

Growth or Development Trap*

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In this essay, we explore how to obtain a more accurate picture not only of the growth situation as measured by traditional economic indicators, but also of the level of development, which also raises the possibility of becoming trapped. We distinguish between development and growth, pointing out that Hungary has good growth figures, but lags behind in terms of development indicators. This discrepancy requires further, more detailed analysis in order to define desirable targets for development indicators that are independent of growth indicators, and to avoid the development trap by achieving them. This is also justified because, in the longer term, the evolution of development indicators also affects the chances of sustainable growth and allows for more general, systemic qualitative progress. Based on the statistical data presented in relation to the issues raised, we conclude that it would be necessary to construct a mathematical model of growth and development to illustrate and econometrically analyse the dynamic relationship. But this is not undertaken in the context of this essay.

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1. Introduction

Middle-income trap theories examine why many countries experience slowing or even stagnation in growth when they reach a middle-income level. When this situation persists for a longer period of time, it is said that the country is caught in a middle-income trap.¹ However, there are weaknesses in the studies that make their recommendations insufficient to avoid the trap in general.

The main theme of the essay is to distinguish between the growth trap and the development trap, and to demonstrate that avoiding the growth trap does not

* The papers in this issue contain the views of the authors which are not necessarily the same as the official views of the Magyar Nemzeti Bank.

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¹ Middle-income trap

necessarily mean avoiding the development trap as well. The *second chapter* presents the main findings of the literature on the growth trap and analyses their methodological weaknesses, while acknowledging, of course, the validity of growth analysis. It goes on to propose a new kind of development modelling, whereby the level of development indicators can be used to make judgements about a country's level of development. The term development is usually used to describe a process, while level of development generally means a state, but we may use the two terms interchangeably in the following. A development trap is a situation where a country's development indicators are deteriorating or stagnating. In this essay, we draw on statistical data to select a few key indicators and examine the positions of Hungary and the V4 countries,² and for further comparison we also analyse data from Austria. The reason for this is that it is reasonable to compare the Hungarian results first with the countries that are in closer historical, cultural and economic relations with Hungary. In the future, it will be worthwhile to extend the studies to more countries such as those in Asia that have successfully avoided the trap. The essay concludes by arguing that, given the weaknesses of growth models based on measuring the GDP, a more objective assessment could be achieved by extending the middle-income trap analysis to include middle development studies, and by setting targets not only for GDP and GDP per capita, but also for development indicators separately from the economic ones. This would allow systemic thinking, which in the longer term would be beneficial not only for growth, but also for social development.

2. Income trap research: a literature review

Researchers in development economics have long investigated the reasons why countries that start from similar economic situations show different patterns of economic development over the longer term. Initially, progress was measured in terms of gross domestic product (GDP) or GDP per capita. They analysed how GDP per capita in some countries evolves over time, whether there is a steady increase or the value starts to stagnate or decline at some point. If stagnation or deceleration occurs, we talk about a trap situation. Researchers from the World Bank were the first to carry out wide-ranging analyses in this topic. They also introduced the concept of the middle-income trap. *Gill et al. (2007)* compared the growth potential of countries in East Asia. They found that to avoid the middle-income trap, one should not linger in the successful production-based economic position, but the share of the knowledge-based innovative economy must be increased. South Korea is cited as an example, where the economy started to grow rapidly as a result of significant investment in the creation of high value-added domestic sectors that are competitive in international markets and in the innovation and knowledge needed

² V4 countries: Czechia, Poland, Hungary and Slovakia.

to do so. One result of this is that while the average annual number of patents registered per 100,000 inhabitants was 1.44 in the period 1990–1994, it increased to 8.67 in 2000–2004, representing a six-fold increase.³ Referring to growth theories, this meant a shift from the neoclassical growth model to the new endogenous growth model, according to which growth can be expected from internal forces, knowledge, innovation, advanced technologies and entrepreneurship. Increasing innovation and knowledge levels have also contributed to improving total factor productivity,⁴ which is important for improving competitiveness. In a later analysis, *Gill and Kharas (2015)* also suggested that several countries, such as Ukraine, were likely to become trapped. They also warned that a country can find itself in a trap even after long years of success. This may be because, for example, changes in the economic structure do not keep pace with changes in environmental opportunities and threats, or because the structure of export products also becomes rigid and not flexible enough to respond to market changes. But poorly targeted, inefficient public economic incentives with a low increase in value-added can also lead to a trap situation. For public economic stimulus to be effective, it needs high-quality universities, well-trained professionals and an innovation-friendly environment that encourages entrepreneurial, innovative firms, the authors argue.

They also point to another important feature: the risk of regional economic and overall development disparities. Because these can also prevent a country from avoiding a trap. *Garrett (2004)* draws attention to the common simplification that democratisation also brings economic success. He gives examples to show that this is not borne out by practice. He says that countries that are otherwise democratised, but where only the assembly units of value chains are present, could easily find themselves in a trap if they do not move up the value chain towards higher value-added activities. Assembly operations are a “natural limit to progress,” says Garrett. Similar ideas are expressed by *Ohno (2013)*, who warns that the gap between winners and losers is increasingly based on the amount of knowledge and skills accumulated. A middle-income level can be achieved through market liberalisation and foreign capital investment, but in order to move to a higher level, a system of continuous human capital development needs to be built. Importing knowledge is not enough, local knowledge creation is needed. The trap, he says, occurs when the initial benefits – be they mineral or other natural resources or cheap labour for investors – are exhausted, and in the meantime, a new, high value-added, knowledge-based economic structure and institutional framework that encourages local knowledge creation are not developed. This line of thought is also emphasised by *Spence (2022)*.

³ *Gill et al. 2007:155, Table 3.6.*

⁴ Total factor productivity: an indicator that takes into account the productivity effects of technological progress, knowledge, innovation and management efficiency, as well.

Huang et al. (2017) draw attention to another risk factor of becoming trapped: low or declining productivity. The example of China is used to examine how long China can remain the “factory of the world”, relying on low investor costs without being trapped. The authors argue that, although the Chinese economy is growing strongly, low productivity levels, one of the causes of which is a deterioration in the efficiency of capital investment, could pose a risk of a trap. They propose a shift from investment-led to innovation-led industrial development, as this would lead to higher value-added and higher productivity levels.

This idea is also underlined by *Rippel (2017)*, when he mentions the importance of investing in innovation and moving up the value chain as a condition for China’s catching-up. A report by the *EBRD (2019)* identifies the productivity problem as a trap risk for the countries financed, including those in Eastern Europe, where productivity is low, despite a high investment-to-GDP ratio and strong GDP growth. The reason for this, according to the report, is that the more a country modernises technically and technologically, the more it needs well-educated and highly capable human capital. It is also a condition for productivity gains. The EBRD concludes that the slowdown in growth is mainly attributable to low levels of total factor productivity (TFP). Fast-growing economies exhaust their growth resources after a decade or two, so a new growth model is needed, based not on knowledge and technology imports but on local innovation and knowledge creation. This requires flexibility and future-oriented thinking. This is what South Korea did when it switched to a knowledge-based economic development model. Thanks to substantial human capital investment, TFP has grown rapidly, which has contributed to the optimal use of physical capital. Innovation as a way to avoid the middle-income trap is also emphasised in other studies.

Matolcsy and Palotai (2019) also draw attention to productivity problems. They point out that there are now limits to increasing growth quantitatively by bringing more people into work. There is therefore a need to increase productivity, to attract workers to higher productivity sectors and to modernise the economic structure in general.

Paus (2017) puts it this way: innovate or perish. The author examines the countries of Latin America and draws conclusions for Asia. She points out that several Latin American countries have been in a growth trap for some time. This is because the international competitiveness of previously labour-intensive, low-productivity products has deteriorated and they failed to switch to more innovative, higher-productivity, more competitive products, i.e. the structure of the economy has not modernised fast enough. Among other things, this is due to low levels of investment in human capital. Economic growth is also constrained by high inequalities in South America, which hinders the accumulation of human capital.

Finally, it is worth quoting the findings of two analyses that also looked at the V4 countries. The European Commission's study (*EC 2020*) analyses regional income traps using economic, productivity and employment data. It finds that there are a number of regions in the EU that are in a trap situation, although this occurs at GDP per capita levels higher than those generally reported in the literature. This is a big problem because these lagging regions undermine the potential for economic growth, while – as national macro indicators hide these regional weaknesses – little attention is paid to them. Researchers divide European regions into 3 groups: regions stalling at high, middle and low income level. Some V4 regions are also in the third group, but are not included in the case studies presented in detail. The reasons for this lag are identified as low value-added production, weak innovation and low productivity levels. It can be noted that these factors are not independent of each other, as it is just the higher value-added economic activities with more innovation that would allow productivity to increase. Researchers see the way out of the trap leading through investment in knowledge, more R&D investment and more competent local leadership. They note that more physical investment without investment in knowledge is not enough, as this is what would contribute to productivity growth.

An analysis by the European Central Bank (ECB) (*Žuk – Savelin 2018*) looks at the speed of convergence, measured by GDP per capita, over the years 2000–2016. This analysis, which covers 17 countries, already mentions the historical fact that the countries under review have had to make the transition from a “command-based economy” to a market economy. The average annual growth rate (at purchasing power parity) between 2000 and 2016 was the highest in Lithuania and the lowest in Slovenia, according to World Bank data. The Hungarian score was the third lowest, but we must immediately mention the weakness of the comparison: it is obviously harder to make a big jump from a higher level. A better indicator is a comparison with the EU average. In terms of real GDP per capita (at purchasing power parity) in 2016, Czechia was in the lead and Hungary was 7th out of 17 countries. Based on 2017 data, Hungary would need to grow by more than 5 per cent per year to reach the EU average GDP per capita by 2025, according to the authors. Czechia can achieve this even with growth below 3 per cent. Interestingly, the study already touches on the shortcomings of the GDP per capita indicator, pointing out that an increase in the value of the indicator does not necessarily translate into an improvement in educational standards or general health. It therefore proposes to examine the UN Human Development Index (HDI) alongside the growth indicator. The HDI indicator takes into account life expectancy at birth, the number of years spent in schooling, the length of schooling in years and the change in real gross national income measured at purchasing power parity. More recently, it has also analysed sustainability, including the environmental impact of economies as measured by various indicators. Finally, the study warns that the economic structure

has a significant impact on the avoidability of trap situations. Increasing the share of more innovation- and knowledge-intensive, more competitive sectors, and increasing the share of domestic value added in exports will reduce the chances of falling into a trap. This would require, for example, an increase in the number of patents granted per million inhabitants.

Over the period under review, this value decreased in only three of the 17 countries analysed, Hungary, Croatia and North Macedonia, but increased significantly in Poland and Czechia. However, it should be noted that intellectual property achievements can only contribute to economic performance if they translate into marketable products and services. The situation is similar for educational outcomes. There is no point in having more highly skilled workers if the economic structure does not offer them jobs that make use of their knowledge and skills. This is also a question of efficiency, as not only unused machines but also unused knowledge is a loss.

3. Main shortcomings of the middle growth trap analysis

As we have seen, the literature on the middle-income trap is abundant. What the studies have in common is that they are looking for the causes of growth stagnation. The reasons generally cited include the low value-creating capacity of the economic structure, poor innovation and knowledge levels, and slowly improving productivity. Other potential problems include the quality of governance, high levels of corruption, excessive regional disparities and a poor level of management. Researches are in search of a new growth model as opposed to the original Solow model, in which the main external, exogenous source of growth is investment. They also warn that technological progress cannot be fast enough if we only invest in infrastructure, in tangible things.⁵ The gap between technology and knowledge hinders the effective use of technologies. This is why so-called intangible investments are important to raise knowledge and skills to the necessary level, i.e. to strengthen human capital, the importance of which is highlighted in particular by endogenous growth models. However, these indicators are only examined as conditions for growth. Another weakness of the research is that there is no consensus on what the GDP per capita value is which indicates a trap situation if a country's growth is stagnant around it. *Spence (2011)* puts this at USD 10,000.⁶ *Felipe (2012a; b)* identifies two middle bands: one between USD 2,000 and USD 7,500 and the other between USD 7,500 and USD 11,500.⁷ This means that if a country stays in the first band for more than 28 years or in the second band

⁵ Tangible investment

⁶ At 2005 purchasing power parity

⁷ At 1990 purchasing power parity

for more than 14 years, it is already in the middle-income trap. The authors found entrapment in 35 of the 52 countries studied.

In a recent analysis mentioned above, the risk of a trap is predicted for a GDP per capita of USD 10,000–11,000 and 15,000–16,000 (*EC 2020*). Others give a growth percentage rather than an absolute value. *Eichengreen et al. (2013)* define this as a slowdown of at least 2 percentage points relative to a 7-year moving average.

There are also authors who measure a country's long-term economic growth against that of a benchmark country, such as the USA, looking at whether there is perceptible convergence over time (*Im – Rosenblatt 2013; Agénor – Canuto 2012*). This also points to a major gap in the question of whether GDP or GDP per capita is sufficient to be selected as the main indicator for comparison. Indeed, growth measured by GDP can be “bad growth”, with investments that do not create significant new value but harm the environment. Therefore, an important question is whether it is enough to set growth as an objective. Is it sure that quantitative growth also brings progress? Is it even possible to compare and assess the real results of individual countries based on the GDP indicator? They are likely to have different historical, cultural and social situations, for example. On the other hand, in an increasingly complex and unpredictable economic and political environment, is it not reasonable to measure the effectiveness of a country's performance by other indicators? Obviously, there is no single economic indicator that can be used to describe whether it responds well to crisis situations or how quickly and successfully it can adapt to changes. Resilience and adaptability are not a question of economic growth. Rather, it depends on the characteristics of the population and society, on historical and cultural traditions, and on the abilities to cooperate. Therefore, the speed of catching up with the most advanced economies in rapidly changing circumstances also depends on these characteristics. It is not enough even to have new values, factories and schools. They also need to perform efficiently and cost-effectively. We must therefore move beyond the “input” approach and reporting how much we have spent on certain investments as results. The really important thing is how much result or outcome is achieved with the input, and how much new value is created. It is therefore advisable to conduct development studies that are not input-oriented but result-oriented, i.e. that consider the efficiency of resource utilisation as an important factor in avoiding traps.

Finally, given the weaknesses of the middle-income trap theories and the necessary conditions for successful adaptation to a rapidly changing environment, it is advisable to extend income-growth research with development analysis. There have also been experiments in this area, the three best known of which are presented here.

4. Analyses including also development indicators

Deciding how to describe development well is not an easy task. Country-specific characteristics would probably also make it difficult to produce a coherent model. Nevertheless, there are initiatives to compare basic development indicators. One example is the UN analysis of human development, mentioned earlier. *Table 1* shows the evolution of the HDI index between 1990 and 2019.

Table 1										
Changes in the value of the Human Development Index in international comparison (1990–2019)										
Country	1990	2000	2010	2014	2015	2017	2018	2019	Value change from 1990 to 2019	Annual average growth rate (%)
Hungary	0.708	0.772	0.831	0.838	0.842	0.846	0.850	0.854	0.146	0.650
Czechia	0.738	0.804	0.870	0.888	0.891	0.896	0.898	0.900	0.162	0.690
Poland	0.718	0.790	0.840	0.858	0.863	0.873	0.877	0.880	0.162	0.700
Slovakia	0.741	0.765	0.831	0.847	0.850	0.855	0.858	0.860	0.119	0.510
Austria	0.803	0.847	0.904	0.913	0.915	0.919	0.921	0.922	0.119	0.480

Source: UNDP (2020)

In *Table 1* we see that the biggest changes in HDI values and average annual growth rate occurred in Czechia and Poland. This is followed by the Hungarian data. If we also look at GDP per capita figures, we see that again Poland and Czechia have made the greatest progress in this respect. This may be related to the fact that one component of the HDI indicator is the national income indicator. Austria also improved its position moderately in terms of both the HDI and GDP per capita indicators, which is, on the one hand, understandable as it started from a much higher level, but, on the other, this also points to a weakness in measuring against a given basis value. In 2019, the highest HDI index was found in Norway (at 0.957). Among the 189 countries reviewed, Austria ranks 18th, Czechia 27th, Poland 36th, Slovakia 39th and Hungary 40th. So for this development indicator, which also takes life expectancy and knowledge levels as human development indicators into account, Hungary ranks last among the countries surveyed here, though not far behind Slovakia.

Another study analysing development indicators has been carried out by the Legatum Institute for 15 years (*Legatum 2021*). They assess the prosperity of 167 countries using 300 indicators most of which are human and social development indicators, but economic data is also taken into account. Rankings are made not only on the basis of composite indicators, but also on the basis of indicators by territories. The Legatum Prosperity Index research draws attention to the fact

that a nation's prosperity cannot be measured only by its economic and material performance. It is also important whether there is progress at the individual and societal level. Development means improving health, raising knowledge and preventing deterioration in the state of the natural environment, such as air quality. In their view, transparent and effective governance is needed to improve development indicators. Hungary is ranked 44th out of 167 countries in the 2021 ranking. This is two places better than in 2020, but still behind the 27th Czechia, 35th Slovakia and 36th Poland. Hungary ranks the worst in terms of government efficiency (82) and transparency of the market environment (78), but also in terms of health, it is ranked only 51st, with only Poland ranking worse in the V4 Group. However, Hungary's position based on economic data is much better, ahead of both Slovakia and Poland, in 33rd place. The economic position is measured, for example, by financial and macroeconomic stability and employment, while the health care situation is described in terms of life expectancy, physical and mental health, and the development of the disease prevention system. The research demonstrates that even when economic performance is good, a country can still have poor development indicators, which may justify setting a target to improve the value of these indicators. The analysis has the merit of also looking at human and social development indicators, in addition to economic ones. It is also a good idea to produce rankings for each of the main themes. But 300 indicators are a lot. Obviously, not all of them affect development with the same weight, so an unfavourable score in many low-weight factors may have a greater impact on the final ranking than good scores in a few indicators that are more important for development.

It is also worth mentioning an interesting social progress indicator research conducted by a Washington-based non-profit organisation with a global network of experts. The researchers look at countries' performance in three areas. These are: the satisfaction of basic human needs, the foundations of well-being and the opportunities available to people. This research primarily assesses access to development and not the level of development achieved. It examines access to adequate health care and different levels of education, freedom of access to information, the freedom of individuals to shape their lives and the cohesiveness of society. In the 2021 study (*Social Progress Imperative 2021*), which looks at 168 countries using 52 indicators, Czechia is ranked 22nd, Slovakia 33rd, Poland 35th and Hungary 42nd. Hungary received its worst rankings for access to health and access to higher levels of knowledge, which are clearly indicators of progress. The study also examines environmental characteristics and civil liberties. It is interesting for its comprehensive approach and multi-directional interest, but it does not draw a picture of the level of development of the countries under study. Therefore, it also does not give an opinion on whether some of them are in a middle development trap. However, an international comparison of the possibilities of

access to development can give some ideas about what indicators to use to assess development. One common feature of the three analytical studies is that they go beyond economic outcomes to assess human and social development and development potential. The indicators used allow for separate measurement of results in several areas. The researchers make no attempt to describe the overall level of development of countries, their economic, human and social development and their interaction with each other in a systemic way. The final conclusion from the analysis of the three development indicators is that countries with good economic indicators may have much weaker development indicators than growth indicators. This could also be a warning that a country not threatened by a growth trap may be in a development trap situation, which could also bring it closer to a growth trap situation in the future.

In the following, we focus on several domestic studies and publications that analyse the relationship between the economy, competitiveness, development and trap situations.

5. Growth, competitiveness, development and trap situation: domestic reflections

The growth trap situation is also addressed in the domestic literature. To avoid this trap, *Palotai and Virág (2016)* suggest strengthening value-creating capabilities. This also requires improving innovation capabilities. The authors also point out that without this it will not be possible to strengthen competitiveness. They highlight that the results of economic growth and competitiveness improvements must be reflected in the fulfilment of human development potential, good education and health. They put it this way: *“The quality and quantity of human capital are key issues for economic competitiveness and convergence. Human capital is one of the key determinants of long-term growth potential: countries with more human capital are able to achieve more powerful economic growth. The quality of human capital can be improved by raising the performance of the education system and the health care system.” (Palotai – Virág 2016:701).*

The authors rightly stress the importance of development characteristics and point to their effects in improving competitiveness and stimulating economic growth. Ultimately, however, the collection of papers looks for sources of growth and identifies development factors primarily as sources of growth. This is why it stresses the importance of avoiding the middle growth level trap. Nevertheless, the listed indicators for measuring development can also be used in a methodology that focuses on avoiding the development trap. *Virág (2016; 2017)* considers it important to create the qualitative conditions for improving competitiveness and to move up the value chain towards higher value added in order to avoid the trap.

He also stresses the importance of new investment and productivity improvements. *Csáki (2018) and Boda (2022)* stress the role of education and human investment in general in avoiding trap situations. *Csath (2019; 2021)* looks at development indicators and highlights innovation outcomes and the reduction of regional development differences as particularly important conditions for avoiding the trap. Various reports by the Magyar Nemzeti Bank (MNB) also mention the risk of a trap. A report by the *MNB (2021)* identifies the quantity and quality of human resources, social and environmental sustainability and productivity, among others, as important elements for improving competitiveness. The report examines the opportunities for catching-up in terms of the potential for increasing economic growth, noting that “*a long-term growth surplus of at least 2–3 percentage points per year is essential for successful catching-up with developed countries.*” (*MNB 2021:7*).

The report looks for reserves for growth. Particularly noteworthy are the findings on the size of local value added affecting economic development, the analysis of weaknesses in the economic structure and the knowledge and health status of human capital. The presentation of the effects of territorial disparities in slowing down development is also outstanding. All of the indicators used provide important information, although a breakdown of indicators into input and outcome, i.e. investment and impact-based indicators, especially for development levels, would provide further valuable analysis. For example, the relationship between education expenditures as a share of GDP as inputs and educational attainment rates and knowledge levels as impact/outcome measures could be assessed. Similarly, the relationships between investment in IT infrastructure as inputs and the proportion of people with IT skills and the proportion of firms using IT systems as outputs could be examined. The scale of results/impacts achieved with inputs is an important issue not only in terms of competitiveness, but also in respect of development. Such an analysis can be found in the study on the relationship between R&D resources as inputs and the number of patents as outcome/result measures.

The MNB’s report does not, of course, examine the trap situation, but analyses whether growth conditions can be improved. Nevertheless, its results can also be used to study how to avoid the development trap. A key issue for the development process and for higher level of development is the evolution of productivity. The MNB’s other report on productivity (*MNB 2020*) shows that, on the one hand, the innovation process, which is an important condition for growth, is not efficient enough in Hungary, and, on the other hand, the effectiveness of digitalisation inputs to support productivity growth is also not convincing. The latter is also highlighted in a recent analysis by the *EBRD (2021)*. According to the EBRD study, Hungary’s overall digital literacy score is 72.5 out of 100, not far behind Slovakia (72.8) and the worst in the V4. At the same time, Hungary leads the V4 in terms of physical

inputs and infrastructure (89.8), but lags behind in terms of skills: the Hungarian figure is 50.9, the Czech 78.5, the Polish 69.2 and the Slovak 64.4. But Hungary is only slightly ahead of Slovakia when it comes to online government services. These values, in line with the findings of the MNB study, indicate an efficiency problem. Hungary ranks much better in quantitative terms than in qualitative ones, which in turn makes it less efficient to run physical investments.

With its multidirectional approach to productivity, the *MNB (2020)* report paints a clear picture of how productivity growth would also bring development gains in terms of the elements examined. It argues as follows: “improving development can be achieved primarily through raising productivity” (*MNB 2020:8*). The findings on untapped human resource potential are also noteworthy. However, it is not only the untapped economic potential that is worth looking at in this potential. Maslow’s pyramid (*Maslow 1943*) also highlights the importance of human development, maximising the use of abilities and knowledge, i.e. self-actualisation. This contributes not only to material well-being, but also to improving quality of life and well-being. From a productivity perspective, unused knowledge is a waste of resources and is therefore considered a factor that reduces productivity.

Overall, the report defines innovation, digitalisation and knowledge as development, which is a good direction to look at when researching how to avoid a development trap.

Finally, ecological sustainability and green growth in general are important with respect to the level of development. In this context, another MNB publication, a study by *Barnabás Virág (2019)*, makes striking observations, referring to the importance of human development which is more than economic growth (p. 33): “as modern economies develop, GDP increasingly neglects several elements of subjective well-being and sustainability, while incorporating a number of outputs whose welfare impact is questionable.” And on page 49 he states: “this is why more indicators can and should be used alongside GDP.”

One could add to this last idea by saying that it is not only because of the problems with GDP that more indicators should be used, but also because in our time it is increasingly appropriate to set development, sustainability and the strengthening of crisis resilience as the goal. Moreover, as growth and development are different factors, since one is a quantitative and the other is a qualitative factor – which can of course be in a causal relationship – we must also bear in mind that without adequate development, the sources of growth will eventually be exhausted, and it would therefore be worth working with two different models. In addition to the middle growth approach, there may be a rationale for a model to assess the state of development and the process, which would indicate whether there is a risk of a development trap.

6. The goal should be progress!

Middle-income trap studies are useful and valuable. The domestic results are particularly noteworthy. But what if the argument was reversed, and human and social development, rather than economic growth, was the objective function? What if we were to look for development indicators that would not only make the economy larger, but also make the country better and more developed, based primarily on its own endowments, historical traditions and the challenges of the future? What if Hungary could ensure that in an accelerating and increasingly uncertain environment it could keep up with and catch up with more developed countries in terms of development indicators – avoiding the development trap – at least as fast as in terms of GDP per capita? A more human and socially developed country can be more resilient to crises, more adaptable to changes, and the internal, endogenous development would also lead to sustainable economic growth. This would mean selecting a few indicators describing development as a state or a process of development, and examining how a country, in this case Hungary, performs in terms of these indicators. Such a study would shed light on how far apart the countries in question are in terms of qualitative characteristics, which go beyond the mainly quantitative indicators of the economy. This approach differs from the growth trap approach because it does not consider growth indicators at all. It seeks to answer the question of whether there is progress, primarily human, social and, increasingly, environmental progress. With this in mind, development objectives could be set, the achievement of which could be given at least as much emphasis as the pursuit of growth objectives. Of course, putting together such a development model requires considerable research. Interesting mathematical analyses could also be performed by examining the relationship between the development and growth model over time. In the framework of this essay, starting from the current Hungarian situation and building on the results of previous Hungarian research, one can only outline the areas where development goals should be set. One of these areas is the state of knowledge and health of the population, which has a major impact on the ability to improve competitiveness and the economic situation in general, but also on national resilience in the face of great uncertainty. The quality of education is important not only because it affects an individual's standard of living and quality of life, but also because it is an important source of future economic growth. Research shows that higher levels of education can be associated with healthier lifestyles and therefore longer life expectancy, and a healthier society means less pressure on the health system (*Picker 2007; Raghupathi – Raghupathi 2020*).

Economic structure and the related productivity and efficiency can also be considered as indicators of development. It is important to address weaknesses in the economic structure and improve the efficiency of spending in the case of economic indicators. In this approach, we do not start from the size of the

input amounts, but from the results, the effects, which we want to improve. The necessary steps for improvement are iteratively decomposed from this, paying close attention to the efficiency of the inputs. This is a shift from the growth approach based on one objective function to a whole-system approach, i.e. one that looks at the economy, people, society and the environment in a coherent way, and we can achieve balanced economic growth and social development by improving the value of selected indicators. Below, we analyse some examples of development indicators for which setting targets would probably avoid falling into the development trap and ensure sustainable economic growth. The economic indicators are included in order to compare Hungary's international position in terms of such and for selected development indicators. In *Table 2*, I summarise the 16 economic, human, social and environmental objectives that I consider most important. Statistical data on selected development indicators show that Hungary is not well placed in the V4 and lags far behind Austria. The ratio of physical to intangible investments is particularly important among the proposed indicators. As we see in the national and international analyses cited, Hungary is in a leading position in terms of physical investment, but lags behind in terms of the human investment, especially knowledge investment, that ensures its utilisation. One could say that Hungary's growth data is good, but its development data is weak. Of course, the selection of mutually agreed indicators and the definition of the value of the targets to be set require further professional discussions and research, and the benchmark could be primarily the development compared to Hungary itself and the other V4 countries, and convergence to Austria.

Table 2**Proposed development indicators and targets**

Economic	Economic structure	Knowledge	Health and environmental
goals			
Reducing regional disparities in GDP per capita	Increasing the share of innovative firms	Increasing the share of tertiary education in the working age population	Increasing life expectancy and healthy life expectancy
Increasing the share of intangible/knowledge investment within total investment	Increasing value added / employee value in all sectors	Reducing the share of people with lower education in all age groups	Reducing population loss
Progress from development: improving the efficiency of public spending (R&D, digitalisation spending)	Increasing the share of high value-added firms in the economy as a whole	Increasing the share of technical/scientific and IT graduates	Reducing air pollution
	Reducing the share of imports in exports	Increasing the share of adult education in the total population	Expansion of green areas, afforestation
	Digital development		

Let us look at the average for the V4 and Austria for some key indicators, and for the EU27 if available. The share of innovative firms is an important indicator of development (*Table 3*), since without innovation it is impossible to improve competitiveness, and innovation is a prerequisite for increasing productivity as well.

Table 3		
Innovative or continuously innovating firms as a percentage of all firms		
Country	Innovative	Continuously innovating
	firms (%)	
Hungary	28.7	9.4
Czechia	46.8	22.3
Poland	23.7	8.0
Slovakia	30.5	13.4
Austria	62.6	19.3
EU average	50.3	26.2

Source: Eurostat, Community Innovation Survey, 2021

Hungary has a low share of firms rated as innovative at the time of the survey. Continuous renewal is more important than innovation connected to a given moment. It is also essential for survival in the longer term in the ever-changing environment. The Hungarian figure exceeds only that of Poland, but is significantly below the EU average. Appropriate education is also an important development indicator for improving competitiveness and innovation (*Table 4*). According to Eurostat, the number of science and engineering graduates per 1,000 inhabitants in Hungary in 2019 was 12.3, not far behind the Slovak figure of 12.9, but more significantly behind the Czech (16.1) and Polish (20.1) figures. The Austrian figure is even higher at 23.4 and the EU average is 20.8. The number and proportion of PhDs in science and engineering is also important. According to Eurostat, in 2019, the Hungarian and Polish values per 1,000 inhabitants were the lowest (0.2 and 0.3 respectively), while the Czech rate was 1.1 and the Slovak 0.8. The Austrian figure was 0.9 and the EU average 0.8.

This figure, however, is also poor for the 25–34-year age group, which is particularly important for employment. The Hungarian value is 0.6, which is slightly better than the Polish value of 0.5, but worse than the Czech (1.1) and Slovak (1.3) numbers. The Austrian figure is 1.3, and the EU average is 1.2. In Hungary's case, these values may indicate a problem with the level of development. High levels of knowledge can be particularly important in avoiding the development trap, and also that the proportion of low-skilled workers should be reduced steadily and strongly. Hungary does not score very well in terms of the share of tertiary education in the two age groups surveyed. The share of 25–34-year olds with tertiary education is low, while the improvement trend is also below that of the other V4 countries.

Table 4
Change from 2011 to 2020 in the share of tertiary graduates aged 25–34 and 25–74 year (%)

Country	Age group 25–34 year			Age group 25–74 year		
	2011	2020	Change (percentage points)	2011	2020	Change (percentage points)
Hungary	28.2	30.7	+2.5	20.0	26.0	+6.0
Czechia	25.1	33.0	+7.9	17.3	22.7	+5.4
Poland	39.0	42.4	+3.4	22.0	29.7	+7.7
Slovakia	25.5	39.0	+13.5	17.7	24.9	+7.2
Austria	20.9	41.4	+20.5	18.3	32.1	+13.8
EU average	33.0	40.5	+7.5	23.7	30.6	+6.9

Source: Eurostat (2021)

On the other hand, despite the positive Hungarian trends, the proportion of low-qualified people (at most 8 years of primary schooling) in both age groups is still too high compared to the other V4 countries, while regional differences are also large (Table 5).

Table 5
Share of low-qualified people in the 25–34 and 25–74 year age groups (%)

Country	Age group 25–34 year			Age group 25–74 year		
	2011	2020	Change (percentage points)	2011	2020	Change (percentage points)
Hungary	12.9	12.4	-0.5	23.6	15.9	-7.7
Czechia	5.7	7.6	+1.9	9.4	7.3	-2.1
Poland	6.0	6.2	+0.2	14.6	9.0	-5.6
Slovakia	6.0	7.3	+1.3	11.3	8.6	-2.7
Austria	12.0	10.9	-1.1	20.3	16.1	-4.2
EU average	19.1	14.7	-4.4	30.7	24.0	-6.7

Source: Eurostat

The data presented confirm that Hungary needs to make significant progress in areas that are particularly important for competitiveness, sustainable growth and avoiding the development trap, i.e. it would be reasonable to set targets for these indicators.

It is worth looking at Hungary's digital performance in a bit more detail because digital maturity is one of the most important indicators of development for adapting to the rapid changes underway and improving productivity. The current times are

characterised by rapid technological change. Among them, digitalisation is of paramount importance. But it is not enough to invest in digital infrastructure and networks. Without investment in knowledge, advanced technologies cannot operate effectively. The speed at which countries develop will therefore be influenced by the speed at which exponential technological changes are followed by the diffusion of their use at individual, societal, firm and public-governmental levels. The EU measures digital development with the DESI⁸ index, which measures technological advances, knowledge levels and the propagation of use. According to the 2021 DESI study (*DESI 2021*), the V4 and Austria were ranked according to the four examined dimensions as shown in *Table 6*.

Country	General ranking	Digital infrastructure	Digital skills of human capital	Adoption of digital technologies	Level of digitalisation of public services
Hungary	23	12	22	26	25
Czechia	18	22	15	15	20
Poland	24	21	24	24	22
Slovakia	22	19	19	21	23
Austria	10	11	9	11	9

Source: DESI (2021)

In the area of human capital, it is striking that the share of firms offering ICT training to their employees is only 16 per cent of all firms, putting Hungary in 21st place. This is in line with the IMD's Digital Competitiveness Report (*IMD 2021*), which shows that the future orientation and adaptability of enterprises, one indicator of which is whether they prepare their employees for future challenges through training, is weak. In the IMD Digital Competitiveness Ranking, Hungary is ranked 62nd out of the 64 countries surveyed in terms of the future orientation and agility of enterprises (this may be linked to the low level of innovation shown in *Table 3*), with Austria ranked 18th, Czechia 32nd, Poland 44th and Slovakia 60th. This indicates a serious development problem. It should be noted that Hungary is in a better position for digital public services to businesses than for digital services to the public. For the former, Hungary is ranked 22nd, the second best ranking in the V4 behind the 20th ranked Slovaks, while for the latter Hungary is 25th, which is the worst ranking within the V4.

⁸ Digital Economy and Society Index

Hungary's poor position in terms of services provided to the population may also be linked to user skills, national level knowledge and personal interest. But it can also be influenced by how user-friendly the systems are. It should be noted that the DESI rankings for 2021 cannot be compared to those of previous years due to methodological changes.

In addition to the knowledge indicators, one could cite weaknesses in the structure of the economy, the high share of low value-added enterprises, cost-based competition rather than knowledge and innovation competition in the export markets, and the high share of imports in exports. These also point to development problems.

Obviously, as a consequence of all these factors together, Hungary's economic convergence is not fast enough. From 2009 to 2020, the GDP per capita at purchasing power parity in Hungary improved from 65 to 74, taking the EU average as 100. At the same time, the Czech score went from 87 to 94 (an improvement of 7 points), the Polish score from 60 to 78 (an improvement of 18 points) and the Slovak score from 72 to 71 (a decrease of one point). Despite the 9-point improvement in the Hungarian score, the pace of convergence in Poland is remarkable, as is the 7-point improvement in Czechia, as it is clear that it is harder to advance from an already high level. Overall, the Czechs are the closest to the EU average, with the Poles outpacing Hungary with faster growth. The Slovak backlog obviously requires further analysis, as Slovakia steadily improved from 72 in 2009 to 78 in 2013, before stagnating and remaining stable until 2015. In 2016, however, it started on a downward trend, falling to 70 in 2019. From there it improved to 71 in 2020. In the case of Slovakia, this may raise the possibility of a trap situation.

In Hungary's case, faster convergence could be supported by improving the value of development indicators. Finally, let us summarise Hungary's performance in some macro indicators and development indicators.

Table 7					
Economic and development data: positions within the EU					
Goals	Hungary	Czechia	Poland	Slovakia	Austria
GDP/capita growth	7	12	4	13	22
Investment/GDP	2	3	23	14	5
Employment (20–64 years)	13	4	16	19	12
Health status	23	20	22	19	11
Avoidable mortality	25	18	19	22	13
Early school leavers	22	10	5	11	14
Neither in employment, nor in education (15–29 years)	20	11	15	21	7
Share of people with tertiary education	25	24	16	20	18
Adult education	20	19	23	25	8
Basic digital skills	21	8	23	16	6

Source: EU (2021)

Table 7 confirms that, despite Hungary's excellent position in terms of economic indicators, the country is still lagging behind in some cases even within the V4, but behind Austria significantly in terms of development indicators. In the case of Austria, however, the rankings for economic and development indicators are more balanced, which is likely to be reflected also in Austria's better ranking in competitiveness. Of course, this does not mean yet that Hungary finds itself in a development trap. It does, however, highlight the need for further analysis and a change of approach that puts more emphasis on development indicators.

7. Summary

The aim of the essay was to draw attention to the fact that in today's rapidly changing circumstances, characterised by technological revolution, it is no longer sufficient to examine the development path and growth model of a country on the basis of economic indicators alone, mainly if it is GDP, whose shortcomings can even disorient decision-making. Progress in development, catching up with more developed countries and thus avoiding the development trap, should be measured by development indicators, and the aim should be to improve the value of these indicators, stressing that growth, which is a quantitative element, does not necessarily mean development, but that improving the level of development is a qualitative element that can have a positive impact on growth, i.e. on the quantitative element.

There are already references to this in the domestic literature, where the internal reasons and ways to avoid the growth trap are sought behind growth outcomes. Development can be measured, for example, by the level of knowledge and health, the capacity of the economic structure to create and use knowledge, and the level of productivity and efficiency. Raising the overall level of knowledge and skills is a prerequisite for increasing knowledge and innovation-based added value, which also strengthens the economy's and society's resilience and adaptability to crisis and, through them, its competitiveness. Together, these are the conditions for sustainable growth and avoiding the middle-income trap. It is therefore useful to change also the paradigm of measurement, because as Albert Einstein (1879–1955) famously said, “*we can't solve problems by using the same kind of thinking we used when we created them.*” A paradigm shift would also mean looking at qualitative factors not only as conditions for growth, but for their own importance, in the context of a stand-alone model. The essay also draws attention to the importance of a systemic approach: to the fact that the economy is part of a larger system, where if one subsystem overstretches the framework of the whole system, it will cause imbalances. In addition to the economy, the whole system also includes society and, in particular, human wealth, the state and development of which also have an impact on economic opportunities. This is why the essay proposes that, after a proper professional debate, a model should be developed to analyse the level of development of countries on the basis of the values of the most important development indicators and to set targets to be achieved. This would ensure a socio-economic and human state dynamically creating the harmony of the whole system and its continuous improvement. A future research task is to define more precisely the development status and process, to further investigate indicators to measure the avoidability of the development trap and to build a model that summarises them.

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