Box 2. Analysis of foreign demand

World trade and other globalisation processes led to a high level of integration of world economies. As a result, structural changes in the domestic demand and trade of major countries inevitably, directly or through interrelated secondary effects, affect less significant world trade players. Lithuania is a small open economy whose exports of goods and services accounted for 50 per cent of GDP in 2001 and 77 per cent of GDP in 2011. Thus, Lithuania is becoming increasingly reliant on developments of the world economy and the economic situation in its major trading partner countries. It is very important to adequately assess the impact of external environment on the economic processes in Lithuania. Among the most intuitive ways to do it is to carry out an evaluation of the foreign demand for the exports of Lithuanian goods and services. Employing the foreign demand indicator, one can observe contributions to Lithuanian export developments and assess changes in the country's international competitiveness.

The impact of an individual trading partner country on Lithuanian exports is directly related to the domestic demand in that country. This impact can be calculated by weighing imports from that country subject to its volume of trade with Lithuania. Intuitively, imports from Lithuania's largest trading partners (e.g., Russia, Germany and the Baltic States) exert the highest impact on Lithuanian exports, while the effects of developments in the imports from countries to which Lithuania exports very little are insignificant. Thus, we can calculate the indicator of foreign trade by aggregating weighted import developments in Lithuania's major export partners, neglecting the countries with which trade volumes are low. To calculate the indicator of Lithuania's foreign demand using the method described above, it was chosen to evaluate economic indicators of Lithuania's trade partners, which are comparable to Lithuanian export volumes data. Seasonally adjusted data of national accounts published by Eurostat and Russia's Federal State Statistics Service are used for the calculations. Quarterly data on the imports of goods and services have been weighted subject to the Lithuanian export values presented in the Eurostat's "ComExt" database. Having defined the sample of Lithuania's trading partners[1], annual change in the country's foreign demand can be calculated with following equation:

$$g_t^* = \sum_{i=0}^{n} g_{it}^I \alpha_{it-4},$$

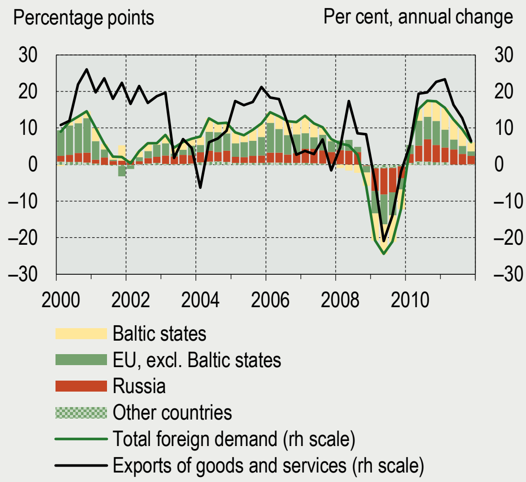
where g_t^* is the change in Lithuania's foreign demand during the period t, g_{it}^I is annual import growth in the country i during the same period t, and α_{it-4} is the coefficient of export weight, i.e. the share of Lithuania's exports to the country i relative to Lithuanian exports to all the countries of the sample.

Quarterly data on changes in foreign demand are calculated using the same algorithm. The obtained changes in the indicator in annual and quarterly terms are presented in Chart A.

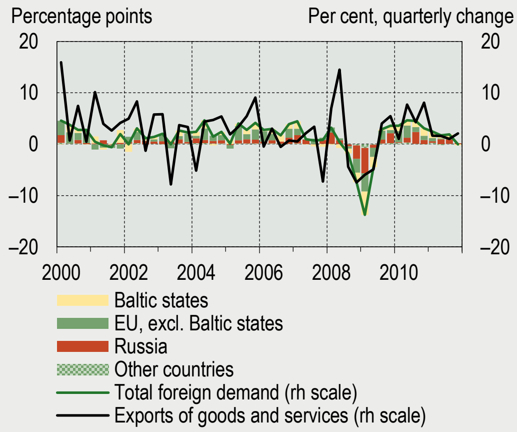
The calculated indicator of foreign demand is one of the possible measures to define the contributions to the development of Lithuania's export, and thus to the development of its economy. Despite certain methodical limitations which will be discussed further on, there is a clear link between the change in Lithuania's foreign demand and its exports. Since the early 2000's the development of Lithuania's foreign demand as its entire economy alike has been volatile. During the first years after the Russian crisis, the EU was a driver behind the development of Lithuania's foreign demand, with Russia's contribution relatively low, although it started increasing from 2007. The Baltic states are other very important trading partners of Lithuania and their aggregate contribution to Lithuania's foreign demand increased, particularly during the period of the highest economic growth in those countries (the period 2004–2007). From early 2008, domestic demand in Latvia and Estonia started declining, thus the influence of these countries on the demand for Lithuanian exports became negative. Foreign demand dropped in the last quarter of 2008 – for the first time from the beginning of data collection. The onset of recession in the EU countries and Russia, and thus the drying up of their domestic demand, contributed negatively to Lithuania's foreign demand. Lithuania entered a new stage of increase in its foreign demand in early 2010 only, with a particularly favourable contribution stemming from a recovery in the domestic markets of

Chart A. Developments in the demand for exports of Lithuanian goods and services and drivers behind it

(A.1.) Annual changes

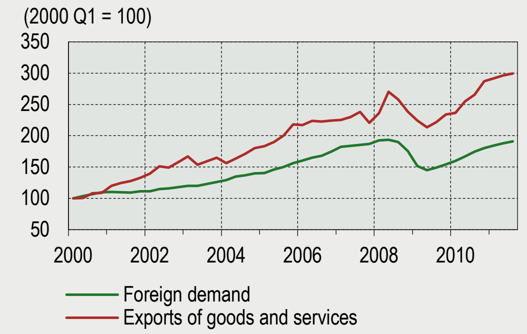


(A.2.) Quarterly changes



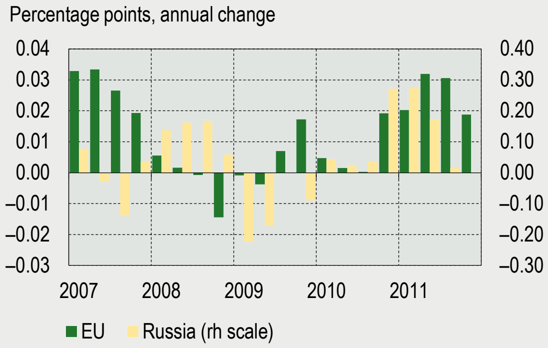
Sources: Eurostat, Russian Federal State Statistics Service, Statistics Lithuania and Bank of Lithuania calculations.

Chart B. Indices of Lithuania's foreign demand and export



Sources: Eurostat, Russian Federal State Statistics Service, Statistics Lithuania and Bank of Lithuania calculations.

Chart C. Market shares of exports of Lithuanian goods in the EU and Russia



Sources: Eurostat, Russian Federal Customs Service, Statistics Lithuania and Bank of Lithuania calculations.
Note: nominal foreign trade data; oil products are excluded from the calculations.

major EU countries and Russia, including, from the middle of that year, the Baltic States. The rate of increase in foreign demand was less strong during the last two quarters of 2011, mainly due a weaker growth in major EU countries, but a recovery in the domestic demand in the Baltic States still had a stimulating effect.

The index of foreign demand (see Chart B) shows that at the end of 2011 Lithuania's foreign demand had already nearly achieved the highest, pre-crisis level; however, since early 2011, its changes have been quite moderate. The index of Lithuanian exports also shows that exports rose to their highest volumes in the latter half of 2011, and were a fifth ahead of the figure for the highest performance quarter in 2008.

With regard to foreign demand and export developments, it is important to note that the correlation analysis has certain limitations and foreign demand cannot explain the entire dynamics of exports. The export development analysis conducted has not taken into account other contributions to export, such as the structure of foreign trade and the level of competitiveness of Lithuanian exports. The higher the similarity between the structures, the lower will be the difference between foreign demand and export developments. Moreover, the expanding market shares of Lithuanian exports in its trading partner countries may indicate growth of competitiveness of Lithuanian exports. With the competitiveness effect being positive, export growth outpaces foreign demand growth, and vice versa. Stronger export growth compared to growth in foreign demand from 2010 and the increase in the market shares of Lithuanian exports in its major trading partner countries during the same period (especially the EU, see Chart C) might point to the growing competitiveness of Lithuanian exports.

[1] The sample of calculation of the indicator of foreign demand includes twenty Lithuania's foreign trading partners. The sample's criterion is set to define significant trading partners, which stipulates that Lithuanian exports to a particular trade partner should be at least 1 per cent of Lithuania's total exports during the period 2005–2010. This criterion is met by the following countries: Russia, Latvia, Germany, Poland, Estonia, the United Kingdom, France, Belarus, Holland, Denmark, Sweden, the USA, Ukraine, Norway, Italy, Spain, Belgium, Kazakhstan, Canada, Finland and Singapore (due to a lack of reliable data, Belarus, Ukraine, Kazakhstan, Canada and Singapore were not included in the calculations). The following potentially important Lithuania's foreign trading partner countries, which did not meet the defined criterion at the time of the calculations, were included in the sample of countries additionally: Turkey, the Czech Republic, Hungary and Austria.