (bankruptcy law) and easy access to external financing (contract enforcement) are the necessary institutional conditions for vibrant innovation activity (Andrews and Criscuolo, 2013).

Chart 8. Doing Business Results (2015)



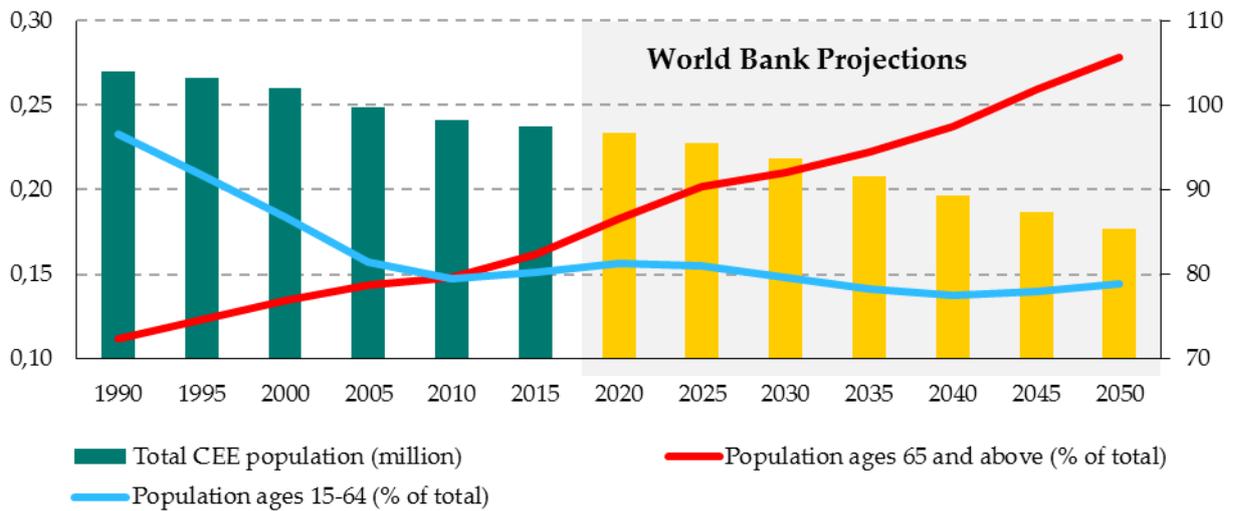
Source: own elaboration, World Development Indicators (World Bank, 2015).

On average, the CEE region is characterized by ageing societies and is bound to suffer from low fertility rate and rising old-age dependency (Chart 9). This challenge is not restricted to the CEE countries alone, as most of the developed world struggles with unfavourable demographics. Even though the situation varies among the CEE countries, the perspectives are rather gloomy. For instance, the old-age dependency ratio in Poland, as predicted by the European Commission, is going to increase from about 20% nowadays to over 60% in 2060. Unfavourable demographic trends pose a long-term challenge for the economic growth due to two reasons. First, ageing leads to an increase in public spending on healthcare and pension systems, which is conducive to increasing budget deficits and public debt. The second reason is that ageing results in the decrease in the labour force. Even though there is some room for improvement that could attenuate the problem, e.g. by allowing for immigration⁴³, enhancing the efficiency of the pension and health systems or by promoting the participation of the

⁴³ Such immigration might be limited in the region because of the language barrier and administrative barriers for non EU immigrants posed by the Schengen agreements.

elderly people in the labour market, the older society is most likely to be the new normal in the upcoming decades.

Chart 9. Unfavourable demographics



Source: own elaboration, World Development Indicators (World Bank, 2015).

However, although it seems clear what are the economic challenges in the CEE region, three reasons make institutional reforms hard to implement.

1. First, the strong sentiment and political support for deep institutional changes, which made the reforms of the ‘period of extraordinary politics’ in the early 1990s possible, might be fading.
2. Second, the view of the accession to the EU is no longer a driver for reforms or an anchor against reform reversals for CEE countries (Berglof, 2013). Theoretically, the euro adoption might be a motivator for further structural reforms, but the political reality is that the public support for the euro introduction is weak in the extra - EMU CEE countries.
3. Third, the recent financial crisis resulted in a decline in public support for market reforms. The countries in the region that had to face austerity measures and slow growth, also experienced a decrease of public support for the reforms and an increase of the perception of uncertainty and risks (Berglof, 2013).

To sum up, the risk for the CEE countries to be *stuck* at this level of development seems genuine. Today, just like 25 years ago, the region is on the verge of yet another transition in its struggle to sustain growth and development. However, this might not be due to the *middle-income trap*, as the challenges of the CEE region seems not to be linked to a particular level of income but rather lack of public support for reforms. Thus, the CEE risks falling into the *convergence trap*.

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