

## THEORETICAL APPROACHES OF INCOME TRAPS

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### ABSTRACT

*There is overwhelming evidence for the notion that several developing economies occasionally undergo episodes of different income traps. Following periods of relatively high growth rate, slowdown terms may evolve preventing the given – in most cases middle-income level – country from further development and catching up to the higher income group. Current study presents a brief overview of nowadays relevant scientific literature regarding growth slowdowns and various types of income traps. After providing some theoretical and methodological examples, we are introducing a new definition of the middle-income trap.*

### KEY WORDS

*Income Traps. Development Economic. Growth Slowdowns. Emerging Economies. Middle-Income Trap.*

### JEL CLASSIFICATION

O11, O15, O47.

### INTRODUCTION

Besides the well-known growth paradigms, growth economics is dealing with several development related issues becoming more and more popular nowadays. Although the question of why certain countries may produce a more successful path of development than others, have always been among the most researched cases or hypotheses, income trap or poverty trap episodes surveyed in different economies of the world have undoubtedly come in the focus of economists' attention during the last couple of years.

The phenomenon of the so-called middle-income trap – later referred to as 'MIT' – is certainly representing such an issue within development and growth studies. In the second half of the 20<sup>th</sup> century several emerging countries have managed to start an accelerating increase in their economic growth, as a result of which most of them became able to catch up to a middle-income level. Subsequently, a significant percentage of these economies have 'run out' of rapid and of course, unsustainable growth. As a next step, a certain amount of them has had to face the middle-income trap.

Whereas in scientific literature several authors have already made attempts to characterize the trap relying on various databases and using quite diverse research methods, we have to outline that no standard concept has been defined so far. It can therefore be generally concluded that the middle-income trap represents an episode in a country's development when the economic growth rate – usually following a relatively high growth period – produces serious stagnation lasting for even decades and thus the given country is not able to upgrade to the higher income level group. Examining the MIT-related literature, we have to highlight the work of Indermit Gill and Homi Kharas who were among the first ones to publish on this issue in frames of the World Bank initiative entitled 'An East Asian Renaissance: Ideas for Economic Growth.' For typical middle-income trapped countries, the authors bring the example of some Latin American and Middle East economies which could not have completed their upgrading procedure to the high income club. (Gill-Kharas, 2007)

Though there is a significant number of economies being (or had been previously) stuck in low income status, in current paper we are dealing with the more critical cases of middle-income countries unable to move forward due to internal or/and external socio-economic factors. So why are there much more developing economies failing to continue their upgrading path towards the high-income club compared to their low-income fellows struggling to achieve the middle-income category? Some researchers suggest that the middle-income group has to face more complex obstacles since carrying out structural transformation while maintaining high growth is not easy to deal with. As usual, developing economies do not have enough highly qualified human capital rate within total population as well as a supportive institutional background. (Fortunato-Razo, 2014)

Our paper is organized as follows. In Section 1 we are making a review of some selected theories of development traps and growth collapses followed by the characteristics and possible triggers of the phenomenon middle-income trap. In frames of Section 2 the focus is set on methodological approaches to present certain ways of defining such episodes in a country's growth path. As a concluding element of the study, we are introducing a new definition of the MIT as well as some countries already having experienced current phenomenon.

## **1 THEORETICAL BACKGROUND**

### **1.1 Selected theories of development traps and growth collapses**

When examining the income trap related economic literature, we should not ignore the publication of Nelson entitled ‘A Theory of the Low-Level Equilibrium Trap in Underdeveloped Economies’. Nelson claimed that in case economic growth is characterized with increasing per capita income, the given country becomes unable to continue its growth and as a consequence, it will be stuck in a so-called low-level equilibrium trap. The model created by the author shows that the actual socio-political environment has such a strong influence on development that the above-mentioned trap can be escaped despite the underdeveloped ways of production and also the lack of “*crash investment program*”. (Nelson, 1956, p. 894)

In their 2006 paper Hausmann, Rodriguez and Wagner define crises or growth collapses as “*periods of continuous negative average growth*”. (Hausman et al, 2006, p. 5) They also highlight the difficulties of analyzing crises of long duration because in most cases data are not yet available for the entire examined period. As a result, the effects and magnitude of such recessions are inexact and significantly underestimated. Concerning developing economies, there is a much higher probability for them to experience a crisis with long duration compared to developed countries. On one hand, studying the outbreak of a crisis, the authors came to a conclusion that negative changes in export produce the most significant correlation in developing economies. On the other hand, the duration of a recession composes a much complicated task: in latter case the study reveals that it strongly depends on “*the measure of the density-weighted value of a country’s alternative export basket*”. (Hausman et al, 2006, p. 22)

Continuing our research in the field of development traps, the categorization of Paul Collier in his Bottom Billionaire book, has become also relevant in economic literature. Using a comprehensive approach of economic, political, social and geographic factors, Collier distinguishes four main groups while focusing on the poorest countries and social groups of the world: conflict trap, natural resource trap, the trap of being landlocked with bad neighbors and the trap of bad governance in a small country. (Collier, 2007) As a possible solution to break out, for developed economies the author suggests to provide a ‘big push’ aid for the poorest region that is temporary and large, e. g. contributing to the development of technology, human capital and competitive export structure in order to prevent the so-called Dutch disease problem. (Collier, 2007) Azariadis outlines that different traps usually function as “*self-reinforcing mechanisms*” and thus may prevent further economic growth. These can be driven by market or institution generated failures. (Azariadis, 2005, p. 297) To go deeper

into details, income related traps can occur in less developed countries since the appropriate, present-day technologies are not adopted leading to long-term stagnation. (Azariadis, 2005)

In frames of an IMF working paper Aiyar, Duval, Puy, Wu and Zhang identify growth slowdowns as extended terms of stagnation which show considerable differences compared to the preceding standard of a given economy. Their research also brings evidence that in case of middle-income countries there is a much higher probability to undergo growth slowdowns than in other income groups. (Aiyar et al, 2013)

## 1.2 Characteristics and possible triggers of income traps

The available evidence seems to suggest that growth slowdowns leading to income traps in the majority of cases occur in forms of single episodes. However, there are countries where growth slowdowns evolve gradually one after another (e.g. Japan in the 1970s and in the 1990s). To continue, there is a third type of stagnation: following a significant growth slowdown, a considerable increase is experienced as the effect of certain state reforms. Nevertheless, a second wave of growth slowdown takes place, like for example in Argentina. (Eichengreen et al, 2012) A year later Eichengreen, Park and Shin released a new publication concerning the middle-income trap where slowdown episodes are presented along with their possible correlates: significant growth in the previous term, disadvantageous demographic characteristics, high rate of investment leading to unsustainable growth and an undervalued exchange rate (Eichengreen et al, 2013)

As it has been already mentioned, researches made in field of growth slowdowns experienced in middle-income economies are not new. In 2004 Geoffrey Garrett published an analysis focusing on the complex growth problems which are widespread in middle-income countries. Garrett highlights that supporters of globalization have no grounds to give a solid explanation for the stagnation going on in several middle-income countries. As a possible solution for catching-up, the author suggests these economies to “*tech up*” and thus become active participants of the global market and “*knowledge economy*” (Garrett, 2004).

Agenor develops quite an important claim that income and poverty traps have to be properly distinguished. Poverty traps are determined as “*self-reinforcing mechanisms*” which largely contribute to the long-term maintenance of poverty and usually emerge in a very low income per capita environment. (Agenor, 2016, p. 10) However, the phenomenon of the MIT occurs after a period of high increase of Growth Domestic Product and thus better standards of living will be available for people. (Agenor, 2016) Among the possible triggers of MIT we have to mention productivity patterns: there is a strong correlation between the low level of

total factor productivity (TFP) and the development of an income trap. As for emerging economies, we have to add that productivity slowdowns are driven by the insufficient method of imitating foreign technologies instead of applying innovation. Thus the country becomes unable to catch up to the more developed income group. (Cherif-Hasanov, 2015)

Eva Paus, focusing mainly on Latin American studies, has made an observation concerning the available MIT literature: on one hand, many authors suggest that structural changes are the main triggers of it as well as the characteristics of the global, external environment. On the other hand, several specialists agree that growth slowdowns show no pattern at all, thus the time, frequency or the country itself are not of primary importance. (Paus, 2014)

## **2 METHODOLOGICAL APPROACHES OF THE MIDDLE-INCOME TRAP**

### **2.1 How can middle-income trap episodes be detected?**

One of the most popular categorizations regularly used in MIT analyses, is the World Bank's country classification by income. The four groups are determined on the basis of GNI per capita. In 2017 economies were defined as follows (Figure 1):

- Low-income countries: with GNI per capita of \$1025 or less (31 economies);
- Lower-middle income countries: with GNI per capita between \$1026 and \$4035 (52 economies);
- Upper-middle income countries: with GNI per capita between \$4036 and 12475 (56 economies);
- High-income countries: with GNI per capita of \$12476 or more (79 economies).

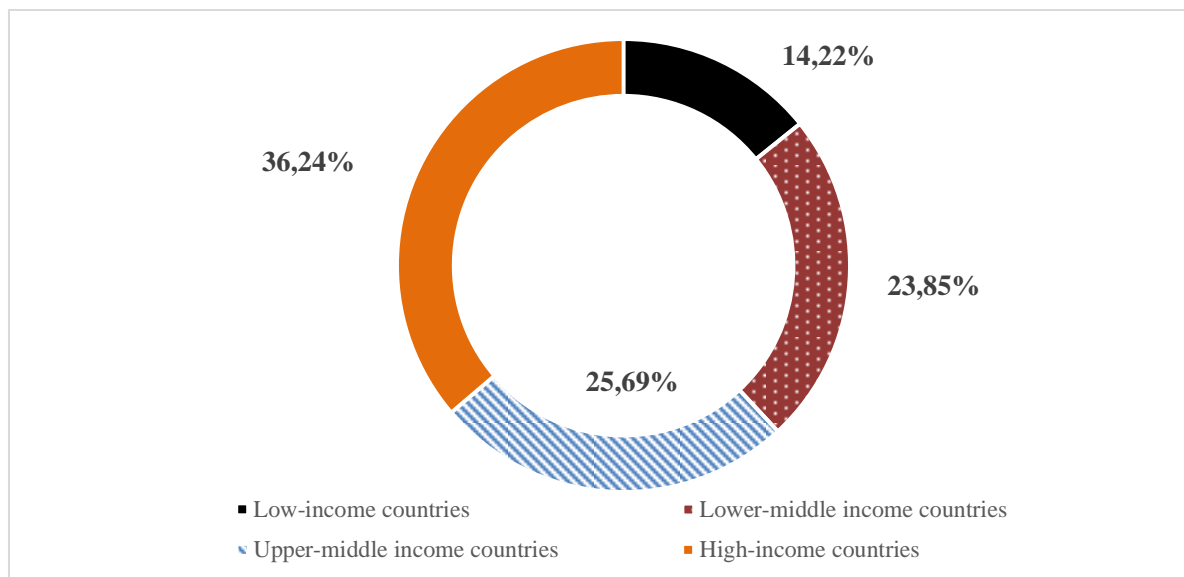


Figure 1 Distribution of world economies by income

Source: author's calculations based on World Bank data (2017)

An alternative characterization is the one developed by Felipe, Abdon and Kumar: the researchers consider a country being stuck in a lower-middle-income trap if it had previously spent at least 28 years as a lower-middle-income group member. In case of being for at least 14 years as an upper-middle-income country allows to suppose that the economy is in an upper-middle-income trap. (Felipe et al, 2012) Ito puts forward the view that middle-income trap may occur when the growth rate drops to the level of the developed economies before the level of income achieves the one of the advanced economies'. (Ito, 2016)

## 2.2. Developing a new definition of the MIT

In current study, we are identifying four income categories by comparing the per capita GDP of the given country to the per capita world Gross Domestic Product. According to our classification, all economies can be considered as low-income group members below 50% as a percentage of world GDP per capita. Between 50 and 100 percent countries belong to the lower-middle and from 100 to 200 percent they can be identified as upper-middle income economies. Above 200% countries are ranked among the high income group. In frames of current research, the definition of the middle income trap phenomenon is stated as follows:

- the per capita GDP adjusted for the purchasing power of the middle-income economy composes at least 50% of world average and maximum the twofold ratio of it;

- 10 years before the slowdown period there is a significant and fast economic growth. What is more, the country undergoes a catching-up path producing an at least 3 percent annual per capita GDP growth as a 10 year average;
- growth slowdown is interpreted as stagnation and instead of a sudden recession;
- in the course of a minimum 10 year long growth slowdown, the per capita GDP growth is close to zero or at most 1% per year;
- the upper level of the middle-income trap is an income level being 2.3 times the value of the per capita world GDP. Latter may correspond to the current level of development of the Czech Republic or Estonia.

After defining the main features of the middle-income trap, some concrete episodes of latter phenomenon are going to be examined in Table 1:

Table 1 Growth and slowdown periods of middle-income countries

	Pre-MIT growth period			Slowdown period						Post-MIT growth rate		
	start year	end year	%/year	start year	end year	length (yr)	%/year	income level	income group*	start year	end year	%/year
<b>RSA</b>	1962	1974	3,20	1975	2001	27	-0,32	136%	UM	2002	2014	1,72
<b>Gabon</b>	1951	1972	4,50	1973	2010	38	0,67	197%	UM	2010	2014	3,29
<b>Namibia</b>	1954	1965	4,25	1966	2001	36	-0,30	106%	UM	2002	2014	3,54
<b>Seychelles</b>	1959	1993	3,59	1994	2004	11	0,39	150%	UM	2005	2014	4,42
<b>Albania</b>	1951	1973	3,64	1974	1989	16	0,48	57%	LM	1993	2014	6,02
<b>Greece</b>	1951	1978	5,75	1979	1994	16	0,25	235%	H	1995	2007	3,35
<b>Poland</b>	1953	1975	3,72	1976	1989	14	-0,11	141%	UM	1992	2014	4,19
<b>Hungary</b>	1957	1978	3,57	1979	1989	11	0,92	185%	UM	1994	2005	3,61
<b>Hungary</b>	1994	2005	3,61	2006	2015	10	0,82	177%	UM	<i>slowdown still in process</i>		
<b>Malta</b>	1986	2000	4,72	2001	2014	14	0,99	211%	H	<i>slowdown still in process</i>		
<b>Russia (SU)</b>	1952	1973	3,63	1974	1990	17	0,76	215%	H	1999	2014	4,89
<b>Portugal</b>	1951	1973	5,88	1974	1984	11	0,84	169%	UM	1985	2000	3,58
<b>Portugal</b>	1985	2000	3,58	2001	2014	14	-0,01	225%	H	<i>slowdown still in process</i>		
<b>Spain</b>	1951	1974	5,10	1975	1984	10	0,65	224%	H	1985	2007	2,63
<b>Serbia</b>	1951	1979	4,79	1980	1989	10	0,65	133%	UM	2000	2014	3,96
<b>Argentina</b>	1964	1974	3,42	1975	2002	28	-0,22	173%	UM	2003	2014	4,79
<b>Barbados</b>	1961	1980	4,38	1981	1993	13	0,06	131%	UM	1994	2007	2,15
<b>Belize</b>	1986	2004	4,36	2005	2014	10	0,36	65%	LM	<i>slowdown still in process</i>		
<b>Brazil</b>	1967	1986	4,21	1987	2003	17	0,49	114%	UM	2004	2013	2,95
<b>Costa Rica</b>	1962	1979	3,61	1980	2002	23	1,03	87%	LM	2003	2014	3,09
<b>Dominican Republic</b>	1966	1977	5,65	1978	1991	14	0,78	56%	LM	1992	2014	3,91
<b>Ecuador</b>	1969	1978	4,43	1979	2003	25	0,29	84%	LM	2004	2014	2,98
<b>Jamaica</b>	1951	1970	5,54	1971	1985	15	-1,54	120%	UM	1986	1995	2,63

<b>Columbia</b>	1967	1980	3,11	1981	2002	22	1,04	76%	LM	2003	2014	3,25
<b>Mexico</b>	1951	1981	3,49	1982	1995	14	-0,54	151%	UM	1996	2007	2,00
<b>Panama</b>	1953	1971	4,09	1972	1996	25	0,76	101%	UM	1997	2014	4,57
<b>Paraguay</b>	1961	1989	3,34	1990	2005	16	0,14	59%	LM	2006	2014	3,43
<b>Peru</b>	1960	1974	2,96	1975	1992	18	-1,67	91%	LM	1993	2014	3,76
<b>Trinidad and Tobago</b>	1951	1980	4,39	1981	1997	17	-1,32	219%	H	1998	2014	4,38
<b>Algeria</b>	1963	1979	5,42	1980	1990	11	-0,41	117%	UM	2001	2014	2,09
<b>Jordan</b>	1973	1986	5,53	1986	2000	15	-1,09	98%	LM	2001	2014	2,93
<b>Tunisia</b>	1960	1981	4,52	1982	1991	10	1,01	56%	LM	1992	2014	2,95
<b>Fiji</b>	1967	1979	4,63	1980	2014	35	0,85	64%	LM	<i>slowdown still in process</i>		
<b>Philippines</b>	1951	1963	3,09	1964	2002	39	1,01	51%	LM	2003	2014	3,56

\*LM: lower-middle income; UM: upper-middle income; H: high income group

Source: own calculations based on WDI (2017) and Maddison Project Database (2013)

As can be seen from Table 1, there are altogether 34 episodes of the middle-income trap between 1950 and 2016 from which we can detect 10 slowdown periods lasting for more than 20 years. What is more, the average length of the fall period is 18-19 years. As an average, the pre-MIT growth period was around 4.23% followed by a decrease stage. To continue, during the slowdown period, the rate of growth was 0.23% as an average. As we have earlier indicated, Eichengreen, Park and Shin concluded that the pre-growth slowdown stage of a given economy can often be characterised by a relatively high (usually a higher than average GDP per capita) growth episode (Eichengreen, 2013, p. 7). Such cases are depicted in Table 1, especially referring to the growth period scenarios in Portugal (5.88% per year between 1951 and 1973), Greece (5.75% per year) and also Spain (5.10% per year).

## CONCLUSION

In the last 10-15 years, research has provided ample support for the assertion that income traps represent a serious decay within the development of emerging economies. After having presented several theoretical and methodological approaches of income traps, the question is still arising whether the phenomenon experienced in middle-income level countries is indeed, a serious development problem or rather an artificial classification calculated in different ways. Although there is no standard definition for the MIT, it is fact that more and more attention is being paid to the latter in academic literature.

It has to be emphasized that income traps always represent a challenge and at the same time, a possibility for policy makers. As Eva Paus sheds light upon the issue, there is significant difference how the question of the trap is interpreted: a view focusing on the fact of growth slowdown or a more complex, structural change orientated approach. (Paus, 2014)



In our study, using a new definition we have managed to reveal 34 cases of significant growth slowdowns between 1950 and 2016 which have been associated with middle-income trap episodes. However, the issue of its main triggers still remains open. Some further research in this area may focus on developing prediction models about the development trajectories of middle-income countries experiencing long term recession.

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