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FOREWORD

The decrease in oil, gas and other mineral resources has received extensive media coverage over the recent years. Changes in oil prices affect economic development in the whole world. Oil and gas are significant also in terms of world policies.

Since the oil price keeps rising, so does the importance of oil exporting countries both as trading partners and investors.

Developments in global markets have brought about major changes also in Estonia's energy sector. Nevertheless, Estonia may be considered a country that is rather well-supplied with energy and that does not depend heavily on imported sources of energy. Our energy sector has made considerable advances in comparison to other countries. However, we should find more effective ways for the reduction of carbon dioxide emissions.

Good supplies of energy during the 1990s helped Estonians to transfer to market-based prices of energy carriers relatively painlessly. Today, this period of rapid price increases is over and the share of people's energy expenditure in the consumer basket is almost as large as in the old EU member states.

Russia's energy consumption and exports will make a significant impact on Europe over the next ten years. Russia has disclosed a number of plans aimed at increasing its export capacity, while it also has ambitions in terms of foreign policy to increase its power. If foreign trade policy outweighs economic interests, it will become extremely difficult to forecast the actual developments in the energy sector.

In addition to the energy-related topics, the current issue includes a summary of a survey of Estonians' opinions regarding the country's economy and banking, and the latest labour market review.

THE ESTONIAN ENERGY SECTOR IN COMPARISON TO OTHER COUNTRIES

Einari Kisel

The Estonian energy sector has undergone several significant changes in the past few years. The following article represents an effort to collect the most essential international reference data on the energy sector and assess Estonia's position with regard to these indicators. Moreover, we look into what each indicator actually reflects and have tried to disclose the factors affecting these indicators, and what one or another indicator shows about a country's energy sector. In addition, the trends of different indicators in Estonia have been analysed. The following text is based on the statistics compiled by the International Energy Agency and Eurostat for 2004 and 2005 and on the most recent data provided by Statistics Estonia.

CURRENT SITUATION OF ENERGY SECURITY IN EUROPE

Energy dependency is the share of imported sources of energy in a country's energy balance. Estonia is, in that respect, one of the most independent countries among the member states of the European Union, having ranked 5th with a share of 28.5% in 2004 (see Figure 1). Estonia imports natural gas and liquid fuels, and exports wood fuel and shale oil.

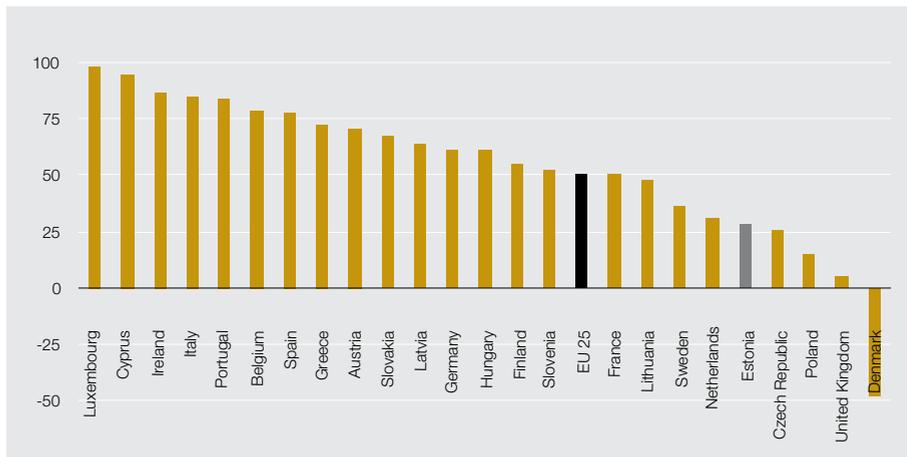


Figure 1. Energy dependency of EU member states in 2004 (%)

The European Union as a whole depends on imported sources of energy for nearly 50 per cent of its needs, and the trend is on the rise. Estonia is one of the few member states whose energy dependency has been decreasing year after year.

However, energy dependency does not reflect the balance of the member states' electricity imports and exports. In Estonia, the exports of electricity in 2005 accounted for approximately one-fifth of the electricity used, thus ranking third among the EU member states after Lithuania and

Bulgaria (see Figure 2). This fact also considerably affects other indicators discussed below as, among others, a large amount of oil shale was used to generate that electricity. This increases Estonia's need for primary energy, whereas this energy is not actually used in Estonia.

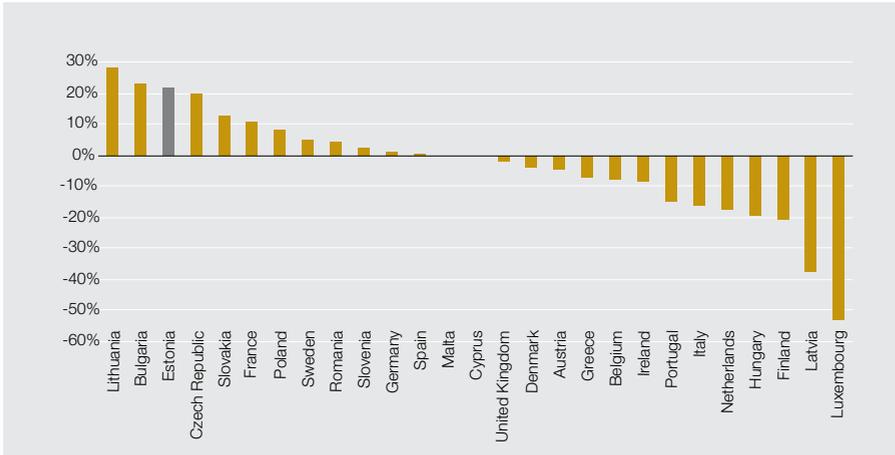


Figure 2. The share of electricity imports and exports in electricity consumption in the EU member states in 2005

Regarding **natural gas**, Estonia is one-hundred per cent dependent on imports from Russia. Meanwhile, natural gas accounts for less than fifteen per cent of Estonia's energy balance. Compared to other EU member states, this indicator is relatively low (see Figure 3). Natural gas plays an important role in Estonia's heating market with a share of more than 40%, but for the most part it is replaceable with liquid fuels: major boiler plants and power stations that use natural gas can operate on light fuel oil, shale oil or heavy fuel oil as an alternative. Pursuant to the District Heating Act, as of July 2008, all major Estonian heat producers are required to ensure the possibility of using reserve fuel to guarantee the supply of heat for three twenty-four hour periods.

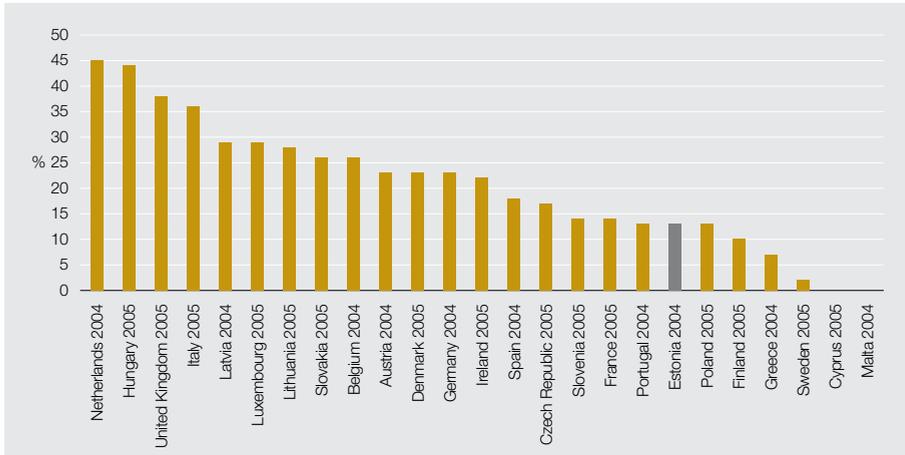


Figure 3. The share of natural gas in the energy balance of EU member states

Estonia's **technical links with its neighbouring countries** are extremely strong. Considering Estonia's electricity and gas consumption, the capacity of the links significantly exceeds maximum demand. In the case of electricity, maximum consumption stands at approximately 1,550 MW while the total capacity of the links is over 2,300 MW. As regards natural gas, maximum consumption stands at 6,700 nm³ per day while the daily capacity of the links is 15,000 nm³. Such a high level of connectivity is rare in the world; as for electricity, such a level exists only in Latvia, Lithuania and Switzerland. However, we should also mention that in the case of natural gas, the capacity of the links is technically not fully applicable due to internal network restrictions in neighbouring countries.

Estonia's transitional period for setting up **liquid fuel stocks** ends in 2010. Currently, over half of these stocks have been established. The Estonian Oil Stockpiling Agency, which was set up to establish and maintain the stocks, has guaranteed the successful implementation of the plans.

THE SITUATION OF THE ENERGY SECTOR IN ESTONIA

In comparisons of the energy sectors of different countries, the **energy intensity of the gross domestic product** (GDP) is frequently used. This indicator shows the volume of energy consumption in an economy; i.e., how much primary energy (energy contained in all utilised energy sources) is used per unit of GDP (measured in monetary terms) over the course of one year.

It is often thought that this indicator reflects the efficiency or inefficiency of the energy sector. The indicator is actually largely affected by the structure of the economy (in particular, the share of energy intensive industry in the economy), the ratio of imports and exports of energy carriers (countries that extract and export energy sources usually have higher energy intensity, whereas the indicator is lower in countries that import energy sources), the basis for GDP calculation (current or constant prices, purchasing power parity, etc.), changes in the currency exchange rate applied during the reference period (e.g., changes in the dollar and euro exchange rates across years), the climate (in colder climates the amount of fuel used tends to be greater), etc. Therefore, it is not really possible to use the energy intensity of GDP indicator as a tool to measure the efficiency of the energy sector in different countries. Nevertheless, it does allow for the assessment of the energy intensity of an economy.

According to the International Energy Agency (which comprises 137 countries), in 2005 the energy intensity of Estonia's GDP at the constant prices of 2000 stood at 458 toe¹/USD (see Figure 4). With this indicator, Estonia rose from the 66th to the 59th position in a year among reference countries. Among the EU member states, Estonia ranked 20th, having passed Poland and Hungary in a year. Globally, Hong Kong took the lead (90 toe/USD) while Congo was the last (3,380 toe/USD). According to the preliminary data for 2006, Estonia's energy intensity at the constant prices of 2000 had fallen to 398 toe/USD. This should raise Estonia's position by a few notches, past Latvia among the EU countries.

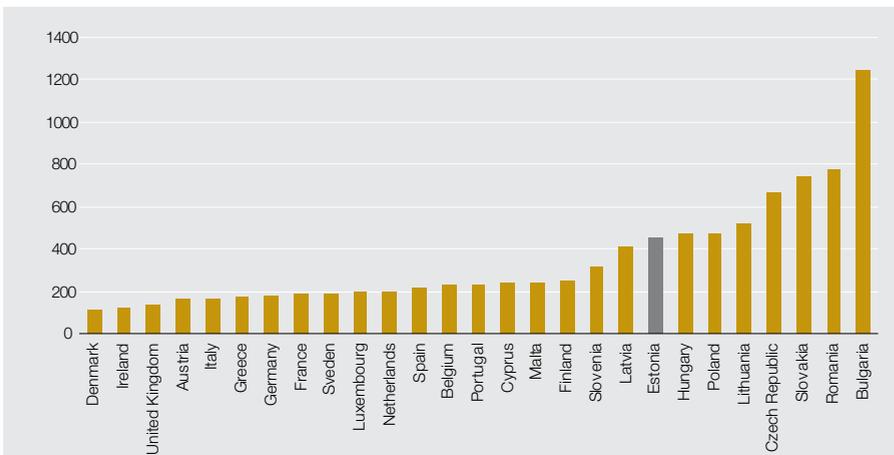


Figure 4. The energy intensity of GDP in EU member states in 2005 (toe/GDP; USD 2,000)

¹ Toe = tons of oil equivalent. (Edit.)

In terms of purchasing power parity, Estonia shared the 76th position in the world as regards the energy intensity of GDP, while ranking 24th among the EU member states (see Figure 5). The top position was occupied by Hong Kong, with Iraq being the last on the list. Within the EU, Estonia leaves behind the Czech Republic, Slovakia and Bulgaria and stands on par with Finland. With the 2006 indicators, Estonia should also exceed Finland.

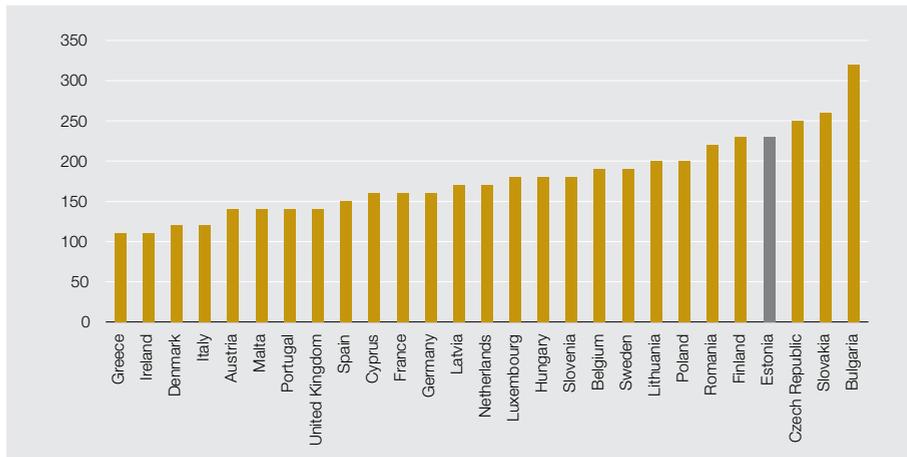


Figure 5. The energy intensity of GDP based on purchasing power parity in the EU member states in 2005 (toe/GDP; USD 2,000)

Several sources have largely overestimated Estonia's energy intensity of GDP, which is why Estonia has clearly occupied the last position in quite a few EU-25 rankings. The underlying reason for this is the revision of GDP calculation methods by Statistics Estonia in September 2006. Consequently, Estonia's GDP indicators from 2000 have been significantly adjusted. As a result, Estonia's GDP has increased considerably, which has also greatly improved the figures of the energy intensity of GDP. This adjustment has not yet been reflected in international databases.

In the case of Estonia, it is also possible to analyse the impact that the factors affecting the energy intensity of GDP have on that indicator. Estonia exports approximately 20% of the electricity produced from oil shale and nearly 80% of the shale oil produced from oil shale. Since the added value of energy products is fairly modest compared to other industries, the exports of energy products contribute relatively little to GDP while being quite energy intensive (nearly a quarter of the oil shale goes to exports). Thus, in comparison to other countries, the exports of energy products should be eliminated from Estonia's total primary energy consumption, which would reduce the total primary energy supply by nearly 10%. Similarly, the exports of these energy products should be subtracted from the GDP; the impact thereof is less than 1%.

The basis for calculating GDP plays an important role too. The following table presents Estonia's energy intensity indicators on the basis of different international indicators:

	2000	2001	2002	2003	2004	2005	2006
TPES/GDP (toe / USD 2,000)	811	815	692	597	516	458	398
TPES/GDP PPP (toe / USD 2,000)	324	312	277	281	261	233	209
TPES/GDP in current prices (toe/€)	747	693	597	603	562	467	383
TPES/GDP (toe/€2,000)	747	729	652	674	641	569	495
TPES/GDP PPP (toe/€2000)	298	280	261	317	324	290	260

TPES – Total Primary Energy Supply

GDP – Gross Domestic Product

PPP – Purchasing Power Parity

The abovementioned table also clearly demonstrates the impact of different currencies on energy intensity indicators. The indicators reflected in USD show a more impressive improvement in efficiency for Estonia owing to the significant decline in dollar exchange rates in recent years.

Considering the trend of the energy intensity of GDP, it can be clearly seen that Estonia's indicator has been growing rapidly, particularly in recent years (see Figure 6). Here, another globally unique trend can be detected: namely, Estonia's primary energy consumption has declined despite its rapid economic expansion (see Figure 7).

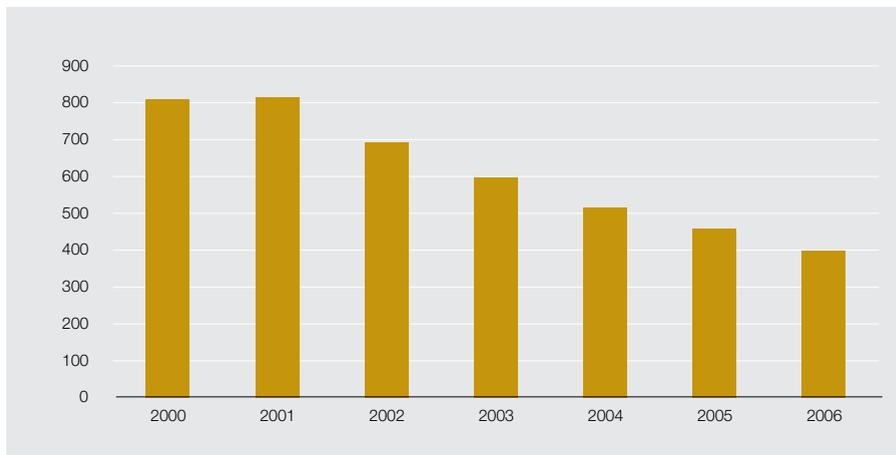


Figure 6. The energy intensity of GDP in Estonia (USD 2,000)

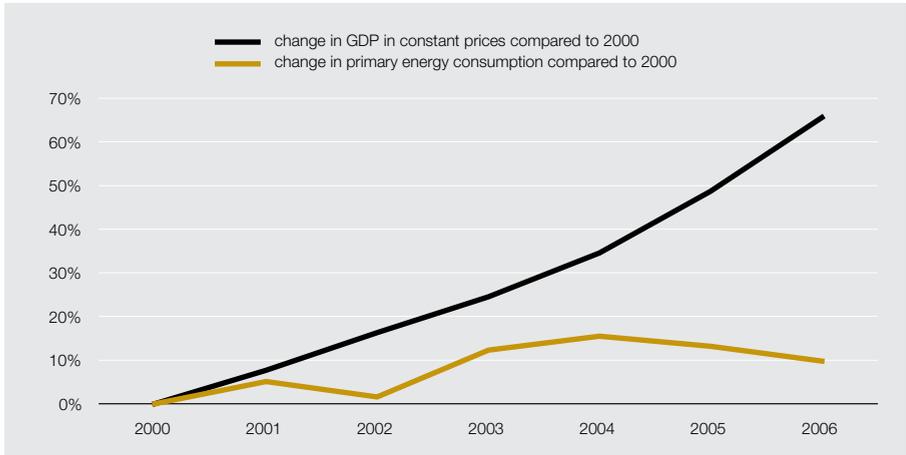


Figure 7. GDP changes in constant prices and primary energy consumption in Estonia

Analysing the reasons underlying the trend indicates that the consumption of heating energy has declined considerably in Estonia in recent years, and so has the losses of energy in power and heat networks. Thus, the investment channelled into the renovation of houses and construction of new heat-proof houses, and in particular, investment in the renovation of heat networks, has significantly reduced the total demand for energy. Energy consumption has grown quite modestly and has largely depended on the emergence of new energy intensive industries. Lower electricity exports have also had an impact and will most probably turn the primary energy consumption trend upwards again along with the completion of the Estlink submarine cable at the beginning of 2007.

Energy demand per capita is the ratio of the total consumption of primary energy to the number of residents. Based on this indicator, a country's prosperity in terms of energy supply is estimated. In comparison to other countries, this indicator is also affected by the same factors that distort the general national level of primary energy consumption and that are not so much related to people's relative welfare (e.g., the share of energy intensive industry in GDP, the imports and exports of energy carriers, climate, etc.). Still, a certain regularity can be seen here: countries with higher living standards are quite on top of the list in this respect, whereas less advanced countries lag behind.

Regarding energy demand per capita, Estonia held the 32nd position with 3.79 toe/cap² in 2005 among the countries analysed by the International Energy Agency (see Figure 8), staying at the same position as last year. The top three were Qatar (19.47 toe/cap, owing to oil products exports), Iceland (12.25 toe/cap, owing to an energy intensive metal industry) and Bahrain (11.18 toe/cap). The last three among the reference group were Senegal, Eritrea and Bangladesh (0.26, 0.18 and 0.17 toe/cap, respectively).

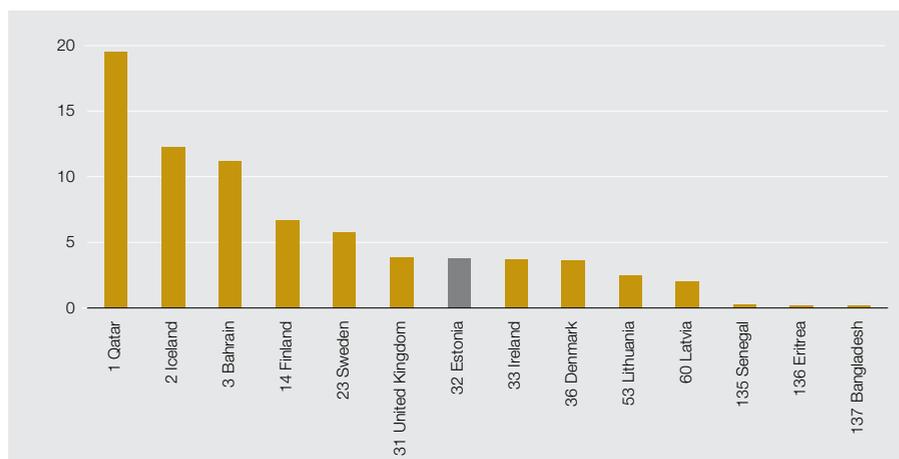


Figure 8. Primary energy consumption per capita in selected countries in 2005

Electricity demand per capita is calculated by dividing the sum of final electricity consumption and energy dissipation by the number of residents. The level of electricity consumption per capita also illustrates, to a certain degree, a country's living standards, but it is also affected by the share of large industries in a country's electricity consumption, climatic conditions and other factors.

In terms of this indicator, Estonia holds the 36th position in the world with 5,568 kWh per capita according to the 2005 data (see Figure 9). The top five are the Nordic countries, where the need for electricity is relatively high owing to climatic conditions, but where energy intensive industries also contribute significantly. The last on the list are tropical countries with low living standards, where the supply of electricity is not widespread.

² Toe/cap (toe per capita) = consumption of primary energy per capita. (Edit.)

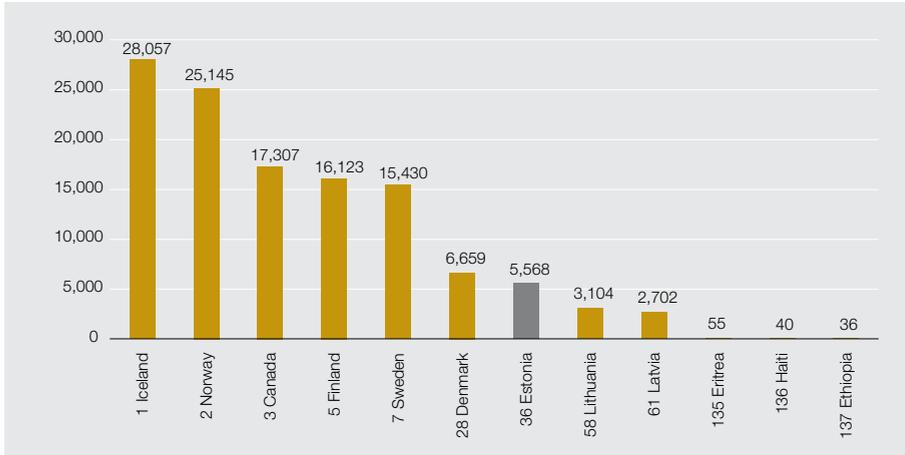


Figure 9. Electricity consumption per capita in selected countries in 2005

Carbon dioxide (CO₂) emissions per capita largely show the pollution intensity of a country's energy sector, since the majority of a country's CO₂ emissions is related to energy equipment and production.

Owing to the carbon dioxide intensive use of oil shale, electricity exports and its cold climate, Estonia is one of the countries that is worst off in the world regarding CO₂ emissions, ranking 125th (see Figure 10). This indicator again reflects the trend that the biggest CO₂ emitting countries are those who export energy sources, are located in a cold climate, or have energy intensive industries.

Estonia's indicators are also slightly distorted by one technical aspect: the flue gases emitted during the combustion of oil shale contains CO₂, whereas the oil shale ash deposited in the ash-disposal areas binds around 2% of that CO₂. However, the impact of this aspect on statistics is marginal.

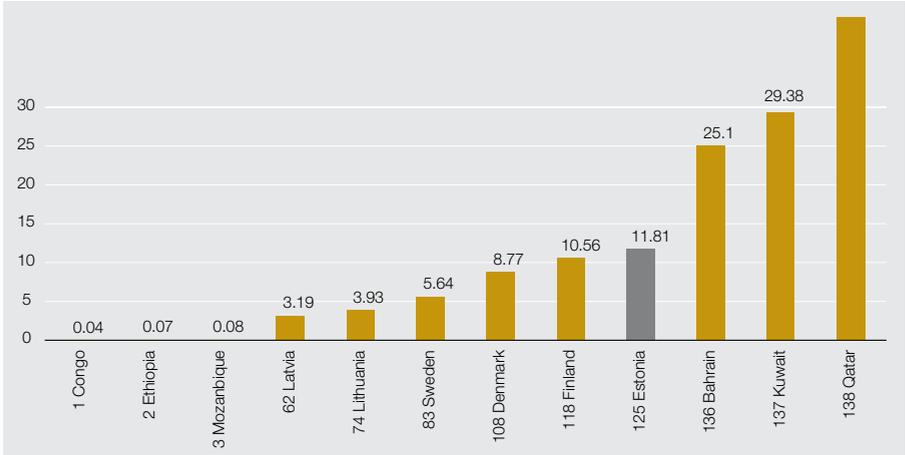


Figure 10. CO2 emissions per capita in selected countries in 2005

The **CO2 intensity of the energy sector** is calculated by dividing CO2 emissions by the volume of primary energy. Estonia's energy sector is one of the most CO2 intensive among the EU member states (see Figure 11). In 2004, only Poland emitted more CO2 emissions per energy unit. However, this indicator has considerably improved in Estonia in recent years after the implementation of new technology in oil shale-fired power plants and the wider use of renewable energy sources.

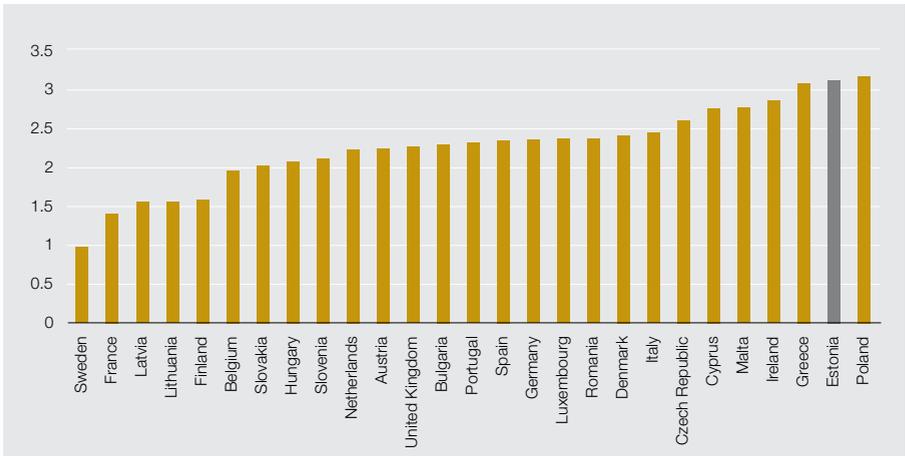


Figure 11. CO2 emissions per primary energy unit of consumption in the EU member states in 2005

For the sake of data comparability, the countries' climatic conditions, the ratio of imports to exports of energy sources and the structure of energy sources used should also be taken into consideration. In that respect, the best-performing countries are those that generate nuclear energy (Sweden, Lithuania, France, and Finland), have large hydroelectric resources (Sweden and Latvia) or import electricity (Latvia and Finland). All of the above cases do not entail the emission of CO₂ in meeting the demand for electricity.

THE SHARE OF RENEWABLE ENERGY SOURCES

It might come as a surprise to many that the share of renewable energy sources in Estonia's energy balance is rather high (see Figure 12). The method for calculating this share is important here as well: namely, whether it is calculated as a percentage of primary energy or final energy consumption, or based on other energy statistics. The outcome is very diverse for Estonia, depending on the percentage of energy spent on its own use in oil shale-fired power plants and the percentage of exported energy. The share of renewable energy sources in Estonia's final consumption reached over 25% in 2005, which is the fifth best result among the EU countries. The percentage of renewable energy sources in Estonia's primary energy was 13%, placing the country in the 7th position among the EU countries. Dividing the domestic use of renewable energy sources by final energy consumption, Estonia ranks 3rd among the EU member states with a share of 17.6%.

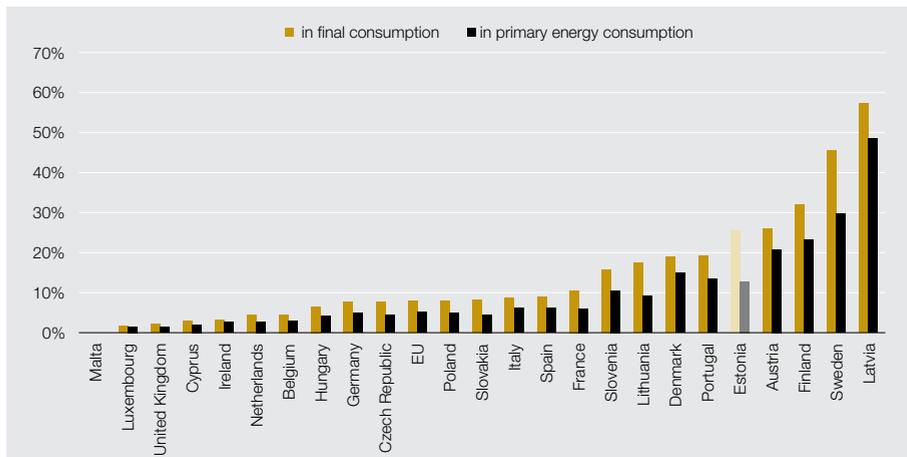


Figure 12. The share of domestic consumption of renewable energy sources in selected EU member states in 2005

The high share of renewable energy sources in Estonia's energy balance primarily stems from the extensive use of wood chips in the Estonian heating sector. The best performing countries in this respect are those where a large part of the electricity generated is from hydropower (Latvia,

Sweden and Austria). Meanwhile, Estonia and Finland are countries where the principal renewable energy source is wood. The use of renewable energy sources in Estonia has been constantly increasing since 1990 (see Figure 13).

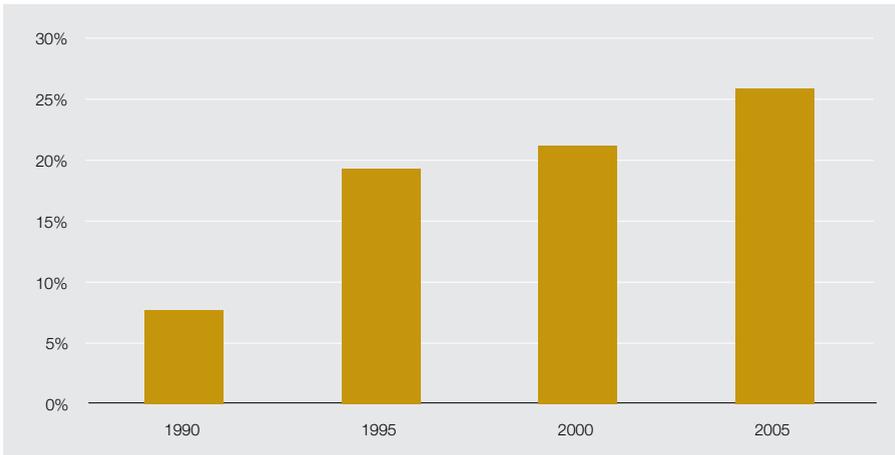


Figure 13. Changes in the share of renewable energy sources in final energy consumption in Estonia

In the 1990s, the prevailing trend was to substitute fossil fuels with wood chips in the heating industry, whereas from 2000 onward the share of renewable energy sources in electricity generation has been increasing. Based on the projects currently under construction, we might say that this upward trend is expected to continue in Estonia into the future (see Figure 14).

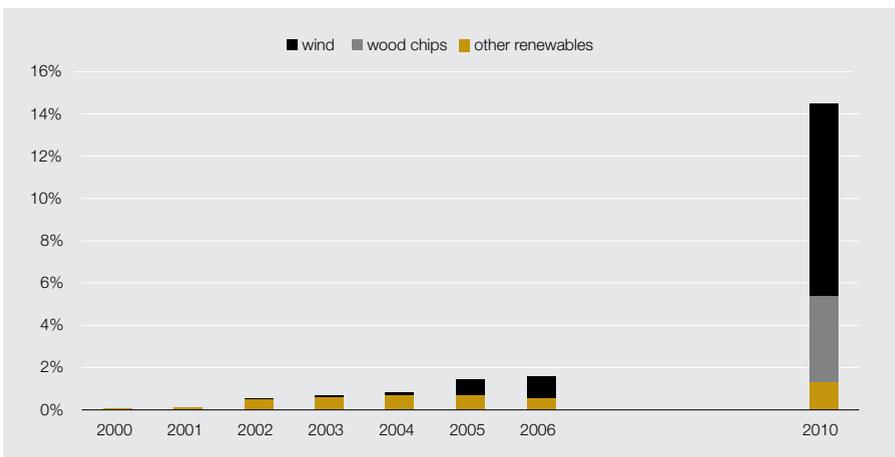


Figure 14. The development of the share of renewable energy in total electricity consumption in Estonia

Unlike in other countries where renewable energy sources mostly substitute for imported energy sources, renewable energy sources in Estonia essentially reduce oil shale-fired power generation. Thus, the increased use of renewable energy sources in Estonia should not affect the security of supply, provided that the use of natural gas is not increased so as to balance the production of renewable energy sources. If it needs to be done in the future, the possibility of also using alternative fuels (liquid biofuels, shale oil or gas) in gas turbines must be ensured.

CONCLUSION

Estonia is a country with a rather high security level of its energy supply: the infrastructure links with other countries are extremely strong, the dependency on imported energy sources is less than one-third and imported energy sources are partly replaceable with alternative fuels.

In international comparison, Estonia stands out with the extremely rapid development of its energy industry coupled with the need to more efficiently reduce CO₂ emissions. In order to meet these objectives, Estonia aims to enhance the sustainability of its energy sector through the implementation of energy efficiency measures, the wider use of renewable energy sources and the introduction of new and environmentally friendlier technologies. Meanwhile, the goal is to avoid an increase in energy dependency arising from the need to secure the imbalances caused by the instability of wind power production.

THE PRICES OF ENERGY CARRIERS IN 1992–2007

Andres Saarniit

INTRODUCTION

Regaining independence together with making the transition to a market economy entailed, among other things, a drastic rise in energy prices for the Estonian population. As we all know, a typical feature of centralised economic planning was a lack of prices based on supply and demand. The only exception was the so-called collective farm market where people could buy and sell foodstuffs. There were no other goods on sale, nor were any allowed to be. Similar to other goods, the prices of energy depended on the decisions of the economic planning authorities. Household electricity and district heating were considered basic commodities and their prices were kept low compared to cars, household appliances and even clothes.

The fact that energy carriers are basic commodities certainly had an effect on the transition to market prices. The Government's efforts to make the transition smoother and more bearable for the population can be clearly perceived. The following article gives a brief overview of the evolution of energy prices during the last fifteen years and does so mostly from the perspective of the final consumers; i.e., households.

GENERAL OVERVIEW OF THE TRANSITION TO MARKET PRICES

In Estonia, the liberalisation of prices already began at the end of the 1980s. The Act on Prices that started the liberalisation was adopted in 1989 when about 90% of prices had been regulated. The new Act divided prices into three categories upon the transition to a market economy: regulated, coordinated and free prices. Pursuant to this Act, the Government also set prices for natural gas, stove fuel sold to households, electricity and heat energy. The regulation of liquid fuel prices was left to the ministries and executive agencies. Thus, the prices of all types of energy were subject to control, at least to the extent of coordination.

After the monetary reform of 1992, the liberalisation of prices continued. Pursuant to a new government regulation adopted at the end of 1993, electricity prices remained under government control, while heat energy and gas were subject to coordination. Meanwhile, the prices of motor and stove heating fuel had been liberalised.

The producers and suppliers of electricity, natural gas and thermal energy operate as monopolies, which is why their price-setting has been continuously regulated. Until 1998, the Government coordinated the prices of household energy. The Minister of Economic Affairs, being responsible for putting forward such proposals, was advised by a committee of independent experts specially formed for this purpose in 1993. Pursuant to the new Energy Act, the Energy Market Inspectorate was established under the jurisdiction of the current Ministry of Economic Affairs and Communications. This price coordination mechanism continues to function to this day.

In 1993, nearly one fifth of the consumer basket was under supervision and the prices of household energy and motor fuel made up about half of the regulated prices. Currently, the share of goods and services subject to market supervision has decreased to 9%; energy comprises 85% of that figure.

Price control was not the only method used by the Government to cushion the transition of energy prices to market-based prices. At the beginning of the liberalisation of prices, all fuel and energy suppliers, including the importers of oil products, were owned by the state or local municipalities. This enabled them to mitigate the price increase of household energy both by discarding targeted profit and applying cross-subsidies¹. The latter was particularly characteristic of district heating. Moreover, the practice of applying different prices to legal persons and individuals was still quite common at the end of the last decade.

The reduction of subsidies for district heating and the transition to cost-covering price setting were the main drivers of establishing a means tested social safety net in order to offset the increase in housing costs. The creation of the system started off in 1992 and was developed further during the next couple of years. The right to receive the allowance and the amount of the allowance was dependent upon the composition of the household, the size of income and, indirectly, the situation in the housing market. According to the basic principle of the allowance system, the right to receive an allowance arose when housing costs accounted for over 30% of the household's income, provided that the housing was of an appropriate size for the individual or individuals living there.

During the years of centralised economic planning, "average apartments with an average size" had primarily been built. During the transition to a market economy, demand for larger and, in particular, for smaller apartments significantly exceeded the supply. A drastic rise in housing costs also increased the demand for smaller apartments, but only a few people were able to change their apartments for smaller ones owing to the supply-side restrictions of the real estate market. Therefore, local governments had to establish a "norm size" for dwellings in order to offset some of the grounds for applying for a housing allowance. Compared to other kinds of benefits, the need for housing allowances was greater. Thus, in 1995 16% of households received housing allowances. That year also marked the beginning of an economic growth cycle and the need for housing allowances began to decrease.

The smooth transition to market prices was possible both in the global and local sense thanks to Estonia's abundant supply of energy², including relatively cheap electricity in Estonia, Lithuania and Latvia (compared to the rest of Europe).

¹ Using the profits from one activity to keep prices down in another. (*Edit.*)

² For further information, see the article by E. Kisel in the present issue.

PRICE STATISTICS OF ENERGY

The beginning of more reliable consumer price statistics dates back to the monetary reform of 1992. Before that no data was published on the whole consumer basket and several methodological problems may arise even while describing the price dynamics of certain basic goods and services. As mentioned above, the liberalisation of prices had already taken off a couple of years earlier. The changes in the prices of energy sold to households may be divided into three periods.

First, there was the robust price hike that occurred before the monetary reform. This primarily concerned imported fuels: the prices of natural gas and oil products increased by hundreds of times. The global market prices of crude oil were even decreasing at that time but the Estonian consumer hardly noticed this. The transition was even more painful because economic growth was following a downward trend and the increase in prices outpaced wage growth.

The second and somewhat calmer period of upward price movement began with the monetary reform and ended at the turn of the decade. By that time, Estonia had evolved into a functioning market economy and had recovered from the first down phase of the business cycle.

Figure 1 illustrates the Government's efforts to make the higher cost of energy carriers more bearable for the population. As we can see, until 1998 the cost of the total consumer basket grew faster than the prices of household energy (electricity, gas, thermal energy and stove heating). The prices of motor fuel increased at almost half the pace compared to average consumer prices. Thus, as far as motor fuels are concerned, the shock from the adjustment to world market prices took place before the monetary reform. Furthermore, it is worth recalling that until the summer of 1996 the value of the US dollar in relation to the Estonian kroon was the same as during the monetary reform, and the increase in motor fuel prices was merely due to domestic factors, namely stronger demand and a rise in excise duties. In the second half of the decade, external factors prevailed – the growth in motor fuel prices by over two-and-a-half times was more or less equally attributable to the appreciation of the dollar and an increase in the prices of crude oil.

The price increase of household energy was still quite different by the various types of energy. The price of domestic gas rose the most – by over 17 times – from June 1992 to December 2000. The highest growth figures were recorded in the first one-and-a-half years following the monetary reform. The price of electricity increased almost as rapidly as the cost of the total consumer basket, whereas the prices of stove heating fuel and thermal energy grew even slower, being 4.5–5 times higher than immediately after the monetary reform. The first half of the period was characterised by greater differences in price dynamics. Towards the end of the decade, the growth rate across different types of fuels levelled off.

The beginning of the present decade may be regarded as the start of the third stage. This period is characterised by the recovery of Estonia's rapid economic growth in a stable price environment, and the volatility and record high growth of crude oil prices. Concerning the global economic outlook for the present decade, economists have often pointed out the rising prices

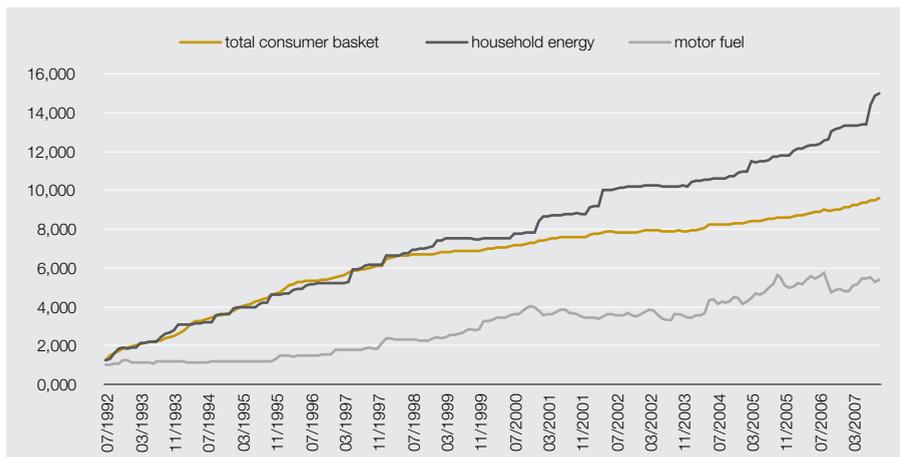


Figure 1. Rise in the cost of motor fuel, household energy and total consumer basket from June 1992 to September 2007 (June 1992 = 1)

Source: Statistics Estonia

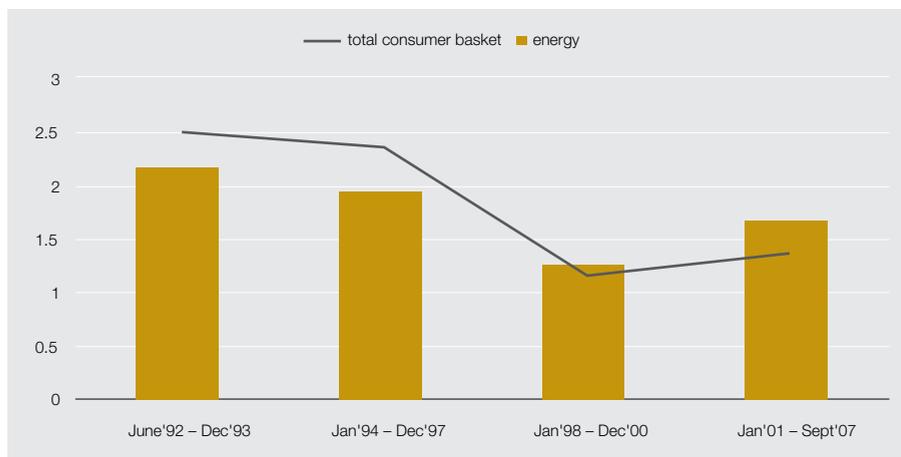


Figure 2. Index of the rise in the cost of energy and total consumer basket during selected periods from the 1992 monetary reform to September 2007 (start period = 1)

Source: author's calculations based on data of Statistics Estonia

of crude oil as the key factor inhibiting growth. In 2007, we can say that there has been enough liquidity in the world for both a rapid rise in the prices of crude oil and brisk economic growth.

From 2001 to 2007, the prices of energy carriers purchased by households increased by an average of 9.5% a year, which is two times slower than in the previous seven years. Given the general stability of prices, however, such growth can be considered rapid, resulting from external price pressures. The rise in the price of crude oil had already begun to influence the prices of energy carriers for domestic purposes in 1998. Since then, the prices of household energy have increased faster than the cost of the total consumer basket. Here, the exchange rates of the Estonian kroon and the US dollar should again be borne in mind. At the end of the last decade, the actual nominal rate of the kroon boosted the prices of motor fuel, whereas after the turn of the millennium, the situation has been just the opposite. Compared to the beginning of 2001, the prices of motor fuel have increased by slightly more than 40%; i.e., much less compared to global crude oil prices. If the value of the kroon had not risen by about 35% during that time, the prices of petrol and other motor fuels would have also been that much higher (see Figures 1 and 2).

Strong income growth and domestic demand have also contributed to the growth in energy prices. Thus, during the last seven years the prices of stove fuel have increased the most – by an average of 30% a year – because of the construction boom and technological advances in the heating sector, including the opportunity to use wood for heating in large boiler plants.

Energy price convergence will naturally continue along with the rise in the level of income, but the period of rapid and drastic price increases is nearing its end.

TAXATION OF ENERGY

The Estonian tax system is characterised by proportional and uniform tax rates as well as taxing income more heavily than consumption. In order to ensure the smooth functioning of the goods and services market, there are only a few tax exemptions and incentives. Energy, however, belongs to the few goods and services that are given special consideration.

In Estonia, most goods and services are subject to a uniform 18% value added tax. Thermal energy consumed by households was among the few exceptions until July 2007. A zero tax rate was imposed on district heating until mid-2001. From then on, a reduced 5% rate was levied on thermal energy, which was further raised to the general rate of 18% this summer. The value added tax on stove fuel also increased to the same level in July 2007.

Similar to other European countries, Estonia also charges excise duties on liquid fuels in addition to the general value added tax. Besides motor fuel, an excise tax has been imposed on fuel oil and

liquid gas. Given the opening of the market, electricity will also be taxed in 2008. Since the prices of motor fuels are determined in the open market, the current tax burden is also trying to consider the changes in the purchasing power of the population. For example, the first half of the previous decade witnessed a rapid rise in excise duties. From 1993 to 1997, the excise tax on petrol and diesel fuel increased by almost six times. Owing to the robust growth in global crude oil prices, the Government revised its plan of tax increases, and so in 2007 the excise duties on motor fuels were only about double the price of 1997. By the time of the accession to the Economic and Monetary Union, the excise tax rates were lower than the minimum level agreed upon by the Member States. Consequently, Estonia was entitled to a transition period for the harmonisation of its tax rates. The Government expects to complete the harmonisation of fuel excise duties in 2008. Thus, the transition to market-based prices of energy may also be considered complete in terms of taxation policy.

Compared to the EU-15, the tax rates on energy will still remain lower. Besides the excise duty on motor fuel, the tax rate on electricity is also below the average (see Figure 3). Further trends in taxation policy will see the rising importance of ecological taxation. The Government has approved the principles of an ecological tax reform, which provides for a reorientation of tax targets to imposing taxes on the use of natural resources and environmental pollution instead of taxing income. Taxes related to the environment also include taxes on energy sources.

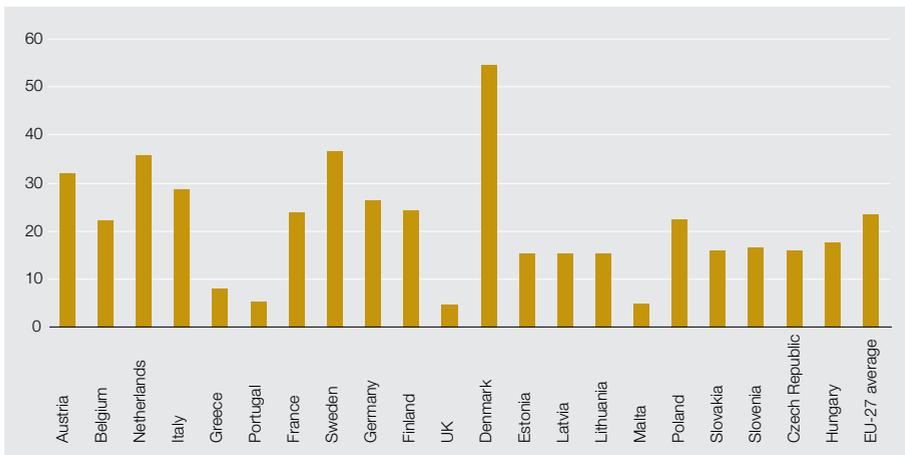


Figure 3. Share of taxes in the price of electricity in selected EU countries (%)

Source: author's calculations based on data of Datamonitor

SIGNALS TO CONSUMERS OR RELATIVE PRICES

Prices have a balancing role between supply and demand in market economies. Energy prices, however, are unique in the sense that it is difficult to replace one type of energy with another. Therefore, it is necessary to consider the signals pointing to future trends. The drastic price rise at the beginning of the transition period gave a clear signal to consumers that fuel had been underestimated in terms of relative prices, and that current consumption habits needed to be changed, while fuel prices also needed to be taken into account in the construction sector.

Although there appears to be little difference between the growth rates of various types of energy when looking back at long periods of time, for shorter periods the price signals might have even been misleading. For example, the price of district heating increased by almost 2.3–2.4 times, whereas the price of electricity rose by only 1.9 times. This induced real estate owners to switch over to electrical heating.³ Owing to the limited facilities of the distribution networks, only a few were able to do so. With hindsight, this might not have been the best investment because electricity prices grew three times faster than the prices of district heating from the middle of 1994 until the end of the decade. Consequently, people tended to opt for natural gas for heating. This was partly due to the introduction of more favourable price packages aimed at increasing the number of consumers as well as the consumption of natural gas heating.

The new decade saw a new increase in the popularity of electrical heating along with active construction in the new housing districts. This was induced by convenience and the low initial level of investment needed rather than the price level. However, people's perception of the price of electricity being high appears to have grown over the last three or four years and the popularity of stoves and fireplaces has increased rapidly. Stronger demand has brought along a considerable increase in stove fuel prices. As a result, firewood has also recorded the fastest growing prices among the different types of heating.

Although the prices of energy will also most probably change in the future, the picture is much clearer in the sense of price signals. Construction experts have done a remarkable job and compared the cost of different types of heating (see Table 1). Comparisons show that the prices of fuels are levelling off and, therefore, convenience and the cost of acquisition are becoming more and more essential in making the choice.

³ The average rise in the price of electricity does not reflect clearly enough the fact that back then lower prices were applied to electricity during the night. The same applied to natural gas heating a couple of years later.

Table 1. Example of a building's yearly heating costs by different types of heating (EEK)

	90 m2, 50 l hot water a day*	180 m2, 200 l hot water a day*	150 m2, incl. hot water**
Electrical heating	16,200	34,200	22,300
Oil heating	12,100	25,700	26,300
Gas heating	890	18,800	15,900
Firewood	7600	16,000	15,000

* Koduabc. *Õhtuleht*. October 25, 2007.

** *Äripäev*. September 19, 2007.

Regarding future price trends, a comparison with world market prices provides some ideas. Comparing the current prices in Estonia with those in the EU-15, it is not surprising that the prices of motor fuels have converged the most and that the prices of oil products have been following global prices for quite some time already (see Figure 4). Oil products are easily transportable and tradable in all markets, whereas the sales opportunities of natural gas depend on costly pipelines and internal distribution networks. In the case of Estonia, Lithuania and Latvia, the price of natural gas has not depended on the price of oil so far. The reason lies in cheap local electricity. For example, at the beginning of 2007 both gas and electricity were more expensive in the new EU member states of Central Europe than in the Baltic States. The difference reached 1.5 times for electricity and 30% for gas. In the future, the price of gas will most probably rise and approach the average price level in Europe. For example, the 2007 autumn forecast of Eesti Pank expects the price of gas to increase by almost 60% during 2007–2008. With respect to world prices, it is logical to assume that in Estonia prices will still remain lower due to lower transport costs.

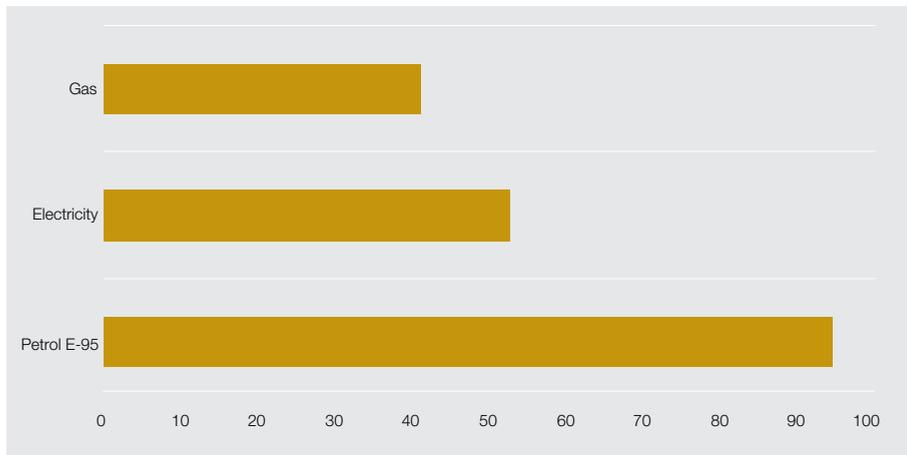


Figure 4. Price level of major energy carriers in Estonia compared to the EU-15 at the beginning of 2007 (EU-15 = 100)

Source: Eurostat

The price of electricity will not hold steady at the current level either. In the coming years the evolution of electricity prices will be a rather domestic issue and is influenced by the growth in consumption, the purchasing power of the population and perhaps the investment needs of Eesti Energia, the major state-owned energy company in Estonia. Later on, with the opening of the energy market, supply and demand in the whole Baltic Sea region will gain in importance.

The share of household energy and motor fuel in the consumer basket is another indicator of the relation between their prices in Estonia and in the world market. During the first five years following the monetary reform, the share of energy-related expenditure increased along with income growth. In the last few years, the expenditure on motor fuel has grown the most (see Table 2). The allegation that countries with lower income levels spend considerably more on of household energy and motor fuel no longer holds true for Estonia. Based on the consumer basket calculated according to the Harmonised Index of Consumer Prices, Estonian households spend only about 1.5 percentage points more on energy compared to the twelve old EU Member States. Most of these larger expenditures are related to household energy. This may have arisen from higher heating costs due to the local weather conditions as well as the poor thermal resistance of dwellings.

Table 2. Share of energy in the consumer basket (%)

	July 1992	1994	1997	2003	2007
Electricity	2.0	2.0	2.6	2.9	2.9
Gas	1.1	1.5	0.8	0.8	0.4
Stove heating	0.5	0.7	0.7	0.8	1.3
Thermal energy	2.3	5.7	6.4	4.8	3.0
Total household energy	5.9	9.9	10.5	9.3	7.5
Motor fuel	3.9	3.1	2.2	6.6	6.1
Total	9.8	13.0	12.7	15.9	13.6

Source: Statistics Estonia

CONCLUSION

The relatively large domestic supply of energy in Estonia made the transition to market-based prices less painful for the population. By now, the period of rapid price growth is over and the expenditure of Estonian households on energy makes up almost as big a share of the consumer basket as in the old EU member states. Along with strong income growth further price convergence is also to be expected. Leaving aside the possible price changes of imported fuels, the role of income and domestic demand in the evolution of prices is most likely to grow.

Discussions on the correct prices of energy with respect to other goods and environmental cleanliness are only gearing up. This will also have a major effect on the taxation policy decisions adopted by the Estonian Government together with other EU member states.

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RUSSIA'S GAS – THE SOLUTION TO EUROPE'S ENERGY DEMAND?

Kaupo Pollisinski

INTRODUCTION

In recent years, Europe's energy supply and energy policy have caught quite much attention from top politicians and experts. By now, it is clearer than ever that in order to manage risks, both the selection of fuel types as well as the geography of energy supply need to be diversified.

The reason for lively discussions was given by the Russian Federation and Germany, who in the last months of 2005 announced a large-scale project of establishing a gas pipeline. The gas fight between Ukraine and Russia at the turn of 2005 and 2006 and a relatively cold winter also contributed to the increased interest in the problems of energy supply. In 1999, Russia started targeted activities to increase natural gas exports towards the regions of the Baltic Sea and the Black Sea. The plans that have been disclosed reveal that in the upcoming years, Russia intends to increase gas exports to Europe by approximately 38.5 billion cubic metres per year. In addition, our eastern neighbour wants to start exporting liquefied gas to the Pacific Ocean region. For 2013–2015, exports to Europe are intended to be increased by additional 43 billion cubic metres. The attempt to gain control over the transport channels of natural gas from Central Asia to Europe is also clearly evident.

GAS EQUALS MONEY

Gas is an essential source of income for Russia. According to the Central Bank of Russia, natural gas forms more than 10 per cent of national exports, in better days nearly 15 per cent (see Figure 1). The income amounts to approximately 10 billion US dollars per quarter and mainly originates from Europe. Russian Customs says on its webpage that in the first nine months of 2007,

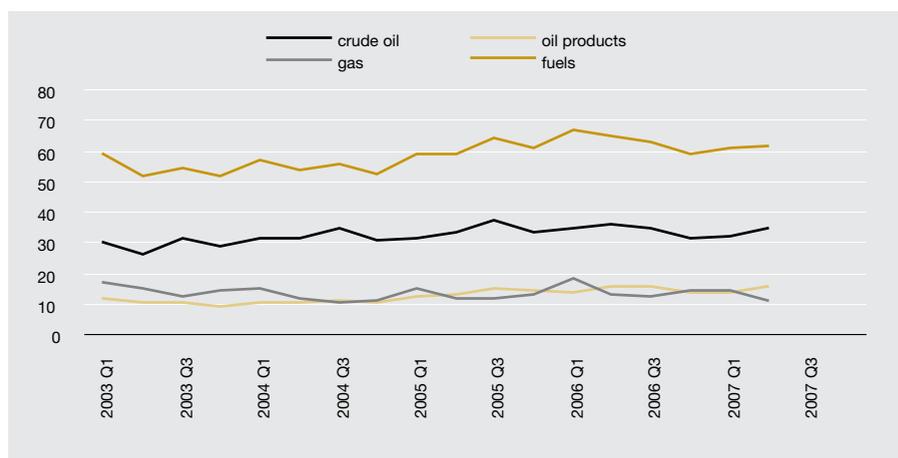


Figure 1. Share of fuels in Russia's exports based on balance of payments

Source: Central Bank of Russia

exports of natural gas amounted to 116.9 billion cubic metres. 103.8 billion cubic metres (89 per cent) of that were exported to distant foreign countries. According to the Russian Federal State Statistics Service, the state earned 29.114 billion dollars from natural gas exports in the first nine months of 2007, i.e. 12 per cent of the export income of that period.

The exports of various hydrocarbon fuels (mainly oil products and natural gas) together form approximately 60 per cent of Russia's exports. This is worth the effort and enables to achieve a thing or two!

For the owner of raw materials, fuel exports is the more beneficial, the more favourable is the global economic situation. Fuel prices have witnessed a strong upward trend since 2003 (see Figure 2). The contributing factors are the general economic revival in the United States and Europe (the main consumers) and, with regard to structural factors, the increased consumption particularly in Asia, which is presumably of a steady nature, and partly probably the activities of market participants.

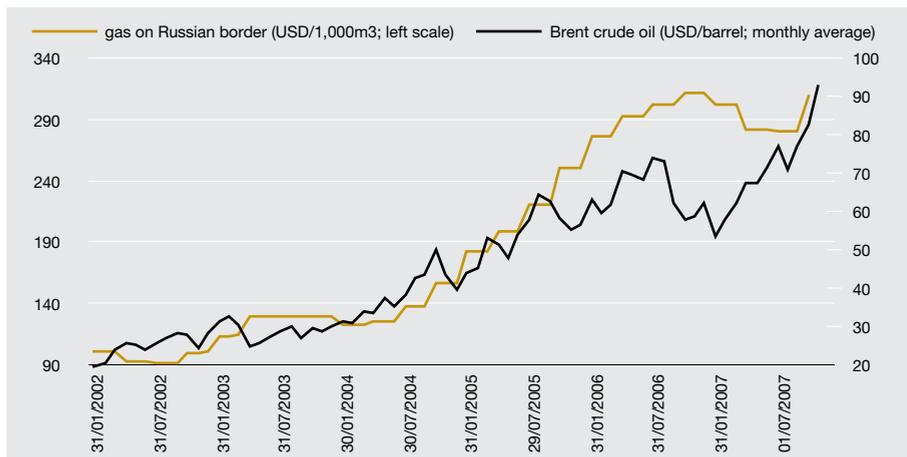


Figure 2. Price dynamics of natural gas and Brent crude oil in 2001–2007

Source: Reuters

GAS EXPORTS DEPEND ON PIPELINES

Today, there are two main routes by which Russian gas gets to Europe: via the **Yamal-Europe** gas pipeline that runs through Belarus and via the Urengoy-Uzhgorod pipeline that runs through Ukraine.

The Yamal-Europe pipeline that runs through Belarus and has a capacity of 33 billion cubic metres per year was completed in 1999. In the same year, in 1999, when Vladimir Putin became Head of the Russian Government, Russia lost its interest in that route. Although the Russian press has recently communicated some declarations by Russian public officials, which seem to give grounds to presume the revival of the interest in relation to the intended transfer of 50 per cent of the shares of the Belarusian gas pipeline operator Beltransgaz to settle old debts, Russia's Energy Minister Khristenko has denied this intention.¹

The Black Sea pipeline **Blue Stream**, which was actually put in use already in December 2002, was officially inaugurated on 17 November 2005. The pipeline is 1,213 kilometres long with 400 kilometres of that located in the Black Sea bed. The operator of Blue Stream is Netherlands-based Blue Stream BV that is owned 50 per cent by Gazprom and 50 per cent by an Italian gas company Eni. The pipeline was constructed by Saipem², a subsidiary of Eni.

The political decision to build Blue Stream was made in 1997 when Russia and Turkey signed a gas agreement for 2000–2025. According to the agreement, Russia was supposed to deliver altogether 364.5 billion cubic metres of natural gas to Turkey.³ The Gazprom's webpage states that *this pipeline enables to pump natural gas directly to Turkey, avoiding transit countries and thus increasing the reliability of gas supply*⁴.

Blue Stream's total capacity amounts to 16 billion cubic metres per year. The capacity in 2005 reached 5 billion cubic metres. This is 1 billion cubic metres less than envisaged in the supply plan on Gazprom's webpage. The development plan of Blue Stream foresees achieving full capacity by 2010.

Unexpected news came on September 8, 2005, when the Russian gas group Gazprom and German companies BASF AG and E.ON AG signed in Berlin, at the presence of President Putin and Chancellor Schroeder, an agreement on the construction of the North European Gas Pipeline (NEGP). Today, this pipeline is known by the name of **Nord Stream**.⁵ The underwater pipeline was to connect the Russian Baltic Sea coast near the town of Vyborg with the German Baltic Sea coast near Greifswald, North-Germany. On the Russian side, there would be a 917-kilometre-long pipeline section on the land, and the approximately 1,200-kilometre-long pipeline in the Baltic Sea bed would run into Germany's gas distribution network. In addition, the possibility of making the pipeline run across the north-western corner of Continental Europe

¹ See <http://www.gasandoil.com/goc/news/ntr74751.htm>.

² Saipem was also chosen to be the constructor of Nord Stream.

³ On December 2, 2005, Gazprom announced that a Turkish company Bosphorus Gaz Corporation A.S., whose indirect major shareholder is Gazprom, won the tender to import 750 m cubic metres of natural gas to Turkey in 2006–2021.

⁴ <http://www.gazprom.com/eng/articles/article8895.shtml>

⁵ See also <http://www.nord-stream.com/home.html?L=2>.

to Great Britain was left open.⁶ The aims of the project are also listed on the webpage of Nord Stream: to diversify natural gas transport routes from Russia to Europe and to avoid transit countries and political risks.

The promises given by Nord Stream are ambitious: the first pipeline with the annual capacity of 27.5 billion cubic metres of gas will be anchored to the seabed by 2010; another similar one by 2013. From then on, the intended supply capacity will be 55 billion cubic metres of natural gas per year.

During his visit to Turkey in November 2005, Putin referred to almost all of the possibilities of extending the Blue Stream⁷: through Greece to Italy and to the whole South Europe, South Balkan and also to Israel. It was also mentioned that another similar pipeline could be built next to the present one with the total capacity of 16 billion cubic metres per year.

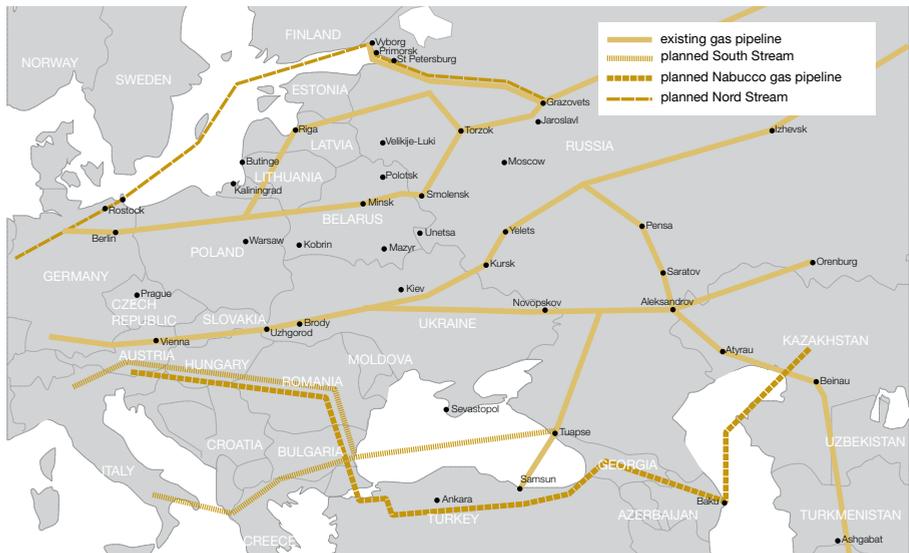


Figure 3. The proposed project of South Stream

Source: The Kommersant

⁶ On November 6, 2007, an agreement was signed in Moscow establishing that a Netherlands-based company Gasunie will obtain 9% of Nord Stream's shares at the expense of German companies and in return, Gazprom will acquire 9% of the shares of the Balgzand Bacton gas pipeline between the Netherlands and the United Kingdom. In addition, Gazprom will have an access to the UK market via the Interconnector gas pipeline that connects Belgium and the United Kingdom and in which Gazprom has a 10% holding.

⁷ By now, the South Stream pipeline running from Russia through the Black Sea straight to South Europe has also been introduced.

The importance of Turkey as a strategically significant centre of natural gas transit may increase in the immediate future, given the plan to import gas to European markets from Central Asia, Azerbaijan and the Middle East region.

At the summit of the Organisation of the Black Sea Economic Cooperation on June 24, 2007, President Putin announced the establishment of a new gas route. For this purpose, a pipeline will be built, starting from the Beregovaya compressor station at the Russian coast – the same starting point where Blue Stream begins – across the Black Sea and reaching the coast of Bulgaria (see Figure 3). From there, the pipeline will fork towards Romania and Hungary in the north and towards Greece and Italy in the west. The project was named **South Stream**. On November 22, 2007, Russian Gazprom and Italian ENI signed in Kremlin the documents that mark the beginning of the actual construction of South Stream. First, an economic-technical reasoning will be prepared that justifies the construction of a 900-kilometre-long underwater pipeline with the total capacity of 30 billion cubic metres per year. The estimated cost of the pipeline is 10–14 billion US dollars. The construction is to begin in 2008 or 2009⁸ and should be completed in 2013. In the second phase, an enterprise will be established that will be engaged in gas transportation. 51 per cent of that enterprise will be owned by Gazprom (as in the case of Nord Stream).

According to Alexander Medvedev, Deputy Chairman of Gazprom's Management Committee, Nord Stream and South Stream will be based on similar schemes, so that both the North and South Europe would be supplied by Gazprom⁹. Russia's non-governmental experts look further ahead – as the meeting point of Nord Stream and South Stream is in Germany, it can create an entirely new situation at the European market.¹⁰ Furthermore, Gazprom is going to conclude an agreement with an Austrian company OMV to acquire a 50 per cent holding in the Central European biggest gas hub Baumgarten.¹¹

During President Putin's visit to China PR on March 21–22, 2006, the representatives of Gazprom and China National Petroleum Corporation signed a protocol of intent on constructing a **pipeline from Russia to China**.¹² In the future, 68 billion cubic metres of gas will be shipped to China from the gas fields in West Siberia and Sakhalin. At first, it is planned to transport 30 billion cubic metres of gas per year from West Siberia via the Altai gas pipeline. Currently, the project is still in the negotiation phase.

⁸ Kommersant 23/11/2007, <http://www.kommersant.ru/doc.aspx?DocsID=828441&NodesID=4>.

⁹ Kommersant 22/11/2007, <http://www.kommersant.ru/doc.aspx?DocsID=828197&NodesID=4>.

¹⁰ Kommersant 23/11/2007, <http://www.kommersant.ru/doc.aspx?DocsID=828441&NodesID=4>.

¹¹ Upstream 13/11/2007, <http://www.upstreamonline.com/live/article144108.ece>.

¹² More particularly, two different pipelines are intended to be constructed.

Attempts are also made for the sake of the gas in the Caspian Sea and on its eastern shore. Moscow holds intensive talks particularly with Kazakhstan and Turkmenistan to reconstruct the Soviet-time gas pipeline between Central Asia and the central region of Russia and to increase its capacity from 50 billion to 70 billion cubic metres per year (see Figure 4). By the Caspian Sea, Russia wants to build a gas pipeline with the total capacity of 10 to 30 billion cubic metres per year.¹³ By doing so, Gazprom would become the only intermediary of gas exports from Central Asian countries to Europe. First agreements that are effective until 2010 have already been concluded.

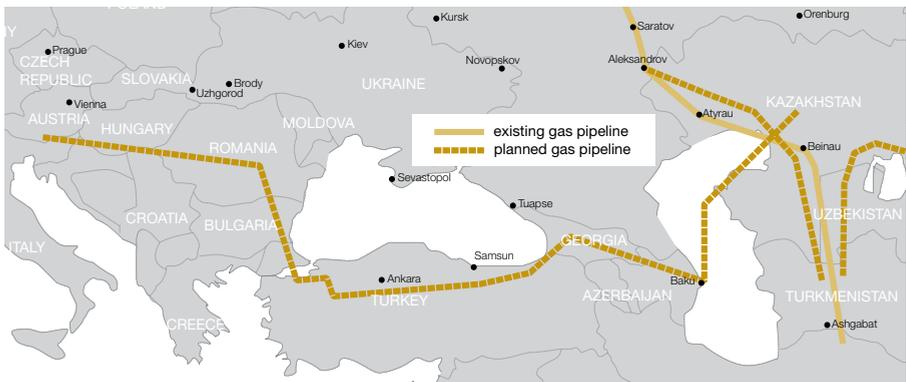


Figure 4. Existing and intended gas pipelines for gas supply from Turkmenistan

Source: The Nezavisimaya Gazeta

Further developments are more difficult to predict, since the owners of Central Asian raw material supplies have probably their own intentions. Those countries, too, want to have independent access to the profitable market. They are interested in future sales prices, investment conditions etc. Moscow's "treat" in that region is the fact that the Soviet-time gas pipeline that connects Central Asia with the central region of Russia and the necessary infrastructure are already in place. The pipeline would pass through Central Asian countries and reach Russia's southern east-west gas pipeline. Thus, Gazprom would control the transport of additional 30–50 billion cubic metres of gas per year. As the only buyer, Gazprom could impose its will on the seller and at the same time compensate and hide the decrease in its own gas production. Plus take commission.

At any rate, there is a passionate fight over Central Asia's gas. Heads of state in that region hold talks with the leaders of Europe and Russia, but final solution will not arrive before actual steps are taken in some direction.

¹³ Nezavisimaya Gazeta 22/11/2007, http://www.ng.ru/economics/2007-11-22/5_truba.html.

At the end of April 2007, the Russian press wrote that the last details of the agreement on the pipeline by the Caspian Sea were to be agreed upon on April 25 in Ashgabat. According to the press, the efforts made by Russia's Prime Minister Viktor Zubkov and the Chairman of Gazprom's Management Committee Alexey Miller were unsuccessful. The evident result was that Turkmenistan insisted on an increase in the price of gas sold to Russia from 100 US dollars per thousand cubic metres to 130 dollars pursuant to the current agreement that is in effect until the end of 2009. As Russia (Gazprom) is also interested in simply "keeping its hand" on the Central Asian gas pipeline, it agreed to pay this price. Hence, the gas price per one thousand cubic metres will be raised in the first half of 2008 to 130 dollars and in the second half of 2008 to 150 dollars, and as of 1 January 2009, it will be calculated using market prices. According to the press, the Uzbek government has a similar intention.¹⁴

GAZPROM IS LIKELY TO HAVE ITS OWN AMBITIONS

A quote on Gazprom's webpage by the Chairman of Gazprom's Management Committee, Alexey Miller, expressively sums up the goals of Russia's gas monopoly: *The process of Gazprom's conversion from the "national champion" into a global energy business leader has been completed.*¹⁵ Whether this is true or not is up to everyone to decide. The efforts made in that direction, however, are surely obvious.

The ambitious goals of Gazprom in Europe were affirmed off-stage by Alexander Medvedev on November 11, 2007, in Rome at the World Energy Congress. According to him, the objective of Gazprom is to obtain control over 33 per cent of the EU's gas market instead of the current 26 per cent by concluding long-term supply contracts.¹⁶

Medvedev emphasized in Rome the importance of Nord Stream and South Stream and the firm commitment to get to the European gas market precisely through those pipelines. He also warned that should these projects be blocked, Europe will soon lack 85 billion cubic metres of gas per year and it is unknown who will compensate this deficit. According to the daily *Nezavisimaya Gazeta*, Medvedev referred to the dissenting opinions of Estonia, Finland, Sweden and Poland as to the pipeline route chosen by Gazprom. He is also said to have referred to German legislation, which provides that before Nord Stream's pipelines NEL and OPAL are connected to Germany's gas distribution network, a third, independent state has to have an access to it.¹⁷

¹⁴ Kommersant 26/11/2007, 28/11/2007; *Nezavisimaya Gazeta* 27/11/2007, 30/11/2007; Interfax 27/11/2007.

¹⁵ <http://www.gazprom.ru>; <http://www.gazprom.com>.

¹⁶ *Nezavisimaya Gazeta* 12/11/2007, http://www.ng.ru/economics/2007-11-12/1_gazprom.html.

¹⁷ *Nezavisimaya Gazeta* 14/11/2007, http://www.ng.ru/economics/2007-11-14/1_gazprom.html.

A slightly wider economic-political dimension to Russia's "transit-free" energy exports was introduced by Mikhail Kasyanov, Prime Minister at the time, at the opening of the first phase of the Primorsk oil port construction in December 2001¹⁸. The thing is that if the Baltic pipeline system and the Primorsk oil port would be brought into operation, it would enable to redirect Russia's hydrocarbon fuels exports to pass by transit countries and to clarify in certain countries Russia's political goals with the help of economic measures. The motive for the North European gas pipeline is the same.

With **Nord Stream**, Russia can exclude its inconvenient (transit-)neighbours Ukraine and Belarus or at least threaten to do so. In recent years, these countries have caused a lot of headache to Russia: first they owe money, then some gas disappears without a trace...

Those against the underwater pipeline say that it would be wiser to extend the Yamal-Europe pipeline, which is already in use and has the necessary infrastructure in place. Yet, obstacles for Moscow would then be political risks and the above-mentioned transit countries that require constant consideration. However, during his visit to Belarus in October 2007, Prime Minister Zubkov took this subject up.

It is said on Gazprom's webpage that the target consumers of Nord Stream would be Germany, the UK, the Netherlands, France and Denmark. They are the ones who would be the immediate beneficiaries of the pipeline. But the countries bordering the Gulf of Finland and the northern and eastern shore of the Baltic Sea would be delighted if the construction of the pipeline did not cause an irreversible environmental pollution.

Once the construction of South Stream is completed, Russia has several opportunities to expand its activities towards South Europe.

The confirmation that South Stream and Nabucco are not rival projects is politically correct, but might not consider all the facts. This was indirectly admitted also by Austria's President Heinz Fischer on May 22, 2007 before Vladimir Putin's visit to Austria, when he had, according to Interfax, offered Gazprom the Nabucco pipeline to direct additional amounts of gas to Europe¹⁹. The only thing left unnoticed was that the route of Nabucco as known today has nothing to do with the gas produced in Russia.

Thus, with Nord Stream, South Stream, Yamal-Europe and Urengoy-Uzhgorod, Gazprom has covered the borders and the centre of the playing field.

¹⁸ <http://www.transneft.ru/Projects/Default.asp?LANG=RU&ID=170>.

¹⁹ Interfax 22/5/2007.

If gas from the gas-rich regions to the east from the Caspian Sea was directed to the **pipeline that connects the Caspian Sea region and Central Asia with the central region of Russia**, this area would also be covered by the Russian gas transport schemes. Blue Stream in the Black Sea would be kept in reserve. The quite “tough” Ukraine and Belarus would be tamed. The opportunities of Europe would be narrowed down. And another part of the “liberal empire” scenario²⁰ would be implemented.

CAN LOFTY PROMISES BE KEPT?

In 2005, natural gas exports from Russia to Europe amounted to 156 billion cubic metres. This forms 28 per cent of Gazprom’s total production (548 bcm) in 2005. By 2010, Gazprom promised to put into operation Nord Stream’s first pipeline with the total capacity of 27.5 billion cubic metres a year and to increase Blue Stream’s productivity from 5 billion cubic metres in 2005 to the designed 16 billion cubic metres a year. Thus, with the help of these pipelines, the capacity of gas exports to Europe should increase by 38.5 billion cubic metres in five years (by 24 per cent compared to 2005). As of 2010, Gazprom plans to produce 550–560 billion cubic metres of natural gas, i.e. to increase its production by 2–12 billion cubic metres a year.

After 2010, Russia’s gas production should increase by additional 27.5 billion cubic metres per year via the Nord Stream pipeline (in 2013), 30 billion via South Stream (2013) and, in the upcoming years, 30 billion cubic metres per year from the Caspian Sea region. The capacity of the necessary additional production will thus be nearly 90 billion cubic metres per year. After 2013, the amount of gas production necessary to keep the export promises would reach 650–700 billion cubic metres per year, the China promises included.

Gazprom itself hopes to increase the production to 580–590 billion cubic metres per year by 2020.²¹ This would be 32–42 billion cubic metres more than in 2005. This means that the increase in Gazprom’s own gas production is planned in such a way that it would barely meet the export promises made for 2010 only in 2020. Therefore, the plans for 2013 cannot be fulfilled. Are these promises empty boasts?

As mentioned above, the Russia-China pipeline is also in store for Russia; its initial annual capacity is intended to be 68 billion cubic metres.

According to the Russian press, Russia’s own non-governmental experts have also made their calculations. In a nutshell, they see Russia’s gas future as follows. In 2020, 230–240 billion cubic

²⁰ The thesis of the liberal empire is a theory spread in Russia, expressing the idea that Russia’s interests in the necessary countries and regions should not be protected by direct political pressure but by gaining control over infrastructures.

²¹ <http://www.gazprom.ru/articles/article20015.shtml>.

metres of gas have to be exported to Europe and 60–70 billion to the CIS. In 2011, exports should begin to countries in the Pacific Ocean region and to the US, reaching the capacity of 110–120 billion cubic metres by 2020. The current plans foresee that by 2020, Russia's gas exports reach the total capacity of 400–430 billion cubic metres per year. Together with domestic consumption, the demand for Russia's gas should be nearly 1 billion cubic metres per year by then. The production will not increase more than 710–720 billion cubic metres per year and the deficit will be approximately 300 billion cubic metres per year.

True, Russia's Ministry of Economic Development and Trade estimates that Russia's production by that time, i.e. by 2020, will be 815–900 billion cubic metres of natural gas per year. For such a long period, it is also difficult to predict the changes at the world's gas market. All that can be concluded from the present data is that be the situation with pipelines as it may, there will almost certainly be a shortage of gas.

A gas deficit may occur even if Gazprom eliminates all the leakages in its pipelines, exploit all the gas that results from oil production and is currently simply wasted, and the Russian state-owned company Unified Energy Systems reintroduces coal heat in those power plants where gas heat was introduced during the general gas euphoria.

On November 21, 2007, Andrey Klepach, Head of the Macroeconomic Forecasting Department of the Russian Ministry of Economic Development and Trade, announced that 2010–2015 are critical and deficit-prone years from the perspective of Russia's domestic gas consumption. The perspective of Russia's economic development until 2020 foresees a sharp rise in the production of electric power, cement and other energy-consuming production, but the current growth in the production of gas will not keep up with that. Besides, Klepach has admitted that the state has failed to persuade or make Gazprom to devise an appropriate strategic development plan.²²

On November 21, 2007, Russia's Government approved the development plan for chemical and petrochemical industry for 2008–2015. The plan foresees a growth in the processing of hydrocarbon raw materials from 30 per cent of the total production today to 70 per cent, which means that instead of raw materials more petrochemical products etc. will be exported. Russia's experts have calculated that with its long-term export agreements, Gazprom has already promised in advance 147 billion cubic metres per year and, by 2015, 179 billion cubic metres per year. According to the current data, the deficit will amount to 10–15 billion cubic metres per year. If the development plan for the chemical industry was implemented, the deficit would reach 30 billion cubic metres per year. Experts believe that this deficit can only be covered by the reserves so far undisclosed.²³

²² Interfax 21/11/2007, http://www.interfax.ru/r/B/exclusive1/44.html?menu=21&id_issue=11914803.

²³ Nezavisimaya Gazeta 22/11/2007, http://www.ng.ru/economics/2007-11-22/1_gov.html.

Putting hopes on the intermediation of Central Asia's gas may prove unwise. Pursuant to agreements currently in effect, Russia is the only intermediary of gas exports from that region to Europe, but China, too, is willing to buy the gas of that region. Construction of the Russia-China a gas pipeline has also begun. Therefore, the route of gas supplies from that region can easily change.

IS THERE ENOUGH MONEY?

A question arises whether Russia has enough money to build new pipelines, increase production and acquire new assets. The answer is: barely enough. At the end of June 2007, Gazprom had an external debt of 50 billion dollars. The programme of Eurobonds that was started in 2003 was extended from 15 billion to 30 billion dollars. The money has mainly been spent on acquiring new assets, some of which are scarcely related to the principal activity (e.g. a holding in Mosenergo and Sibneft).²⁴ True, the debt burden is not yet very big, but the targets as well as the promises made to foreign partners require also a lot of money.

The amount of funds necessary to establish a gas pipeline is difficult to predict. The budget of the construction of the Far East and Pacific Ocean oil pipeline has already almost doubled compared to the initial one (partly also because of the change in the route after the initial approval of the budget).²⁵ The 4–5 billion euros planned for Nord Stream in 2005 will probably no longer suffice. The prices of steel alone have increased 1.5 times by now (see Figure 5). In addition,

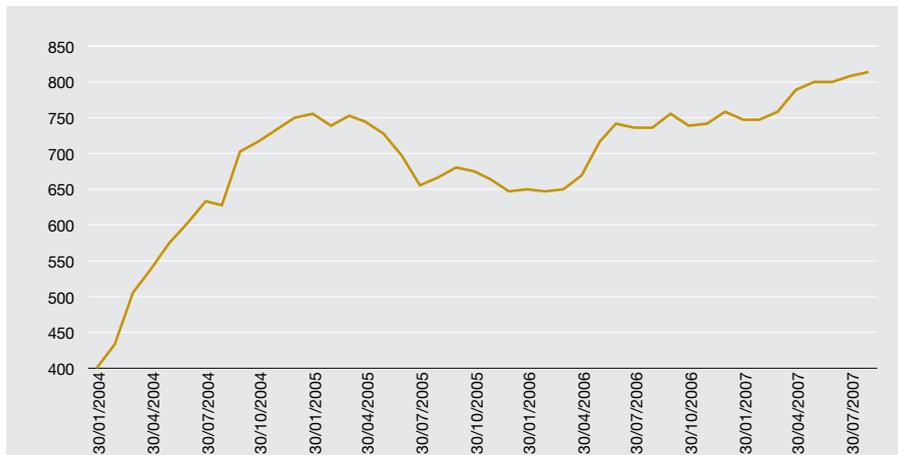


Figure 5. Price dynamics of hot rolled steel in 2004–2007 (USD)

Source: Reuters/EcoWin

²⁴ Vedomosti 23/7/2007, <http://www.vedomosti.ru/newspaper/article.shtml?2007/07/23/129693>.

²⁵ Nezavisimaya Gazeta 22/8/2007.

Russia's Ministry of Industry and Energy enforces an increase in the investment in geological intelligence, which means that the Ministry is dissatisfied with the preparation of new production areas in Gazprom.

New fields, no matter how vast, are shifting more and more towards north and also towards the continental shelf, requiring new technologies and more money for investment. Discussions about the Shtokman field in the Barents Sea began already at the end of 1980s, but the preparations for putting it into use are still in progress. (True, the delay is partially caused by the uncertainty resulting from the period of quick changes in Russia.)

There will be enough money as long as gas prices are high – or rather, not dropping very fast – and the lender has still faith in the borrower.

LESS TRANSIT COUNTRIES, MORE DIRECT SUPPLIES

At the end of July, Russia's Minister of Transport, Igor Levitin, said to the journalists in Riga that Russia's goal is to decrease considerably the transit of its goods through the neighbouring countries by using, in the direction of North-West Russia, the ports of the Gulf of Finland and Kola Peninsula and, in the South Russia, its new ports by the Black Sea.²⁶ By that, Russia means above all the transit of oil, oil products and natural gas. In the north-west direction, the ports of Primorsk, Vysotskiye, Ust-Luga and Murmansk should be ready to serve the total of oil products exports in 2008–2015.²⁷ Levitin also said that the Ventspils oil pipeline will not be opened ever again. Russian officials promise to transfer the Black Sea basin transit currently moving through Ukrainian ports (15.4 m tons per year) to the new port of the Tamanskiy peninsula where the total capacity is intended to be 35 million tons per year.²⁸ Levitin did not withhold that there is a strong political motivation behind this plan.

The Russian press has quoted the opinion of Alexei Makarkin, the Deputy Director General of the Centre for Political Technologies, that the current situation is the revision of the previous concept: since Russia failed to achieve its political goals in the Baltic States and Ukraine with the help of transit flows through the ports in these countries, new priorities need to be set.²⁹

The new oil pipeline projects, too, follow the principle of “less transit countries, more direct supplies”. The most outstanding example of them is the Baltic pipeline system ending at the Primorsk Port. It had and still has only one purpose – to avoid transit countries, i.e. initially the Baltic States

²⁶ Nezavisimaya Gazeta 25/7/2007, http://www.ng.ru/economics/2007-07-25/4_porty.html.

²⁷ Kommersant 25/7/2007.

²⁸ Nezavisimaya Gazeta 25/7/2007, http://www.ng.ru/economics/2007-07-25/4_porty.html.

²⁹ Ibid.

(later also Belarus and Ukraine), in the exports of crude oil and oil products. The crude oil pipeline leading to the Ventspils Port dried up in 2003 – after Russian companies were kept away from its privatisation process. Another victim was the Lithuanian Mazeikiai Nafta in the middle of 2006.

One of the new projects – the Baltic Pipeline System 2 (BPS-2) – is to redirect the Druzhba oil pipeline that connects Russia with Western Europe, or at least its northern Belarus-Lithuania-Latvia pipeline, towards Primorsk before it exits the Russian territory (see Figure 6). It is risky to dry up the pipelines to the west and south-west, since there are too big and some very important consumers. It is uncertain how fast the Primorsk Port and the neighbouring ports can be expanded so that all this oil flow could be directed to the market from there. It is also uncertain for how long the Gulf of Finland will endure such pressure.

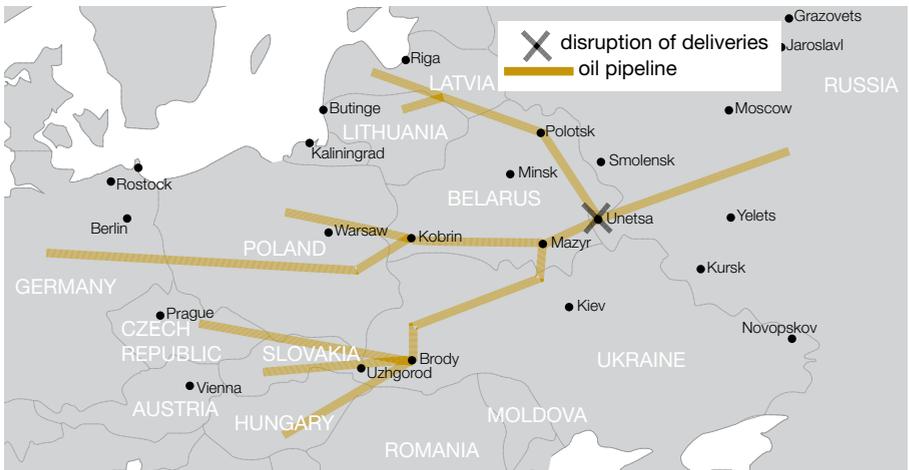


Figure 6. Oil pipeline Druzhba for oil supplies to Europe

Once the BPS-2 is completed, the handling capacity of Primorsk Oil Port should increase from 75 million achieved at the end of 2006 to 120 million tons per year. This would also entail the doubling of oil flows in the Gulf of Finland.

In 2006, 23.8 million of the 84 million tons of exported oil products passed through the Baltic States, with 21.2 million tons passing through Estonia. It is also planned to redirect the exports of other products (e.g. solid bulk goods, mixed goods, liquid bulk goods) mainly to Russia's own ports.

Russian experts find these plans to be (so far) quite hypothetical, as neither the ports nor the transport structures leading to the ports are capable of handling such additional amount of

cargo in the near future. But the goal has been set. The successful implementation of the plan is proved by the fact that the share of bordering countries in the total goods exports of Russia formed 25 per cent in 2002 and 18 per cent in 2006. However, Igor Levitin, the Minister of Transport, promised to leave 200 to 205 million tons of transit a year also to the Baltic States, Finland and Ukraine³⁰ (see also Figure 7).



Figure 7. The scheme of redirecting oil exports

SUMMARY

The trends in Russia's energy consumption and exports of energy sources (particularly gas) in the upcoming decade may have a great impact on the energy supply of the whole Europe. By now, several ambitious plans for increasing the export capacity have been disclosed, but there are a number of questions related to their actual implementation, concerning the financing of the necessary investments and the expected growth in Russia's domestic energy consumption. It must also be kept in mind that Asia's major consumers China and India are also competing with Europeans for Russia's energy resources. However, it can be presumed that as long as the sellers benefit from the prices of energy sources at the world markets and as long as there is a solvent demand in Europe, solutions will be found to the problems that prevent the expansion of exports.

Yet it cannot be forgotten for a second that in addition to the purely economic considerations, there is certainly a place for other kind of interests in Russia's external economic policy – for instance, the desire to strengthen its impact in one or another region in the world. If these non-economic interests outweigh economic considerations, the actual development may prove very difficult to predict.

³⁰ Ibid.

ESTONIAN RESIDENTS' OPINION ON THE STATE OF ESTONIA'S ECONOMY AND BANKING SECTOR

Survey by TNS Emor

Eesti Pank commissioned a survey from TNS Emor, a market research company, to identify how Estonians assess various risks to the economy and the likelihood of different development scenarios. The three-phase survey was carried out from 30 October to 29 November 2007 among 15 to 74-year-old people. The following brief overview outlines some of the survey results.

Approximately 60% of respondents consider recent rapid price increases a risk to Estonia's economic success. This view is common to all socio-demographic groups; however, people with higher education tend to express this view less frequently than others.

Nearly 70% of the respondents think that Estonia's banking sector is stable and their savings are safe but a quarter of the respondents seem to doubt in it. Entrepreneurs and students are more convinced in the strength of the Estonian banking sector. Apparently, they have a better knowledge of the banking system and/or they have a more positive outlook, will and faith in Estonia's success.

The majority of the respondents in all socio-demographic groups (75% in total) claim to have become **more careful in their economic decisions** in the recent years (in 2004 when Eesti Pank started to explain the risks related to reckless borrowing and excessive optimism, a mere 64% of the respondents admitted to have taken the advice). As much as 83% consider it important to **learn about the recommendations and warnings issued by economists**. On the other hand, an average of 60% of the respondents does not actually know of outstanding economists, even those who frequently speak in public. Thus, it seems that for most people it is more important what the message of an article or a presentation is, and not the author or the presenter.

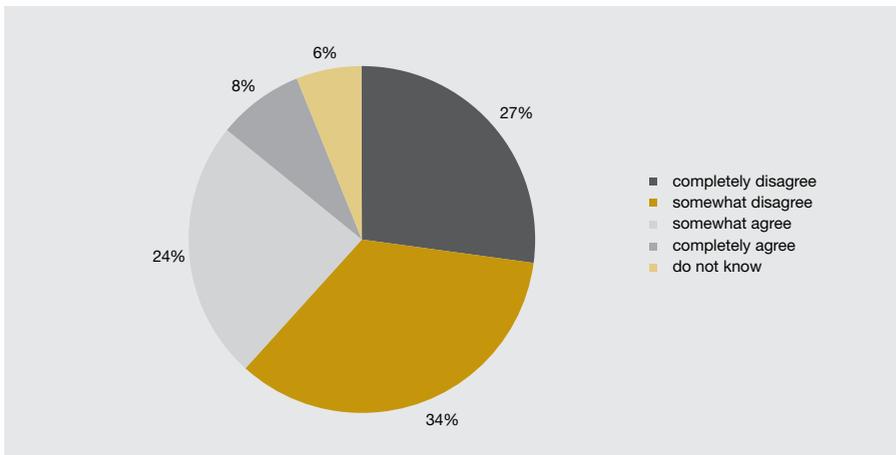


Figure 1. Please indicate the extent to which you agree with the statement ... recent price rises are temporary and will be over soon, and do not endanger Estonia's economic success

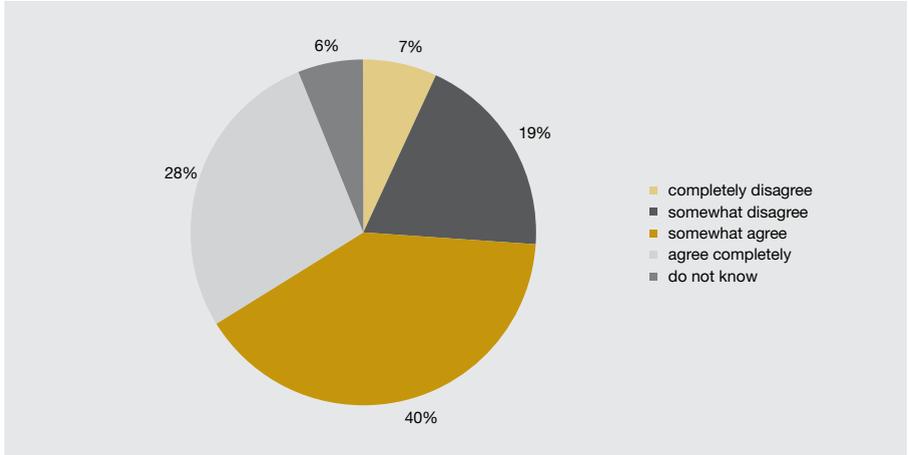


Figure 2. Please indicate the extent to which you agree with the statement ... Estonia's banking sector is strong and stable and my money is safe

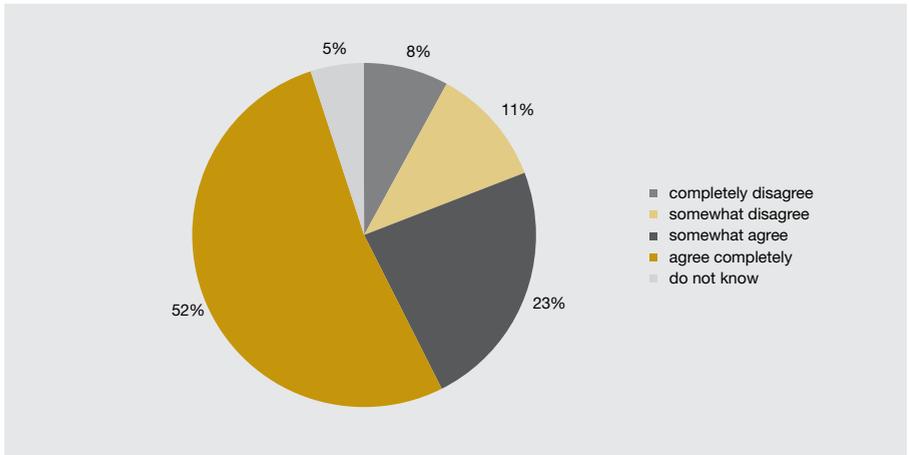


Figure 3. Please indicate the extent to which you agree with the statement ... I am more cautious in my current economic decisions than one or two years ago

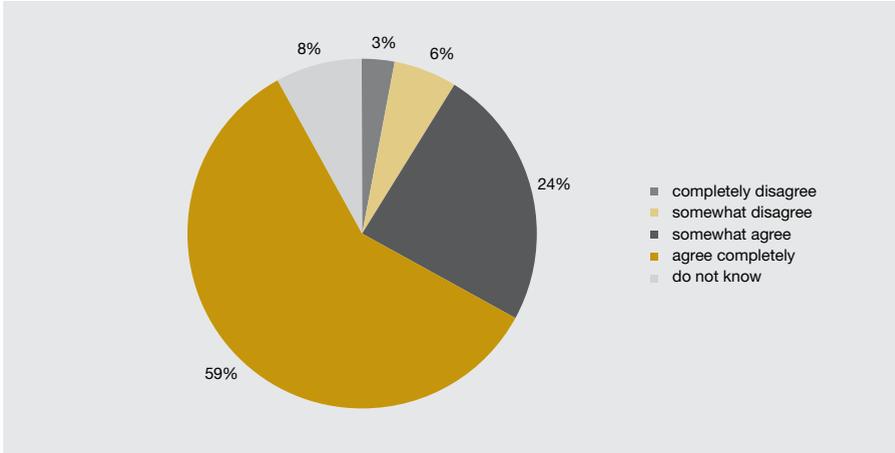


Figure 4. Please indicate the extent to which you agree with the statement before making important economic decisions it is wise to learn about the recommendations and warnings issued by economists

FURTHER DEVELOPMENT SCENARIOS, THREATS AND RISKS OF ECONOMY

About 40% of the respondents believe that **nobody actually knows how Estonia's economy will develop**. The percentage of people who agree with the statement that in the next few years our **economic growth will decelerate slightly, which is actually beneficial** because the growth will then be more balanced, is somewhat lower.

The higher the education level of the respondents, the more they agree with the statement that economic growth will be decelerating in the coming years, which is actually beneficial because a more balanced development will be ensured. This view is shared by 49% of managers and 42% of entrepreneurs. The respondents with a lower level of education tend to think that nobody actually knows how our economy will develop. Probably, they are less aware of economic mechanisms and uncertainty develops a feeling of insecurity in them.

A fifth of the respondents is expecting or is afraid of a serious crisis. Such people include many of the elderly (in their pre-retirement and retirement age) and non-Estonians. In general, however, we cannot preclude that a pessimistic outlook is related to a person's overall mindset and values. The percentage of people holding a more pessimistic view for the future as presented in the current survey (about 20%) is rather similar to the results of other surveys.

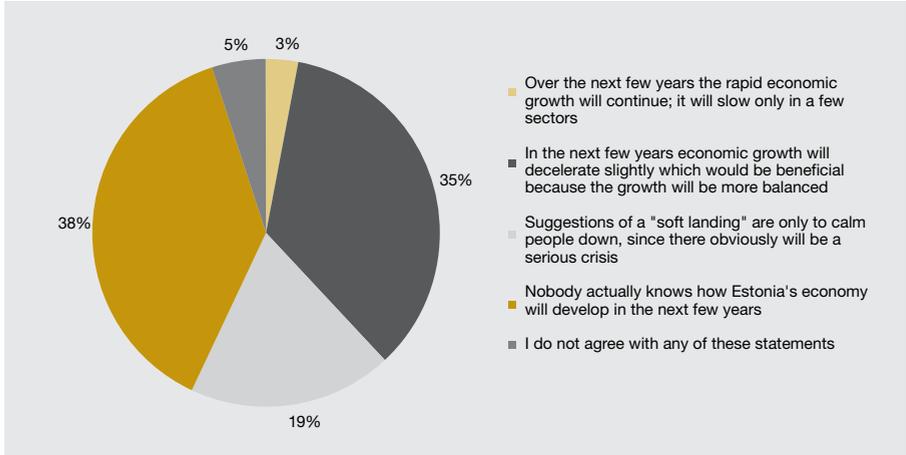


Figure 5. Please indicate which of the following statement you most agree with

64% of the respondents think that consumption based on borrowing poses a threat to Estonia's economy.

54% of the respondents agree with the statement that reckless pay rises may lead to a reduction in these well-paid jobs and increased unemployment.

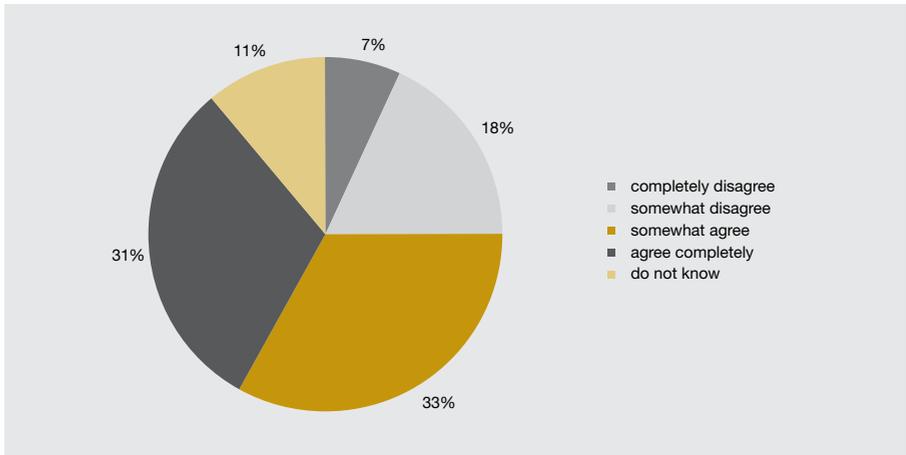


Figure 6. Please indicate the extent to which you agree with the following statement: Estonian people borrow money in addition to their regular income (e.g., from banks) to spend on consumption and this poses a threat to Estonia's economy

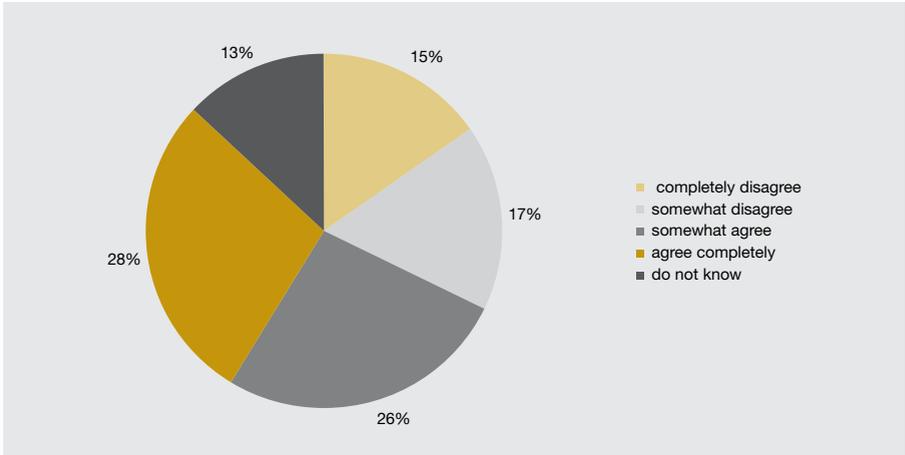


Figure 7. Do you agree with the statement that reckless pay rises may in time lead to a reduction in well-paid jobs and consequently increased unemployment?

SPENDING/SAVING THE STATE’S MONEY IN THE CURRENT ECONOMIC SITUATION

The **general view towards (national) savings is highly supportive**; however, similar support is given to increasing salaries of the nursing and rescue service staff. It is noteworthy that even though some time ago one of the primary issues in the Estonian media was speculations about the devaluation of the currency and the pointlessness of saving, only 17% of the respondents share such views. Estonians have been rather conservative and prudent throughout their history and do not like living with loans. This attitude is obviously quite difficult to shift.

Please indicate which of the four statements you agree with	It is important that the Estonian Government does not spend the entire budget revenue but maintains a reserve for more difficult times	66%
	If there is sufficient money, the Government should increase the salaries of fire-fighters, teachers and others, and various benefits as soon as possible	52%
	Price rises make it pointless to save for a rainy day; it is better to spend the state’s money on something useful right away	17%
	Recent price rises in Estonia do not mean that saving is pointless. Well-planned investment helps to soften the impact of price rises and saves the state’s reserves for possible crises and emergencies	55%
	I do not agree with any of these statements	4%

LABOUR MARKET REVIEW

Diana Tur, Natalja Viilmann

MAIN DEVELOPMENTS IN THE FIRST HALF OF 2007

In the first half of 2007, labour market indicators evolved in line with the ongoing economic growth slowdown. Even though unemployment was at record low and wage pressures at record high during that period, the employment growth rate declined even further. In the second quarter, the Estonian economy employed 1.3% more people year-on-year, whereas the unemployment rate fell to 5%.

The activity rate continued to grow in the second quarter, though also at a slower pace. The employment rate in the age group of 15 to 64 reached 69.3%, which gives ground to hope that achieving the Lisbon Strategy objective – 70% employment rate – by 2010 is quite realistic.

Along with the rise in employment and economic activity, unemployment has been steadily declining. Thereby the share of the long-term unemployed (for a year or longer) in the economically active population¹ has decreased. This is a positive indicator also when compared to the EU average. While long-term unemployment in Estonia has exclusively followed a downward trend in the past years (falling to 2.8% in 2006); the EU average has remained close to 3.6%.

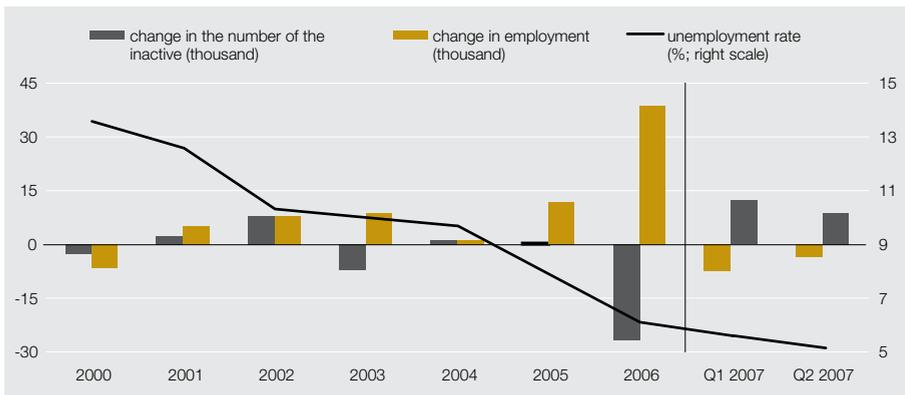


Figure 1. Main labour market indicators

There are yet a few signs of a slowdown in wage growth, which is considered to be too fast. Real wage growth was extremely rapid in the first half-year. This increases purchasing power on the demand side and generates additional costs on the supply side, thus putting the competitiveness of quite a few companies at risk. Companies were no longer able to finance the accelerated wage growth in the first half of 2007 from revenue growth, i.e. at the expense of productivity and price rise, and the share of profits in GDP fell to the levels recorded 6-7 years ago.

¹ The number of economically active people equals the sum of the employed and the unemployed.

Table 1. Main labour market indicators

	Change y-o-y (%)						Change y-o-y (thousand)								
	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007			
	-0.4	-0.3	-0.2		-5.0	-3.6	-2.3		-5.0	-3.6	-2.3				
Population (as at 1 January)	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007			
Employment status (15 to 74 years old)	2004	2005	2006	Q1 2007	Q2 2007	2004	2005	2006	Q1 2007	Q2 2007	2004	2005	2006	2007	
Workforce	-0.2	0.1	4.1	0.7	0.1	-1.4	0.5	27.2	4.9	0.7	-1.4	0.5	27.2	4.9	
employed	0.2	2.0	6.4	1.9	1.3	1.2	11.9	38.9	12.3	8.6	1.2	11.9	38.9	12.3	
unemployed	-3.9	-17.9	-22.4	-16.9	-18.2	6.8	-1.4	-3.1	8.5	-1.6	6.8	-1.4	-3.1	8.5	
less than 6 months	-17.2	-12.3	-15.6	-11.9	-11.8	-2.6	-11.4	-11.7	-7.4	-7.8	-2.6	-11.4	-11.7	-7.4	
6 to 11 months	-9.8	-38.0	-7.0	-48.3	-48.5	-4.4	-2.6	-2.9	-1.9	-2.0	-4.4	-2.6	-2.9	-1.9	
12 months or more	9.2	-16.0	-30.1	-12.3	-14.0	1.0	-3.5	-0.4	-2.8	-3.2	1.0	-3.5	-0.4	-2.8	
24 months or more	7.0	-15.3	-37.4	-24.8	-25.0	2.8	-5.3	-8.4	-2.7	-2.7	2.8	-5.3	-8.4	-2.7	
Inactive	0.3	0.1	-6.9	-2.0	-1.0	1.3	0.3	-26.7	-7.5	-3.5	1.3	0.3	-26.7	-7.5	
Total	0.0	0.1	0.0	-0.3	-0.3	0.0	0.8	0.5	-2.7	-2.7	0.0	0.8	0.5	-2.7	
	Level (%)														
Participation rate	62.9	62.9	65.5	65.3	66.3	-0.1	0.0	2.6	0.6	0.3	-0.1	0.0	2.6	0.6	
Employment rate	56.8	57.9	61.6	61.8	62.9	0.1	1.1	3.7	1.3	0.9	0.1	1.1	3.7	1.3	
Unemployment rate	9.7	7.9	5.9	5.3	5.0	-0.3	-1.8	-2.0	-1.1	-1.2	-0.3	-1.8	-2.0	-1.1	
Wages	2004	2005	2006	Q1 2007	Q2 2007	2004	2005	2006	Q1 2007	Q2 2007	2004	2005	2006	Q1 2007	Q2 2007
	Level (EEK)														
Average gross monthly wages	7,287	8,073	9,350.5	10,322	11,549	8.4	10.8	16.2	20.1	21.2	8.4	10.8	16.2	20.1	21.2
manufacturing	6,696	7,526	8,823.3	9,784	10,836	8.4	12.4	17.6	21.6	22.8	8.4	12.4	17.6	21.6	22.8
Average net monthly wages	5,675	6,411	7,524	8,339	9,214	9.6	13.0	17.4	20.0	20.3	9.6	13.0	17.4	20.0	20.3
Minimum wages	2,480	2,690	3,000	3,600	3,600	14.8	8.5	11.5	20.0	20.0	14.8	8.5	11.5	20.0	20.0

* authors' estimates

The growing cross-border mobility of employees is probably an additional factor that exerts wage pressure also on these positions that would otherwise remain unaffected owing to low labour shortage.

Further developments regarding wage pressures are important upon adjusting to slower economic growth. If wage growth does not subside in the near future, the probability of more abrupt adjustment increases.

Labour force participation and economic inactivity

Labour market developments in the first half of 2007 were in line with expectations. Employment growth is likely to slow and the unemployment rate to decline also in the following quarters. According to the Estonian labour force survey, the number of the employed in the age group of 15 to 74 stood at 658,600; the number of the unemployed was 35,000 and that of the inactive² (students, retired, homemakers and discouraged) totalled 352,800 in the second quarter of 2007. During the preceding four quarters the number of the employed had stayed around 650,000 and there were discussions about reaching the possible limit of labour supply. In the second quarter, however, the number of the employed increased to 659,000, which gives hope that not all reserves have been used up.

In addition to demand for labour arising from economic growth, employment growth also requires stronger labour supply. Therefore, besides growth in employment and a steady decline in unemployment, attention should be paid to reducing economic inactivity, particularly to those age groups whose integration into the labour market has been obstructed for one reason or another (e.g. the elderly and the young).

Year-on-year, employment increased due to a decline in both unemployment and inactivity. Yet the decline in inactivity and the rise in the labour participation rate³ in the first half of 2007 was not as drastic as in 2006. The labour participation rate in the age group of 15 to 74 increased to 66.6% in the second quarter of 2007, being only 0.6 percentage points above the year-ago figure.

Although employment increased somewhat slower than before, we have still made it quite close to an important milestone: the objective laid down in the Lisbon strategy to raise the employment rate among those aged 15 to 64 to 70% by 2010. Namely, the respective rate in Estonia reached 69.3% in the second quarter.

The number of the inactive declined rather modestly in 2007: by 2% in the first quarter and by only 1% in the second quarter. In other words, 3,500 inactive people entered the labour market in the second quarter of 2007. No long-term growth trend regarding the number of the

² Inactive is a person in working age who neither works nor looks for a job.

³ Labour participation rate equals the percentage of the employed and the unemployed in the working-age population.

inactive was observed by regions. Yet in the short term the number of the inactive increased in North-Eastern and Southern Estonia and decreased in Western and Northern Estonia. Western Estonia contributed the most to the decline in the total number of the inactive in the first and second quarters.

In the first quarter of 2007, economic inactivity decreased owing to both students and people in the retirement age, whereas in the second quarter the latter did not contribute to activity rise. The number of economically inactive working-age pensioners remained exactly at the level recorded in the second quarter of 2006 (128,700). Therefore, the number of the inactive declined mainly on account of students (i.e. the number of people inactive due to studies fell by 8,000 year-on-year). Meanwhile, inactivity related to illness and parental leave rose slightly, and so did the number of the discouraged (by 1,000).

Apart from the economic situation, the number of participants in the labour force also depends on population changes. The population either grows or declines, depending on the birth rate, mortality rate and the inflow and outflow of labour. Factors related to demographic processes were the ones that curbed labour supply this year. Namely, the working-age population in Estonia began to shrink, just as expected. The past few years saw the entrance of the baby-boom generation born in the 1980s (the most numerous young age group) into the labour market, whereas by now this trend has lost its topicality. Those entering the labour market, i.e. 15-year-olds, are still more numerous than those leaving the labour force (people aged 75), but the difference is no longer sufficient to offset the decline in the number of working-age population of other age groups (either through death or migration).

Eurostat anticipated in its forecast of 2004 that the decline in Estonia's working-age population (aged 15 to 74) would begin as soon as in 2006 and deepen further. By the year 2014, the number of working-age people was supposed to decline by as many as 67,000 to 982,000.

In reality, Eurostat's forecast turned out to be slightly pessimistic. Estonia's working-age population started to decline just this year and at the beginning of the year the number of those aged 15 to 74 had fallen by just 2,600 year-on-year (i.e. the total number exceeded the forecast by 2,500). This was probably owing to a somewhat smaller than expected net migration⁴ (above all emigration), which resulted in a more moderate decline in the number of working age residents. However, if the emigrated do not return to Estonia in the coming years, Estonia's working-age population may, according to preliminary estimates, decrease by approximately 40,000 people to one million by 2014 (see Figure 2).

In the second quarter of 2007, the labour force was underpinned by younger (aged 15 to 24) and older (aged 50 to 74) age groups. Year-on-year, the number of young labour force participants

⁴ Net migration equals the difference between the number of immigrants and emigrants.

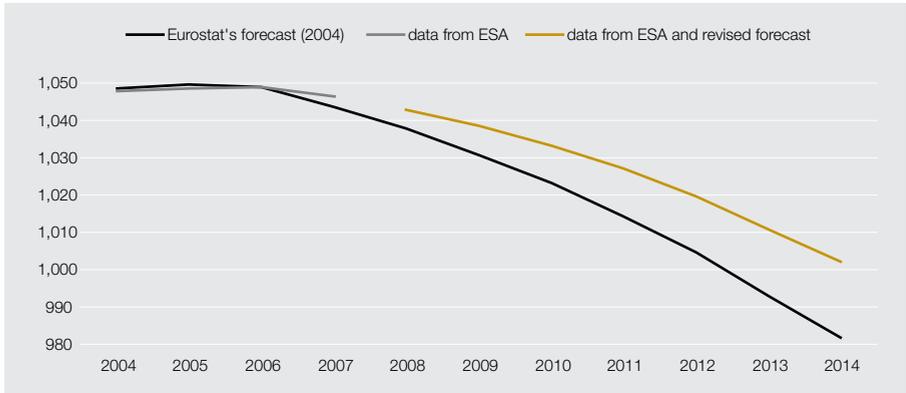


Figure 2. Working-age population estimate for Estonia (thousand)

grew by 2,600 and the number of older participants by 1,600. Meanwhile, the number of people in their prime working age, i.e. aged 25 to 49, decreased by 3,500 (see Figure 3). Still, all age groups contributed to the increase in employment, and also the number of people of prime working age rose year-on-year, although by just 1,900. Evidently, unemployment declined by 7,800 persons largely on account of that age group.

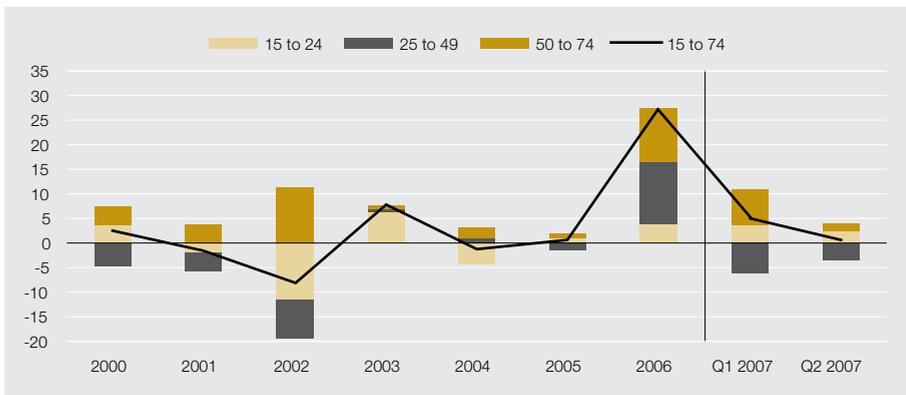


Figure 3. Contribution to employment growth by age groups (thousand)

Apart from age, people's labour market behaviour is also affected by their regional mobility. Even though differences between Estonian regions have decreased in recent years, labour market development was still quite inconsistent by regions. The activity rate has always been the highest in Harju County and Tallinn (69–70%). However, in the past half-year, activity increased above all in Central Estonia (see Figure 4).

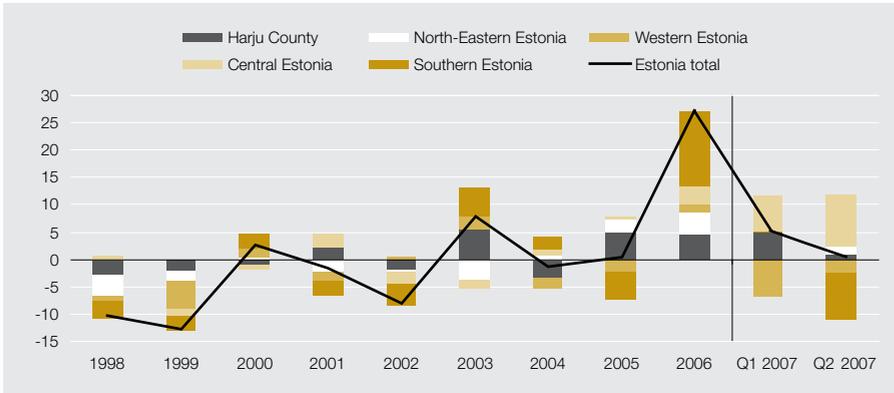


Figure 4. Contribution to employment growth by regions (thousand)

Employment

Compared to 2006, when the number of the employed increased by 6.4% year-on-year, employment growth slowed in the first half of this year: in the first quarter, the number of the employed stood at 1.9% and in the second quarter at 1.3% above the year-ago figure. In the second quarter of 2006, the number of the employed increased rapidly to 650,000 and remained close to that level in the following three quarters, even slightly declining now and then. But in the second quarter of 2007, the number of the employed increased by as much as 8,600 to 658,000.

The employment figure has risen across all age groups (see Figure 5). The number of young employees has increased quite considerably. In the second quarter this year, employment in the age group of 15 to 24 stood at 70,000, which is 4.8% more year-on-year. The number of young employees has gone up by a fourth in the past three years. Quite many young people prefer to work while studying.

By economic sectors, employment rose only in the secondary sector (manufacturing, construction, electricity, gas and water supply) in the second quarter – by 8.5% or 18,300 people. The number of working people increased rapidly only in the construction sector (by 21,200). In the past four years, the number of employees in that sector has more than doubled, amounting to 82,600 people, i.e. 12.5% of total employment. The trend of the construction sector attracting employees from other sectors with higher wages and faster wage growth probably continued also in the second quarter. If the expected cooling in the real estate market materialises in the near future, it might again reduce demand for construction workers after a certain period.

Employment in the manufacturing and energy sectors declined by 1,600 and 2,500 people, respectively. Since value added growth in the manufacturing sector remained high in the second

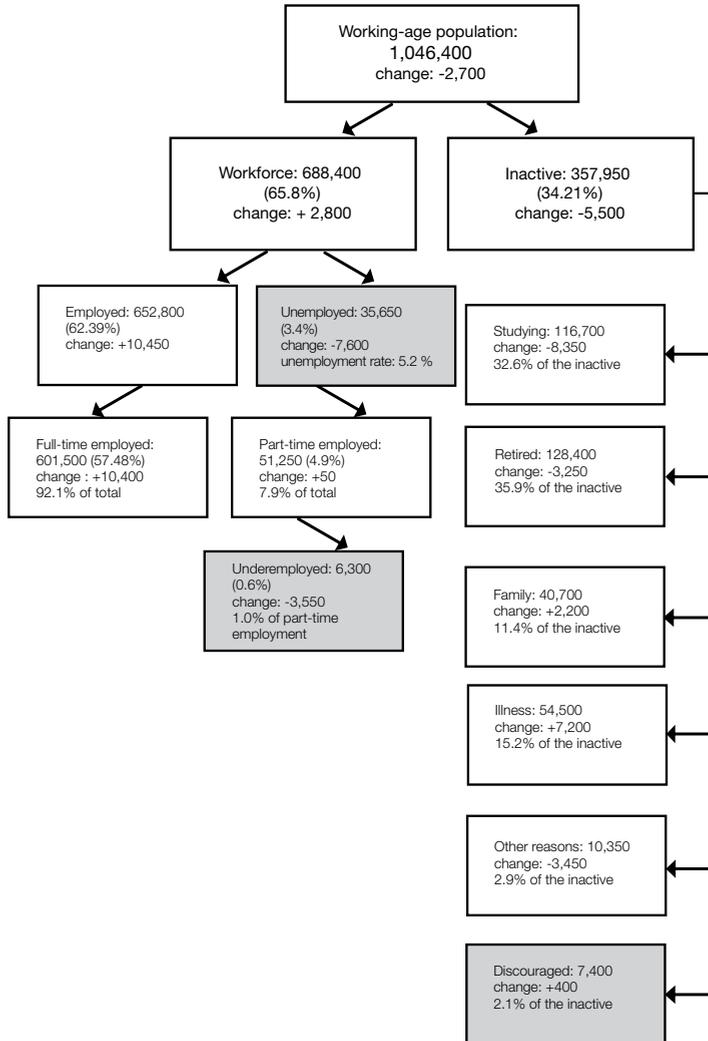


Figure 5. Estonian labour market in the first half of 2007 and change compared to the same period of 2006 (% of working-age population)

quarter, this could only occur on account of productivity. Nominal labour productivity⁵ growth in the manufacturing sector accelerated to 20.9%; real growth (growth in constant prices) stood at more than 11%.

Employment decreased also in primary and tertiary sectors (see Figure 6). According to the Ministry of Economic Affairs and Communications, the driving force behind employment decline in the primary sector is forest management that has to cope with allowable cut restrictions. Based on second quarter data, the number of employees declined also in trade, hotels and restaurants as well as in the transport, storage and communications sector. This might have resulted from the somewhat stalled trade growth and difficulties in the tourism and transit sector, which arose from unfavourable foreign policy events.

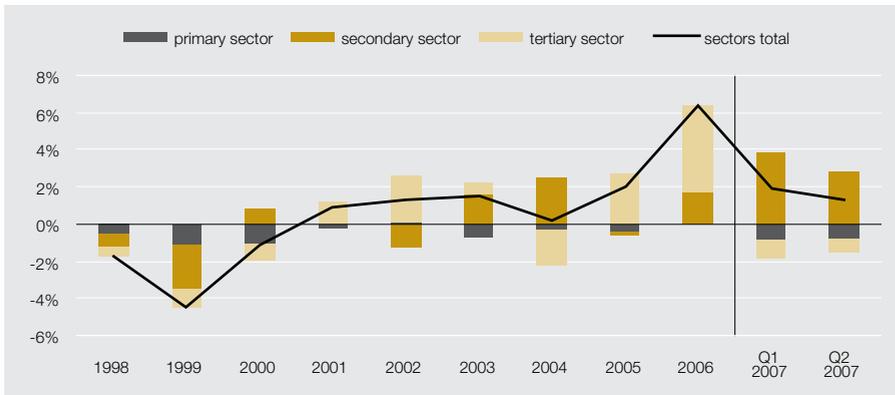


Figure 6. Employment growth and contribution by sectors

By regions, employment growth was positive in Western, Northern and Central Estonia in the first two quarters of 2007. Employment increased the most in Western Estonia – by approximately 8,700 people – and above all among the young and the elderly. Employment growth in other regions was comparatively slow and even declined in Southern Estonia (by 1.6% in the second quarter).

In the second quarter of 2007, the employment structure changed slightly. During 2006 and in the first quarter of 2007, employment growth was mainly underpinned by salaried workers. The share of this group in total employment climbed to 92.5% at the end of last year. In the second quarter of 2007, that group decreased by 1,300 whereas total employment increased along with the growing number of entrepreneurs and sole proprietors (by 6,900 and 2,900, respectively). The percentage of salaried workers in total employment again declined to near 90%.

⁵ Nominal labour productivity means added value growth per employee

By occupational groups, employment growth was spurred not so much by the increase in the number of blue-collar workers⁶ but rather by white-collar workers⁷. As regards the increase in the number of male workers, it coincides with the number of construction workers. The reasons behind changes in female employment (the decline in the number of blue-collar workers and the increase in the number of white-collar workers) are not so obvious (see Figure 7).

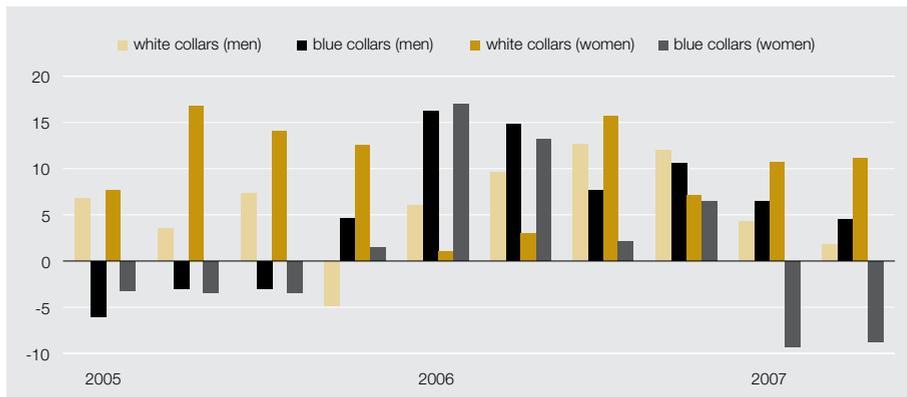


Figure 7. Contribution to employment growth by occupational groups (thousand)

Even though the extent of migration within the European Union it is very difficult to estimate since there are no reliable data, it is possible to use Eurostat's employment data proceeding from the concept of domestic and national employment⁸. The difference between these figures shows net migration, i.e the number of Estonian residents working abroad minus residents of other countries working in Estonia (see Table 2).

According to these data by Eurostat, in recent years (after the accession to the European Union) the number of Estonian residents working abroad has been steadily increasing. The inflow of residents from other countries into Estonia has not been able to offset it either. In the first quarter of 2007, the negative net migration balance amounted to as many as 17,000 people. In other words, of the 13,000 people that entered the labour market only 5,000 stayed in Estonia and 8,000 took up employment elsewhere. In the second quarter, the negative net migration balance decreased to 15,000 people. Thus, just 4,000 people stayed in Estonia of the 9,000 that entered the labour market while 5,000 took up employment elsewhere; meanwhile domestic employment grew by only 0.6% during that period.

⁶ Blue-collar workers: service and sales staff; skilled workers in agriculture and fishing; skilled workers and craftsmen; operators of machinery and equipment; unskilled workers, military personnel.

⁷ White-collar workers: lawmakers, senior officials and executives; specialists and technicians; officials.

⁸ National employment includes domestic employment and Estonian residents working abroad; it does not include non-resident foreigners working in Estonia.

Table 2. National and domestic employment

	National employment	Growth (%)	Domestic employment	Growth (%)	Difference
Q1 2004	592,000	2.2	587,000	2.3	5,000
Q2 2004	597,000	1.1	591,000	0.5	6,000
Q3 2004	600,000	-1.8	595,000	-1.9	5,000
Q4 2004	604,000	-0.4	596,000	-0.9	8,000
Q1 2005	597,000	0.8	590,000	0.5	7,000
Q2 2005	612,000	2.4	607,000	2.7	5,000
Q3 2005	614,000	2.4	609,000	2.3	5,000
Q4 2005	617,000	2.1	611,000	2.5	6,000
Q1 2006	636,000	6.6	627,000	6.2	9,000
Q2 2006	651,000	6.5	641,000	5.6	10,000
Q3 2006	651,000	6.0	640,000	5.1	11,000
Q4 2006	653,000	5.8	640,000	4.7	13,000
Q1 2007	649,000	1.9	632,000	0.8	17,000
Q2 2007	660,000	1.3	645,000	0.6	15,000

Sources: Eurostat; authors' calculations

As the difference between domestic and national employment data is relatively significant, there are also major differences in all the indicators based on these data. For instance, the labour productivity growth indicator, which has been calculated on the basis of the domestic employment rate, reflects a slighter slowdown in 2006 and a stronger growth in 2007: 9.2% in the first and 6.9% in the second quarter (see Figure 8).

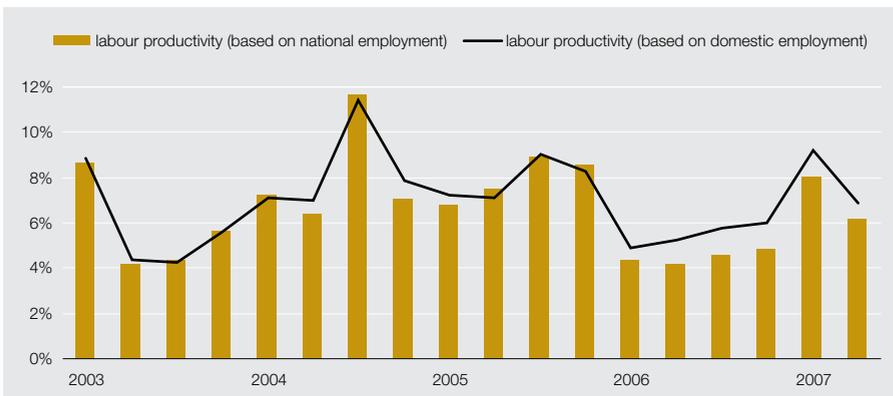


Figure 8. Labour productivity growth

All in all, we may say that the growth of labour supply targeted at the domestic market is slowing, whereas labour outflow from Estonia is picking up. This means that labour reserves have diminished and supply constraints will increase – a risk factor outlined by Eesti Pank in several of its forecasts.

Vacancies

According to the labour demand forecast of the Ministry of Economic Affairs and Communications from last year, labour supply was expected to create complications in the near future. On one hand, it is related to the decreasing and aging population and on the other hand, to consistent outflow of employees into foreign countries. Companies have difficulties with finding necessary workforce since insufficient labour supply no longer meets the demand arising from rapid economic expansion. However, this forecast is looking rather far ahead, as recent data do not confirm it yet.

Although the statistics on vacancies compiled by the Labour Market Board are not representative and thus do not extend to the entire Estonian economy⁹, it has been used in the present analysis as one possible indicator of labour demand.

Recent Labour Market Board statistics indicate that labour demand growth is actually subsiding. According to that, the number of new job advertisements in the last four quarters was actually smaller year-on-year. In the second quarter of 2007, the number of new jobs fell by as much as 36%, but this growth figure has posted rather volatile results across months also before (see Figure 9).

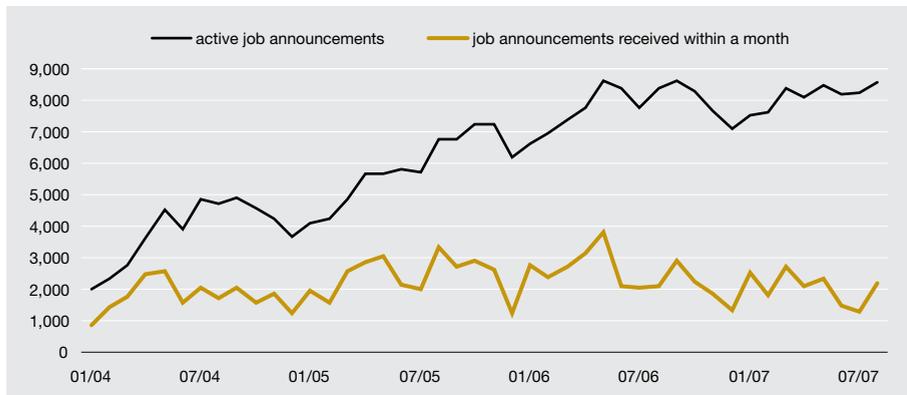


Figure 9. Job announcements submitted to the Labour Market Board

⁹ According to Statistics Estonia, only 1% of employees who have found a job during the period under analysis have found it through the Estonian Labour Market Board.

The number of valid vacancy announcements submitted to the Labour Market Board during the period under review has remained close to the year-ago levels. Taking into account the fact that supply constraints (insufficient qualification of present job-seekers, outflow of labour to other countries etc.) have not eased recently, the stabilisation of the number of vacancy announcements may indicate that the ability of employers to hire suitable employees has not been diminished and that demand pressures have remained unchanged.

Unemployment

Unemployment decreased also in 2007, although this process has likewise slowed year-on-year. The number of the unemployed again fell to the level of the first half of 2005 after having stayed at a considerably higher level in the meantime. In the first two quarters of 2007, unemployment declined by an average of 17.9%, i.e. by 7,700 people. The second-quarter unemployment rate stood at 5.0%, after falling from the quarter before (5.3%) and year-on-year (6.2%). Over the last three years unemployment has decreased twofold: in the second quarter of 2004 it was as high as 10%.

Compared to the second quarter of 2006, this year the biggest decline in the unemployment rate was measured in North-Eastern Estonia, where unemployment is traditionally the highest: to 9.8% from 14.0%. Unemployment was the lowest in Western and Northern Estonia: 3.0% and 3.9%, respectively.

Along with the rapid decline in unemployment in 2005–2006 also long-term unemployment – the share of people in the economically active population who have been looking for work for a year or longer – has decreased. Compared to 2002, long-term unemployment declined by nearly a half by 2006. This is a positive indicator also compared to the EU average. In Estonia, the long-term unemployment rate fell to 2.8% in 2006, whereas the EU average totalled 3.6%. While long-term unemployment in Estonia has only shown a downward trend in recent years, the EU average has stayed close to 4%. The highest long-term unemployment rates in the European Union in 2006 were recorded in Slovakia (10.2%) and Poland (7.8%), and the lowest in Denmark (0.8%) and Cyprus (0.9%).

The number of the long-term unemployed has declined considerably, indeed, but the share of long-term unemployment in total unemployment has still remained high. While in 2006 the European Union average regarding those who had been looking for work for a year or longer was 46% of the unemployed, the share of long-term unemployment among the unemployed in Estonia stood at 48%.

According to Statistics Estonia, in Estonia the likelihood of becoming unemployed for a long time is three times smaller among people with higher education compared to people with primary or basic education. Older people and those who worked as unskilled workers before becoming unemployed face a bigger risk of long-term unemployment. While just every tenth

employed person has primary or basic education, the same applies to every fourth unemployed individual. People with higher education have no problems with finding work. The unemployment rate in that group fell to 2.6% this year. Such a remarkably low indicator rather illustrates the fact that it is not that easy for employers to find specialists with higher education.

Language skills constitute another problem in Estonia, which is why the unemployment rate among the Russian-speaking population and in North-Eastern Estonia is much higher compared to the rest of Estonia.

The number of the long-term unemployed declined also in the first two quarters of 2007; however, their share among the unemployed did not change considerably. While last year 48% of the unemployed had been looking for work for a year or longer, the share of long-term unemployment stood at 53% in the first quarter this year. The situation improved in the second quarter: the share of the long-term unemployed was smaller than that of the short-term unemployed, amounting to 47.6% (see Figure 10).

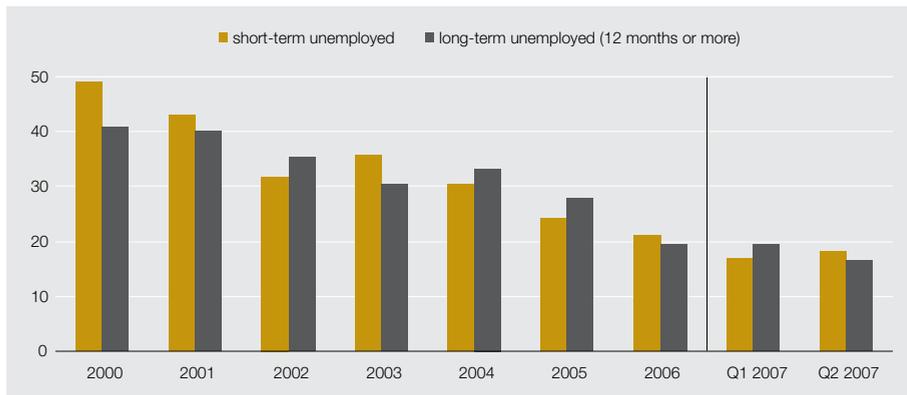


Figure 10. Number of short-term and long-term unemployed (thousand)

Unemployment decreased in the first half of 2007 across all age groups. The down trend was particularly fast among the elderly, whose unemployment rate fell to 3% in the second quarter. Unemployment among those in prime working age stood at 4.8% and at 11.7% among the young.

Unemployment among Estonians and non-Estonians decreased more or less comparably. Unemployment among Estonians decreased by approximately 3,300, whereas the respective figure for non-Estonians was 3,700.

Unemployment analysis by regions reveals that a particularly steep fall occurred in North-Eastern Estonia where the unemployment rate shrank by more than 4 percentage points to 9.8% from 14%. Similarly positive changes took place in the Southern Estonian labour market where unemployment declined by 3 percentage points. In Western and Central Estonia, unemployment was rather low but it has risen slightly from the same period last year.

According to the consumer barometer of the Estonian Institute of Economic Research, households estimated the likelihood of becoming unemployed to be higher compared to 2006 (see Figure 11). The more pessimistic estimate is in line with the number of the registered unemployed that remained quite close to last year's figures during the past months and failed to decline.

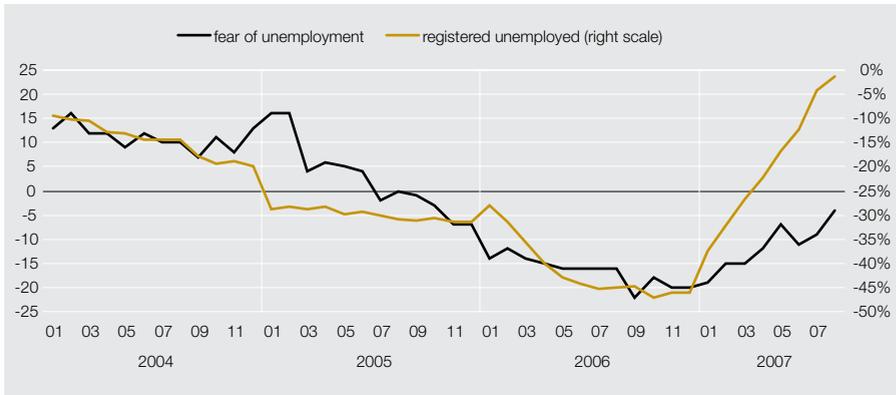


Figure 11. Fear of unemployment based on the EKI consumer barometer and registered unemployment (thousand)

But considering that the number of the registered unemployed has been generally in line with the changes in total unemployment, the decline in the number of the unemployed may soon stop. Further employment growth (in particular considering the decreasing and ageing population) is only possible with rising economic activity or return of people working abroad.

LABOUR COSTS AND PRICE PRESSURES

Average wages

Underpinned by strong demand and labour supply constraints, average gross monthly wages continued to rise fast also in the second quarter of this year, reaching 11,549 Estonian kroons. Consequently, average gross wages increased by 21.2% compared to the second quarter of 2006 and at an accelerated pace. Such a rapid growth was partly caused by one-off benefits and holiday pays in summer. The growth in gross hourly wages ceased to accelerate

in the second quarter, but still remained at a very high level of 20.1%. Even if the pace of wage growth finally begins to slow in the second half-year (a slight slowdown in the growth of social tax revenues gives grounds to expect that), annual wage growth will be faster than in 2006 when it was 15.8%.

The real growth of gross wages picked up from 12.6% at the end of last year to 14.2% in the first quarter of 2007 and reached a record high of 14.7% in the second quarter (see Figure 12).

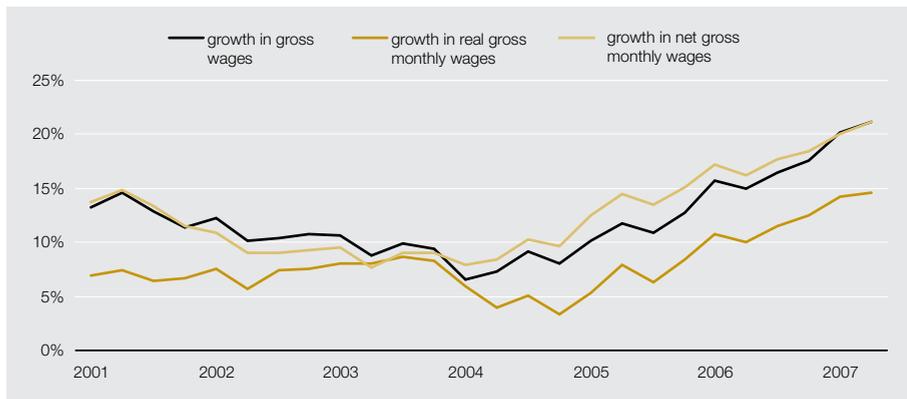


Figure 12. Average wage dynamics

Consequently, the purchasing power of salaried workers grew even further. This year the difference between the growth rates of net and gross monthly wages had disappeared, since the personal income tax reduction had been offset by the rise of the effective income tax rate stemming from stronger wage growth.

Robust wage growth has been accompanied by a rapid increase in relative wages both by fields of activity and by regions. Miners and construction workers saw the biggest rise in average gross wages in the second quarter – by as much as 38.8% and 32.1% year-on-year – amounting to 13,743 and 12,700 kroons, respectively. Gross wages of salaried workers in the mining industry were affected by one-off bonuses and additional remuneration. The growth in average gross hourly wages, on the other hand, slowed from 20.3% in the first quarter to 19.1% in the second quarter.

Average gross monthly wages fell only in the fishing industry (1.4%). The biggest slowdown in wage growth occurred in the real estate sector: from 16.3% last year to 5.6% in the second half of this year.

Rapid wage growth continued in 2007 in agriculture (25.1% in the first and 22.4% in the second

quarter). This can be explained by the low level of wages and increased EU agricultural subsidies. Based on GDP statistics, subsidies increased by 32.3% (253.5 million kroons) in the second quarter, with most of it channelled to agriculture.

In manufacturing, wages increased at a rate comparable to the average of fields of activity, although slightly faster: by 21.6% in the first and 22.8% in the second quarter (see Table 3).

Table 3. Growth in average gross monthly wages by fields of activity (%)

	2003	2004	2005	2006	Q1 2007	Q2 2007
Average	9.4	8.4	10.8	16.5	20.1	21.2
Tradable sector						
Agriculture	8.9	13.1	17.2	21.0	25.1	22.4
Forestry	13.3	22.9	15.1	8.8	33.4	27.2
Fishery	-4.4	-1.4	3.3	55.3	-3.1	-1.4
Mining and quarrying	9.3	6.6	0.5	15.3	19.8	38.8
Manufacturing	9.0	8.4	12.4	17.5	21.6	22.8
Non-tradable sector						
Electricity, gas and water supply	9.3	6.0	13.5	7.8	18.0	22.3
Construction	13.5	11.7	13.6	18.8	24.2	32.1
Wholesale and retail trade	14.5	2.6	7.0	23.1	22.4	20.5
Hotels and restaurants	17.7	8.5	19.5	13.4	20.7	17.3
Transport, storage and communications	4.1	9.3	10.1	14.3	28.7	21.1
Financial intermediation	9.8	3.0	9.2	3.2	29.1	27.5
Real estate, renting and business activities	-0.4	15.4	4.2	17.6	5.4	5.9
Public administration and defence	8.7	8.2	9.5	13.7	23.7	25.6
Education	9.4	10.3	11.5	10.1	16.9	17.5
Health care and social welfare	15.0	13.9	21.1	14.3	15.3	26.6
Other	8.3	14.3	11.6	12.8	23.3	21.6

Since both employment and wage dynamics were rather uneven across fields of activity in the second quarter, faster growth in relative wages as well as structural changes largely affected also average wage growth. For example, while the number of the employed in the construction sector increased by 21,200 in the second quarter (total employment rose by just 8,600 people), the share of the construction sector in total employment rose by 3.1 percentage points year-on-year (from 9.4% in the second quarter of 2006 to 12.5% in the second quarter of 2007). Given that the construction sector also witnessed very fast gross wage growth (32.1%), the shift in the employment structure also boosted average gross wage growth. Considering only the statistics on fields of activity with regard to the number of the employed and average gross monthly wages, we may say that the impact caused by employment structure changes on average wage growth increased to 0.8 percentage points in the second quarter of 2007 (see Figure 13). This means that the acceleration of average gross wage growth in the second quarter (by 0.9 percentage points) was rather driven by structural changes in employment and not so much faster wage growth.

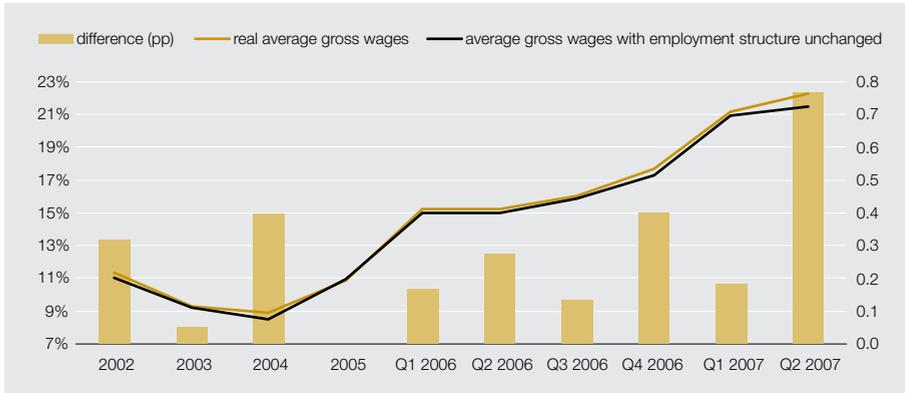


Figure 13. Impact of changes in employment structure on average wage growth

In reality, structural changes in employment are not limited to movement between fields of activity. Bigger changes occur within fields of activity and within companies, but there are no sufficient statistical data to assess the impact of such changes.

As regards wage growth by regions, in the second quarter of 2007 it was faster elsewhere in Estonia, outside Harju County that has so far stood out for the highest results. While average wage growth in Tallinn and Harju County was 19.4%, the respective figures in Tartu and Tartu County stood at 24.5%, in Viljandi at 25.8% and in Põlva at 24.4%. The situation has also improved in Ida-Viru County where wage levels have usually been the lowest, but where wage growth reached 24.7% in the second quarter, outpacing Estonia's average. Thus, the differences in wages between Harju County and other regions decreased even further, which might also be related to increased mobility of the population.

The situation has slightly changed by sectors and by owners of the place of employment. Last year and in the first quarter of this year, wages increased more vigorously in the private sector. In the second quarter, wage growth was the strongest in the public sector (24.7%) and the lowest in foreign-owned private companies (18.4%). As for companies belonging to Estonian private persons, the growth of average gross monthly wages was 21.8%, i.e. 1.5 percentage points lower than in the first quarter (see Figure 14). The public sector posted better results than other sectors also in terms of wage level.

So far, public sector wage growth has generally been in line with increased tax revenues and stronger wage pressures are not expected in the medium term. Nor are public sector wages

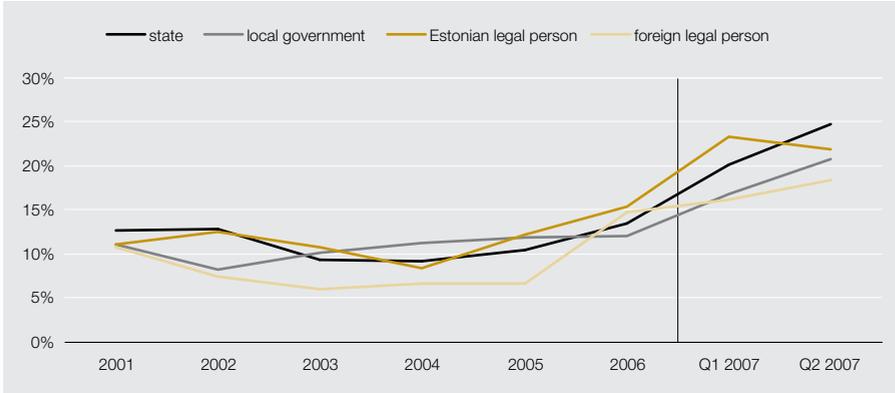


Figure 14. Average wage growth by the owner of the place of employment

so sensitive as to react quickly to changes in the economic situation, in particular at the turning points of the growth cycle. Therefore, when the extremely rapid nominal economic growth began to slow in the second quarter, accelerated wage growth in the public sector was not a problem in itself, provided that it would recede within this year. The adjustment of public sector wage growth should nevertheless be aimed at in next year's budget.

As the economic environment has become more complicated compared to recent years, wage pressures have remained strong also in the private sector. One of the reasons is the ever increasing shortage of highly qualified specialists under the conditions of rapid economic growth. Companies are willing to pay increasingly larger sums of money either to retain them or attract employees from other firms. Supply constraints are also driven by open borders and increased cross-border mobility.

Unit labour costs

The recent rapid wage growth in Estonia indicates that the labour market has changed and that the cost of human capital has risen. The labour market has become increasingly more open and employees have more choices, including the opportunity to go and work outside Estonia, which serves as an additional source of wage pressures, even if it is just an argument.

Based on companies' economic statistics, the growth of the total wage fund did not exceed that of the total value added produced in the first half of 2007 either. The growth rate of value added was even faster than earlier, which in turn gave rise to robust wage growth (see Table 4).

Normally, wage policy in manufacturing companies is directly or indirectly related to labour productivity growth. Therefore, wages might well grow but the growth largely depends on

Table 4. Growth of labour cost and value added based on companies' data (%)

	Q1 2006	Q2 2006	Q3 2006	Q4 2006	Q1 2007	Q2 2007
Fields of activity total						
Labour cost	19.1	20.0	22.1	24.9	30.3	30.3
Value added	27.3	21.5	29.6	30.2	29.0	31.1
Manufacturing						
Labour cost	15.8	16.4	18.6	18.7	22.2	23.2
Value added	20.9	12.8	11.0	18.7	25.1	25.8

the increase in employees' contribution. In other words, wage growth must be in line with productivity growth. When wages and productivity grow at the same pace (though fast), it is considered to be a move up in the value chain and it is even recommended. According to companies' economic statistics, labour costs in the manufacturing sector grew by 22.2% in the first and 23.2% in the second quarter of 2007, whereas the value added created by that very labour force increased even faster – by 25.1% and 25.8%, respectively. Companies have invested in technologies that have even reduced labour costs in relative terms.

Meanwhile, GDP statistics calculated on the basis of a more complex methodology show completely different trends and estimates of the wage-to-productivity ratio.

Last year the share of labour costs in GDP did not grow much, but data on the first two quarters of this year indicate a fast rise, mainly at the expense of profits, approaching again the levels of 2000 (see Figure 15).

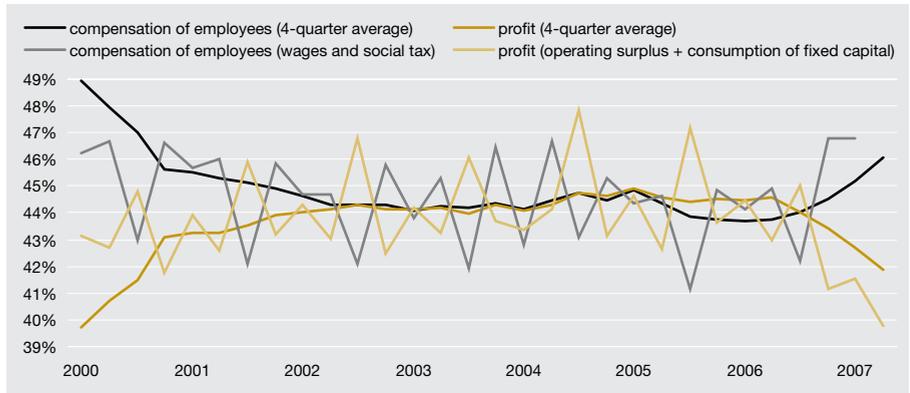


Figure 15. Share of labour cost and profit in GDP

Based on GDP statistics, it is possible to calculate also real and nominal unit labour costs for the economy as a whole as well as by economic sectors.

The real unit labour cost indicator compares the amount of expenditure per employee (mostly wages and taxes on labour) and labour productivity (per employee) at current prices. Practically, the share of value added spent on wages is calculated. Following the definition, the growth rate of unit labour costs is positive when labour costs per salaried employee grow faster than labour productivity in nominal terms. When real unit labour costs increase, it normally indicates a decrease in the share of employer's profit in the value added (GDP).

Nominal unit labour costs compare labour costs per employee with real productivity, not with productivity calculated at current prices. The aim is to analyse inflationary pressures arising from wage growth, as enterprises have to increase prices of their products in order to retain profitability when wage growth exceeds productivity.

Adjusted GDP statistics changed also unit labour cost statistics to a certain extent. According to revised data, real unit labour costs increased by 1.6% in 2006. Taking into account the decrease in the preceding years, all in all real unit labour costs declined by 3.6% in 2006 from 2001 and by as much as 12.1% from 2000 (see Figure 16). The situation changed in the first half of 2007: unit labour cost growth accelerated to 7.8% in the first and to 9.5% in the second quarter. Nominal unit labour cost growth picked up to 7.9% in 2006, to 15.7% in the first quarter of 2007 and to 19.9% in the second quarter. Growth was particularly extensive compared to real unit labour costs, which means that the GDP deflator also grew faster during that period. The growth rate of both indicators was exceptional this year, compared to earlier periods.

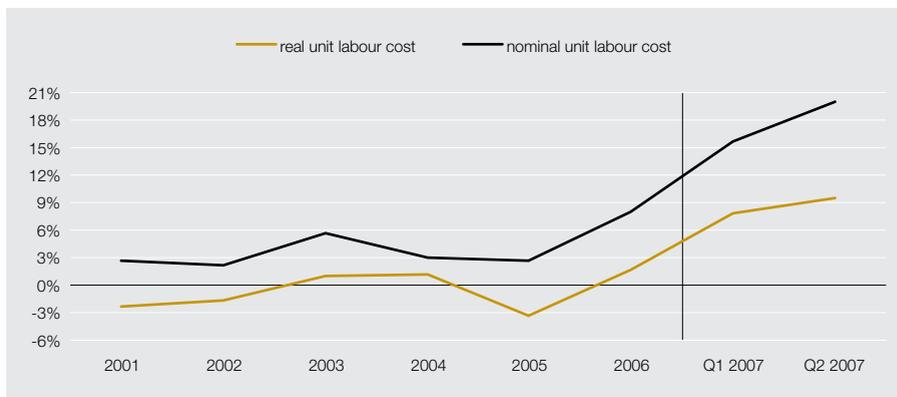


Figure 16. Unit labour cost growth

Considering the differences arising from calculating domestic employment indicators on the basis of national employment statistics, which have been rather large in the last few years, domestic real unit labour costs did not increase that abruptly in 2007, yet still rapidly. Table 5 shows real unit labour cost growth in Estonia on the basis of domestic employment calculated according to Eurostat's data. As can be seen, the indicator increased by just 0.9% in 2006, which is 5.1% below the level in 2001 and 13.6% lower than in 2000.

Table 5. Real unit labour cost growth based on domestic employment (%)

	2000	2001	2002	2003	2004	2005	2006	Q1 2007	Q2 2007
Real unit labour cost	-8.9	-2.4	-1.4	-0.1	1.2	-3.3	0.9	5.3	8.8

Against this background, also the 5.3% and 8.8% growth witnessed in the first and second quarters of 2007 seem slightly less robust, but if such trends persist the relative reduction in profits may become a problem for some investors.

By sectors,¹⁰ in the first half of 2007 real unit labour costs increased faster than average in agriculture and in the fields of activity targeting the domestic market: electricity, gas and water supply, construction, hotels and restaurants and the real estate sector (see Table 6). In agriculture, growth was mainly driven by increased subsidies (from EU Structural Funds as well as Estonian funds owing to the cofinancing requirement). The subsidies probably expanded the wage fund more than the operating surpluses of companies, and income growth in this sector exceeded that of the value added produced. According to the GDP statistics calculated using the income method, subsidies increased by 32.3% in the second quarter of 2007. In the fields of activity targeting the domestic market, the rapid wage growth boosted by earlier strong

Table 6. Unit labour cost growth based on GDP statistics (%)

	2004	2005	2006	Q1 2007	Q2 2007
Real unit labour cost growth					
Total economy	1.1	-3.4	1.6	6.4	9.6
Primary sector	-2.2	5.7	2.9	11.8	34.7
Secondary sector	5.1	-3.1	5.1	8.6	10.5
Private sector service providers	3.0	9.6	-1.2	11.5	12.0
Nominal unit labour cost growth					
Total economy	2.9	2.6	7.9	15.7	19.9
Primary sector	15.5	13.7	-0.2	23.2	55.4
Secondary sector	2.9	2.7	10.1	16.3	20.7
Private sector service providers	4.6	13.2	5.5	14.8	17.0

¹⁰ Only national employment data can be used here.

economic expansion most probably started to reduce profit growth opportunities as economic growth slowed. If these fields of activity react adequately to the changed economic situation in the near future, growth in wages as well as real unit labour costs in these sectors should moderate in less than a year.

In manufacturing, real unit labour costs have grown quite modestly through years. Maintaining the competitiveness of manufacturing companies is important for the economy since a great part of its production is exported. Therefore, it is not advisable that growth in labour costs would exceed growth in productivity during a longer period. In the first and second quarters of 2007, real unit labour costs increased by 3.5% and 3.4%, respectively, in manufacturing (see Figure 17), which cannot be considered a robust change.

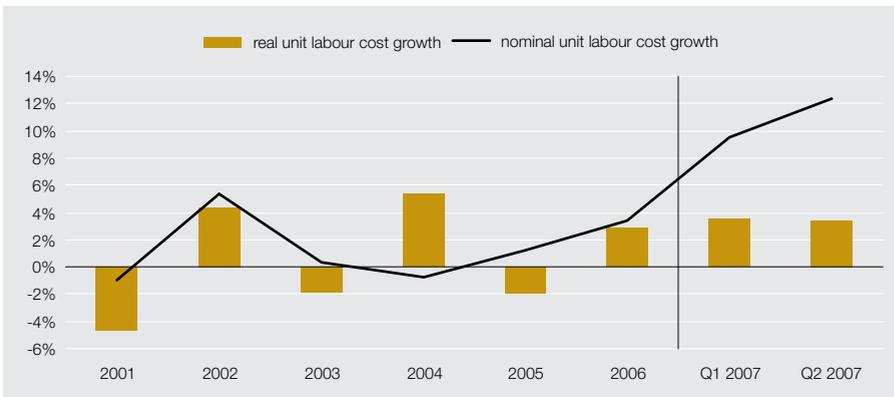


Figure 17. Unit labour cost growth in manufacturing

INSTITUTIONAL DEVELOPMENTS IN THE LABOUR MARKET

Minimum wage in Estonia

On 6 September 2007, the Confederation of Estonian Trade Unions (EAKL) and the Estonian Employers' Confederation (ETKL) commenced negotiations on national minimum wage for 2008. Trade unions seek to have the minimum wage raised to 5,000 Estonian kroons per month and to 29.75 kroons per hour. The current minimum wage is 3,600 kroons per month (21.50 kroons per hour).

New initiatives

The monthly rate that serves as the basis for minimum social tax liability rose from 1,400 kroons to 2,000 kroons at the beginning of 2007 and will rise to 2,700 kroons in 2008. As of 2009, it will be equal to the minimum monthly wage of the preceding year.

Tax policy saw the following changes in the past year:

- Pursuant to the amendment to the Income Tax Act adopted in the summer of 2007, the income tax rate for both employees and companies will gradually fall to 18%: from 22% in 2007 to 21% in 2008, 20% in 2009, 19% in 2010 and eventually to 18% in 2011.
- The amendment to the Income Tax Act also provides for a gradual increase in the non-taxable income threshold to 3,000 kroons per month (2,250 kroons in 2008, 2,500 in 2009, 2,750 in 2010 and 3,000 kroons in 2011).

To promote saving, the Income Tax Act is going to be amended to exempt also income on private persons' securities investments from income tax in case it is reinvested.

In order to reduce health insurance liabilities, the Health Care Services Organisation Act and the Estonian Health Insurance Fund Act were amended at the beginning of 2007. It was decided to finance hospitals' capital expenditure, i.e. depreciation of buildings and facilities, additionally from the state budget. This enables to use the released resources for investments and improve the availability and quality of health care services.

Implementation of the Estonian Action Plan for Growth and Jobs

The progress report on the "Estonian Action Plan for Growth and Jobs 2005–2007 for implementation of the Lisbon Strategy" shows that under the national programme for increasing the supply of qualified labour in 2007–2009 financed during the new European Social Fund programming period for 2007–2013, aims to enhance employment and activity, and reduce unemployment and inactivity in the labour market.

On 2 August 2007, the Government adopted the implementation plan for the years 2007–2009 of the "Estonian Higher Education Strategy 2006–2015". The main objective of the plan is to ensure enhanced international competitiveness of higher education. To raise the quality of education, the base value of one student place will be raised by 30%, which gives higher educational institutions the opportunity to raise the wages of faculty members. The formula for financing universities will be reviewed as well. Moreover, subsidies of the European Regional Development Fund will be used to increase investments in buildings and furnishings of educational establishments.

On 14 June 2007, the Government approved the proposals of the Ministry of Economic Affairs and Communications to simplify the procedures related to citizens of third countries working in Estonia. This entails shortening the time of procedures and reducing red tape upon registration of short-term employment of foreigners and applying for residence permits for long-term employment. The whole plan is based on the principle that foreign labour is substantiated in case of qualified labour. This in turn will be ensured by imposing a wage criterion. Respective legal amendments will be prepared by November 2007.

Furthermore, on 14 June 2007 the Government also adopted the Draft Act to amend the Public

Service Act. The new Draft Act excludes the provisions that allow release from service of officials who turn 65. This will significantly broaden employment opportunities for older people.

The Government's action plan for 2007–2011 aims at modernising the labour market and making it more flexible. An efficient labour market policy is already in place, but the labour law is outdated and needs updating. The concept for a new Employment Contracts Act was submitted to the Government in September. The deadline for submitting the final Draft Act and related legislation is the end of 2007. In addition, consultations with social partners and other interested parties are to be conducted. Legislative proceeding in Riigikogu has been planned in the first half of 2008.

Conclusion

- Employment and unemployment developments in the labour market in the first half of 2007 were in line with slowing economic growth: unemployment decreased and employment increased further, although at a more modest pace.
- The growth in labour supply targeting the domestic market is declining due to demographic processes as well as opportunities to work abroad, whereas demand pressure is weakening. This means that wage growth is not expected to accelerate further in the near future.
- The cost of labour increased too fast in the last half-year. With growth in value added slowing, the stabilisation of wage growth might be insufficient.
- As regards wage growth, so far a “darker” scenario has materialised. Real unit labour cost growth is one of the reasons behind increased inflationary pressures. Faster wage cost growth may cause problems also in the future. Namely, besides stimulating inflationary pressures, it may lead to lower profitability, reduction in investment, slower economic growth, further deterioration of the external balance, loss of competitiveness, etc.
- The opening of the labour market has undermined the flexibility of the labour market, as reduced demand need not bring along increased unemployment. This, in turn, will put pressure on the cost of labour, which is an important production input. A serious alternative is to work abroad. Also the constraints on wage growth arising from increased unemployment may turn out to be weaker than earlier.
- So far, developments in the tradable sector have been more in line with productivity growth. In the non-tradable sector, however, wage pressures on prices raise more concerns. In manufacturing, the number of jobs decreased further, but this was offset by robust productivity growth.
- Further developments regarding wage pressures will be affecting also the economic adjustment process. If wage growth does not slow in the near future, the probability of “hard landing” will increase.

Table 7. Estonian labour market

		2004	2005	2006	2007	
Population (as at 1 January)	thousand	1,351.1	1,347.0	1,344.7	1,342.4	
Employment status (15 to 74 year-olds)		2004	2005	2006	Q1 2007	Q2 2007
Workforce	thousand	659.1	659.6	686.8	683.3	693.5
employed	thousand	595.5	607.4	646.3	647.0	658.6
unemployed	thousand	63.6	52.2	40.5	36.3	35.0
Inactive	thousand	388.7	389.0	362.3	363.1	352.8
Total	thousand	1,047.8	1,048.6	1,049.1	1,046.4	1,046.4
Labour participation rate	%	62.9	62.9	65.5	65.3	66.3
Employment rate	%	56.8	57.9	61.6	61.8	62.9
Unemployment rate	%	9.7	7.9	5.9	5.3	5.0
Employed by fields of activity		2004	2005	2006	Q1 2007	Q2 2007
Agriculture, forestry and fishery	thousand	35.0	32.2	31.1	27.1	29.3
Mining and quarrying	thousand	8.0	5.9	5.2	6.1	5.2
Manufacturing	thousand	140.9	139.5	136.4	146.5	136.6
Electricity, gas and water supply	thousand	12.0	12.5	12.4	9.0	9.6
Construction	thousand	46.8	48.7	62.8	72.6	82.6
Wholesale and retail trade	thousand	80.0	80.6	88.7	88.7	91.3
Hotels and restaurants	thousand	16.2	22.1	22.3	20.5	25.4
Transport, storage and communications	thousand	51.5	54.6	61.5	59.0	62.7
Financial intermediation	thousand	7.9	6.9	7.3	7.6	7.9
Real estate, renting and business activities	thousand	39.4	46.4	48.1	51.7	44.4
Public administration and defence	thousand	36.9	37.2	39.0	34.4	40.1
Education	thousand	54.5	54.9	58.5	53.3	52.3
Health care	thousand	37.5	35.0	37.5	34.4	35.5
Other	thousand	28.8	31.1	34.3	36.1	35.5
Unemployed by duration of unemployment		2004	2005	2006	Q1 2007	Q2 2007
Less than 6 months	thousand	21.2	18.6	15.7	14.0	14.9
6 to 11 months	thousand	9.2	5.7	5.3	3.0	3.4
12 months or more	thousand	33.2	27.9	19.5	19.3	16.6
24 months or more	thousand	21.5	18.2	11.4	10.6	8.7
Inactive by reason of inactivity		2004	2005	2006	Q1 2007	Q2 2007
Studies	thousand	123.1	126.1	124.4	117.9	115.5
Illness or disability	thousand	43.3	47.0	51.3	57.1	51.9
Pregnancy, maternity or parental leave	thousand	27.2	27.1	23.8	27.1	26.9
Need to take care of children or other family members	thousand	13.7	14.0	13.9	13.9	13.5
Retirement age	thousand	149.4	145.4	129.5	128.1	128.7
Discouraged people (lost hope to find work)	thousand	17.7	14.7	7.2	8.0	6.8
Other	thousand	14.4	14.6	12.2	11.1	9.6
Workforce by level of education		2004	2005	2006	Q1 2007	Q2 2007
First level and less	thousand	73.2	65.1	75.3	68.2	73.9
Second level	thousand	375.6	367.4	376.4	383.2	382.2
Third level	thousand	210.3	227.0	235.0	231.9	237.4
vocational secondary education	thousand	70.0	67.6	70.5	74.9	76.7
higher education	thousand	140.4	159.5	164.6	156.9	160.6



APPENDIX

MAIN QUARTELY INDICATORS OF THE ESTONIAN ECONOMY as at 10 December 2007

	Unit	Period	Indicator	Change compared to the previous period (%)	Change compared to the same period last year (%)	Source
Gross domestic product						
Current prices	EEK m	Q3 07	61,675.7			ESA
Constant prices	EEK m	Q3 07	42,632.2	-1.4	6.4	ESA
Production						
Volume index of industrial production (at constant prices (2000 = 100))	%	Q3 07		-5.7	4.1	ESA
Investments in fixed assets (at current prices)						
	EEK m	Q2 07	9,828	12.8	6.2	ESA
Construction						
Construction activities of construction enterprises (at current prices)	EEK m	Q3 07	16,654	10.7	15.9	ESA
Usable floor area of completed dwellings	thousand m ²	Q3 07	118.0	-23.8	26.2	ESA
Usable floor area of non-residential buildings	thousand m ²	Q3 07	174.9	-35.5	-36.2	ESA
Consumption						
Retail sales volume index (at constant prices, 2000 = 100)	%	Q3 07		0	13	ESA
New registration of passenger cars	pieces	Q3 07	18,235	-16.6	-11.2	ARK
Prices						
Consumer price index	%	Q3 07		2.1	6.4	ESA
Producer price index	%	Q3 07		1.5	8.7	ESA
Export price index	%	Q3 07		1.9	8.9	ESA
Import price index	%	Q3 07		0.9	2.8	ESA
Construction price index	%	Q3 07		1.6	12.1	ESA
Real effective exchange rate (REER) of the Estonian kroon	%	Q3 07		1.3	2.8	EP
Labour market and wages						
Employment rate (based on the Labour Force Survey)*	%	Q3 07	63.3	62.9	61.9	ESA
Unemployment rate (based on the Labour Force Survey)*	%	Q3 07	4.2	5.0	5.4	ESA
Registered unemployed (according to the Labour Market Board)	persons per month	Q3 07	12,914	-1.7	-1.2	TTA
% of population between 16 years old and pension age*	%	Q3 07	2.0	2.0	1.6	TTA
Average monthly gross wages and salaries (health insurance benefits excluded)	EEK	Q3 07	10,899	-5.6	20,2	ESA

* Indicators of the period, not changes

	Unit	Period	Indicator	Change compared to the previous period (%)	Change compared to the same period last year (%)	Source
General government budget (net borrowing not included here)						
Revenue	EEK m	Q1 07	19,336.5	-8.7	24.6	RM
Expenditure	EEK m	Q1 07	18,610.8	-19	20.6	RM
Balance (+/-)*	EEK m	Q1 07	725.7	-1,804.7	87	RM
Period's revenue to the planned annual revenue*	%	Q1 07	27	29.5	21.6	RM
Transport						
Carriage of passengers	thousand	Q2 07	50,883	-5.2	-2.2	ESA
Carriage of goods	thousand tons	Q2 07	27,964	-3.4	23.7	ESA
Tourism, accommodation						
Visitors from foreign countries received by Estonian travel agencies	thousand	Q2 07	491.4	16.3	19.6	ESA
Visitors sent to foreign tours by Estonian travel agencies	thousand	Q2 07	134.7	5.1	14.4	ESA
Accommodated visitors	thousand	Q3 07	826.8	31.9	1.9	ESA
o/w foreign visitors	thousand	Q3 07	505.7	26.9	-5.5	ESA
Foreign trade (special trade system)						
Exports	EEK m	Q3 07	30,023.2	-8.6	1.4	ESA
Imports	EEK m	Q3 07	41,140.7	9.9	-1.6	ESA
Balance*	EEK m	Q3 07	-11,117.5	-12,794.4	-12,205.5	ESA
Foreign trade balance/exports*	%	Q3 07	-37.0	-38.9	-41.2	ESA
Balance of payments*						
Current account balance	EEK m	Q2 07	-8,548.7	-12,027.8	-7,847.9	EP
Current account balance to GDP	%	Q2 07	-14	-21.9	-15.2	EP
Foreign direct investment inflow	EEK m	Q2 07	7,650.9	8,779.4	3,374.4	EP
Foreign direct investment outflow	EEK m	Q2 07	-6,776.0	-3,488.6	-3,982.1	EP
International investment position						
Net international investment position	EEK m	30/06/07	-168,582.9	5.7	18.6	EP
Direct investment in Estonia	EEK m	30/06/07	162,995.2	5.9	9.3	EP
Net external debt	EEK m	30/06/07	235,230.8	9.5	35.2	EP
o/w government	EEK m	30/06/07	3,139.5	-34.2	-36.6	EP
EEK/USD average quarterly exchange rate	EEK	Q3 07	11.4	-1.9	-7.2	EP

ESA – Statistical Office of Estonia
ARK – Motor Vehicle Registration Centre
EP – Eesti Pank /Bank of Estonia
TTA – Labour Market Board
RM – Ministry of Finance

