

# Croatian Economic Outlook

## Quarterly



No. 66

March 2016

e-ISSN 1847-7852

ISSN 1332-3067

**e I Z** The Institute  
of Economics,  
Zagreb



## Forecast Update

### Global economic activity fell short of expectations

Global economic activity fell short of projected growth rates in 2015, mainly due to continued deceleration of economic activity in emerging and developing economies. Advanced economies, on the other hand, continued along a modest recovery path and are becoming the main growth contributors. The UN (*World Economic Situation and Prospects 2016*, January 2016) estimates world output growth for 2015 at 2.4 percent, down by 0.4 percentage points from its mid-2015 estimates. In 2016 and 2017 world growth is expected to pick up by 2.9 and 3.2 percent.

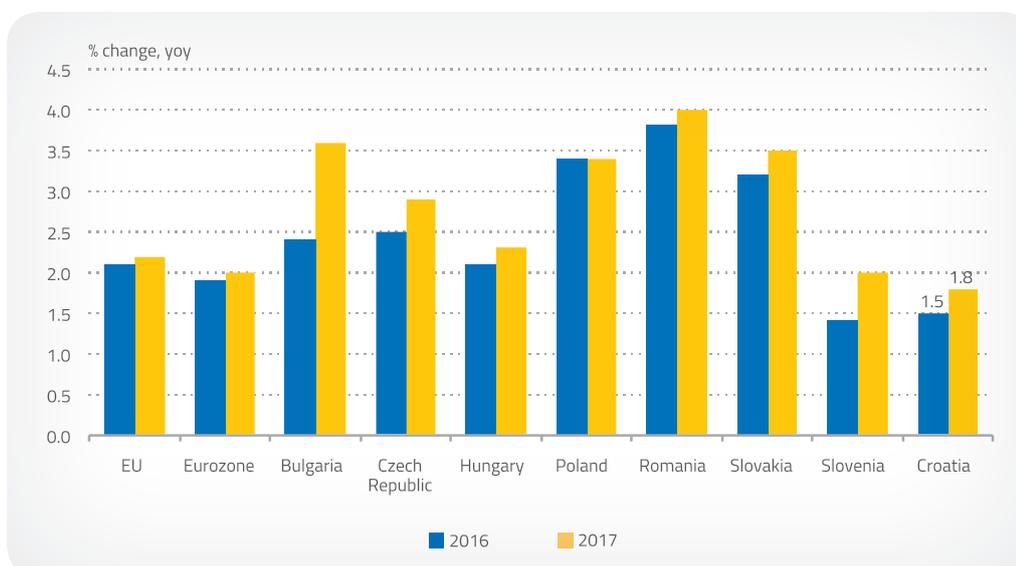
### Eurozone remains on a steady recovery path

Recovery in the eurozone continued at a moderate pace, largely driven by ongoing

recovery of private consumption. Following a 0.4-percent rise in the second quarter of 2015, real GDP increased by 0.3 percent in the third quarter (both measured quarter-on-quarter), suggesting continued but modest recovery. The estimated growth rate for 2015 stands at 1.6 percent and is projected to increase to 1.9 and 2 percent in the current and the following year (*World Economic Situation and Prospects 2016*, January 2016). The risks to these projections remain on the downside due to increased uncertainties regarding global recovery trends and increased geopolitical tensions.

### Croatian GDP rebounded in 2015 and is expected to increase in the following two years

After six consecutive years of declining activity, Croatian GDP rebounded in 2015 and recorded

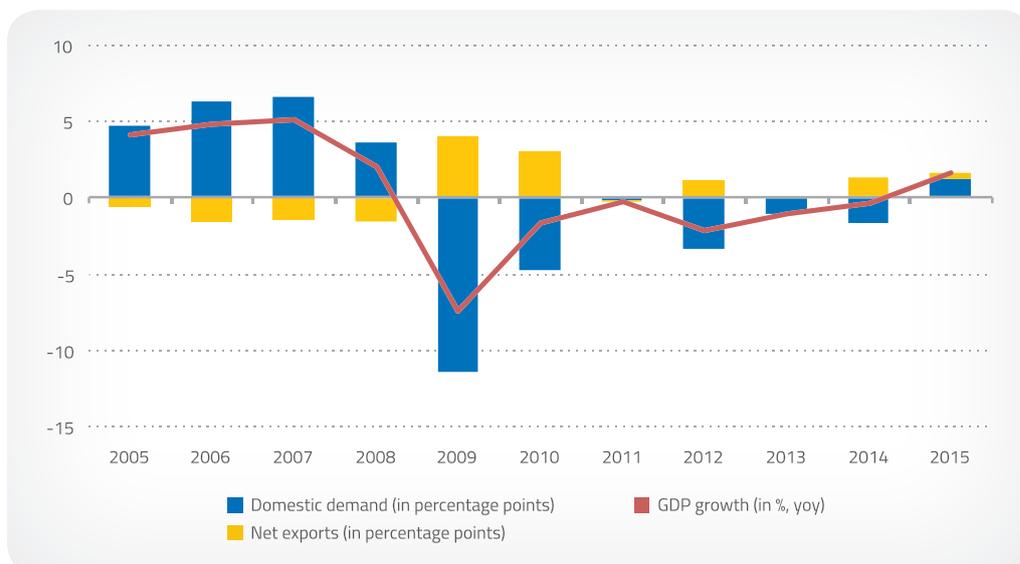


**Figure 1**  
Real GDP Growth  
Forecasts for the  
EU, Croatia and  
Selected CEE  
Countries

**Sources:** *World Economic Situation and Prospects 2016*, United Nations, January 2016 and EIZ for Croatia.

**Figure 2**  
Demand  
Contribution to  
GDP Growth

**Sources:** Croatian Bureau of Statistics and own calculations.



a positive growth rate of 1.6 percent, still far from pre-crisis growth levels, but nonetheless an important turnaround for future prospects. Based on newly released data for 2015, we have slightly revised our forecasts for real GDP growth rates for 2016 and 2017 upwards to 1.5 and 1.8 percent. Unlike in recession years, domestic demand is expected to have a positive contribution to GDP growth, as was the case in 2015 (Figure 2).

### Personal consumption gains momentum

Taken as a whole, personal consumption in 2015 increased by 1.2 percent compared to 2014. This increase was mainly a result of increased real disposable income due to tax changes as of 2015 and low oil prices. For the first time since 2007, seasonally adjusted personal consumption steadily increased throughout 2015, resulting in an average 0.6 percent quarter-to-quarter growth rate. Growth is even more pronounced if we look at year-on-year figures, which suggest personal consumption increased by 2.4 percent in the last quarter of 2015, the highest recorded growth rate since the beginning of 2008. In the short term we expect the continuation of this trend. Although these initial effects of the consumption increase due to tax changes have subsided, real disposable income is permanently increased. As oil prices are expected to stay moderate throughout 2016, and government spending on public sector wages and pensions is also likely to

remain stagnant, while consumer optimism is improved due to a long-awaited recovery of domestic activity, our forecasts for personal consumption growth are now at 1.4 and 1.5 percent for the current and the following year.

### Government consumption expected to decrease slightly

Government consumption in seasonally adjusted terms went up by 0.3 percent in the last quarter of 2015 when compared to the previous quarter and by 0.6 percent if we look at 2015 as a whole. Ever since the beginning of 2014, seasonally adjusted quarter-to-quarter government consumption rates recorded very small fluctuations (ranging from -0.2 to 0.3 percent), suggesting government managed to keep its expenses in check. Taking into account that the newly proposed budget for 2016 is very shy on cutting major expenditure items, we have modified our earlier forecasts for real government consumption to 0.2 percent, up by 0.7 percentage points from the last forecast. However, in 2017 we expect more serious fiscal consolidation and a 0.8 percent cut in government spending.

### Investments expected to gradually increase in the next two years

In the final quarter of 2015, investment activity declined by 0.1 percent (measured by seasonally adjusted figures on a quarter-to-quarter basis). This was, however, not enough to offset relatively high growth rates in the first three quarters, so the year of 2015 as



**Figure 3**  
Real Sector  
Developments

**Note:** Seasonally adjusted by X11ARIMA (Statistics Canada).

**Source for original data:** Croatian Bureau of Statistics.

a whole recorded investment growth of 1.6 percent. In the first and the second quarter of 2016, we forecast a slight fall in investments, due to the prolonged formation of government and uncertainties regarding the budget for 2016, but investments should then bounce back in the second half of the year. Hence, our new growth forecasts stand at 1.9 percent (down by 0.2 percentage points) for the current year and 3 percent for the following year.

### Trade activity along a steady recovery path

In seasonally adjusted terms, the final quarter of 2015 saw export growth of 4.5 percent and import growth of 2.5 percent when compared to the previous quarter (Figure 4). In 2015 as a whole, both these items

recorded a substantial increase in activity, with export growth of 9.2 and import growth of 8.6 percent, exceeding even the pre-crisis rates. In the next two years, we see both exports and imports continuing to increase, however at somewhat more moderate growth rates, mainly due to extraordinarily high rates in 2015 that are expected to create strong base effects. Our export growth forecast stays unchanged at 3.6 percent in 2016 and 3.7 percent in 2017. Import growth, on the other hand, has been revised upwards to 3.2 and 3.4 percent for 2016 and 2017, as domestic recovery is now perceived to be stronger. Taking into account the positive GDP growth forecasts, we estimate current account balance at 1.4 percent of GDP in this year, further improving to 1.5 percent of GDP in the following year.



**Figure 4**  
Exports and  
Imports of Goods  
and Services

**Note:** Seasonally adjusted by X11ARIMA (Statistics Canada).

**Source for original data:** Croatian Bureau of Statistics.

**Table 1**  
Forecast  
Summary

	2016	2017
<b>Real GDP (% change)</b>	<b>1.5</b>	<b>1.8</b>
Real private consumption (% change)	1.4	1.5
Real government consumption (% change)	0.2	-0.8
Real investment (% change)	1.9	3.0
Exports of goods and services (constant prices, % change)	3.6	3.7
Imports of goods and services (constant prices, % change)	3.2	3.4
Current account balance (% of GDP)	1.4	1.5
General government balance (ESA 2010 definition, % of GDP)	-3.5	-3.0
Public debt (ESA 2010 definition, % of GDP)	89.5	90.0
Unemployment rate (registered, %, pa)	16.9	16.5
Exchange rate, HRK/EUR (pa)	7.62	7.63
Broad money, M4 (% change, eop)	4.0	4.2
Total domestic credit (% change, eop)	-0.5	2.2
Consumer prices (% change, pa)	0.1	1.9

**Note:** Cut-off date for information used in the compilation of forecasts was March 8, 2016.

**Conventional abbreviations:** pa - period average, eop - end of period, HRK - Croatian kuna, EUR - euro.

**Source:** Authors' forecasts.

## Turbulent domestic political situation

After the general elections in November 2015 that were perhaps the tightest elections so far, the third-ranked coalition, Most (Bridge of Independent Lists), formed the government with the relative winner, the right-centrist HDZ-led Patriotic Coalition. The two coalitions agreed on the joint candidate for Prime Minister, Mr. Tihomir Orešković, a businessman from the pharmaceutical industry, previously hardly known to the electorate. After some disputes about the legitimacy of the candidate, the appointment of Mr. Orešković as the new Prime Minister, along with that of the other members of the Government, was approved by the Parliament on January 22, 2016. In Mr. Orešković's Cabinet, the Most coalition is in charge of six ministries, those of economy, public administration, justice, interior, environment and agriculture. Two Deputy Prime Ministers were appointed: Tomislav Karamarko (the leader of HDZ) and Božo Petrov (the leader of Most). Given his political inexperience, the opposition regarded the new Prime Minister as just a marionette in the hands of HDZ and Most, with no significant autonomy in decision making on important

issues, including the appointment of ministers and other high-ranked officials.

## Trouble in paradise

Mr. Orešković's ministerial team did not remain intact for long, as the Minister of Veterans' Affairs, a war veteran himself, resigned shortly after it was discovered that he had misused some of his veteran entitlements. Of greater importance, however, is a recent decision by President Grabar-Kitarović to dismiss the director of the national intelligence agency; to be effective, the dismissal must be co-signed by the Prime Minister, who has been postponing it and still has not signed it. But arguably the most serious test for the new government was the budget, as it had to suit the diverse interests within the ruling coalition, but also the interests of the others in Parliament whose votes the Government counts on. On March 21, after dismissing most of the proposed amendments, the Parliament passed the budget with 80 votes for and 51 against.

## Central bank independence

A parallel dispute is going on about whether the Parliament should vote on the yearly

report of the Croatian National Bank (CNB) or just be briefed on it; Most and the opposition walked out of the Parliament session, thus preventing a quorum, after they had been told that there would be no voting on the CNB's report. The Prime Minister argued that politics should stay away from monetary policy ensuring its hard-won independence but he did leave room for future changes in the way CNB is supervised.

### **Will Most bridge the gap with HDZ?**

Although both HDZ and Most are claiming that there are no tensions threatening the Government's stability, those seem to unfold on a regular basis. It seems that tensions result, at least partly, from Most's eagerness to present itself as independent of HDZ, most likely in order to compensate for having to be in a coalition with one of the parties that prior to the elections they had loudly ruled out as a possible coalition partner. Though all these frictions may be seen as indicating a potential fall of the Government when issues accumulate to an unbearable extent, we expect the ruling coalition to smooth out its inner relations, given that acting in ways that would lead to new elections seems hardly opportune for it.

### **Increased budget revenues in 2015**

Although comparable data for general government finance are still unavailable for 2015, there are some signs of improvements in terms of fiscal deficit from central government statistics based on national accounting rules and the cash principle. Looking at the whole year of 2015 in comparison to 2014, the total revenue was 7.8 percent higher, mostly due to increased tax revenues. Apart from economic activity recovery, growth in revenues can be attributed to novel accounting practices such as including own revenues of users from the science and high education system, as well as lump-sum payments of a part of pension savings for the military and police from the second retirement pillar, in accordance with the complete takeover of the pension insurance for these professions by the public pension system.

### **Thin increase in expenditures**

Total central government expenditures increased by 4.1 percent in the last quarter of 2015 relative to the same quarter of 2014. For the whole year of 2015 cumulatively, expenditures increased by 3.5 percent. Unfortunately, it is difficult to pinpoint which items from the expenditure side of the budget influenced this net result most significantly, due to substantial changes in the methodology, which we wrote about in the December 2015 issue, the largest being the exclusion of the Croatian Health Insurance Fund from the Treasury.

### **Deficit smaller than expected?**

Overachievement of tax revenues resulted in a deficit of 2.7 percent based on preliminary data on 2015 central government budget execution, which is significantly lower than the originally planned 3.7 percent. Moreover, if the deficit based on ESA 2010 methodology is somewhere around 4 percent, Croatia would be close to the EDP target of 3.5 percent for 2015 (Figure 5). However, until ESA 2010 data become available, it is difficult to precisely estimate the government balance in 2015.

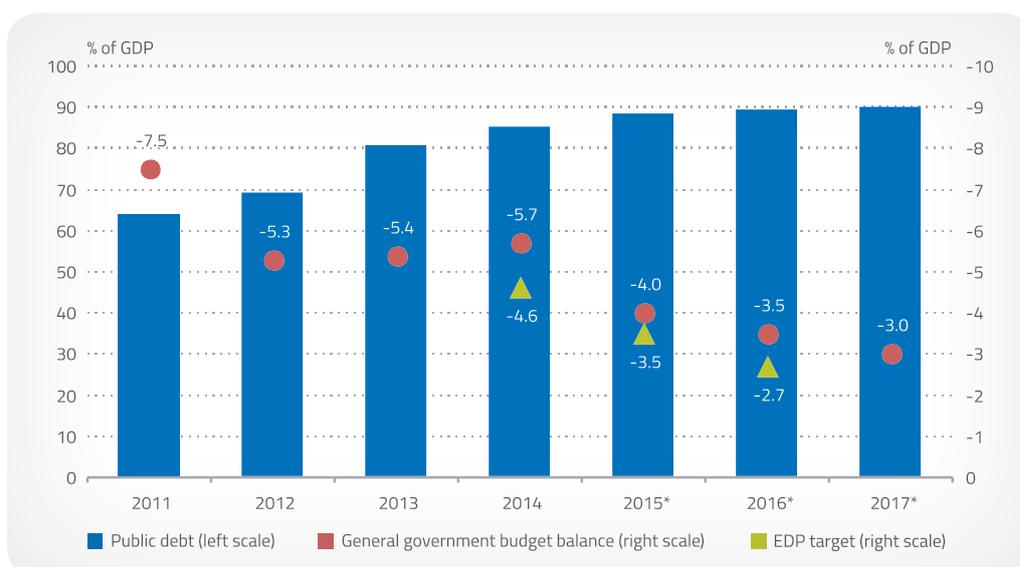
### **Significant fiscal adjustment subject to sizable risks**

The State Budget proposal was presented on March 10. The proposed budget shows the intention to consolidate public finance by decreasing the deficit to 2.2 percent in 2016 and further to 2 percent in 2017 and 1.8 percent in 2018. Projected deficit for the general government based on national accounting rules is at similar levels, at 2.7 percent in 2016, 2 percent in 2017, and 1.7 percent in 2018. However, these projections underestimate macroeconomic risks, as well as risks related to public sector employee compensations. Growth projections on which the budget is based, along with the projections for the largest revenue item that hinges heavily on growth projections, the value added tax, are quite optimistic. The budget also includes important items with regards to compensation of employees, such as: obligations based on signed collective agreements, including wage growth based

**Figure 5**  
General  
Government  
Budget Balance  
and Debt

**Note:** \* represents  
EIZ forecast.

**Sources:** Eurostat  
and EIZ for forecast.



on “devotion to service”, Christmas bonuses, increasing wage base by 6 percent, and increases due to return of the wage parity on the pre-crisis level. The Government will have to open negotiation processes with trade unions to renegotiate terms of agreement or to change laws regulating compensations of public sector employees. Both options are highly uncertain in terms of their ability to contain a rise in compensations in line with the draft budget. As an additional source of uncertainty, there are several litigation processes involving the government that are either taking place (suits filed by the oil company INA and by commercial banks) or are announced (public employees’ trade unions) and that could materialize in large fiscal outlays for the government.

### Improved prospects for fiscal policy

In spite of these risks, the intention to implement fiscal consolidation is clear from the planned budget savings of around 2.5 billion kuna. Therefore, we revise our previous forecasts for general government balance and public debt. A deficit of 3.5 percent based on ESA 2010 methodology is expected in 2016, which could be decreased further to around 3 percent in the following year. General government debt is now estimated at around 88.5 percent and is expected to rise further to 89.5 percent of GDP in 2016, and to stabilize around 90 percent of GDP in 2017.

### Political uncertainty threatening structural reforms

Although the incumbent Government secured the mandate on the platform of structural reforms, so far no real measures in this direction have been taken. It remains to be seen if this is only a temporary occurrence or the friction between coalition parties will continue to hamper potential progress.

### Eroding credit rating

In March, Moody’s decreased Croatia’s credit rating claiming that there are signs showing the Government could be facing obstacles in implementing regulations and fiscal and structural reforms in the next 6 to 12 months, as well as significant risks with regards to growth prospects. On top of that, a negative outlook was assigned to new credit rating, which could be viewed as a sign that credit rating agencies are having serious doubts about the capacity of the new Government to implement the appropriate set of reforms.

### Labor force continues to decline

Although the usual seasonal effect kicked in after the summer months, with both increasing unemployment and decreasing employment, seasonally adjusted data suggest a continuation of positive trends on the labor market. The year 2015 ended with an average unemployment rate of 17.7 percent, 1.3 percentage points lower than

in 2014. The average number of employed persons in 2015, according to the data from the Croatian Pension Insurance Institute, slightly increased when compared to 2014 (Figure 6), while total labor force continued to decline due to a much larger decrease in unemployment, caused partly also by outflow from the register of unemployed persons.

### Labor market to follow sluggish developments in the overall economy

The number of registered unemployed persons started to decline on a monthly basis already in February, down by 1.3 percent from January, and reached 289 thousand at the end of the month. For the upcoming period, the labor market is expected to follow sluggish developments in the overall economy, with a prolongation of the fall in unemployment and a slight increase in employment, predominantly based on the recovery of employment in the private sector. Hence, we expect the unemployment rate to fall just below 17 percent in 2016, i.e., to 16.9 percent, whereas for 2017 we see further prolongation of positive trends on the labor market and the unemployment rate at 16.5 percent.

### Main risks to labor market projections in the hands of the Government

We expect wages to continue with the observed slight increase that has so far been driven by the private sector recovery. This, in turn, should also lead to the rise of the overall

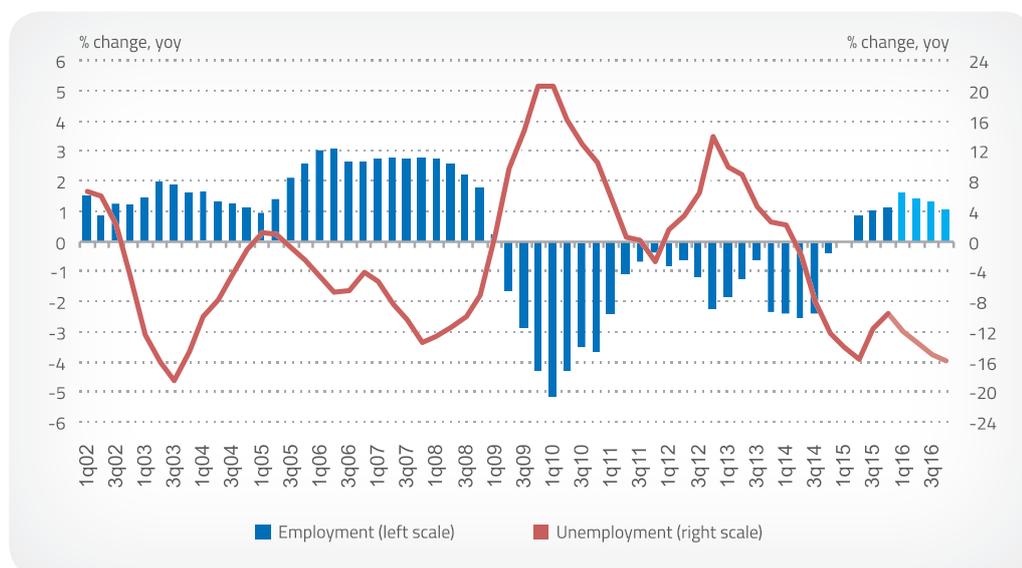
disposable income in the economy, which was mainly based on the increase of the net wage bill already in 2015. However, main risks to these projections are on the downside, and are largely in the hands of the Government given that potential public sector restructuring and/or wage adjustments could limit the sustained recovery of the labor market.

### Prolonged deflation

The last quarter of 2015 demonstrated that consumer prices continued to fall, in line with the development present since late 2014. Consumer price and producer price indices in January 2016 recorded negative growth rates of -0.8 and -3.4 percent when compared to the same month the year before. Besides food and non-alcoholic beverage prices, the prices of housing, water and especially energy and oil contributed to deflation. Despite certain risks related to imported deflation from energy and food markets, our baseline projection indicates consumer prices will increase in this year, but only by 0.1 percent. For 2017 we forecast economic recovery and oil prices pushing up consumer prices by 1.9 percent.

### Three billion kuna liquidity injection

In order to provide long-term sources of kuna liquidity in the banking system, in February the Croatian National Bank executed the first of four structural repo operations planned for this year. Through this measure, we expect three billion kuna of liquidity to be injected by



**Figure 6**  
Total  
Employment and  
Unemployment

**Note:** 1q2016–  
4q2016 is based on  
extrapolated values.

**Sources:**  
Croatian Pension  
Insurance Institute  
and Croatian  
Employment Service.

Table 2 Main Economic Indicators

	2014	2015	2015			
			Q1	Q2	Q3	Q4
<b>ECONOMIC ACTIVITY</b>						
Real GDP (% change, yoy)	-0.4	1.6	0.5	1.2	2.8	1.9
Real private consumption (% change, yoy)	-0.7	1.2	0.3	0.6	1.4	2.4
Real government consumption (% change, yoy)	-1.9	0.6	0.6	0.4	0.6	0.8
Real investment (% change, yoy)	-3.6	1.6	-0.4	0.8	2.2	3.7
Industrial output (% change, yoy)	1.2	2.7	-0.1	2.4	4.6	3.9
Unemployment rate (registered, %, pa)	19.6	17.7	20.1	17.2	16.0	17.6
Nominal GDP (EUR million)	43,045	43,921	9,836	10,969	12,154	10,979
GDP per capita (EUR)	10,156	10,363	-	-	-	-
<b>PRICES, WAGES AND EXCHANGE RATES</b>						
Implicit GDP deflator (% change, yoy)	0.0	0.1	0.3	0.4	0.0	-0.1
Consumer prices (% change, yoy, pa)	-0.2	-0.5	-0.4	0.0	-0.6	-0.8
Producer prices (% change, yoy, pa)	-2.7	-3.9	-4.1	-2.8	-4.1	-4.4
Average gross wage (% change, yoy, pa)	0.2	1.3	0.7	1.5	1.5	1.4
Exchange rate, HRK/EUR (pa)	7.63	7.61	7.68	7.57	7.57	7.62
Exchange rate, HRK/US\$ (pa)	5.75	6.86	6.81	6.86	6.80	6.96
<b>FOREIGN TRADE AND CAPITAL FLOWS</b>						
Exports of goods (EUR million)	10,369	11,531	2,574	2,934	2,968	3,055
Exports of goods (EUR, % change, yoy)	8.1	11.2	9.2	15.4	9.3	10.9
Imports of goods (EUR million)	17,129	18,482	4,263	4,782	4,819	4,617
Imports of goods (EUR, % change, yoy)	3.6	7.9	7.0	6.0	6.8	12.0
Current account balance (EUR million)	364	-	-1,264	19	3,891	-
Current account balance (% of GDP)	0.8	-	-12.9	0.2	32.0	-
Gross foreign direct investment (EUR million)	2,896	-	404	114	148	-
Foreign exchange reserves (EUR million, eop)	12,688	13,707	14,158	13,734	13,437	13,707
Foreign debt (EUR million, eop)	46,664	-	49,126	48,802	46,927	-
<b>GOVERNMENT FINANCE<sup>a</sup></b>						
Revenue (HRK million) <sup>b</sup>	131,917	-	33,232	37,291	39,283	-
Expense (HRK million) <sup>b</sup>	139,532	-	37,248	36,527	36,093	-
Net = gross operating balance (HRK million) <sup>b</sup>	-7,615	-	-4,016	764	3,190	-
Net acquisition of non-financial assets (HRK million) <sup>b</sup>	4,855	-	927	1,566	1,985	-
Net lending/borrowing (HRK million) <sup>b</sup>	-12,470	-	-4,943	-802	1,205	-
Domestic government debt (EUR million, eop)	21,630	-	22,139	21,910	22,528	-
Foreign government debt (EUR million, eop)	14,861	-	15,597	15,423	14,934	-
Total government debt (eop, % of GDP)	88.6	-	-	-	-	-
<b>MONETARY INDICATORS</b>						
Narrow money, M1 (% change, yoy, eop)	9.6	11.4	8.3	11.6	10.4	11.4
Broad money, M4 (% change, yoy, eop)	3.2	5.1	2.8	4.8	4.6	5.1
Total domestic credit (% change, yoy, eop)	-2.3	-2.0	-0.6	-0.7	1.4	-2.0
DMBs credit to households (% change, yoy, eop)	-0.8	-1.5	0.9	0.9	-0.5	-1.5
DMBs credit to enterprises (% change, yoy, eop)	-3.7	-5.2	-2.3	-2.6	-2.9	-5.2
Money market interest rate (% pa) <sup>c</sup>	0.5	0.7	0.5	0.5	1.2	0.7
DMBs credit rate for enterprises, short-term, (% pa) <sup>d</sup>	5.7	5.4	5.3	5.5	5.3	5.3
DMBs credit rate for households, short-term, (% pa) <sup>d</sup>	9.3	8.9	9.3	9.2	8.8	8.4

Notes: <sup>a</sup> Data refer to consolidated general government. <sup>b</sup> On the cash principle. <sup>c</sup> Interbank demand deposit trading, one week interest rate. <sup>d</sup> The weighted average interest rate on new kuna and foreign currency indexed loan agreements, revised data.

Conventional abbreviations: pa - period average, eop - end of period, yoy - year on year, HRK - Croatian kuna, EUR - euro, US\$ - US dollar, DMB - deposit money bank.

Sources: Croatian Bureau of Statistics, Croatian National Bank and Ministry of Finance.

the end of the year, and, as debt securities are used as collateral, a flattening of the domestic currency yield curve. As a result, credit activity could speed up and the level of credit euroization might decline. However, it remains to be seen whether these operations will have an actual effect on credit activity, or they will be used by the banks as a means of replacing more expensive sources of funding with cheaper ones. On top of both regular and structural repo operations, the CNB abolished the obligation for banks to allocate the foreign currency component of the reserve requirement, in order to improve foreign currency liquidity in the banking system necessary for the conversion of Swiss franc loans to euro-indexed ones. By doing so, banks will obtain an additional incentive for reducing regulatory costs in the amount of 493.7 million euros and 4.7 million US dollars.

### Banks recorded a loss in 2015

In 2015, 15 Croatian banks recorded losses bringing the system to a total net loss of 4.34 billion kuna (Figure 7). The main reason for the negative result was the newly-introduced regulation on Swiss franc loan conversion. On the other hand, for the first time since mid-2014 nonperforming loans (NPLs) decreased below 17 percent and accounted for 16.56 percent of loans at the end of December 2015. The biggest contributor to NPLs is still the corporate sector, with construction, manufacturing and wholesale and retail trade holding more than two-thirds of NPLs.

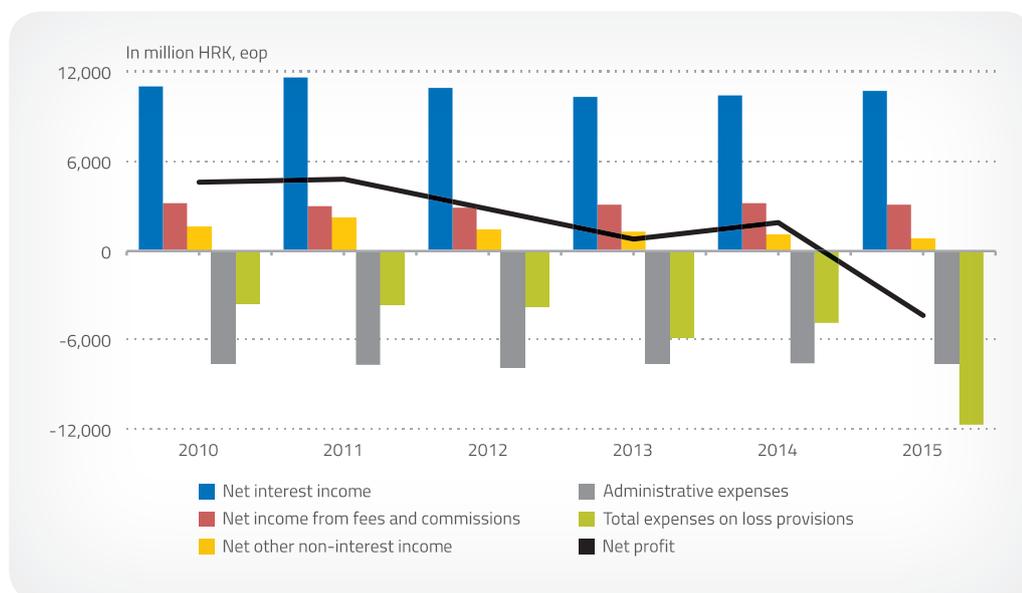
The share of NPLs in total corporate loans was 29.93 percent at the end of December, while the same indicator for household loans stood at 12.15 percent. Having in mind that the inflow of new NPLs has also fallen, it is possible that the NPL ratio will continue to fall in the months ahead.

### Stable HRK/EUR

We see the average HRK/EUR exchange rate at around 7.62 in this year and 7.63 in the next year. Expectations of another good tourist season and foreign investment recovery point to a stable exchange rate with still some depreciatory risks coming from corporate deleveraging and bank provisions. For the time being, HRK/EUR exchange rate stability is guaranteed by a number of measures and instruments the CNB has at its disposal.

### Negative credit activity despite CNB expansive monetary policy

Abundant liquidity coupled with low interest rates and measures enabled by the CNB seem insufficient for domestic credit recovery. Latest January 2016 data suggest domestic credit activity declined by 4.4 percent in a period of one year (Figure 8). For this year we expect credit to contract further, but by no more than -0.5 percent in 2016. Due to improvements in the borrowing conditions, and an aggregate demand recovery coupled with GDP growth, in 2017 we see credit up by 2.2 percent.

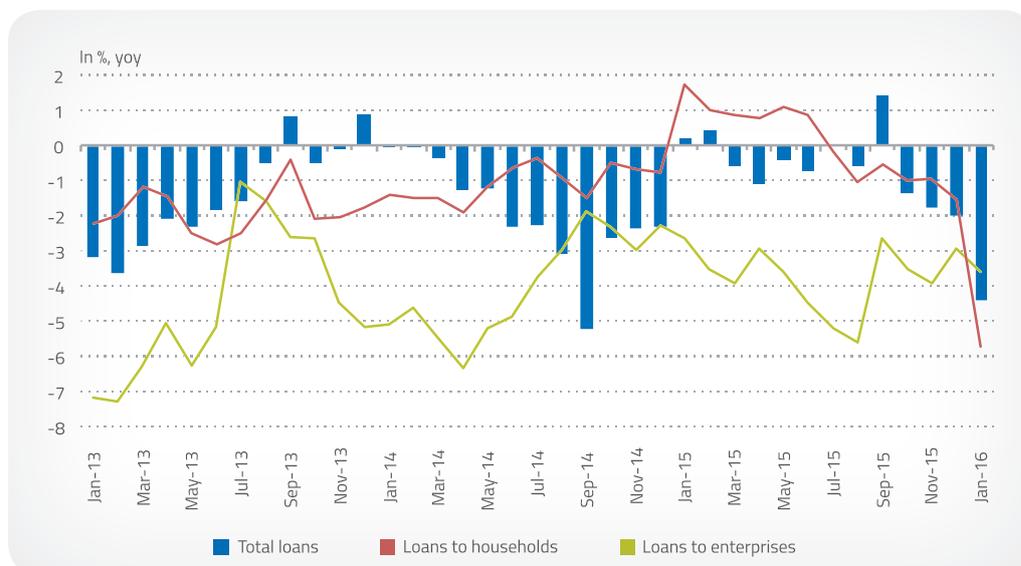


**Figure 7**  
Bank Income and Profit

Source: Croatian National Bank.

**Figure 8**  
Credit Sector  
Developments

Source: Croatian  
National Bank.



## Analysis

### Using Google search data to nowcast unemployment rates in EU-28

#### Google search data and unemployment

The past decade has witnessed the uprising of the Internet as a dominant mass communication medium, making it an indispensable business and leisure tool. One interesting aspect of Internet use is its tractability – most of the online actions are recorded thus leaving a data footprint. Among other things, this precise and sometimes publicly available information on individual behavior has released great economic research and public policy potential.

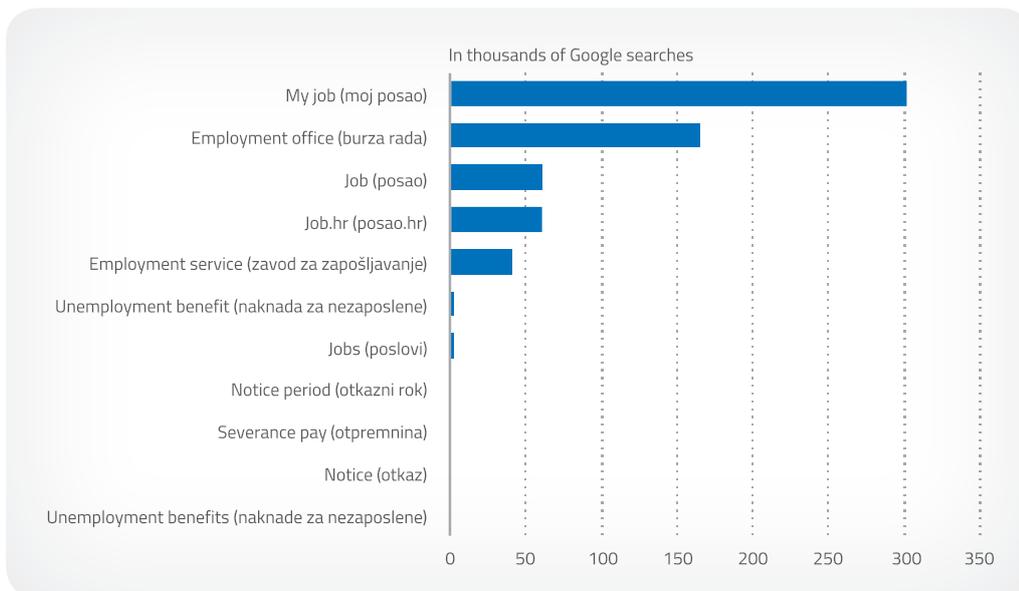
Indeed, researchers across fields have pioneered in the use of online search data to nowcast and predict various statistics of public interest. Google data have been particularly popular due to Google's dominant role in the market of online engines (more than 100 billion searches every month in 2014), as well as Google's publicly accessible interface for analyzing dynamics of volume of online searches – Google Trends, launched in 2009. For example, Google search data have been used to predict automobile sales, unemployment claims, travel destination planning, consumer confidence, housing

market transactions and influenza epidemics, among others.

In this short analysis we present the estimation of the contemporaneous unemployment rate in Croatia using Google Trends data. The use of online search data is appealing as they can reflect the contemporaneous labor market sentiment and trends. For example, an unemployed person searching for a job will most certainly do so online, where online search engines have a dominant role. If the labor market prospects are deteriorating, unemployment-related searches should increase.

The use of Google unemployment-related queries can yield a contemporaneous estimate (nowcast) of the unemployment rate, thus circumventing the delay in the release of official unemployment statistics, making the reaction of policy-makers to movements and trends on the labor market potentially faster.

The Institute of Economics, Zagreb has conducted these estimates of unemployment rates using Google search data in cooperation with the Research Institute of the Finnish Economy (ETLA), which coordinates the ETLAnow project – an economic forecast model that provides daily updates on the current and future unemployment rates for EU-28 countries.



**Figure 9**  
Average Number of Monthly Searches of Unemployment-Related Queries

**Note:** Monthly averages are averages of Google searches in Croatia in Croatian language between February 2015 and January 2016.

**Source:** Google AdWords.

In a nutshell, ETLAnow builds on an econometric model in which official Eurostat unemployment rates are explained by the trend in the volume of the unemployment-related Google searches. Once the model is estimated, Google Trends data are used as inputs to construct a daily estimate of the unemployment rate. In order to provide inputs for the econometric model, in each of the EU-28 countries, specific unemployment-related Google searches need to be specified.

The Institute of Economics, Zagreb provided the ETLA research team with 29 keywords and phrases which could showcase the intensity of job searches and reflect labor market conditions. Keywords and phrases include the most popular channels of job search (online job search websites, official employment service), various legal dimensions of employment and unemployment (unemployment benefits, employment contract, notice period, severance pay) as well as keywords that reflect the intensity of job search abroad. Based on the volume of searches and forecasting performance, the ETLA research team chose eleven keywords to construct the unemployment estimate. Figure 9 presents these eleven keywords.

In total, these eleven key phrases account for more than 630 thousand monthly searches. Most of the unemployment-related searches are associated with the online job-search

websites: the most popular one – *mojposao* – accounts for almost half of the searches, while the second most popular – *posao.hr* – accounts for almost ten percent of the searches. The colloquial term for the employment office – *burza rada* – and simple search for *posao* (job) also stand high on the ranking with more than 26 percent and slightly less than 10 percent, respectively. The official employment service takes 6.3 percent of the searches, while the rest of the keywords and phrases have smaller contributions to the total number of unemployment-related searches – less than 0.5 percent.

After collecting keywords and phrases, an econometric model is estimated using online unemployment-related queries. As Google Trends data are available on a daily basis, the unemployment rate nowcast is updated daily. The nowcast can be obtained from <http://www.etla.fi/en/etlanow-eu28/>.

### Unemployment dynamics slightly improves, but the level is still high

Latest data from ETLAnow suggest that the unemployment rate in February 2016 stood at 17.48 percent, 0.72 percentage points lower than the unemployment rate in February 2015. Although this indicates a slight improvement in the labor market prospects, unemployment rates are still high, compared both to pre-recession Croatia and to the contemporary unemployment in EU-28

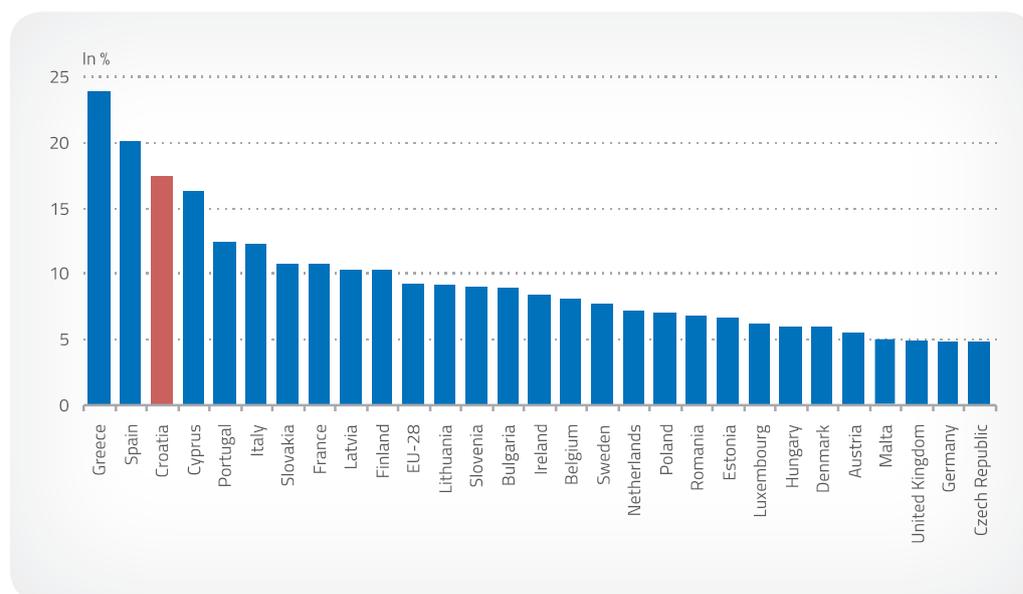
countries. For example, the unemployment rate in February 2008 was 10.40 percent, while Croatia now stands in the disappointing third place when compared to the EU countries, below Greece and Spain.

The same conclusions can be inferred from the ETLAnow forecasts for March 2016. The unemployment rate in March 2016 remains stable at 17.42 percent, only 0.08 percentage points below the one in March 2015. While

this implies stable labor market developments, a comparison with pre-recession years and other EU member states yields a disappointing outlook. Figure 10 displays March 2016 unemployment rates in EU member states, and it is evident that Croatia's unemployment rate is significantly higher than the average EU-28 unemployment rate (9.20 percent), placing Croatia at the very top when it comes to unemployment dynamics.

**Figure 10**  
ETLAnow EU-28  
Unemployment  
Rates Nowcast for  
March 2016

Source: ETLAnow.



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The views expressed are those of the authors and do not necessarily reflect the views of The Institute of Economics, Zagreb, or of other researchers at The Institute of Economics, Zagreb.

*Croatian Economic Outlook Quarterly* is published in March, June, September, and December.

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**For the publisher:** Maruška Vizek

**Print:** GRAFOKOR d.o.o., Zagreb

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