

Middle Income Trap and Developing Countries

^{*1}Aniruddha Prasad, ²Akshay Kumar and ³Anil Kumar Singh

^{*1}Assistant Professor, Department of Economics, PGDAV College, University of Delhi, Delhi, India.

²Research Scholar, Centre for Economic Studies and Planning (CESP), Jawaharlal Nehru University (JNU), Delhi, India.

³Associate Professor, Department of Economics, Shyam Lal College (EVE), University of Delhi, Delhi, India.

Abstract

The developing countries in their developmental path face the middle income trap which limits their growth and their potential to become high income economies. This paper tries to bring insights in this conundrum and suggests some policy measures like human capital growth, investment and infrastructure expansion along with innovation and infusion of the existing advanced technologies. The developing economies can also learn from the success stories of some economies that recently escaped this middle income trap to become high income economies.

Keywords: Middle income trap, developing economy, developed economy, demography, dependency ratio, human capital, productivity, technology, development path, investment, innovation, infusion

Introduction

As the countries grow richer, they usually face a trap that is estimated at about 10% of the annual Gross Domestic Product per capita of the United States which translates to approximately the equivalent of \$8,000 today. This conundrum in economics literature is termed as “The Middle Income Trap”. This value of per capita Gross Domestic Product is in the middle of the income range of middle income countries defined by the World Bank. In the last three decades, out of 101 such countries, only 34 economies could manage to shift to the high-income countries group. Among these, more than one-third were the beneficiaries of being integrated into the European Union or have been resource rich due to oil discovery that were then undiscovered¹. Since Gill and Kharas (2007) introduced for the first time the concept termed as the middle-income trap, journalists, policy makers and researchers alike have embraced this notion capturing the reality that-over the past five decades-only a few middle-income countries could improve economically to become a high-income and industrialized nations².

China 2030 report (2013) by the World Bank points out that among the 101 nations grouped as ‘middle-income countries’ in 1960, by 2008, only 13 of them had become ‘high-income countries’³. Similar evidence is outlined by other researchers as well (Felipe 2012, Im and Rosenblatt 2013)⁴. As per Agenor and Jelenic (2012), currently there are only 13 countries that are able to transform themselves into high-income economies: Greece, Equatorial Guinea, Hong Kong Special Administrative Region (China), Israel, Ireland, Japan,

Mauritius, Puerto Rico, Portugal, the Republic of Korea (South Korea), Spain, Singapore and Taiwan. These 13 countries, out of total 101 countries, were labeled as the middle-income economies after World War II⁵. Furthermore, some previous studies have compared East Asian economies that have successfully transitioned themselves from middle income economies into high income economies, with some Latin American countries that have been classified as middle income countries⁶.

The conundrum of the situation of ‘middle income trap’ refers to a situation when any middle income economy can no longer compete with other economies in integrated international market with standardized and labor-intensive commodities as the wages grow to be relatively too high raising the cost of labor, while it cannot compete even in higher value adding economic activities on a larger scale since the economy has productivity relatively too low as compared to the advanced and richer nations. This results in slow growth and low or no potential for improved standards of living for most of the population⁷. The middle income countries face insufficient development of the capabilities in their domestic productive activities for upgradation and transition towards higher value added economic activities within and across the sectors⁸. Domestic innovation capabilities must be enhanced comprehensively to keep the economy well on its developmental path.

The existing economic scenario of globalization and integration of markets internationally seems to be more challenging for such middle income countries to work upon

¹ World Bank

² Cited from Eva Paus, ADBI (2017)

³ Ibid.

⁴ Ibid.

⁵ Cited from Lubis and Saputra (2015)

⁶ Ibid.

⁷ Cited from Eva Paus, ADBI (2017)

⁸ Ibid.

their economic potential and narrow the capabilities gap with their richer peers. The rise of the environment for innovation on a larger and advanced level remains a complex process that will require sufficient time for learning and channelising the learning process in the production process (Cimoli *et al.*, 2009; Amsden, 2001) and in the setup of the required institutional structures that will enable and support innovation for the sustained growth (Doner and Schneider 2016)⁹.

As technological progress intensifies and technology changes faster, it gets tougher to compete internationally with more players competing one another. This leads to less time available for reaching competitiveness in the higher value adding sectors. Further, with the rise of the People's Republic of China (PRC), the pressure has increased on other middle income economies, since China has been improving over its innovation and becoming a dominant player in the global innovation set up. As the competition gets intense and the objectives of geo-politics change rapidly, the need to escape from this middle income trap becomes a more urgent need and even becomes more difficult to shackle this trap. This global reality is being faced by almost all middle income economies. The countries facing this challenge have their abilities differing in resolving this constraint. Moreover, such abilities are conditioned by the nature of an economy's existing economic structures, innovation system and development path along with its integration in the global market in a globalized world and the political constellations¹⁰.

Innovation and Inequality

Theoretically, innovation is impacted by inequality through four major channels¹¹. First, high inequality means high inequality in resource distribution that may have highly unequal access to education, a crucial human resource development sector which in turn, would limit the accumulation and upgradation or advancement of human capital that is required for innovation¹². Second, the advancement and sustainability of innovation may be prevented due to limitations on policies because of inequality as such policies may threaten the power of elites with decision making power (Flehtner and Panther 2015) since such policies may create social mobility across income groups. Third, high inequality may also create tensions among income groups due to tensions as upper income groups would be required to pay higher taxes to finance the governmental expenditures especially on social sectors like education, skill enhancement, infrastructure and so on. Further, high inequality may cause political instability as evident from the recent uprisings in many South Asian and African countries that in turn makes it difficult to sustain and continue the implementation of a long term development strategy that could benefit the economy as a whole. As argued by Foxley (2012), a reduction in the highly unequal distribution of resources, opportunities and income in many of the Latin American economies is critical to maintain or achieve the political and social peace and stability. This, in turn, highlights the required foundation for a structured and effective developmental strategy aimed to increase productivity and diversify exports and the trading partners.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

Success Stories

South Korea is the best example of this strategy. In 1960, the per capita income of South Korea was approximately \$1,200 and it increased to over \$30,000 today¹³. South Korea in its initial years of development boosted its investment-both public and private. Moreover, in the 1970s, it shifted its attention towards an industrial policy that could encourage its firms producing domestically to adopt advanced production methods and foreign technology. This led to the rise of companies like Samsung. Samsung in its initial years was a noodle-maker firm that began producing television sets for regional and domestic markets by licensing technologies from advanced Japanese firms that were ahead in their production techniques. The success of Samsung ignited the demand for skilled professionals with technical knowhow. This was accompanied by the support from the government which responded by increasing budgets and setting targets for its public universities to enhance the curriculum and lead to the development of these required skills. Today, Samsung competes globally with tech giants and has proved itself as a global innovator and marked itself among the leading smartphone manufacturers of the world. This success path was followed by countries like Poland and Chile¹⁴. Poland increased its productivity drastically by adopting the technologies from Western European economies. Chile on the other hand encouraged technology transfer to enhance its local innovation. It is known famously for the adoption of Norwegian salmon farming techniques that increased its production significantly making it a top salmon exporter globally.

Developing Economies and Challenges

Most developing economies face demographic bonuses with a larger labor force that culminates into low wage structures as compared to high income developed economies. These factors can benefit by attracting Foreign Direct Investment (FDI) in domestic firms and encourage multinational companies (MNCs) and other investors for other types of investment in such developing capital constrained economies. Agenor and Jelenic (2012) pointed out that developing economies would be facing the issue of rising wages making the labor costly in the long term that may reduce the demographic benefits in longer perspectives. This demands for a change in the economic structures of such developing countries otherwise the competitiveness in the international market would start declining with increasing production costs and intense competition. This would in turn force the economies to remain under the middle income trap. This middle-income trap would restrict the growth in productivity and output to a slower pace that would cease international competitive ability eventually. Therefore, such economies would be trapped with the then economic scenario by being in the middle-income bracket of the countries and their transition into high-income countries would be too hard to be achieved or be a distant dream.

To resolve the problem of high wages of the employees, the production activities with low value addition should be transitioned into high value adding production activities. As it is evident that most of the developed economies have relatively smaller populations. This helps them in focusing more on skill intensive and capital intensive products or in the production of highly valued services sector. This advantage

¹³ World Bank

¹⁴ Ibid.

creates the competitive advantage of the developed countries which can leverage them in increasing the wages of the employees. To match their competencies, developing economies should improve the advancement of technology and its upgradation along with the improvements in the quality of their significant human capital to escape from the high wage trap that would limit the growth (Carnovale, 2012). If the existing population is not engaged economically, this would create dependency and a larger burden on the working population and hence a suitable policy should be emphasized in the development strategy of the economy to improve the human capital.

Economic theories propounded by various researchers have illustrated that growth of an economy occurs with the organic coherence between the human capital resources and periodic new innovations. This entails the need in an economy to improve the quality of education and the training of its youths to acknowledge well the available technology and improve the potential. Thus, the investment by the government or society in social sectors like human capital is crucial in the development of a country's economy (Lin, 2012; Jones & Romer 2009; Becker, 1975). Jankowska *et al.* (2012) have also highlighted the case of South Korea that was successful in improving the enrollment of its citizens in education, especially, secondary and tertiary education that could lead to creation of a large pool of skilled workers in South Korea. In contrast, the middle income or the developing economies of Asia have low human capital in general. Therefore, it is always pointed by researchers to focus on the social sector to uplift every section of the population.

As per Egawa (2013), middle income trap can be triggered by the country's demography through its dependency ratio and fertility rate. In a similar context, Aiyar *et al.* (2013) pointed out that the slowdown in economic growth is impacted significantly by the dependency ratio. If the birth rate exceeds the mortality rate then the dependency will rise and as the gap increases, the dependency rate increases as well leading to fall in proportion of the productive and working population. This increased dependency and reduced working age population proportion has the potential to reduce savings that would in turn lead to fall in investment and eventually the decrease in national income. The dependency ratio varies across countries. Some of the developing economies such as India, the Philippines and Indonesia have their dependency ratio well above 50% that puts a larger burden on their working population. A few developed economies also have a high dependency ratio. Countries like the United Kingdom and Japan are developed economies with high dependency ratio. But, it is to be noted that there is a difference between the dependency ratio of the developed economies and the developing economies¹⁵. In general, the developing economies face the dependency ratio in the productive age groups while the developed economies have their dependency ratio mainly concentrated in the non-productive ages¹⁶.

Vandenberg *et al.* ((2011) has articulated that the expenditure by the government can be helpful for the developing economies to avoid or tackle the middle income trap by the investments in many fields especially in social sectors of education and health. But still, it is evident that in some developing economies, the expenditure by the government is too low as compared to their Gross Domestic Product (GDP). Many of such countries face vulnerability due to lower

efficiency of the bureaucracy. The middle income trap can be prevented through large investments that would improve the productive efficiency in the economy and hence the growth slowdown can be overcome (World Bank, 2010). Japan and South Korea faced similar challenges when their economy was in the middle income category¹⁷. India, Indonesia and China have been increasing their investments to as much as 25% of their GDP in the last few years which is quite in the right direction of the growth process¹⁸.

Some of the developing economies like India, the Philippines and Indonesia have challenges in the infrastructure sector with lower or poor infrastructure development that makes it tough for an economy to sustain its growth path at high pace for a longer period. There is a need to increase the productivity and improve the competitiveness of the developing economies by diversifying the policies and improving the quality of exportable goods such as high value adding high technology products and services. As per Carnovale (2012), the reasons preventing the escape from the middle income trap are the lack of innovation through research and development and high dependency on the exports of labor intensive manufacturing. The developing countries may have comparative advantage in some of the sectors of high value addition and the focus of such economies must be centered around such sectors for the competitiveness in the global market. Such sectors can be benefitted further by the grant of patent rights, brand development, technical management and funding in research and development¹⁹. However, there are some developing economies like Indonesia and the Philippines that need to focus on their falling research and development²⁰.

Some findings show that the middle income trap can be used by a framework of coordination failures²¹. Such failures can lead to slowdown in growth rate and the economy can be trapped in disequilibrium due to lack of investment resulting in the middle income trap. Aiyar *et al.* (2013) in their research did the analysis of some variables that determine slowdown of growth. The variables the demography, the institutions, the economic structure, the macroeconomic environment, location in the tropics and war and civil conflicts were found to have significant influence while the variable of infrastructure was not found to have significant impact²² which is in contrast to the importance of infrastructural networks. Thus, it can be inferred that the middle income trap can be explained by the existing macroeconomic factors.

As per Eichengreen *et al.* (2013), there are three conditions that cause slowdown in economic growth. First, it is found that the growth gets slow if the average growth for seven years exceeds 3.5%. That means the sustainability of continuous high growth is a challenge. The next condition shows that the decrease in the average growth rate occurs to only 2% for seven years where the economy needs more attention. Lastly, the growth slowdown in general occurs in an economy that has its per capita income exceeding US\$10,000 at 2005 constant international Purchasing Power Parity price. Their analysis even focused on the determination of per capita GDP in some of the middle income countries post World War I. The variables determining it were a positive political

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Xiaohe, 2012

²⁰ Lubis and Saputra (2015)

²¹ Todaro and Smith, 2009

²² Aiyar *et al.* (2013)

¹⁵ Lubis and Saputra (2015)

¹⁶ Ibid.

regime, consumption's share of GDP, the government's share of GDP, investment's share of GDP, high technology exports, the number of years of schooling, inflation, years of schooling at higher and secondary levels, and a positive influence of the exchange rate during growth slowdown²³. While, the other variables like the world's GDP growth, trade openness and age dependency for both old and the young have negative impact on per capita income during growth slowdown.

The research by Egawa (2013) found that health, education, working age population and share of exports of highly valued technologically manufactured goods to total exports values bring positive impact on economic growth rate per capita. Agenor and Jelenic (2012) in their research went on to mention some actions that can avoid the middle-income trap, that could include improving the protection of patents, building feasible infrastructure and reforming the labor market and other input markets like land. A similar study by Tho (2013) outlined that developing economies raise human capital resources, their activities in R&D, improve their international competitiveness vis a vis developed economies, create high quality institutions and enhance their dynamic comparative advantage to prevent the likelihood of middle-income trap.

The growth of an economy can be impeded by the growth in population numbers if the rise in population is not well managed²⁴. As per Solow's model, the countries will have low per capita income if they have high population growth. Furthermore, these countries have low per capita income levels and low per capita capital stock. Hence, for improving welfare, it is crucial to manage the growth of population²⁵. As the human capital is related to the efficient and technical production activities, it is important to improve the human capital. If the human resources are properly managed, productivity and efficiency will improve as Solow pointed out that the labor productivity can be triggered by investment in human capital and focus on knowledge²⁶.

High dependency ratios²⁷ also restrict the economic growth of an economy as the dependent population in non-productive age groups exceeds the population in productive wages that make the productive population overburdened due to social and taxation responsibilities. High dependency ratios coupled with demographic factors having high fertility levels and low mortality may limit the resource allocation effectively causing the middle income trap. Hence the growth of an economy can be influenced by the change in demographic structure²⁸. However, Mill (2009) highlighted education can change the demographic factors and high dependency ratio as high income groups tend to have smaller families since they are more concerned about welfare and the career²⁹.

Conclusion

Countries should enable high-tech industries adding high values in the national income to accelerate the economic growth making it more sustainable and continuous through

longer duration and they should try to tilt international trade through high value added products and larger economies. The countries should focus on 3i strategies of innovation, investment and infusion. The innovation will keep the comparative advantage in the international set up. The investment in technology and human capital will push the productivity to rise while infusion focuses on adoption of advanced technologies from the developed economies in developing countries to make the production more market viable.

The role of government and the synergy of technology with human interface have been positive signs for the growth of human capital in developing economies. The recent episodes of pandemic gave a reality check for lack of pandemic preparedness for every economy while it also boosted the adoption of technology at a faster pace. This resulted in the rise of the productive capabilities and reduction in search costs of jobs that would impact the global economy positively. The government policies to attract the foreign investments to reap the benefits of economical labor and large hidden market potential by the developing economies can be a booster for the sustainable growth of a developed economy. The economies must also be careful for unforeseen situations due to global uncertainties and hence keep a reality check to sustain their developmental path for longer horizons.

References

1. Abugattas, Luis and Eva Paus. "Policy Space for a Capability-Centered Development Strategy for Latin America," in Diego Sanchez-Ancochea and Kenneth C. Shadlen. Eds. *The Political Economy of Hemispheric Integration. Responding to Globalization in the Americas*. New York and London: Palgrave Macmillan, 2008, 113-143.
2. Agenor C and Jelenic. *Avoiding MiddleIncome Growth Trap*. World Bank Economic Premise, 2012.
3. Aiyar D, W Puy and Zhang. *Growth Slowdown and the Middle-Income Trap*. Working Paper, Asia and Pacific Department. Washington DC: IMF, 2013.
4. Aiyar, Shekhar, Romain Duval, Damien Puy, Yiqun Wu, and Longmei Zhang. "Growth Slowdowns and the Middle Income Trap," International Monetary Fund Working Paper WP/13/71, 2013.
5. Amsden, Alice. *The Rise of "The Rest." Challenges to the West from LateIndustrializing Economies*. Oxford, New York: Oxford University Press, 2001.
6. Asian Development Bank. *Asia 2050: Realizing the Asian Century*. Manila, Philippines: Asian Development Bank, 2011.
7. Becker GS. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York, United States of America: Columbia University Press for NBER, 1975.
8. Campbell R. Mc. Connel and LB, Stanley. *Contemporary Labor Economics*. New York, USA: McGraw-Hill Book Company, 1986.
9. Carnovale M. *Developing Countries and Middle-Income Trap: Predetermined to Fall?*, Thesis, Leonard N. Stern School of Business. New York: New York University, 2012.
10. Cimoli, Mario, Giovanni Dosi, and Joseph E. Stiglitz. "The Political Economy of Capabilities Accumulation: The Past and Future of Policies of Industrial Development," in Mario Cimoli, Giovanni Dosi, and Joseph E. Stiglitz. Eds. 2009. *Industrial Policy and*

²³ Eichengreen *et al.* (2013)

²⁴ Campbell & Stanley (1986)

²⁵ Mankiw & Scarth (2007)

²⁶ Lubis and Saputra (2015)

²⁷ The dependency ratio is defined as the ratio of non-productive ages (below 15 years old and above 64 years old) population and productive ages (15-64 years old) population in an economy

²⁸ Egawa (2013)

²⁹ Cited from Lubis and Saputra (2015)

- Development. *The Political Economy of Capabilities Accumulation*. Oxford: Oxford University Press, 2009, 1-16.
11. Davis L. *Technology Intensity of U.S Output and Trade*. US Department of Commerce, International Trade Administration, 1982.
 12. Doner, Richard and Ben Ross Schneider. "The Middle Income Trap: More Politics than Economics," *World Politics*. 2016; 68(4):608-644.
 13. Egawa A. *Will Income Inequality Cause a Middle-Income Trap in Asia?* Working Paper. Brussels: Bruegel, 2013.
 14. Eichengreen B, Park D and Shin K. "Growth Slowdowns Redux: New Evidence on the Middle-Income Trap," *NBER Paper Series*, WP 18673, 2013.
 15. Eichengreen P and Shin. *Growth Slowdown Redux: New Evidence on the Middle Income Trap*. NBER Working Paper Series No. 18673, National Bureau of Economic Research, USA, 2013.
 16. Eichengreen B, D Park and K Shin. "When Fast-Growing Economies Slow Down: International Evidence and Implications for China," *NBER Working Paper Series*, WP 16919. European Union. 2011. *New Practical Guide to EU Funding Opportunities for Research and Development*, 2011.
 17. Felipe J. "Tracking the Middle-Income Trap: What is it, Who is in it, and Why? (Part 1)," *Asian Development*, 2012.
 18. Flechtner, Svenja and Stephan Panther. "Global and Domestic Inequalities and the Political Economy of the Middle-Income Trap," Paper prepared for the World Congress of Comparative Economics, Rome, 2015, 25-27.
 19. Foxley, Alejandro. *La Trampa del Ingreso Medio. El desafío de esta década para América Latina*. Santiago, Chile: CIEPLAN, 2012.
 20. Gill I and H Kharas. *An East Asian Renaissance: Ideas for Economic Growth*. Washington DC, USA: World Bank, 2007.
 21. Hausmann, Ricardo, Jason Hwang, and Dani Rodrik. "What You Export Matters," *Journal of Economic Growth*. 2007; 12:1-25.
 22. Im FG and Rosenblatt D. "Middle-Income Trap: A Conceptual and Empirical Survey," *World Bank Policy Research Working Paper Series No. 6594*, World Bank, 2013.
 23. Jankowska N and Perea. *The Middle Income Trap: Comparing Asian and Latin American Experience*, Policy Insight No 96, OECD Development Centre. Paris: OECD, 2012.
 24. Jones CI and PM Romer. "The New Kaldor Facts: Ideas, Institutions, Populations, and Human Capital." *NBER Working Paper Series 15094*, 2009.
 25. Kharas H and H Kohli. "What Is the Middle-Income Trap, Why do Countries Fall into It, and How can it be Avoided?," *Global Journal of Emerging Market Economies*. 2011; 3(3):281-289.
 26. Lee, Keun. *Schumpeterian Analysis of Economic Catch-up: Knowledge, Path Creation and the Middle Income Trap*. Cambridge and New York: Cambridge University Press, 2013.
 27. Lin JY. *New Structural Economics: A Framework for Rethinking Development and Policy*. Washington DC, USA: World Bank, 2012.
 28. Lubis RF and Saputra PMA. *THE MIDDLE-INCOME TRAP: IS THERE A WAY OUT FOR ASIAN COUNTRIES?* *Journal of Indonesian Economy and Business*. 2015; 30(3):273-287.
 29. Mankiw NG and WM Scarth. *Macroeconomic*. 3rd ed. New York: Worth Publishers, 2007.
 30. Mill JS. *The Collected Works of John Stuart Mill, Volume II-The Principles of Political Economy with Some of Their Applications to Social Philosophy (Books III)*, Edition of John M. Robson, Introduction by V.W Bladen. *The Online Library of Liberty*, 2009.
 31. OECD. 2016. *PISA2015. Results in Focus*. <https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf> (accessed 24 February 2017).
 32. Paus E. *Escaping the middle-income trap: innovate or perish*, ADBI Working Paper Series, 2017.
 33. Paus E. "Latin America and the Middle-Income Trap," *Financing for Development Series*. ECLAC, United Nations, 2014.
 34. Robertson, Peter and Longfeng Ye. "On the Existence of the Middle Income Trap," *Business School, University of Western Australia, Discussion Paper 13.12*, 2013.
 35. Rodrik, Dani. "Premature De-industrialization," *NBER Working Paper*. 20935, 2015.
 36. Shapiro, Helen and Lance Taylor. "The State and Industrial Policy", *World Development*. 1990; 18(6):861-878.
 37. Stiglitz, Joseph and Justin Lin. Eds. *The Industrial Policy Revolution. The Role of Government beyond Ideology*. New York and London: Palgrave Macmillan, 2013.
 38. Tho TV. *The Middle-Income Trap: Issues for Association of South East Asian Nations*, ADBI Working Paper No 421, Asian Development Bank Institute. Tokyo: Asian Development Bank, 2013.
 39. Todaro MP, and SC Smith. *Economic Development*. 10th ed. Boston, USA: Pearson Addison Wesley. Vandenberg and Zhuang, 2011. *How can China avoid the Middle-Income Trap*, Asian Development Bank Working Paper, 2009.
 40. UNCTAD. *Trade and Development Report 2016*. Geneva: United Nations Conference on Trade and Development, 2016.
 41. Vandenberg P, L Poot and J Zhuang. *The Middle-income Trap: Characteristics, Policies and Lessons for the People's Republic of China*. Asian Development Bank, Manila. Processed, 2011.
 42. World Bank. *Poverty and Shared Prosperity 2016. Taking on Inequality*. Washington, D.C.: World Bank, 2016.
 43. World Bank. *China 2030. Building a Modern, Harmonious, and Creative Society*. Washington, D.C.: World Bank, 2013.
 44. Xiaohe M. "How China Can Avoid the Middle-Income Trap". *Academy of Macroeconomic Research, China National Development and Reform Commission (NDRC)*, 2012, 7(1).