

Analysis within the framework of the IEER ad-hoc business climate research project shows the change in the propensity of emigration according to the frequency of internet search terms relating to foreign employment. Google Trends provides a system for retrieving time series data with the frequency of different search terms characterized by the Google search service. Our prior assumption is that the internet is a significant part of pre-migration enquiries and the Google search engine is used in this process, thus search volume carries relevant information for our calculation with regard to migration trends.

The results show that in general, the frequency of search terms for working abroad not related to a specific country peaked twice between January 2007 and September 2012, first in 2009 and then in January 2012, while in December 2010 it was at a minimum. The most popular search destinations were Austria, Germany and Great Britain during the period under review. In all three countries, 2012 showed an increased interest in employment opportunities; the search volume peaked in January of this year. Employment in Austria was of interest to those mostly in the western part of Hungary, while for Germany the same can be said for those living in the counties of Komárom-Esztergom and Tolna. For job opportunities in England the north-eastern part of the country showed the greatest interest for the period under review. The data shows that – with the exception of Austria – Hungarians very rarely look for work in neighbouring countries.

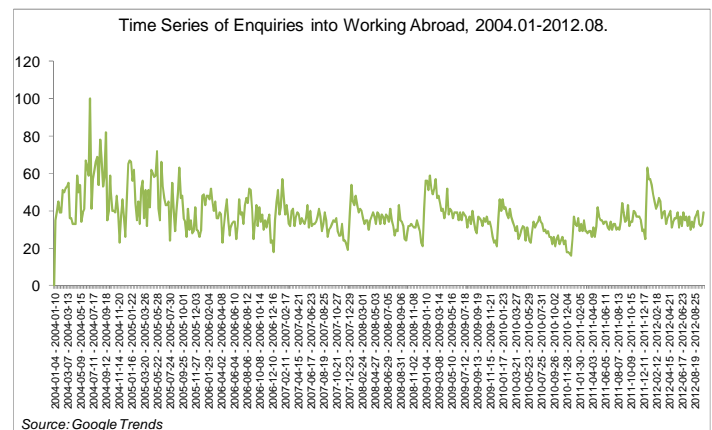
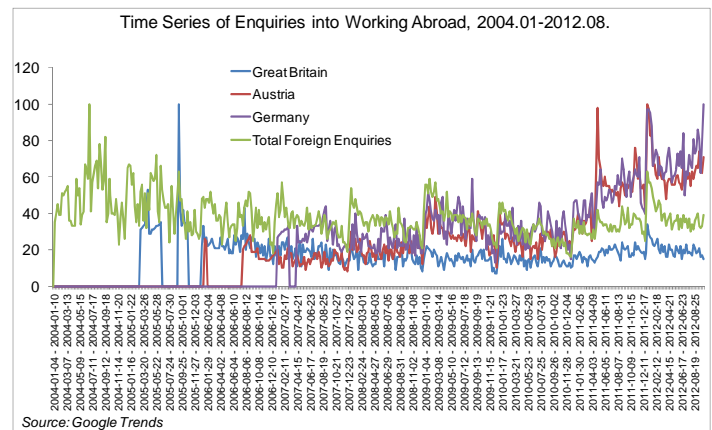
Background

According to a research from the Társi Social Research Institute in March, in 2012 the migratory potential of Hungary hit a 20-year peak. The growth in the share of those planning for short-term or long-term foreign employment has become particularly intense since 2010, as the migration rate based on the cumulative totals of the different migration plans also began to increase steeply in the last two years. One of the main results of the Társi analysis is that in 2012 one in five adults in Hungary is planning to settle abroad.

This is not surprising given all the previous literature on the subject and recent socio-economic developments. In a study by Agnes Hars published in the 2008 Social Report, in the year immediately before the outbreak of the global economic crisis, a major exodus was not expected according to the findings of an examination into migration intentions. However, at the same time it called attention to a possible -- indeed, what was then considered more likely to occur -- scenario in where economic austerity measures, the economic downturn, and deteriorating living standards together could “push” the population towards migration.

Details

Google Trends provides a system for retrieving time series data with different search terms to illustrate the frequency of Google's search services, where the occurrence of a search term exceeds a certain Google threshold. Aggregation of the data can be narrowed down to countries, and for some countries even a regional breakdown is available. In terms of time frame Google Trends is able to retrospectively analyze traffic until January 2004 on a monthly or, depending on the search frequency, even on a weekly basis as well.



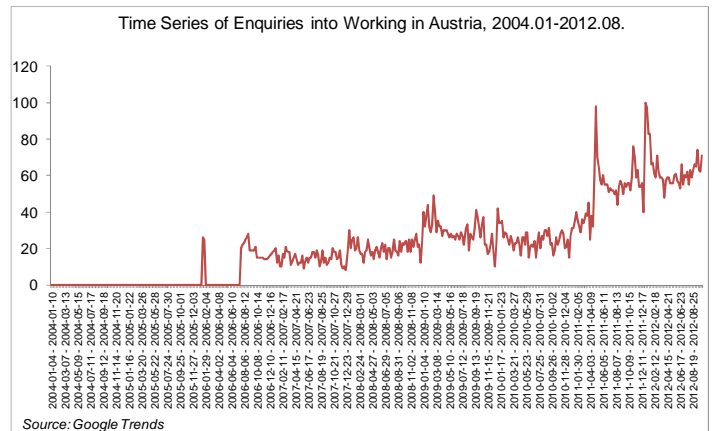
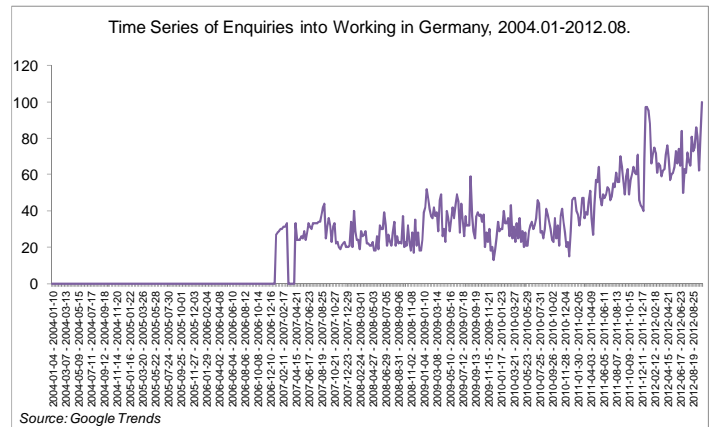
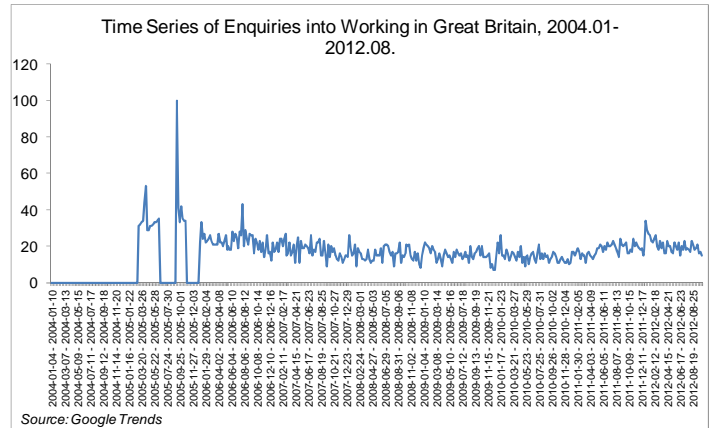
The frequency of key words and phrases is graded by Google Trends on a score between 0 and 100, which depicts the total number of searches on Google of an expression compared to the total number of searches. A score of 100 represents the most intensely searched in terms of frequency, while in terms of number it represents the most used keyword. A zero value can be seen in the time series if a search term is under the Google threshold -- if the search volume along the entire length of the time series is below this threshold, the application doesn't issue data at all. High traffic volume are scaled on a weekly while less common search terms are scaled on a monthly time series. When there is a sufficiently high search volume Google lists the most popular search terms related to the examined search term. Time-series reports prior to 2007, as in previous years are often faced with a lack of data.

Google uses a similar scale for the spatial distribution of search traffic, which is also discussed in our analysis. A value of 100 is a territorial unit – i.e., counties in the case of Hungary – characterized from where the most queries regarding a search term began. Regional differences can only be used by the online Resources Map program, which is specifically designed to help in the presentation and representation of territorial data.

Google Trends offers numerous ways to refine the analysis, so even the study of the traffic of multiple search terms can be implemented by specifying various filter criteria. In addition, the data can be downloaded from Google, so that more detailed mathematical and statistical analysis can be drawn under the appropriate software. In the course of our study the different search terms related to the characteristics of job search traffic data of the countries under review were downloaded from the Google system country by country, so all the possible migration of a target time series can be characterized. In addition to working abroad in general, search terms not connected to specific countries were formed in a time series representing general interest.

Results

The frequency of general queries, that is foreign employment related search terms not linked to destinations during the period of January 2007 and September 2012, peaked twice, first in 2009 and then in January 2012, while in December 2010 it reached a minimum. Using mathematical and statistical tools for analyzing the time series we can conclude that in December 2010 there was a turn of stochastic trends: a declining trend since the beginning of the period began to grow. What can also be concluded is that during the period in review the most relevant searches came from Nógrád county, while users from Tolna and Komárom-Esztergom counties showed great general interest.

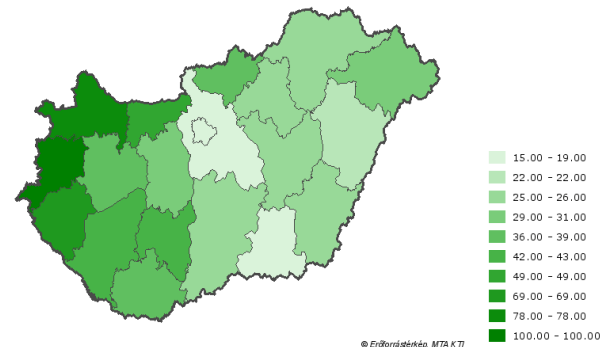


Based on the aggregation of the time series and the number of search terms – that is, search terms of sufficient frequency – it can be stated that for those planning to work abroad, or at least for those interested in doing so, they mostly tried to inquire about Austria, Germany and Great Britain. For all three countries, it can be clearly seen that in 2012 there was an increased interest in employment opportunities, with the search volume peaking in January of this year. Using mathematical and statistical tests it can be stated that the trend of interest in job opportunities began to increase for Austria in August 2010, while for Germany it was in November 2010, while for the UK it was in June 2010. From a territorial point of view, it can be said that employment in Austria was of most interest to those in western counties (Vas, Győr-Moson-Sopron, Zala), while for Germany the same could be found for the residents of Komárom-Esztergom and Tolna counties. Job opportunities in Great Britain aroused greatest interest from those in the north-eastern part of the country (Borsod-Abaúj-Zemplén and Szabolcs-Szatmár-Bereg counties) during the period under review.

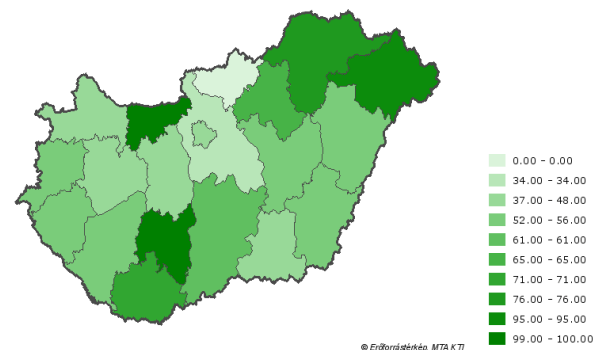
Based on our data collection experiences, we can say that there is also appreciable search traffic for France, Italy, Switzerland, Sweden, and the United States regarding labour opportunities over the past few years. It can be seen that the frequency of searches increased in 2011-2012, however a more detailed mathematical and statistical analysis for our claim can not be supported due to infrequent turnover and a lack of data. In the case of these countries, Google registered an appreciable quantity of queries from the area of Budapest only.

With the exception of Austria, it is very rare that Hungarians looked for work in neighbouring countries. In the case of Slovakia, the Ukraine, Romania, Serbia, Croatia and Slovenia Google didn't register the work-related search volume required for analysis. This suggests that the Hungarian internet users prefer to turn to the labour markets in Western European countries, even if they may be more remote -- both geographically as well as culturally.

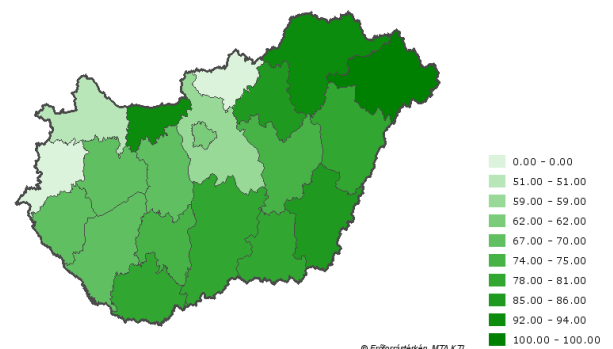
Google Research Traffic Related to Working in Austria



Google Research Traffic Related to Working in Germany



Google Research Traffic Related to Working in Great Britain



Macro-economic trends: Lithuanian economic developments between 1995 and 2012

Lithuania did very well in overcoming obstacles in the transition process. Below the most important demographic and economic trends between 1995 and 2012 are summarized. The data shows that the population is declining, however the activity rate increases. Capital stock has increased rapidly during the period, and this corresponds to an increase in real wages. The Lithuanian economy for most of the period was based on external sources, but the majority of this went to companies. The very low level of debt and the financial position of households are sustainable. Only the negative balance of foreign trade overshadows this image; nevertheless, since the outbreak of the economic crisis in 2008 we are witnessing a significant improvement in this area as well.

Demography and labour force

During the period in review the population of Lithuania showed to be in decline. This decrease was particularly strong in 2010-2011, but the working-age population decreased at a lower rate. For the period as a whole the active population, and within this those who were employed, also declined, but only about half as fast as the population as a whole, so the activity rate can be said to have increased. The unemployment rate has increased over the whole period, but as with the number of those employed there is a well-observed strong positive trend from 2000-2007, and then afterward a decline.

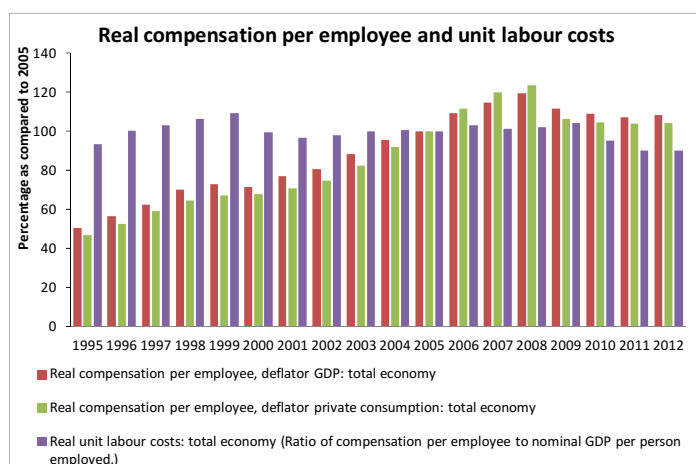
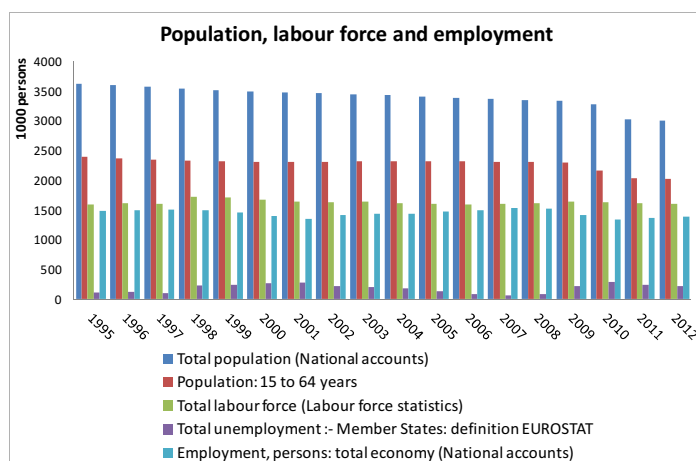
Wages and work-related expenses

For gross wages from the beginning of the period in review until 2008, the growth rate from 2000 until 2007 was the greatest during the strong economic upswing. The gross wage per employee and the unit labour costs (UCL) representing the rate of GDP per person employed, however, slightly decreased or increased slower at this time. Gross real wages were slightly inflexible to respond to the economic downturn in 2008: it suddenly began to decline, but this decline was much less than the fall in GDP.

GDP

The data shows that from the beginning of the period in review until 2008, GDP increased steadily. The year 2009 shows a decline compared to the previous one, but the gross domestic product then continued to increase again. The real GDP per capita data clearly show that the population decline between 2010 and 2011 has not dampened the total GDP mass, but has brought per capita GDP growth.

During the period in review, GDP growth, export growth, public consumption, capital accumulation, as well as individual and collective consumption, all moved in tandem.



Movements in imports and the balance of trade, meanwhile, were in the contrary direction.

Capital accumulation and consumption

The amount of capital produced and consumed by the Lithuanian economy and the growth of capital stock shows a positive picture. The total amount of capital in production from 2000 until 2007 during the upswing reached 25 billion LTL in value, which is expressed as a percentage of GDP to peak at around 28%. The net production of capital (which does not include normal wear and tear and revaluations) also became the highest in 2007 as a proportion of GDP (16%). These indicators responded very sensitively to the 2008 economic downturn, the net capital yield fell to 2%, the gross production of capital to 18%. This year around 7% and 21% respectively is expected.

We can view separately which industry sectors benefitted from this capital amount. The largest amount of capital inflow was produced by the construction industry – based on a list of sectors with working capital inflows, we see an industrialization process emerging.

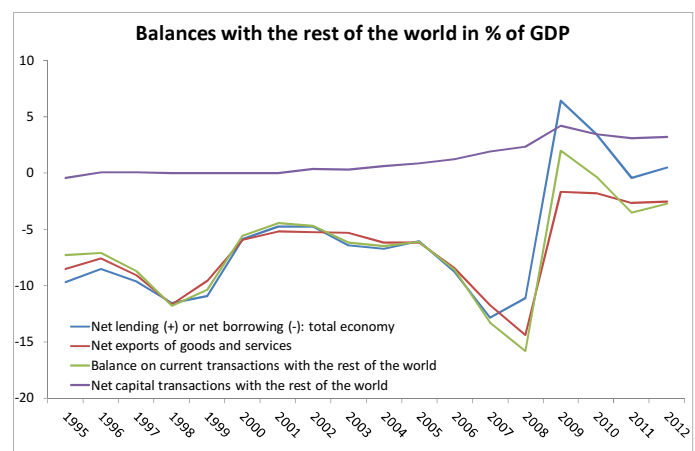
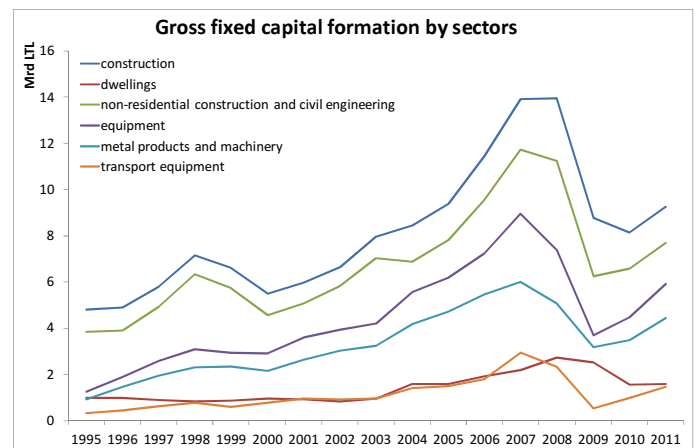
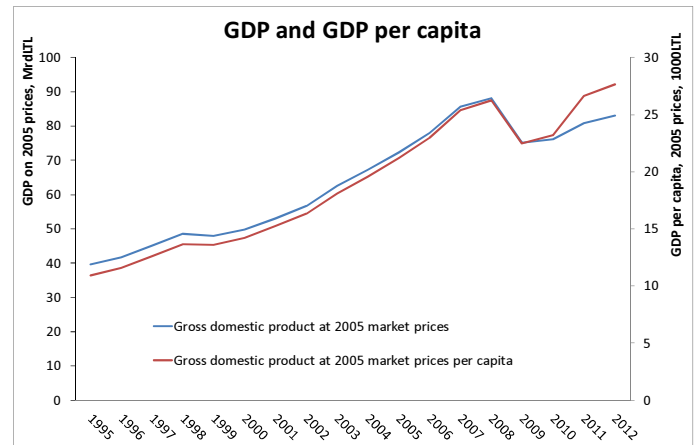
In the case of a stable positive trend in net long-term capital production, net capital stock increases. During the period in review that stock has doubled, which means that a successful capital formation process took place in Lithuania. In comparison, during the same period in Germany 25% and in Hungary 56% growth was recorded. This means a big change in the productivity of capital: if the labour force, knowledge, level of technology and other factors of production volume does not increase to a similar extent, then along with the usual assumptions a decline in the productivity of capital can be expected. In parallel, the productivity of other factors increases. In this way knowledge and technology appreciates, which allows the country to move towards a knowledge-based economy.

When the production process of capital expressed as a percentage of GDP and the change in the position of national savings is examined, it can be seen that in years when there was high working capital production, both gross and net national savings reached a high level. This suggests that the accumulation occurred associated with foreign financing needs.

Funding needs

Now, we examine that as a result of this capital accumulation to what extent has the net foreign financial position worsened, i.e. what are the financing needs of the country's economy. In particular, we would like to know about government and private sector borrowing requirements separately.

If the amount of foreign capital inflows, the foreign trade balance, and the balance of transactions are represented as a share of GDP, it can be seen that in foreign trade imports



are dominant and this is also the dominant element of the net financing requirement indicator. This overshadows the image of the Lithuanian economy.

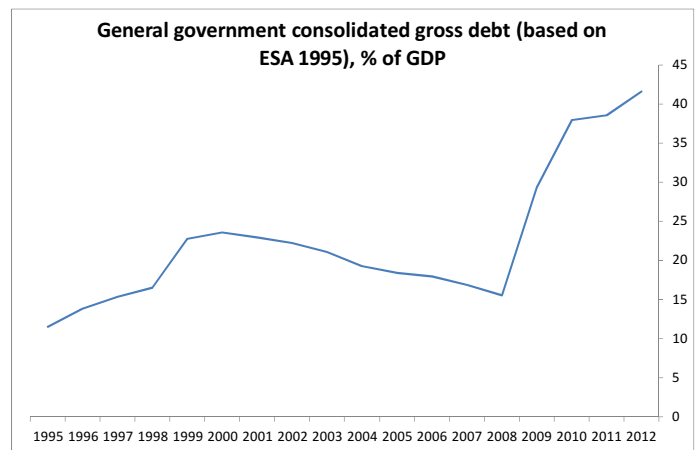
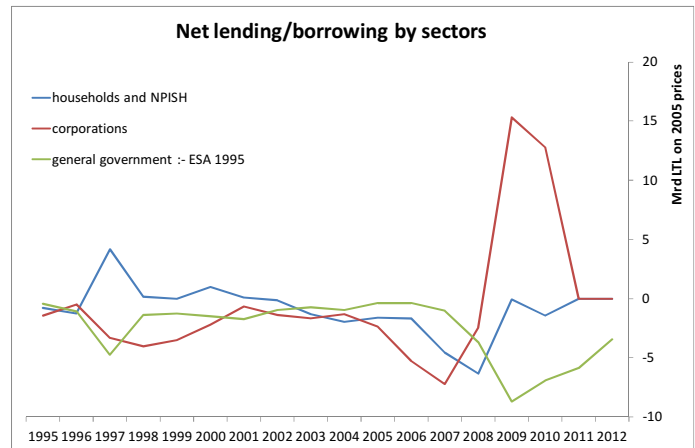
In general, we may think that by itself it does not count as "trouble" if a country has external financing needs. If you expect to be able to repay, it can be a good decision to borrow. For example, in the case of capital accumulation from high-productivity export industries, very large debts aren't considered unsustainable. However, in the case of using external financing to finance consumption, an arbitrarily small deficit can be viewed as unsustainable.

In Lithuania, we see that high production and capital accumulation is used to sustain the long-term negative financing gap. In 2008, as a result of the economic downturn, we can see that the rest of the world is moving toward sustainable balances. This can also be seen in the compilation of data of the net borrowing requirements by economic sectors. The public sector during the crisis had to increase its borrowing requirements, but the private sector, especially the companies, were able to reduce this: as we saw earlier, this means a reduction in the consumption of import and stated capital.

Public debt

For most of the period in review -- up to the 2008 economic downturn -- Lithuania's public debt was low and declining. Then a one time increase occurred, from 15% to 40%. By international comparison, this indicator is even now at a very low level.

Source: AMECO online database
(http://ec.europa.eu/economy_finance/ameco)



International trends

The Ifo Index, Germany's industry and trade confidence index of the Institute for Economic Research in Munich showed a further decline in September 2012, a fifth consecutive month of decline. The current business situation assessment has continued to deteriorate, and for the next half year it is expected to become more pessimistic. According to the IEER index of asynchrony, the Ifo business confidence index indicated lower uncertainty than in the previous month. Researchers see that German economic growth will continue to be threatened by the economic environment.

Results from the September survey by the French statistical office (INSEE) showed that French industrial activity continues to be unfavourable. The business confidence index, a compilation of the opinions of business leaders, remained unchanged compared to August, and is still well below its long-term average. The overall outlook index is at a very a low value, one which was last observed in 2009.

Germany (Ifo)

The Ifo Business Climate Index for German industry and trade continued to fall in September, marking its fifth successive decline. The companies surveyed are again less satisfied with their current business situation. They also expressed greater pessimism about the future. The curbing forces on the German economy continue to prevail.

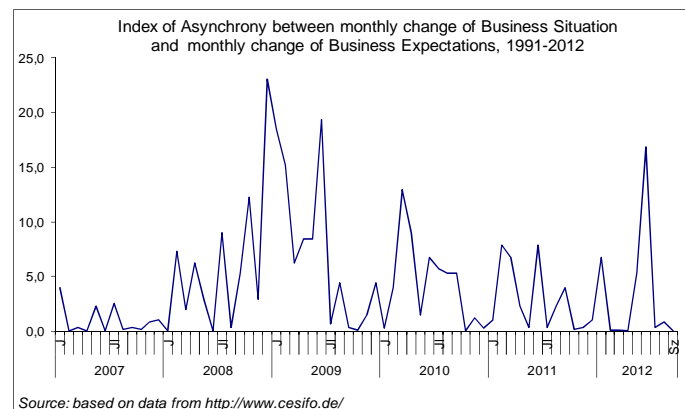
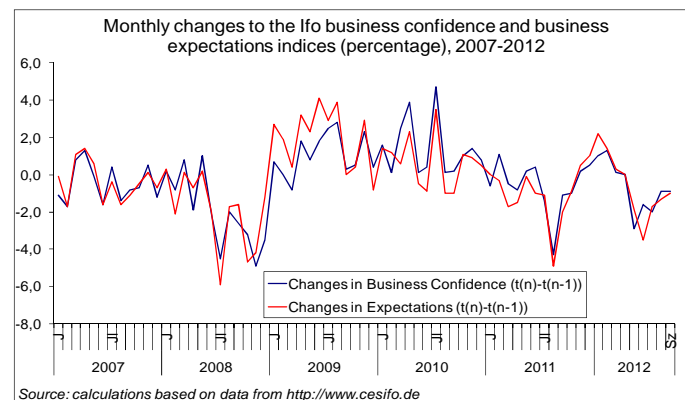
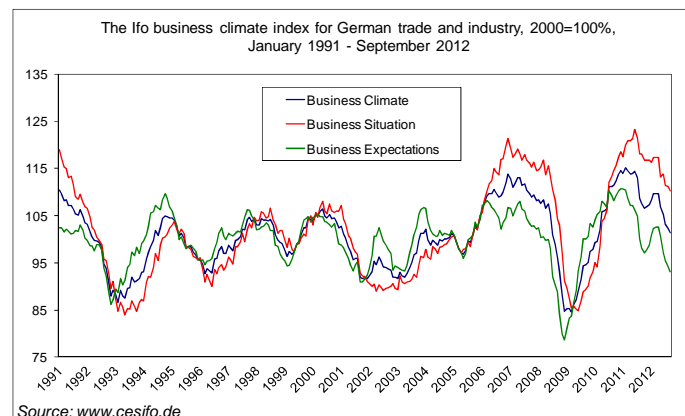
Measuring the gap between the business situation and expected developments, the asynchrony index calculated by IEER slightly decreased in September, thus the business confidence index showed a lower level of uncertainty compared to last month.

After recovering briefly last month, the business climate in manufacturing continued to cool significantly in September. Although survey participants were more cautious in their assessment of the current business situation, it remained clearly above the long-term average value. Expectations concerning the six-month business outlook remained clearly negative and dropped for the fifth month in succession. In terms of the outlook for exports, last month's slightly negative trend continued.

The business climate recovered at both levels of trade. Companies in retailing reported an improved business situation, while their expectations were only marginally more pessimistic. The same, but even more pronounced trends were seen in wholesaling. The wholesalers surveyed are far more satisfied with their current business situation than last month, but the six-month business outlook continued to cloud over.

In construction the business climate indicator fell again. Assessments of the current business situation are less positive than last month. Moreover, the construction companies surveyed are more pessimistic about their six-month business outlook.

Source: Ifo (<http://www.cesifo-group.de>)



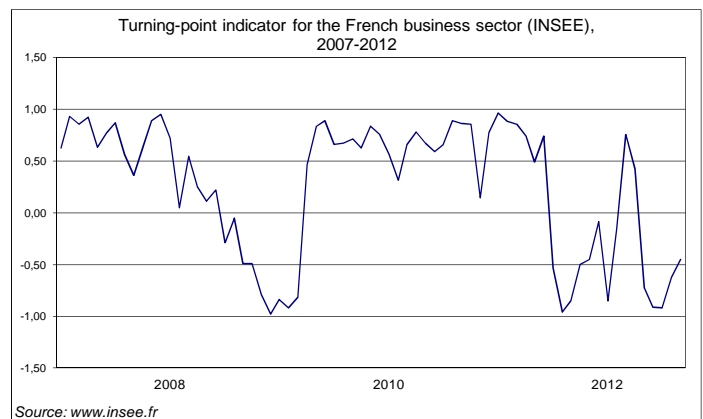
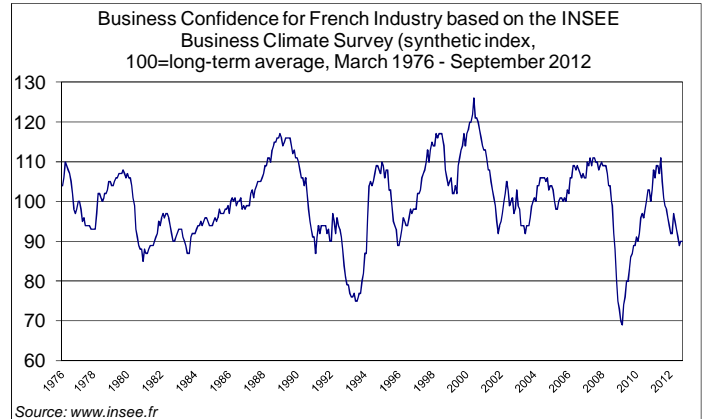
Based on the survey by the French statistical office (INSEE), in the opinion of French business leaders interviewed in September the business climate in France continues to be unfavourable compared to the previous month. The INSEE business confidence index remained unchanged compared to August, and is still well below its long-term average.

Despite a slight increase since August, the economic turning point indicator remained in the unfavourable zone.

Industrial company leaders see output significantly decreasing: the balance indicator has reached a very low level. Business leaders judge stocks of finished products to have declined. The total orders index increased, but is still very low. The foreign orders index remained unchanged and is still at a low level.

French economic growth over the next few months is expected to be at a very weak pace according to the individual business operations forecast of company executives (which summarizes the business prospects of the coming months). The general business outlook index – which reflects the sum of opinions related to the business activity of respondents – once again declined significantly compared to the previous month, and is at such a low value, one which hasn't been seen since 2009.

Source: INSEE (<http://www.insee.fr>)



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