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## Economic Growth and Convergence in the Baltic States: Caught in a Middle-Income Trap?

The Baltic states experienced strong economic growth and a rapid closing of the income gap with developed economies until the onset of the global financial crisis. Since then they have seen a marked slowdown of economic growth. This raises the issue of whether the Baltic states might become caught in a middle-income trap with modest growth and slow convergence. Such a trap may stem from a lack of coordination among different actors in the economy, holding back the growth of productive capacity. Based on the results of empirical studies, it is argued that a middle-income trap cannot be ruled out for the Baltic states given their deep crises, weaknesses in education, simple production and export contents, institutional constraints, and rapidly ageing populations. Policymakers may seek to facilitate faster and more stable growth by taking measures that address a number of structural coordination problems in the Baltic states.

The Baltic states – Estonia, Latvia and Lithuania – have achieved substantial economic success since they regained independence in 1991. Market economies were established, living standards have increased and a high degree of macroeconomic stability has been attained. These achievements were crowned by the admittance of the countries into the European Union in 2004 and to the euro area starting in 2011.

In spite of these achievements, the Baltic states have income levels substantially below those in developed or high-income economies. In 2014 per capita GDP at purchasing power standards (PPS), i.e. adjusted for different price levels in the countries, was 43-50 per cent of the level in the USA, 51-59 per cent of the level in neighbouring Sweden and 60-69 per cent of the average in the EU15. The Baltic economies grew rapidly before the global financial crisis and in particular during the years 2001-2007. Economic growth slowed, however, in the aftermath of the global financial crisis, and the speed of income convergence has consequently been modest.

Many emerging economies have experienced spurts of rapid economic growth that have narrowed the gap with high-income economies, only to see this growth taper off and the process of convergence slow down. Many of

these economies have had per capita incomes rise to and then stabilise at around half of the US level, and only a dozen emerging economies have succeeded in actually narrowing the income gap to attain essentially the living standards of developed economies.<sup>1</sup> Such a scenario with low trend growth and slow or non-existent convergence has been labelled the *middle-income trap*.

This paper discusses whether the Baltic states might become caught in a middle-income trap. Such an outcome may be self-reinforcing, as unfavourable prospects may reduce investment in physical capital, human capital and organisational advancement. The paper focuses on the Baltic states, but much of the discussion may also be applicable to other EU countries from Central and Eastern Europe (CEE), and to some Southern European countries severely affected by the global financial crisis.

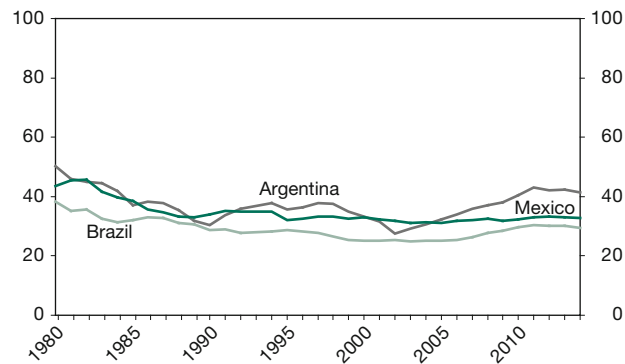
\* This paper draws on a study prepared for and under the copyright of the European Commission for the seminar “Joining the euro and then? How to ensure economic success after entering the common currency” held in Vilnius on 16 June 2015. The author would like to thank, without implicating, the discussants Märten Ross, Ingrida Šimonytė and Andris Strazds for valuable feedback at the seminar, and staff of the European Commission for feedback during the preparation of the paper. The views expressed are those of the author and not necessarily those of the European Commission or Eesti Pank.

1 The countries that have successfully made the transition from emerging economies include several “Asian tigers” such as Singapore, Hong Kong and South Korea, as well as some European countries. The countries that may be caught in a middle-income trap include several Latin American countries and countries in Asia such as Malaysia and the Philippines. See discussion in P.-R. Agénor, O. Canuto: Middle-income growth traps, World Bank Policy Research Working Paper, No. 6210, 2012.

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**Figure 1**  
**GDP per capita (PPS), Latin American countries,**  
**1980-2014**

Index: USA = 100



Source: WEO database.

### The middle-income trap

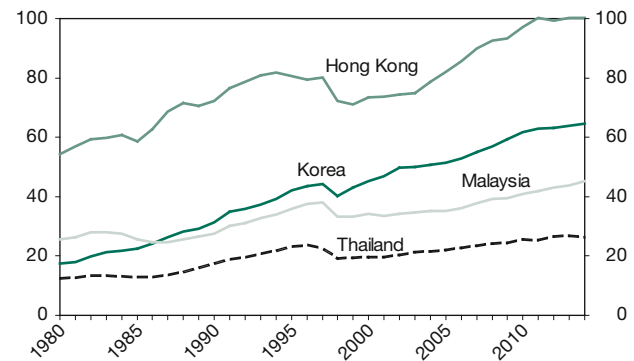
It is beyond the scope of this paper to thoroughly discuss the complexities of economic development, but some background may prove useful. Economic theory predicts that countries with low income levels will see fast economic growth and that consequently income levels will gradually converge with the income levels of the developed high-income countries. Such a convergence process can be driven by several factors. Since a low-income country typically will have a small stock of physical capital, the returns to capital will be high, which will stimulate capital accumulation. Low-income countries may also benefit from the import of capital, technology and know-how from developed countries. The result would be a process of convergence or catching-up, with higher rates of economic growth in low-income countries than in high-income ones.

Economic growth is in practice a result of many overlapping processes.<sup>2</sup> Resources must be reallocated from production activities with low productivity to those with high productivity. More input in the form of physical capital and skills can lead to increased production per worker. Finally, existing inputs may be utilised more effectively, leading to growth in total factor productivity (TFP). Economic growth will typically involve greater complexity in society and the increased use and development of technology. Economic development is thus dependent on the ability of societies to facilitate and manage increasing complexity and to ensure the continuous improvement of education, training, research and innovation.

<sup>2</sup> E.W. Nafziger: *Economic Development*, Cambridge University Press, 4th ed., 2006.

**Figure 2**  
**GDP per capita (PPS), Southeast Asian countries,**  
**1980-2014**

Index: USA = 100



Source: WEO database.

The narrowing or closing of the income gap envisaged by theory does not always bear out in practice. This is most clearly illustrated by the growth problems experienced in many countries in Africa and South Asia where incomes levels have remained very low over decades. Slow or non-existing convergence, however, has also been observed for middle-income countries with per capita GDP adjusted for different price levels at, say, 20-50 per cent of the US level.<sup>3</sup> This has been acknowledged for many Latin American countries for a while. Figure 1 shows the GDP per capita (PPS) for a number of Latin American countries for 1980-2014. Income levels in Argentina, Brazil and Mexico have remained at 30-40 per cent of the level in the USA, and there is little to no evidence of convergence over more than three decades.

The countries in Southeast Asia have typically performed better. Figure 2 shows GDP per capita (PPS) for Hong Kong, Korea, Malaysia and Thailand. The countries have all seen their income gaps with the USA narrow since 1980, and for Hong Kong the gap was all but eliminated by 2010. A closer inspection reveals, however, a more complex picture. Economic growth was generally fast in the period until 1997, but all four countries experienced deep output declines in 1998 after the outbreak of the Asian crisis. Economic growth resumed at a rapid pace in Hong Kong and Korea (as well as in Singapore, which is not included in the figure). However, this has not been the case in Malaysia and Thailand, where the convergence processes have generally been quite slow since 1998. In 2014 GDP per capita in Malaysia and Thailand relative

<sup>3</sup> The typical reference country for convergence analyses is the USA, as this is the major economy with the highest income per capita and with technological leadership in many areas.

to the USA was at essentially the same level as it was in 1997.

The issue of some hitherto fast-growing countries suddenly experiencing lower rates of growth and consequently slow or non-existing convergence was first labelled the “middle-income trap” in a study published by the World Bank.<sup>4</sup> The study considered the experiences of many Asian countries and found that while some had succeeded in making the transition from middle income to high income country, others had not. The issue gained renewed impetus after the global financial crisis as growth prospects deteriorated in many emerging economies. The possibility of a middle-income trap has since been discussed in a large number of studies.<sup>5</sup>

A drop in GDP growth is typically associated with a corresponding slowdown in TFP growth.<sup>6</sup> The slowdown is likely to appear in a situation where “easy” productivity gains from sectoral reallocation, imports of foreign technology and surging domestic demand are exhausted.

Some analysts posit that the risk of a middle-income trap should not be overstated.<sup>7</sup> As the gap between an emerging economy and the high income economies narrows, the “advantage of backwardness” is reduced and economic growth will slow down. Moreover, growth rates are bound to vary over time, and periods of lower growth may be succeeded by periods with higher rates of growth. The upshot is that a wide range of outcomes are possible for the convergence process of a middle-income country, though this, of course, includes the possibility of an extended slowdown in growth.

The term “trap” suggests that the middle income outcome may be the result of self-fulfilling or self-reinforcing mechanisms. Agénor and Canuto develop a model with two rational expectations equilibria – one that results in middle income and the other in high income.<sup>8</sup> The mecha-

nism works as follows: a middle-income economy is engaged in relatively simple production activities and mainly employs workers with relatively basic education levels, while a high-income economy is engaged in design, innovation and advanced production activities and to that end employs many highly skilled workers. Individuals in the middle-income economy have little incentive to invest in education, because only few highly educated workers are suitably employed in this economy. Concurrently, the firms operating in the middle-income economy cannot move into highly productive innovation and design activities, because there are so few highly educated workers available. The outcome is a country trapped as a middle-income economy. In the high-income economy, on the other hand, individuals have an incentive to invest in education and the firms can engage in highly productive activities, as they have ample access to highly educated workers. According to this line of reasoning, the middle-income trap is essentially the result of a coordination problem.

There are likely to be many mechanisms through which a middle-income trap can emerge.<sup>9</sup> Advanced infrastructure such as communication and transportation networks may not benefit a middle-income economy very much, and there is therefore little incentive to invest in improving the infrastructure. However, this may make it more difficult for the economy to become a high-income economy. The same line of reasoning may apply for measures to improve enforcement of intellectual property rights, reduce corruption, improve business practices or ensure the flexible labour markets required in a knowledge-based economy.

There is empirical evidence suggesting that these coordination problems may indeed have been important factors behind growth slowdowns observed across the world. A 2013 paper by Eichengreen et al. uses data for the period 1957-2010 and identifies a substantial number of growth slowdowns.<sup>10</sup> The authors estimate probit models to ascertain which factors explain growth slowdowns. For example, a financial crisis appears to increase the probability of a slowdown. A high share of the population having completed tertiary education lowers the probability of the country experiencing a growth slowdown, whereas the share of the population with secondary education is unimportant. A large share of high technology in exports appears to reduce the risk of the middle-income trap. A large old-age dependency burden increases the probability of a slowdown. It may be envisaged that many of these

4 I.S. Gill, H.J. Kharas, D. Bhattachali: *An East Asian Renaissance: Ideas for Economic Growth*, The World Bank, 2007.

5 Important studies include B. Eichengreen, D. Park, K. Shin: *When fast growing economies slow down: international evidence and implications for China*, in: *Asian Economic Papers*, Vol. 11, No. 1, 2012, pp. 42-87; B. Eichengreen, D. Park, K. Shin: *Growth slowdowns redux: new evidence on the middle-income trap*, NBER Working Paper, No. 18673, 2013; F. Cai: *Is there a “middle-income trap”? Theories, experiences and relevance to China*, in: *China & World Economy*, Vol. 20, No. 1, 2012, pp. 49-61; S. Aiyar, R. Duval, D. Puy, Y. Wu, L. Zhang: *Growth slowdowns and the middle-income trap*, IMF Working Paper, No. WP/13/71, 2013.

6 B. Jones, B. Olken: *The anatomy of start-stop growth*, in: *Review of Economics and Statistics*, Vol. 90, No. 3, 2008, pp. 582-587. See also B. Eichengreen, D. Park, K. Shin: *Growth slowdowns...*, op. cit.

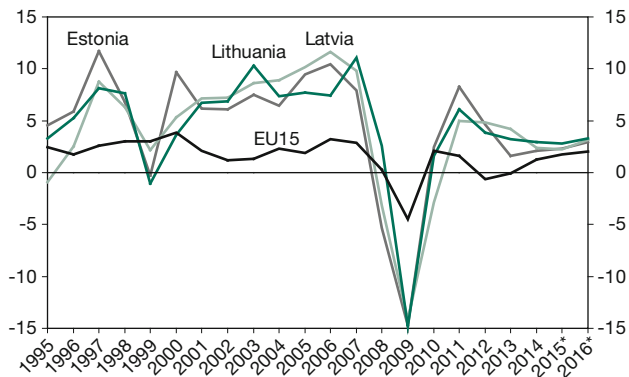
7 See for instance L. Pritchett, L.H. Summers: *Asiaphoria meets regression to the mean*, NBER Working Paper, No. W20573, 2014.

8 P.-R. Agénor, O. Canuto, op. cit.

9 F. Cai, op. cit.; P.-R. Agénor, O. Canuto, M. Jelenic: *Avoiding middle-income growth traps*, VoxEU, 2012.

10 B. Eichengreen, D. Park, K. Shin: *Growth slowdowns...*, op. cit.

**Figure 3**  
**GDP growth, Baltic states and the EU15, 1995-2016**  
 in % per year



Note: \* indicates projections from the 2015 Spring Forecast of the European Commission.

Source: Ameco database.

factors affect medium-term growth due to their effects on investment and TFP growth.

A 2013 paper by a number of IMF economists uses a large sample of 138 countries from 1955-2009 and identifies episodes of growth slowdowns and then the determinants of those slowdowns.<sup>11</sup> Using the full sample, it is found that the probability of a growth slowdown decreases if institutions are strong, if the old-age dependency ratio is low, if the macroeconomic environment is strong, if the investment share is high, and if production and trade are diversified. Moreover, using a *subsample of only middle-income countries*, it emerges that a small government sector and highly developed infrastructure may also reduce the probability of a growth slowdown. The robustness of the results is corroborated using Bayesian model averaging, but the estimations are in any case subject to substantial data and methodology problems.

### Economic growth and convergence in the Baltic states

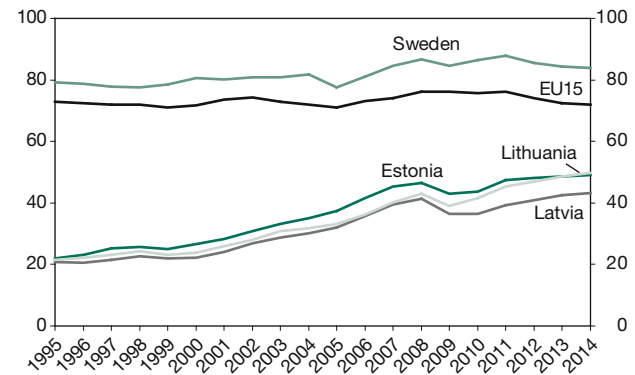
Figure 3 shows annual GDP growth in the Baltic states from 1995 to 2014 and projections for 2015-2016 sourced from the European Commission Spring Forecast 2015. The second half of the 1990s saw rapid economic growth, only interrupted by the fallout from the Russian crisis in 1999. The period from 2000 to 2007 was characterised by high and arguably increasing rates of economic growth.

This growth spurt came to an abrupt end after the outbreak of the global financial crisis, although growth had

<sup>11</sup> S. Aiyar et al., op. cit.

**Figure 4**  
**GDP per capita (PPS), Baltic states, EU15 and Sweden, 1995-2014**

Index: USA = 100



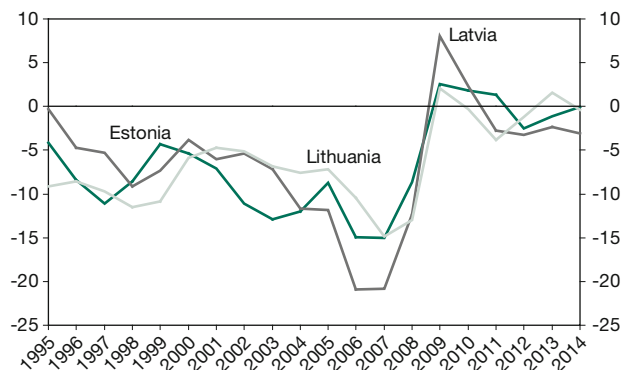
Source: Ameco database.

already turned negative in Estonia in the second half of 2007. In all three countries, GDP declined by approximately 14 per cent in 2009, a deeper decline than in other EU countries. GDP growth bounced back in 2010 and 2011, but these relatively high growth rates were short-lived and GDP growth since then has been at subdued levels. The 2015 spring forecast by the European Commission projects annual growth rates of two to three per cent in 2015 and 2016, only marginally above the projected growth rates of the EU15. The upshot is that the Baltic states have seen a marked decline in their economic growth rates since the onset of global financial crisis.

The dynamics of economic growth are mirrored in the countries' income levels, as illustrated by the series of GDP per capita (PPS) in Figure 4. In 1995 the income levels in the Baltic states were just over 20 per cent of the US level, with Latvia having the lowest income of the three. In 2014 the income levels were around 40-50 per cent of the US level, with Latvia still worst off in relative terms.

Three important observations can be made from Figure 4. First, the large GDP declines in 2009 (and in 2008 as well for Estonia) are clearly visible. The global financial crisis led to an immediate reversal of the convergence process, and trend output has not yet returned to its pre-crisis trajectory. Second, cultural and communication links mean that the Baltic states often compare themselves with the neighbouring Nordic countries. There seems to have been only very modest convergence to the income level of Sweden since the outbreak of the global financial crisis. Finally, there has been some convergence to the EU15 income level since the crisis, but this is mainly due to the weak economic performance of the EU15 countries.

Figure 5  
Current account balance, Baltic states, 1995-2014  
% of GDP



Source: WEO database.

The conclusion is that the Baltic states have performed well overall since regaining independence and introducing market economies. Economic growth has been high on average, though also very volatile. The period 2011-2014 following the global financial crisis was marked by modest growth and slow convergence, and this trend is forecast to continue beyond 2015. These observations raise the question of whether the Baltic states will return to the rapid economic growth of the pre-crisis period or whether the countries are at risk of becoming caught in a middle-income trap.

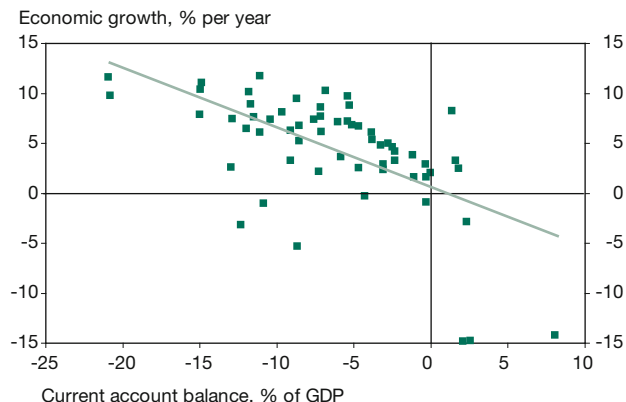
### Assessing the risks

The theoretical and empirical literature discussed above provides largely overlapping lists of factors that may increase the likelihood of a country becoming caught in a middle-income trap. This section discusses the extent to which these factors may be relevant for the Baltic states.

An important finding in the literature is that long-lasting growth slowdowns have often occurred after financial crises. The Baltic states were strongly affected by the global financial crisis. Figure 5 shows the current account balances of the three countries. The current account deficits were very large until 2008 and particularly so during the pre-crisis boom. The global financial crisis led to reversals, and all three countries had current account surpluses in 2009, an extreme example of a *sudden stop*.<sup>12</sup> Since 2010 the current accounts have been close to balanced each year.

12 G. Calvo: Capital flows and capital-market crises: the simple economics of sudden stops, in: *Journal of Applied Economics*, Vol. 1, No. 1, 1998, pp. 35-54.

Figure 6  
Current account balance and economic growth,  
Baltic states, 1995-2014



Source: WEO and Ameco databases.

The dynamics of GDP growth were inversely related to the developments of the current account balances during the period 1995-2014. Figure 6 shows a cross plot of the current account balance and rate of economic growth for the Baltic states. The pre-crisis boom was in large part facilitated by very large capital inflows stimulating domestic consumption and investment demand.<sup>13</sup> The sudden stop was a key factor in the immediate and dramatic GDP decline.<sup>14</sup> Economic growth in the countries appears highly dependent on the availability of foreign capital and is thus vulnerable to financial crises that affect capital inflows. The high growth rates before the crisis did not reflect longer-term growth potential, as they were partly driven by demand impulses from large capital inflows.

Returning to the list of factors that may increase the likelihood of a country being caught in a middle-income trap, several others may be of importance for the Baltic states. Education, and in particular tertiary education, is likely to be an important factor. According to Eurostat, spending on education in the Baltic states is generally somewhat below the spending in the EU15, particularly in the neighbouring Nordic countries.<sup>15</sup> In 2014 the share of the population aged 25-64 with a tertiary degree was 38.8 per cent in Estonia, 30.2 per cent in Latvia and 36.7 in Lithu-

13 Z. Brixiova, L. Vartia, A. Worgotter: Capital flows and the boom-bust cycle: the case of Estonia, in: *Economic Systems*, Vol. 34, No. 1, 2010, pp. 55-72.

14 K. Staehr: External capital flows, international price competitiveness and short-term economic growth in Latvia, *European Economy – Occasional Papers*, No. 120, 2012, pp. 19-39.

15 In 2011 total public and private spending on education was 5.5 per cent of GDP in Estonia, 5.6 per cent in Latvia and 5.8 per cent in Lithuania, while the total spending on education was 7.0 per cent of GDP in Sweden.



ania, while the average for the EU15 countries was 30.8 per cent.

Although the statistics indicate that the countries have well-educated populations, it must be noted that the tertiary education systems in the Baltic states (and other CEE countries) are very heterogeneous, and this may affect the scope and the quality of the education provided.<sup>16</sup> A large part of the population was trained in Soviet times, and the skills acquired at that time may not fully correspond to those required in a rapidly changing society. The *Eurostudent IV* survey reveals that tertiary students in Estonia and Latvia generally spend little time on attending classes and studying, but they spend a lot of time working (for pay).<sup>17</sup> This pattern is particularly pronounced for postgraduate students. Estonia and Latvia are the two countries in the survey where master's students spend the most time at paid work – 27 hours per week on average.

In the 1990s, the exports of the Baltic states gradually evolved from products produced in low-skilled sectors to products produced in medium-skilled sectors.<sup>18</sup> Even so, high-tech products comprise a relatively small share of total exports compared to the shares in other CEE countries like the Czech Republic and Hungary. It is also notable that much of the high-tech exports are only assembled in the Baltic states and often contain little domestic value added. The relatively unsophisticated export structure of the Baltic states has changed little since the global financial crisis.<sup>19</sup>

Measures of institutional quality in the Baltic states have seen improvement over time and in 2013 were on par with those for Southern European countries, but they are still below those of the best performing countries in Northern Europe. This applies to measures such as government effectiveness, regulatory quality, rule of law and control of corruption.<sup>20</sup>

16 I. Kogan: Education systems of Central and Eastern European countries, in: I. Kogan, M. Geibel, C. Noeike (eds.): *Europe Enlarged: A Handbook of Education, Labour and Welfare Regimes in Central and Eastern Europe*, The Policy Press, 2008.

17 D. Orr, C. Gwosc, N. Netz: *Social and Economic Conditions of Student Life in Europe (Eurostudent IV 2008-2011)*, 2011, W. Bertelsmann Verlag.

18 A. Zaghini: Evolution of trade patterns in the new EU member states, in: *Economics of Transition*, Vol. 13, No. 4, 2005, pp. 629-658.

19 R. Remeikiene, G. Startiene, D. Dumciuviene: Assessment of the industry competitiveness of the Baltic states in the EU during the period of economic recession, in: *Technological and Economic Development of Economy*, Vol. 21, No. 1, 2015, pp. 79-95.

20 See comparative Worldwide Governance Indicators from the World Bank.

Finally, the Baltic states have seen a rapid increase in the old-age dependency rate, which may curtail dynamism and increase the likelihood of a middle-income trap arising. According to Eurostat, the old-age dependency ratio is slightly below the EU average, but it is set to increase rapidly in the coming decades, and this trend may be aggravated if emigration continues to reduce the size of the working-age population.

The conclusion is that the Baltic states display a number of features that may make them vulnerable to the middle-income trap. The countries have gone through an exceptionally severe economic and financial crisis, the education sector exhibits weaknesses, production and export are tilted towards low-tech goods, the institutional quality is lacking, and the populations are ageing. None of these factors will necessarily prevent a return to fast economic growth and rapid convergence, but they do point to some challenges faced by policymakers in the Baltic states.

### Policy challenges

The theory and the empirical studies discussing the middle-income trap are useful starting points for the discussion of policies that could increase the potential growth of the Baltic states. The premise is that to raise growth, the production processes in the Baltic states must move up the value chains. This requires a change from simple manufacturing and services sold in competition with producers from low-cost countries to production with substantial levels of research and development, innovation and design content. Such a move would bring knowledge, agglomeration and specialisation rents, enabling the provision of high compensation to the production factors employed.<sup>21</sup> This transformation, moving up the value chain, may be facilitated by investments in capital equipment, human capital and innovation, and by ensuring a conducive and stable economic environment.<sup>22</sup>

Knowledge-based production requires investment in people and human capital. This calls for reforms strengthening education and skill accumulation at all levels, especially the tertiary level. Universities and tertiary schools should be international leaders and benchmark their performance against top Western institutions, and students

21 R. Baldwin, S.J. Evenett: Value creation and trade in 21st century manufacturing, in: *Journal of Regional Science*, Vol. 55, No. 1, 2015, pp. 31-50.

22 See for instance P.-R. Agénor, O. Canuto, M. Jelenic, op. cit.; A. Foxley, F. Sossdorf: Making the transition from middle-income to advanced economies, *Carnegie Endowment for International Peace*, 2011; H. Kharas, H. Kohli: What is the middle income trap, why do countries fall into it, and how can it be avoided?, in: *Global Journal of Emerging Market Economies*, Vol. 3, No. 3, 2011, pp. 281-289.

must commit their full time to studies and academic advancement.

Investment in capital equipment and intellectual capital will typically be borne by privately owned firms, and it is therefore important that financing be available. Studies suggest that investment in research and development and other forms of knowledge accumulation is particularly difficult to finance for firms in Central and Eastern Europe.<sup>23</sup> Other policies may also help strengthen investment in physical capital and know-how. Studies find that infrastructure and communication investments often have substantial returns and may help raise total factor productivity in the economy.<sup>24</sup> Measures to improve governance and strengthen institutions may include better protection of intellectual property rights, more efficient bureaucracy and a clamp down on corruption, influence peddling and tax evasion. Studies suggest that such policies could be conducive to economic growth.<sup>25</sup>

Countries risk being caught in a middle-income trap after a financial crisis affects investment and the outlook for companies and individuals, and the experience in the Baltic states since the global financial crisis does indeed point in this direction. This underscores the need for measures to reduce the likelihood of future crises, for instance through the use of macroprudential regulation and countercyclical fiscal policies.

The Baltic states have been through a challenging but overall successful economic transformation since they regained independence in 1991. The countries have seen rapid economic growth and increasing living standards, but the convergence process slowed down after the global financial crisis, and the possibility of a middle-income trap cannot be ruled out. Policymakers in Estonia, Latvia and Lithuania hence face the challenge of implementing deep structural and institutional reforms that address coordination problems in the economies and that will invigorate economic growth.

23 J. Meriküll, K. Männisoo: The impact of firm financing constraints on R&D over the business cycle, Working Papers of Eesti Pank, No. 3/2015.

24 E. La Ferrara, M. Marcellino: TFP, costs and public infrastructure: an equivocal relationship, in: M. Artis, A. Banerjee (eds.): The Central and Eastern European Countries and the European Union, Cambridge University Press, 2006.

25 R. Bouis, R. Duval, F. Murtin: The policy and institutional drivers of economic growth across OECD and non-OECD economies: new evidence from growth regressions, OECD Economics Department Working Papers, No. 843, 2011.