QE – Main Channels and its Impact (incl. impact exercise for a small-open economy Slovakia)

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Non-standard measures

Academic consensus?

- Negative interest rates > forward guidance/increase in inflation target > QE

Risk of ZLB is likely to remain high in the future (secular stagnation ?)

Cash should be abolished (i.e. anonymous holding of bonds with zero coupon), as it reduces the space for arbitrage and hence limits the depth of ZLB.

Market participants

- Negative interest rates are problem, especially if kept longer (e.g. insurance companies, pensions).

Non-standard measures

Central bankers

- Negative rates tried till -0.75% (outside biggest economies), not sure where the absolute minimum is.
- Forward guidance not implemented in academic sense (issues about credibility).
- No serious discussions about inflation target changes or the removal of cash.
- Exchange rate channel strong.

- Very low (medium-longer run) interest rates not so much a *choice* of the CB as a *reflection* of economic difficulties, due to historical trends (secular) as well as cycle (weak demand)
- By providing monetary stimulus, CB creates conditions for interest rates to "normalise" faster

ECB’s non-standard monetary policy measures survey

Non-standard measures

- 2011 – **liquidity** – not enough
  - Policy rate down 95bp, cost of credit to non-financial down only by 24bp
- summer 2014 – **credit easing** (cheaper funds for banking giving new loans) – not enough
- all these measures were "passive" – volumes depended on market participants
- the risk of 3rd recession, falling inflation expectations meant rising real interest rates (tightening monetary conditions)
- Jackson Hole, early September – hints about **QE** (direct control of volumes by CB)
- January 2015 - QE decision (to be implemented since March)
- cost of credit down 66bp since summer 2014 (ES-94bp, IT-105bp)

Volume of NSM

Instrument (2 Oct. 2015)	Holding (€bn) 2 Oct. 2015	Share on GDP 2 Oct. 2015	Historical maximum (€bn)
VLTRO (3Y) - liquidity	0.0		1 018.7
TLTRO (4Y) – credit easing (CE)	399.6	4.1	399.6
SMP	127.9	1.3	219.5
Private asset purchases (ABS, CBPP, CBPP2)			
ABSPP	13.2	0.1	3.6 until QE beginning
CBPP	22.0	0.2	61.1
CBPP2	10.4	0.1	12.8
CBPP3	122.8	1.3	54.2 until QE beginning
Public sector purchase programme (PSPP)	346.3	3.6	
QE (=CBPP3+ABSPP+PSPP) from 9 Mar. 2015	**424.5**	**4.4**	**1140.0 planned**

How non-standard policies work

Assumption: markets for various assets segmented

- **Signalling effect**: interest rates remain low for longer period -> fall of long-term interest rates (FG, OMT, QE/CE).
- **Direct support of demand**: reduction of credit price and decline of risk premium (TLTRO, Funding for lending, QE/CE).
- **Portfolio effect**: I get cash and I would like to invest it into interest bearing assets – it reduces long-term interest rates and risk premium (QE/CE, TLTRO, Funding for lending).
- **Exchange rate** – loosening monetary conditions for exporters (QE)

QE – FAQ

- If bonds are sold by institutional investors, often non-residents (not just by local banks), little impact ?

  No, if the money decides to leave EA i -> weaker euro, if it stays, the usual portfolio rebalancing channel (eg, EA quities).
- QE **reduces divergent development** within the euro area, as it helps more periphery economies (larger space for decline of interest rates).
- QE allows banks to rebalance their debt portfolio (reduction in so called **home bias**, which is an issue for Banking Union).
- Effect on bank **capital** likely to be **positive** (capital gains+lower funding costs+higher volumes > lower NNI due to flattening of yield curve)

QE not enough

- However, QE will **only** help to close negative output gap, but not increase potential growth (recession losses will become permanent, if structural reforms are not implemented).
- Improve longer-term growth prospects (TFP + demography) – structural reforms
- Debt overhang – more efficient insolvency legislation + Capital Markets Union
- EA institution framework (Banking Union, elimination of diabolical loop, + ?)

- QE creates space for structural reforms.

QE and monetary aggregates

Influence of QE on M3 – modern interpretation

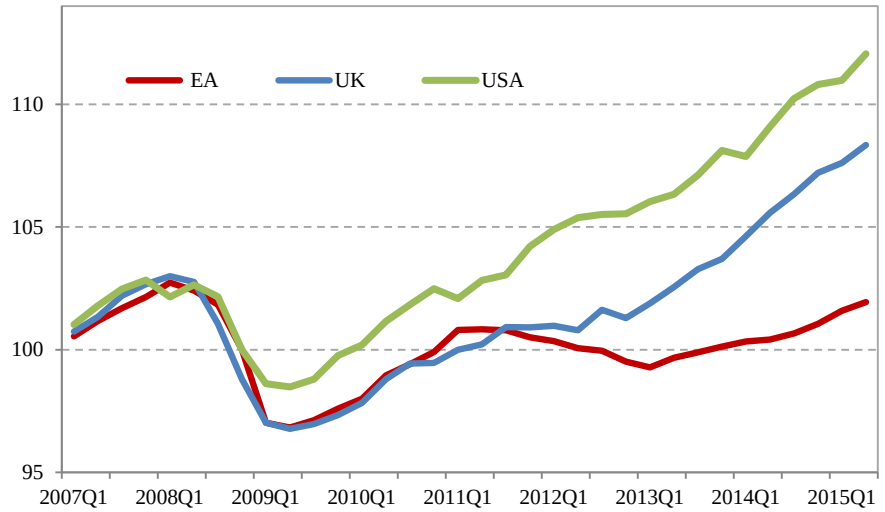
- In low inflation economies the credit growth might be better predictor of inflation pressures than money supply, but nevertheless:

- **Money multiplier** interpretation might not be relevant if banking sector is frozen.
- Not households' decision to save and deposit more money in the bank, but **granting new credits** comes first before money creation starts.
- That means, that not the level of excess reserves, but banks' **decision** on **how much** they are willing **to lend** has the key impact on new deposit creation in the economy.
- **This** credit **decision** of banks **depends on** profit opportunities of the bank (ie, mainly **cyclical macroeconomic environment**).
- After QE transaction banks are left with non-interest bearing cash instead of bonds. Banks have incentives to look for more profitable assets, incl. loans (so called portfolio rebalancing effect).
- The key question is whether in this situation banks are banks provoked to issue new credits (and henceforth create new money) or vice-versa they use the cash to repay their obligations (and paradoxically money supply would decrease).

US and UK with QE
vs.
EA without QE

EA economy lagging behind US and UK

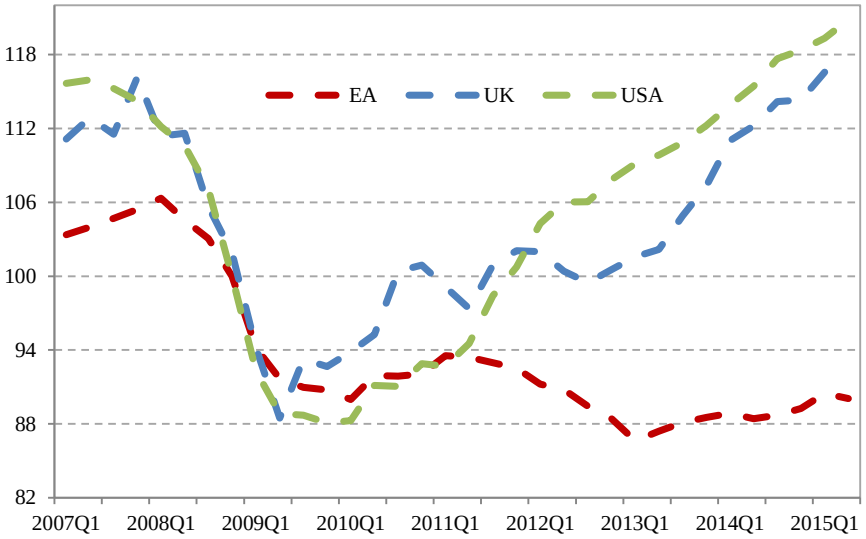
GDP



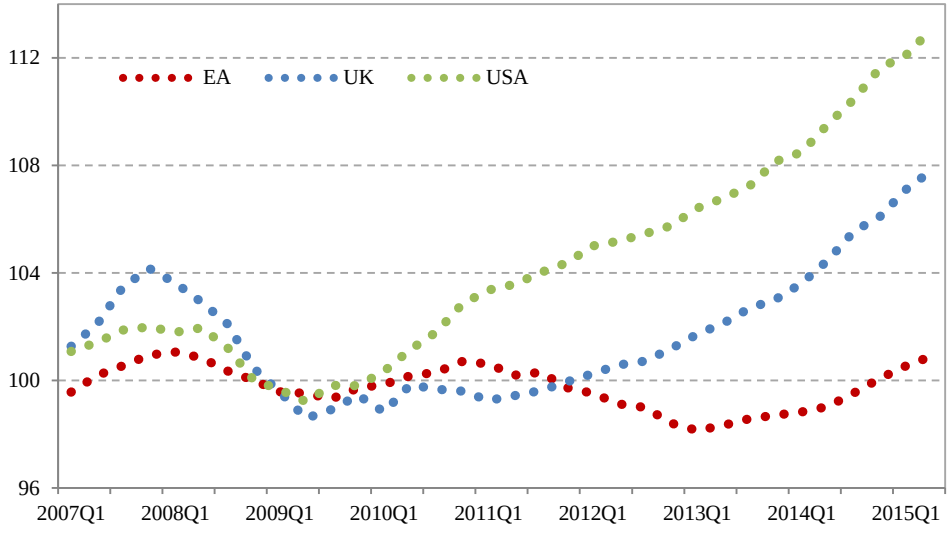
Weaker demand in EA – both **consumption and** mainly **investment.**

In comparison with the period, when QE in US started, EA GDP increased only moderately, while in US it rose by approx. 12%. In UK, output exceeded its pre-QE level by more than 8%.

Investment



Consumption



Source: Eurostat, NBS calculations,
Note: index USA and EA is 100 in 4Q2008, at beginning of QE in USA, in UK the index in 1Q2009 (beginning of QE in UK) has the same value as in EA.

QE likely helped to push core inflation higher in US and UK

Weaker demand in EA led to the slower price growth. QE in US and UK helped to increase trend inflation to around 2%, while in the same time in EA it was only modestly above 1%.

Average level of core inflation one year after the introduction of QE in US up to the March 2015 - difference 0,6%	
USA	1,7%
EA	1,1%
Average level of core inflation one year after the introduction of QE in UK up to the March 2015 - difference 1%	
UK	2,2%
EA	1,2%

Central banks' balance sheets

- ECB balance sheet/monetary base smaller, has done much smaller volume of outright purchases

Central banks´ balance sheets and the monetary base

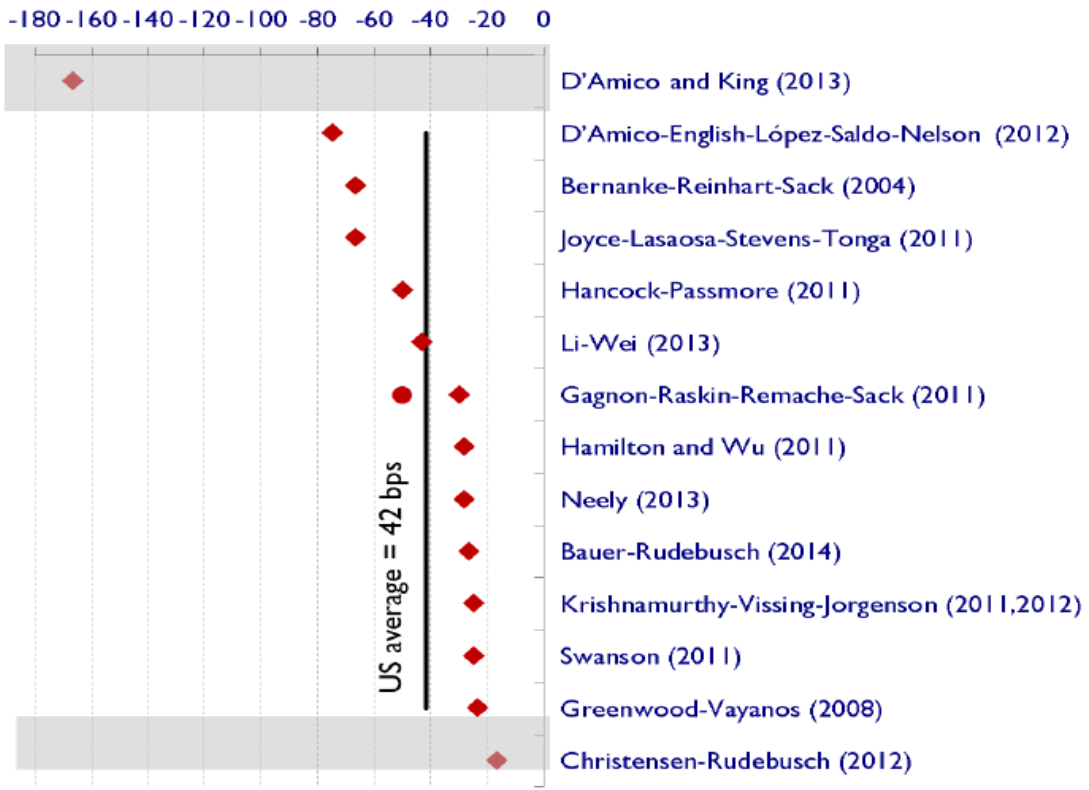
	Monetary base (% of GDP)	**Outright purchases** (% of GDP)
	End of July	End of July
ECB (Eurosystem)	**15.2**	**5.2**
FED	22.7	24.3
Bank of England	21.7	20.9
Bank of Japan	66.0	63.5

Source: ECB, Federal Reserve, Bank of England, Bank of Japan.

Transmission channels and impact of LSAPs on bond yields

US: Impact of Asset Purchases on long-term yields, scaled to USD 1 tr. of purchase

(basis points)



Source: ECB and Williams (2013).

Notes: The impacts provided in Williams (2013) have been rescaled to USD 1 tr. The vertical bar excludes the highest and lowest impact across studies.

The first transmission channel is the direct effect on the yields of purchased securities. Estimates are quite uncertain, with the chart showing too broad a range for the US with an average of 42 bp on 10y yields.

In the EA, in view of present levels, other channels will be more relevant:

signalling about future monetary policy; inflation expectation effects; portfolio rebalancing and other asset prices; wealth effects; improved credit channel

QE Impact on EA

Estimated QE effects on EA GDP and inflation

Literature

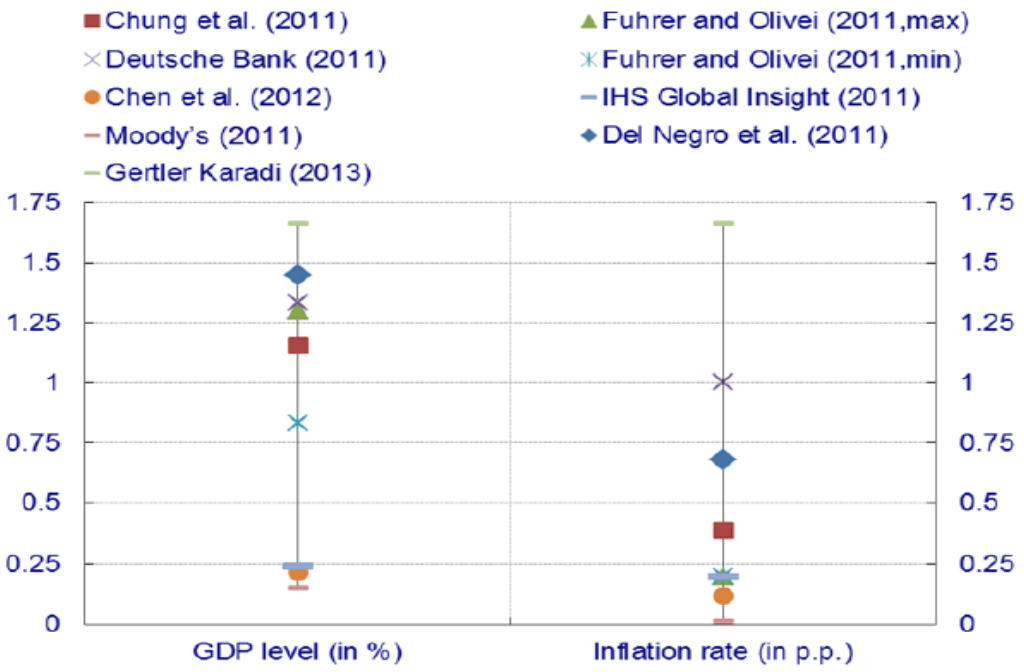
Eg, Euro area

- Baumeister + Benati (2010):
  - Total 1.0% for EA GDP
  - Total 1.0% for EA HICP

United States

(scaled to USD 1 tr. purchases)

(peak impact on the level of output and inflation)



Source: Studies quoted in the chart and ECB staff.

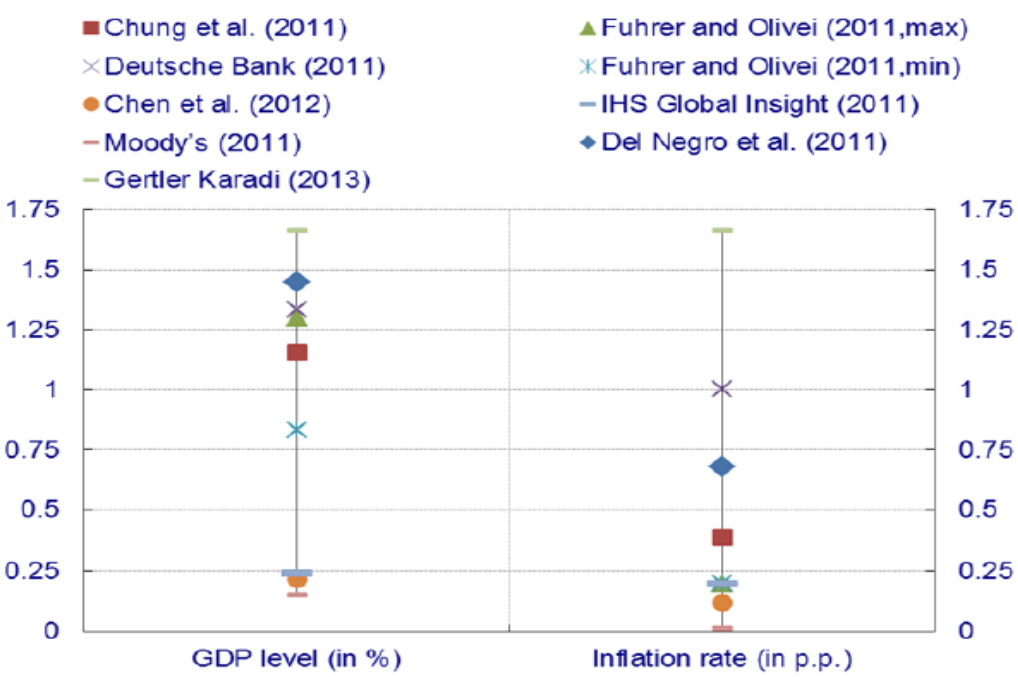
Note: The macroeconomic impacts are scaled to USD 1 tr. of asset purchases to allow for comparison across studies. Some of the studies provide the impact only for real GDP.

Transmission channels and impact of QE on real economy

United States

(scaled to USD 1 tr. purchases)

(peak impact on the level of output and inflation)



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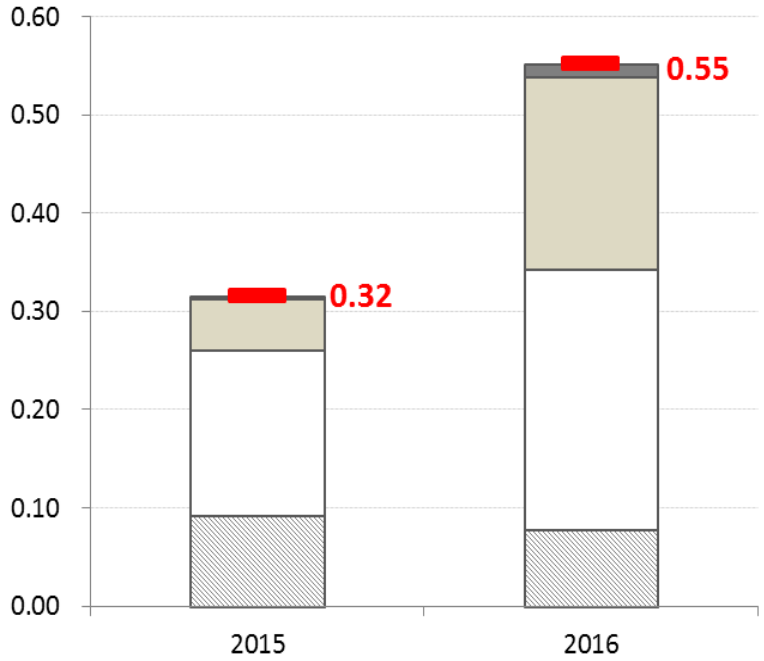
QE Impact on small open economy (A case of Slovakia)

Estimation of QE on GDP growth and inflation rate

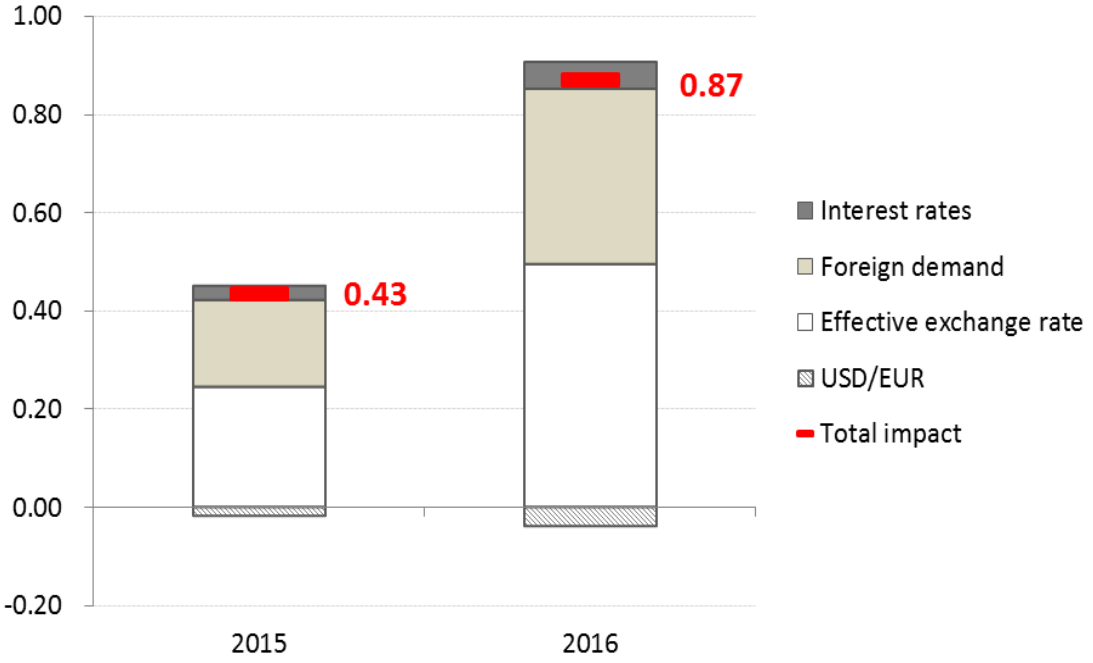
Impact on GDP growth – reference period
5th Sept. 2014 - 10th Mar. 2015

Impact on inflation– reference period
5th Sept. 2014 - 10th Mar. 2015

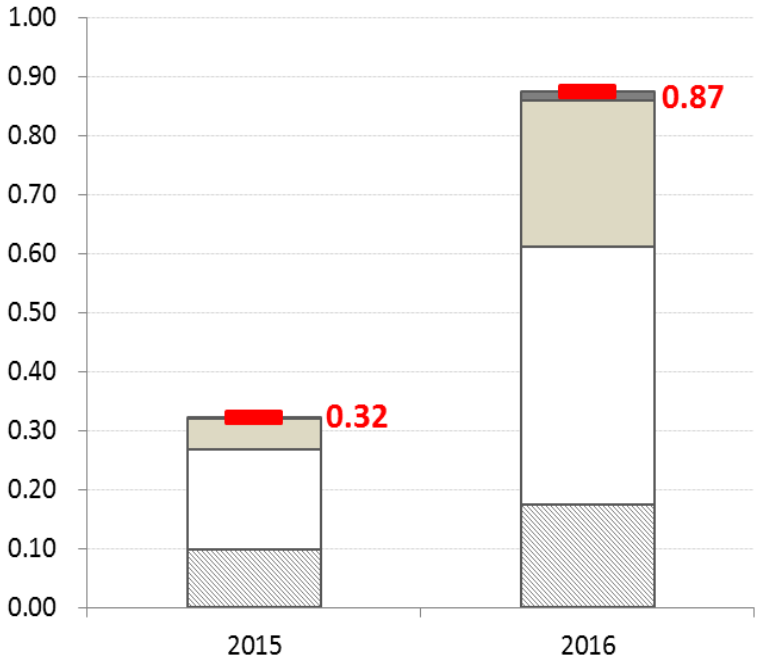


Estimation of QE on GDP level and inflation level

Impact on GDP level– reference period 5th Sept. 2014 - 10th Mar. 2015



Impact on HICP level– reference period 5th Sept. 2014 - 10th Mar. 2015



Estimation of EAPP summary

Scenario: reference period 5th Sept. 2014 - 10th Mar. 2015

Technical Assumptions

	Change since Sep 2014 Cut-off: 10-03-2015	
	Actual	EAPP-driven
Foreign demand (p.p.)		0,97
Nominal effective exchange rate SK *	-3,0%	-2,4%
Interest rates (10-year SK bonds - b.p.)	-45,6	-65,0
Exchange rate USD/ EUR *,**	-16,6%	-13,2%

* negative values mean depreciation of the euro / effective exchange rate of SK

** it is assumed, that 80% effect of actual difference from baseline is EAPP-driven, and 50% of the rest USD/EUR is offseted by increase of oil-price in USD

Impact on SK macro variables

	Inflation SK (%)			**GDP SK (growth in %)**			**Cumulative up to 2016**	
	2014	**2015**	**2016**	**2014**	**2015**	**2016**	**HICP**	**HDP**
Foreign demand	0.00	0.05	0.20	0.00	0.18	0.18	0.25	0.36
Nominal effective exchange rate SK	0.00	0.17	0.27	0.00	0.24	0.25	0.44	0.50
Interest rates	0.00	0.00	0.01	0.00	0.03	0.03	0.01	0.05
Exchange rate USD/EUR	0.00	0.09	0.08	-0.00	-0.02	-0.02	0.17	-0.04
Total	**0.01**	**0.32**	**0.55**	**0.00**	**0.43**	**0.43**	**0.87**	**0.87**