



Future Scenarios for Productivity Growth

Research Summary



Summary

The decreasing growth rate of productivity has been noticed in the USA and several Western European countries ever since the 1960's, **but after the last global recess the growth of productivity in global economy has been very modest as a whole.** Estonian economy and that of other Central and Eastern European countries has not escaped that. Reasons are usually the languishing investments post crisis, low demand in world economy, and general instability dominant in the economic environment.

Continuously greater offering of technology-based services and growing digitalisation of production is likely one of the important processes altering the game rules that dominates the economic models and global value chains. However, it has been found **that one reason for the slowing pace of productivity growth is related to technology and digitalisation** – although it brings forth considerable gain in terms of efficiency and changes business processes and models, different barriers accompany it, which is why the effect of digitalisation may turn negative in a short-term perspective.

The level of integration in world economy has grown significantly over the last couple of decades and **more and more economic activity is carried out in global value chains.** In 2013, nearly 80% and in 2016 already 85% of the total international trade was done

via global value chains. The prerequisites of the fast developments of global networks have been the development of telecommunication and transport infrastructure, as well as demand for more quality input at every stage of the value chain. Although globalisation has emphasised Asia's role in international trade, it has been found that with the implementation of new technologies in production and supply chains, global production and trade can be directed back to the OECD countries.

The effect of the global value chains to the productivity of a country's economy is not limited to more demanding product quality or labour force with higher level skills through the companies directly involved in the value chain, but, rather, a great number of companies are connected to the global chains indirectly, **via local cooperation relations, offering production input to other internal companies participating in the global chains.** Due to such secondary effects, the role of global value chains is much greater in countries' economies than trade data would lead us to expect.

Further progress of Estonia's export-focussed economy is not solely affected by the described trends related to economic environment and technology, but also to wider, **so-called geo-economics flows that rule the global economy** and primarily influence the functioning of global value chains.

The so-called **new mercantilist economic policy, resurgence of protectionist tendencies** instead of developing a common and as open as possible global economic environment, and possibilities of trade wars between countries are more and more topical. Another development course has to do with shifts in the division of world economic power – China has become the world’s largest exporter and in terms of adjusted GDP they have passed the USA. Further growth of Chinese economy, its economic expansion to regions near and further, and the future of the economic relationship between China and the USA are the key questions relevant to further development of world economy and international trade.

Over the last decade, the global value chain structure has seen significant changes: the chains are less integrated, there is noticeable regional clustering and formation of regional centres and there has also been concentration within the countries. As a result of this development, the leading companies of the value chains have started to renew their supply chains and make them more flexible, focussing mainly on the greater and more capable suppliers in significant areas (China, India, Brazil, South-Africa). Regional value chains have developed, three interconnected trading nodes via which the production input moves are more clearly concentrated and distinguishable: USA, Asia (China, Japan, South Korea) and Europe (primarily Germany).

Changes in the value chain

come from different push factors. One of the most significant changes has been the growing of protectionism after the global recession. Although the total number of bilateral and regional trade agreements has continuously grown, outside of these agreements the countries have set different limits. Therefore, international trade has become more expensive. Secondly, in emerging markets the capability to prepare different production input necessary for production process can be produced on site. Technology brings about changes in production models – decrease of added value created in the production stage and increase in relative importance of the stages preceding and following production – that is, continuously greater part of the industry value comes from the services related with it. One of the most important influencing factors is that labour costs in emerging markets have increased quite quickly and their cost advantage has therefore decreased. Fast salary increase has made the leading companies of the value chain look for ways to bring jobs back (reshoring).

The essence and extent of a company’s operations and investment needs depend on the company’s role in the value chain. The further the company reaches in the value chain, the more difficult it is to increase the productivity and the more important international grasp and networks become. The added value of the operations on the higher level of the development model of a value chain-based company is higher, but this means larger and

long-term investments and more creative and demanding development strategies.

In terms of added value creation, **subcontractors** are on the lowest development model step, which indicates production activities with local nature and which is connected to the end consumers through long supply chains. For the subcontractor to become a **“recognised supplier”**, it is necessary to invest into the quality of a product or a service, earn trust and recognition from partners, develop specific skills and knowledge, and develop one’s own niche to achieve a higher added value. At higher development levels – **market creator, global brand** – the company’s capability to create intellectual property, conduct research and development, launch new products and services, and prototype and patent such products and services becomes essential. Said activities require in addition to high level human capital and research capacity also legal certainty of the economic environment and protection of intellectual property.

At a higher developmental level of a company, investments into intangible assets and research and development become central.

In addition to investments, **export also enhances the productivity of the companies focussing on foreign demand**. Exporters obtain new knowledge and take new technologies and production methods over from suppliers, clients, and competitors. In Estonia, the export intensity per worker is high compared to

other Central and Eastern European countries, but it is still behind compared to the Nordic and Western European countries.

In addition to growth focus and investment patterns, a company’s business model and development stage determine also the choice of strategy on which depends the capability to earn additional value. The dominating element of the development strategy of Estonian companies is the process that connects with the company’s effort to increase the efficiency of work processes and client contentment, and less attention is paid to the development work related to architecture and employees.

Entrepreneurial activities contribute into creating the total value of economy, which is visible as the growth of employment, incomes, productivity, and wellbeing.

A company’s performance is definitely influenced by how the entrepreneurs mutually but also other participants in the entrepreneurial process (e.g. entrepreneur associations, support organisations, local authorities, universities) are connected (both through formal and informal relationships). These **entrepreneurial ecosystems or communities** with stronger cohesion and more available resources and used resources achieve a better result. In the case of such entrepreneurial communities it is more likely that the success of some will support the increase of general business activity.

The concurrence of external trends and internal economic

factors is described in four alternative scenarios. The preparation of the productivity development scenarios is based on the question of how the possible external environment developments can start influencing the positioning of Estonian companies in the international value chains in the next 10–15 years and how could the entrepreneurs adjust to the changes ahead and raise their productivity in the changing economic environment.

As an open economy, the Estonian economic sphere is sensitive to what is going on in world economy and, therefore, in the **framework of scenarios**, the possible different directional developments that can happen specifically in world economy are handled as primary: first, the opposition of possible trends affecting international trade - **liberalism and new mercantilism**; and second, competition between developments related to demand in world economy – the **so-to-say old type demand that prefers mass production versus the so-called new type demand that prefers personalised products and services**.

The new mercantilism trend is characterised by: (i) backlashes due to the negative side effects of globalisation; (ii) trade wars breaking out between large countries; (iii) the spread of protectionism in international trade and attempts to constantly change the rules of the game.

The functioning of the liberal trade regime in world economy is characterised by the following: (i) the institutional architecture

of world trade remains regardless of the unsatisfied countries constantly trying to change the rules in their own favour; (ii) threatening with trade wars does not lead to the collapse of the institutional architecture of world trade regardless of its dangerous aspects; (iii) trends accompanying globalisation continue after a period of fluttering; (iv) there might be no considerable expense in the user sphere of multilateral contracts.

Continuing of the old type demand is characterised by the following: (i) consumer habits of the growing middle class will not change and the consumer-driven world preferring mass production will continue, enhanced by the growing middle classes in Asia and Latin America; (ii) in developed countries, little variation in consumer preferences is dominant.

The emergence of new type demand is driven and characterised by the following: (i) changes in production and supply patterns resulting from the application of breaking technologies and the importance of the consumer's geographical location diminishes; (ii) hindrances for companies entering the market decrease which also changes their pricing policy; (iii) changes in the age structure and lifestyles of the consumers bring about changes in consuming preferences.

	Free trade continues in world economy and long global value chains dominate	Protectionism spreads in world economy and value chains become more regional
Demand favouring mass production is predominant	 <p>Scenario 1 The world is a global market place</p>	 <p>Scenario 3 Capsulation to/of Europe, i.e. thicker glass ceiling</p>
Demand favouring personalised products and services are predominant	 <p>Scenario 2 World of a smart consumer</p>	 <p>Scenario 4 European Wild West</p>

The development scenarios offer a wide spectrum of economic policy discussion points and this, foremost, constitutes but one out of many input in the development process of smart policy formation. Policy makers and decision makers can rely on this base when discussions are held in business, economy, and productivity growth supporting policy strategy drafting.

Scenario 1. The world is a global market place

Global free trade recovers and companies are gathered into long global supply chains, the participation condition there is cost efficiency. Asian and other developing markets enjoy a competitive advantage. The growing middle class of developing countries that prefers mass production designs the demand. Estonian companies partake in the GVC-s through Nordic companies that have developed supply chains with Asia. Since salaries are on the rise, more automation is required to achieve the cost efficiency required by GVC-s. To grow added value, industrial companies need to move to the level of recognised suppliers and product developers. Producers of end products are focussed on a sufficiently narrow market niche where the MNE-s do not operate. Demand does not support the breakthrough of innovative technology-based companies and the level of innovation remains modest in economy. In the labour market, there is the danger of being locked in old skills, there is not enough motivation to diversify one's competence. The growth of value added is rather not increasing, and convergence is moderate.

Scenario 2. World of smart consumer

Recovering free trade and diverse and changing new type demand provide a competitive advantage to countries where the economy is more technology-intensive and benefits from updated business models. Production and service provision mix, platform and sharing economy spread. Supply chains become more complex. Digital platforms where the consumer communicates directly to

the “factory” (e.g. 3D-printing cluster) take over increasing amounts of functions in the supply chain and payment and supply organisation. Production in regular factories is on the decline. New demand is mainly spreading in Europe and Nordic countries, where the consumers prefer personal, functional, and environmentally friendly products and services. This enables the technology and start-up companies to obtain increasingly more relevant positions in the economic structure and they will slowly take over the baton from traditional industries. Small producers are supported by increasing demand for products-services with “small footprint” and for sharing economy. Growth of value added and convergence may accelerate.

Scenario 3. Capsulation to/of Europe, i.e. thicker glass ceiling

Protectionism spreads in world economy and regions become blocks. Units of production company move from USA to Europe and Asia, markets are reallocated, and leading companies change their supply policies and practices. The nature of demand does not change and relies on the growing middle class of the developing countries. Demand growth is faster in Asia and if the MNE-s also move there, Europe is in danger of becoming capsulated. Estonian (and European) companies will lose their chances for business on faraway markets because the growth there will not reach us. Many Estonian companies may lose their current positions in GVC-s which served other regions. For Estonia, Europe's role as an export market grows. The cost advantage of Estonian economy will recover partially, because production in Asia becomes more

expensive, thus the subcontracting of Scandinavia and Western Europe which left here due to high labour costs, may partially return. This will postpone Estonia's investments into automation and smart production solutions. Growth of value added and convergence may halt.

Scenario 4. European Wild West

Protectionism rules in international trade, trading blocks are set up, and value chains become regional. At the same time, the development of a new type of demand is thriving, its growth is supported by new technologies, demographic changes, increase in consumer awareness, and changes in attitudes. The supply chains that fed companies this far fall apart and the formation of new ones is dictated by the changed demand environment. Industries can no longer do without implementing Smart Factories and similarly to other sectors, in production too, the digital platforms that directly connect the consumers and production options and take over functions in supply chains, are developing. Without changing one's business strategy, the risk of falling out of competition is high. A lifeline for Estonian companies is implementing diverse technology, contributing into research and development activities, innovation in product and service development, and navigating to Nordic and Western European markets where the new demand type is dominating and geographic proximity also favours moving there. Growth of value added and convergence depends on the risks (not) realising and, thus, developments may take different courses.

