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Is Middle Income Trap a Threat for BRICS Countries?

İzzet TAŞAR 0000-0001-9187-6910

Assoc. Prof., Fırat University, Department of Economics, itasar@firat.edu.tr, Turkey

Halil Oğuzhan ERGÜR 0000-0001-9475-7036

İnönü University, Department of Economics, haliloguzhanergur@hotmail.com Turkey

Yavuz ÖZEK[1] 0000-0003-4517-4875

Fırat University, Vocational School of Social Sciences, Department of Banking and Insurance, yozek@firat.edu.tr, Turkey

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Abstract

The middle income trap implies the economies that cannot show breakthrough after reaching a certain per capita income level and that they are stuck in that income level. The middle income trap prevents economies from reaching a higher income level and eliminating development differences with other countries. For this reason, whether countries are at risk of catching a middle income trap and structural measures should be taken to get rid of it for economies of the countries that are exposed to the trap are important. In this study, it is examined whether BRICS economies are in the middle income trap or not. Gross Domestic Product (GDP) per capita has been used variable. The analysis using the panel data method covers the years 1988-2018. According to the results obtained from the study, it was determined that the BRICS countries examined did not have the risk of middle income trap.

Keywords: BRICS Countries, Middle Income Trap, Panel Data

1. Introduction

Middle income trap was developed by the world bank in 2005 while investigating economic development in east Asia, the world bank realized that there was no solid growth direction to policy makers in middle income economies (world bank, 2015). The income per capita intervals defined by World Bank are as follows: the middle income range is between $1006 and $3955 for lower-middle income countries, and is between $3956 and $12235 for the upper-middle income countries.

Gill et al, 2007 defined middle-income trap in their "An East Asian Renaissance" report and stated that the Middle East and Latin America as examples of middle-income trap that couldn't get away or escape from the trap for decades. The situation in which a middle-income country that lacks behind in economic growth is the middle-income trap. For instance middle income countries could not accelerate their economic growth and could not compete with high income countries which are characterized with big economic activities and sound technological developments, with low income countries too which are characterized with little expertise task at lowest cost (Garret, 2004). Middle income trap countries are starved with low skilled workforce and minor technological base with inventive economic structure thus the countries lack economic competitiveness and the ability to achieve higher economic growth hence getting stagnant at the middle income trap (Tho, 2013).

Many developed countries completed their transition from low-income to middle-income level however these countries failed to manage it in transition to high-income and stagnated in the middle-income level. This is defined as the middle-income trap which is the inability of the economies to move towards a higher level of income per capita. Middle income trap is a new concept in economic literature and it is a status where economic activities become unable to accelerate or grow (Acaro et al, 2016).

[1] *Corresponding Author: yozek@firat.edu.tr*

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Middle income trap can be described as experiencing economic decline or downturn of countries which had bigger economic rise previously (Cai, 2012). Middle income trap specify to countries that stagnate after attaining the middle income status. A country stuck for twenty-eight years or higher in lower middle income level is cornered in low middle income trap (Acaro et al, 2016). Economies with high foreign trade quantities in high technology commodities, adequate human capital have a small possibility of getting into economic stagnation thus reducing the possibility to fall into middle-income trap (Xon et al, 2013).

2. Literature Review

The middle-income trap defines a situation that a middle-income country (MIC) falls into economic stagnation and becomes unable to advance its economy to a high-income level for certain reasons specific to MICs according to the study in (Tuğcu, 2015). In study depending on the World Bank income levels classification which are used to decide the countries stuck in middle-income trap is followed to find a way out from the middle-income trap. A binary model was deployed in the study in order to do so. This binary model includes cross-section data of 26 high- and middle-income economies. According to the research, investment in education, health and R&D could be more helpful for a country to achieve high-income level.

Similarly, another review study by (Pruchnik et al, 2017) established a conceptual framework about middle income-trap by presenting an extensive literature review of the middle income-trap concept. The paper also considers different definitions and put together a list of countries that are stuck in the middle income-trap. The work explains how there are significant inconsistencies among the prevailing definitions of the middle income-trap. At least by one definition, 60.2 percent of the countries have been listed as stuck in the trap where as 48.4 percent of the countries are listed as middle-income according to the World Bank classification.

Another literature survey study (Glawe et al, 2016) surveys various middle income-trap literature by laying out different techniques for defining the middle income-trap. The focus of the definitions was emphasized on the distinction between absolute and relative approaches. The paper also presents a classification of the most important empirical studies. The results of the survey indicate that an appropriate, clear, and generally accepted definition remains as one of the major problems of the middle income-trap concept.

Middle income-trap and Turkey (Kesgingöz et al, 2016) is another work that employs the use Philips- Perron (PP) unit root test to investigate whether Turkey is a trap in the middle income-trap or not. The findings of the study indicate that Turkey is currently in the upper-middle income-trap. The paper recommends that for Turkey to exit the upper-middle-income trap and fly into the high-income status there is a need for the country to engage in some economic policies such as providing an opportunity for everyone, setting a sustainable financial system, subsidizing international trade, and providing balanced and sustainable economic growth.

An overview of studies that made in analytical and empirical ways about middle-income trap have been presented within the study by (Agénor, 2017). This study includes descriptive and statistical tests on the middle-income traps. Study also examines the arguments about the existence and persistence of the middle-income traps. Also some public policies have been mentioned in order to avoid and escape from middle-income traps. As conclusion the study provides directions for further theoretical and empirical studies.

3. Features of middle Income Trap

Middle income trap arises when a country attains or achieves the middle income status then fails to accelerate its economic growth and income per capita to the high income level, the Latin American countries constitute the most countries cornered in the middle income trap hence simplifying the middle income trap into “Latin American Disease” (Xue et al., 2014:1).

The middle income trap can be associated with the following features:

1. The rise of income per capita to $ 16,740, established fixed prices from 2005

2. The income per capita gets to 58% of the USA level

3. The manufacturing industry share of a country reaches 23% (Eichengreen et al, 2011).

Middle income trap has also been associated with following features:

1. An inferior level of economic heterogeneity
2. Small scale level of human and infrastructural development

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3. Powerless legal institutions
4. Low sophisticated relationship among sectors of the economy
5. The exportation of low technological goods and lack of diversity for exported goods

The factors above have a considerable high chance of keeping an economy in the middle income trap Felipe, et al, 2012).

Middle income trap can be attributed to countries that are not able to acclimate to modern urbanization, these countries lack the capability to develop its human capital and drive economic changes that can lead to economic growth thus get trapped in the middle income level (Jankowska et al, 2012).

3.1. Challenges faced by Middle Income Trap Countries

Countries Stuck in the middle income trap are often faced with many challenges these challenges are what prevent them from reaching their potentials and becoming high income countries. Middle income trapped countries suffer from lack of advanced infrastructure and infrastructural development aids countries to boost their production capacities and promote innovation which in turn will stimulate economic growth however with the deficiency of advanced infrastructure middle income countries find themselves stagnant and not having ability to grow which leads to being trapped in the middle income level (Agenor et al, 2012). Also they are associated with powerless Institutions and following of due processes will turn around economic activities in a country. Advanced institutions will not only attract foreign investments but will create a healthy environment for economic growth (Felipe, et al, 2012). Low level of economic diversification is often linked with such countries the economic structure of such countries plays an important role in the country's growth to the high-income level (Eichengreen, et al, 2013).

Inefficient financial market is also a big obstacle as developed financial markets play an important role in promoting innovation and facilitating the transition of a nation to a high-income level (Agenor et al, 2014). Finally, these countries have Inefficient labor market hat may deter recruiting, increasing the likelihood of falling into the middle income trap.

3.2. Prospects of Middle Income Trap Countries

Middle income trap can be avoided or escaped by putting much value to education together with big emphasis on highly competitive goods export (Kanchoochat et al, 2014). However according to (Agénor et al, 2012) there are two main policies middle income trapped countries can utilize to drive economic growth and escape middle income trap they include:

1. Labor market Improvements: lack of skilled workers will deter economic growth as employees will not be able to get skilled laborers who can do the technical works there by slowing economic activities.
2. Application of Property Rights: Successful innovations from individuals and firms has to be protected, but in middle income countries that is often not the case which leads to discouragement and loss for both the individuals and firms as such property rights should be safeguarded to boost the level of innovation.

Since 1960, solely 13 countries realized a transition from middle-income to high-income status. 5 of these countries were East Asian countries. Developments in infrastructure networks, mainly in high-speed communication and broadband technologies can be stated as success for these countries. Instead of importing foreign technologies innovating their own technologies has been another crucial factor for their transition to high-income status.

4. Empirical Results

In this study, whether the economies of Brazil, Russia, China, India and South Africa were in the middle income trap between 1988 and 2018 were investigated by using the panel data method. In the study, the United States was taken as the reference country. Based on the study of Robertson and Ye (2013), the gross domestic product per capita value of each country is subtracted from the same value of the reference country. Thus, in empirical analysis, the natural logarithm of the difference series was used. $\ln GDPPC_{it} = \ln GDPPC_{it} - \ln GDPPC_{USAt}$

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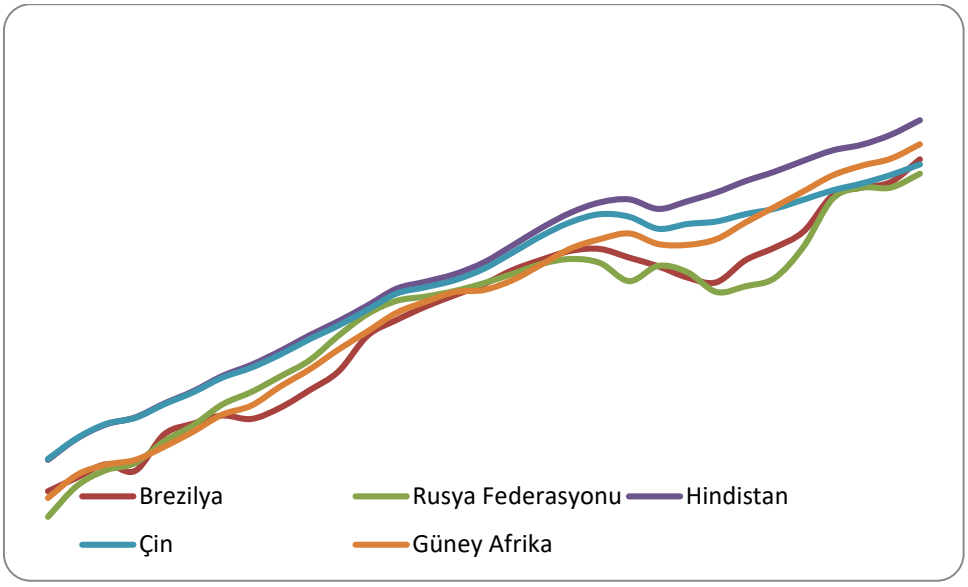
Graphic 1: Per Capita Gross Domestic Product Differences between BRICS Countries and U.S.



As obvious in the graph, Russia might be considered as the most fragile economy in the group. The economy depending on energy resources is a big risk especially when the world has a shock in production. The world crises in 2009 hit Russia most. India is the best performing country at all.

Table 1. Horizontal-Section Dependency Tests

Constant Model	GDPPC Statistics	Probability Value
CD_{lm} (BP,1980)	87.511	0.00***
CD_{lm} (Pesaran, 2004)	17.332	0.00***
CD (Pesaran, 2004)	-2.925	0.00***
LM_{adj} (PUY, 2008)	6.655	0.00***

$$\Delta y_{i,t} = d_i + \delta_i y_{i,t-1} + \sum_{j=1}^{p_i} \lambda_{i,j} \Delta y_{i,t-j} + u_{i,t}$$

Notes: For model, lag length is considered as (p_i) 1. The figures which is ***, **, * show 1 %, 5 % and 10 % levels, respectively

It shows whether the countries forming the panel of horizontal cross-section dependence are affected by each other. It shows that countries forming the panel of zero hypothesis in horizontal cross-section dependence do not affect each other, therefore there is no horizontal cross-section dependence. The alternative hypothesis shows that there is a horizontal cross-section dependence among the countries that make up the panel, so they affect each other. According to the probability values, it was concluded that an alternative hypothesis of 1% significance level was accepted and BRICS countries influenced each other in terms of economic growth. Even it is not a big surprise to see the validity of performing together, that situation is a subject to be investigated in the further studies. Due to the horizontal cross-section dependency, second generation unit root tests should be applied. Therefore, empirical analysis will continue with cross-sectionally augmented Dickey-Fuller (CADF) developed by Peseran (2007). In the CADF test, the null hypothesis is a variable unit

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root and is not in the middle income trap. The alternative hypothesis is that the variable has no unit root and is in the middle income trap.

Table 2. CADF Unit Root Test

	Constant		Constant and Trend	
	Lags	CADF-stat	Lags	CADF-stat
Brazil	1	-1.031	1	-1.282
Russia	1	-2.577	1	-2.583
India	1	-1.967	4	-3.338
China	1	-2.074	4	-3.458
South Africa	3	-0.746	3	-2.298
Panel		-1.679		-2.592

Notes: The maximum delay length is taken as 4 and the optimal delay lengths are determined according to the Schwarz information criteria. CADF statistics critical values, constant model -4.11 (%1), -3.36 (%5) and -2.97 (%10) (Pesaran 2007, table I(b), p:275) ; constant and trend model -4.67 (%1), -3.87 (%5) and -3.49 (%10) (Pesaran 2007, table I(c), p:276). Panel statistic critical values, constant model -2.57 (%1), -2.33 (%5) and -2.21 (%10) (Pesaran 2007, table II(b), p:280) ; constant and trend model -3.10 (%1), -2.86 (%5) and -2.73 (%10) (Pesaran 2007, table II(c), p:281). Panel statistic is average of CADF values.

Based on the results in Table 2 depict that the BRIC countries move together. According to these results, they do not have a middle income trap risk. The countries trappe in the middle-income have some policy alternatives to deploy in order to escape or prevent the middle-income trap. Building modern infrastructure, toughening property rights regulation through patent protection and reforming of labor markets are among these alternatives.

Table 3. Im, Lee and Tieslau (2005) Structural Break Panel Unit Root Tests

	One break model					
	Level shift model: Break in constant			Level and trend shift model: Break in constant and trend		
GDP				Transformed		
	Lag	LM-stat.	Break Time	Lag	LM-stat.	Break Time
Brazil	1	-3.524	2008	3	-4.336**	2005
Russia	1	-2.747	2005	3	-3.251	2007
India	1	-3.607	2008	1	-3.664*	2008
China	1	-3.049	2000	1	-3.019	2000
South Africa	1	-3.75	2001	1	-3.785	2001
Panel-LM		-4.801			-3.154	
p-value		0.00***			0.00***	
	Two breaks model					
Brazil	0	-5.755***	1994 - 2005	3	-6.338***	1994 - 2005
Russia	3	-5.678***	2001 - 2009	3	-6.752***	2004 - 2008
India	1	-7.140***	2004 - 2009	1	-7.463***	2004 - 2010
China	1	-7.552***	2004 - 2010	1	-8.623***	2004 - 2010
South Africa	1	-5.105**	1997 - 2008	1	-5.256**	2001 - 2012
Panel-LM		-15.218			-13.782	
p-value		0.00***			0.00***	

Notes: Critical values for individual statistics for one break model: -4.604 (1%); -3.950 (5%); -3.635 (10%)

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Critical values for individual statistics for two breaks model: -5.365 (1%); -4.661 (5%); -4.338 (10%)

Maximum delay length was taken as 4 and optimal delay lengths were determined by the "t-stat significance" approach.The figures which is ***, **, * show 1 %, 5 % and 10 % levels, respectively

With the implementation of these policies middle income trapped countries will be able to escape the trap and this will lead to more foreign investments flowing into the economy thus accelerating escape from middle income trap. BRICS countries did well in terms of that criterias in the observed period.

When the break dates are considered, for all countries the global crises affects BRICS economies in general but Brazil. Brazil after 2002 reached a different government and mostly adapted to market economy even there were critics. Apart from that, the interest rates were the highest as %19,75. Those domestic problems already cause a sharp decrease in Brazil economy. All other countries had a shock in recession bur Brazil felt it a bit earlier, so did not respond sharply. 2004 on the other hand is a great year for especially emerging markets, with the global funds, even the petrol prices were high, the world in general had a high growth rate.

5. CONCLUSION

Middle Income trap is problem faced by many countries, it can be tricky because at first those countries were at the lower income level but over time grew steadily and reached a stagnation at the middle income level hence finding it difficult to move to higher income level, even though the high income and middle income share a lot of similarities in their economic structure only a few could cross over and avoid the middle income trap. After former Word Bank President Robert Zoellick had introduced China 2030 program, Middle income trap gained a significant popularity.

BRIC countries, Indonesia, Malaysia, and Vietnam.

Nowadays, many countries have been trapped in middle-income but not the countries from the emerging market group alone like the BRIC countries, Vietnam, Malaysia and Indonesia, as some studies show the countries with an upper-middle-income level such as Poland and Turkey, and even some high-income countries like Greece. It is an important criteria to find out if those countries has a risk in terms of Middle income trap. According to the data between 1988 and 2018 and by using the panel data method our findings suggests that, BIRCS countires as of 2019 does not have a middle income trap risk.

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