Analysis

Finland benefits from Eurosystem's securities purchases

Monetary policy | 30 June 2015 | Seppo Orjasniemi, Elisa Newby

AUTHORS



Seppo Orjasniemi



Elisa Newby
Head of General Secretariat

The effects of the Eurosystem's expanded asset purchase programme (EAPP) are already visible on the financial markets. The achievements of the programme are, however, only intermediate goals from a central bank perspective, through which the effects of the programme can work through to the real economy and prices. To a small open economy such as Finland, the effects of the programme are transmitted particularly via lower market interest rates and a weaker exchange rate. According to calculations conducted at the Bank of Finland, the EAPP will stimulate Finland's GDP growth by 0.2 of a percentage point and inflation by 0.3 of a percentage point in 2015.



Stimulus to central bank balance sheets

In March 2015, the Bank of Finland initiated secondary market purchases of bonds issued by the Finnish government. With these purchases, the Bank of Finland executes the Eurosystem's purchase programme for public sector debt securities, under which the ECB and national central banks purchase bonds of sovereigns, state agencies and supranational European institutions. The Eurosystem had, already in autumn 2014, launched purchases of covered bonds and asset-backed securities issued by banks. The Eurosystem's combined monthly purchases of all of these securities will amount to EUR 60 billion and will continue at least until the end of September 2016. Of this, the Bank of Finland's purchases of public sector securities will amount to around EUR 700 million.

The immediate effect of monetary policy purchases of securities is that the central bank's balance sheet expands and the amount of central bank money increases. When the Eurosystem purchases a bond from a bank, the bond is recorded on the assets side of the central bank's balance sheet and the central bank credits the seller bank's current account at the central bank with electronic central bank money. This initial effect of the programme – direct growth in the monetary base – can be referred to as the impact phase.[1]

However, growth in central bank money or liquidity in the banking system does not mean an increase in the amount of money held by non-financial corporations and households. Increased liquidity is transmitted to the real economy only if banks increase their lending. Hence, the Eurosystem cannot directly stimulate loan markets with asset purchases and thereby increase aggregate demand or supply. Unlike the impact phase of an asset purchase programme, the adjustment phase is prolonged. In addition, several factors influencing the transmission, e.g. the structures of the economy or accumulation of private sector debt, are independent of central bank measures.

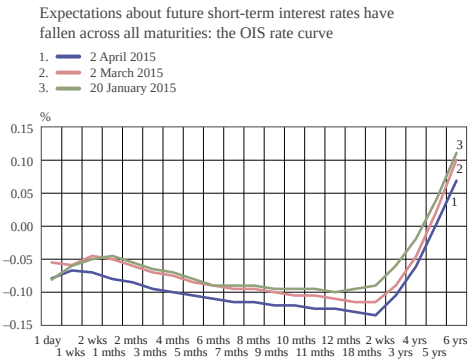
This article reviews how the effects of the Eurosystem's expanded asset purchase programme are transmitted from the financial markets to the real economy and prices. The importance of the various transmission channels is assessed from the perspective of both the euro area and Finland, however taking into consideration that, in assessing the success of the purchases under the EAPP, the focus should be on overall euro area developments, since the ECB Governing Council has set the objectives of the programme at the level of the euro area as a whole.

The effects of the EAPP have been taken into account in the Bank of Finland's new macroeconomic forecast published on 10 June 2015. However, the Bank of Finland's general equilibrium model does not allow for a detailed analysis of the programme's transmission channels.

Asset purchases have many transmission channels on the markets

The effects of asset purchase programmes have typically been analysed by assessing market reactions to central bank announcements of the commencement of asset purchase programmes, which is relatively straightforward. Financial markets react rapidly to changes in the outlook for their prices, as the markets operate in real time and encompass a large number of buyers and sellers.[2] Hence, the effects of an asset purchase programme are first reflected on the financial markets and only later in the real economy and prices, since e.g. wages and prices adjust slowly (Chart 1). This is why no studies of the Eurosystem's asset purchase programme have yet been published, except for some analyses focusing on market reactions.

Chart 1.



Source: Bloomberg.

10 June 2015
bofbulletin.fi

Immediate market effects of the EAPP announcement

The financial markets expected already in the second half of 2014 that the Eurosystem would expand the purchase programmes for covered bonds and asset-backed securities to public sector debt securities. The expectations were boosted by slowing inflation and expectations of inflation falling below the objective for price stability. In addition, ECB President Mario Draghi stated in November 2014 that the Eurosystem was targeting to expand its balance sheet by around EUR 1,000 billion. The markets assessed the prevailing non-standard monetary policy measures as insufficient in quantitative terms to achieve the target. Due to the relaxed monetary policy and expectations of further monetary policy relaxation, the exchange rate of the euro depreciated against the US dollar by almost 17% and the yield on the 10-year German government bond fell from 1.4% in early June 2014 to around 0.5% at the end of the year.

The markets reacted strongly to the ECB Governing Council's announcement of 22 January 2015 on the launch of the EAPP. The euro depreciated against the US dollar instantly by 1.4%. Similarly, the Euro STOXX equity index rose by 1% and the yields on 10-year German and Spanish government bonds declined by 0.25 of a percentage point. The yield on the Finnish 10-year government bond, in turn, declined by a further 0.13 of a percentage point from an already low level. The market response was almost equally strong on 5 March when the Governing Council, at its monetary policy meeting, announced further details of the modalities of the EAPP and announced that purchases would commence almost immediately.

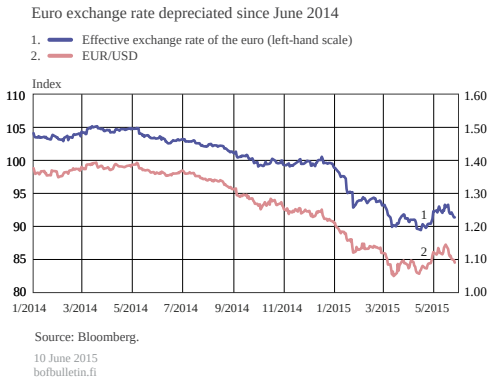
During the first months of the EAPP, the money market rates and yields on government bonds continued to fall rapidly, meaning markets had not priced in all effects in advance. Market reactions to central bank announcements of asset purchase programmes have been very similar in the United States and the United Kingdom.[3]

EAPP signalled continuation of relaxed monetary policy

The central bank's announcement of an asset purchase programme signalled relaxation of monetary policy. By committing itself to a long-term purchase programme, the central bank decreased uncertainty about the future course of monetary policy. The Eurosystem has amplified the signalling effect of the EAPP with forward guidance, i.e. by communicating the monetary policy it intends to pursue. In January 2015, ECB President Mario Draghi announced that the Eurosystem intended to carry out the purchases 'until end-September 2016 and …in any case … until we see a sustained adjustment in the path of inflation which is consistent with our aim of achieving inflation rates below, but close to, 2% over the medium term.' If markets were to interpret the EAPP as just a temporary measure, it would not bring about a broad-based decline in long-term interest rates. Non-standard monetary policy – such as outright purchases of securities – pushes down long-term interest rates only if the monetary policy stance is supported by forward guidance.[4]

If the Eurosystem can credibly influence market expectations about future monetary policy, short-term money market rates and expectations about their future level should fall. Market participants' expectations about the central bank's monetary policy stance is measured by the overnight indexed swap (OIS) which reflects changes in the ECB policy rate (Chart 2). For example, the three-month OIS rate is interpreted as market expectations about the average Eonia rate over the next three months. Hence, changes in the OIS rate reflect expectations about overnight rates. The OIS rate fell by 0.05 of a percentage point from the beginning of November to –0.10% at the end of March 2015. Expectations about long-term money market rates fell even more: the three-year OIS rate declined by over 0.5 of a percentage point, to –0.11%. Hence, the OIS rate curve declined evenly, which reflects the effectiveness and reliability of the Eurosystem's monetary policy. In this case, the decline in the rate curve is not explained by standard interest rate policy, since the ECB Governing Council lowered the key policy rate last in September 2014, i.e. over 5 months before the launch of the EAPP.

Chart 2.

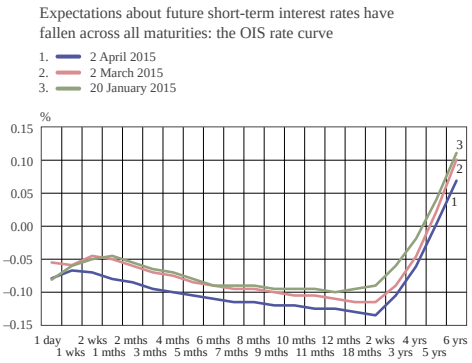


A decline in money market rates reduces banks' own funding costs. A decline in the interbank market rate is transmitted to banks' retail loan prices in two ways. In the first place, the price of finance offered by banks to the public must cover banks' own funding costs. Secondly, interbank market rates are reflected in reference rates such as Euribor rates.[5] A decline in the reference rate reduces the private sector's loan servicing costs: the three-month Euribor – the most common reference rate of housing and corporate loans in Finland – fell by around 0.10 of a percentage point from the beginning of 2014 to 0% at the end of April 2015. The 12-month Euribor has declined even more, by 0.15 of a percentage point, to 0.17% at the end of April 2015.

EAPP changes composition of investment portfolios

Central banks use regular liquidity auctions to steer short-term money market rates, and changes in these rates pass through to long-term rates through expectations. A central bank's regular interest rate policy is ineffective, however, if short-term market rates are already at the zero bound but the inflation outlook necessitates further relaxation of monetary policy. When the Eurosystem purchases a large quantity of government bonds, including long-term government bonds, the amount of these instruments on the markets decreases while demand for government bonds increases. If a central bank purchases above all long-term debt securities, the average time to maturity, i.e. duration, of debt securities on the markets decreases. Narrowing of the yield spread between short and long-term debt securities prompts investors to purchase debt securities with even longer maturities.[6] Investors will then require a smaller average term premium on long-term bonds than before and, as a response, the yield on long-term bonds will decline (Chart 3).

Chart 3.



Investors also have to look for substitutes for government bonds they have sold to the Eurosystem, as there are less government bonds on the markets, and with higher prices but lower yields. Rebalancing of investment portfolios is reflected in other investment instruments such as corporate bonds or equities. When investment flows are channelled to these alternative investment assets, their prices will rise and yields fall, too. This has two positive effects on the real economy. A decline in the yield on corporate loans decreases firms' funding costs, which in turn eases funding of new investments and firms' working capital. On the other hand, a rise in securities prices increases the wealth of securities holders, which in turn boosts consumption.

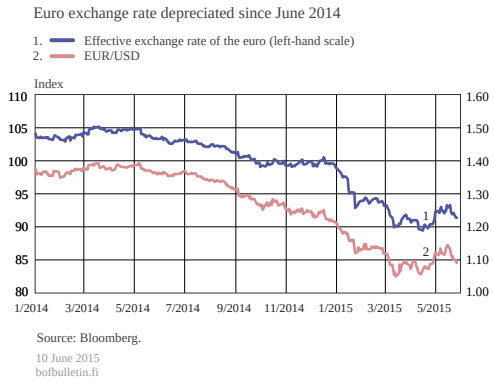
The effectiveness of the portfolio channel depends partly on how willing or able investors are to sell their sovereign bond holdings and invest in other securities. Many institutional investors, such as life and pension insurance companies, cannot shift their investments from government bonds to riskier assets due to rules that restrict their investment activities.[7] Finnish financial institutions hold around EUR 40 billion of euro area government bonds, of which a little over half is on the balance sheets of pension insurance companies, pension funds and insurance companies. These institutional investors may be less willing to sell their sovereign bond holdings than banks and management companies. Insurance companies' and banks' willingness to sell is also dampened by capital adequacy and liquidity rules that force the institutions to hold government bonds of high-rated euro area countries on their balance sheets. The EAPP does not work its way through to the Finnish economy only through the Bank of Finland's purchases, since over 90% of Finnish government bonds are held by foreign investors. Instead, Finnish financial institutions hold significant amounts of euro area bonds which are also subject to euro area purchases. A rise in the value of these instruments is beneficial to both their holders and the Finnish economy.

Investment flows outside euro area weaken the euro

The Eurosystem's EAPP increases the supply of euros relative to other currencies, weakening the exchange rate of the euro, assuming other factors remain unchanged. The euro exchange rate will also depreciate when the banks that have sold government bonds to the Eurosystem invest the euros obtained in securities outside of the euro area. For example, many institutional investors may consider US and UK government bonds as substitutes for bonds of high-rated euro area countries, despite the exchange rate risk. In order to purchase US or UK debt securities, the investor must first exchange the euros obtained into dollars or pounds. Demand for these currencies will grow and the supply of euros on foreign exchange markets will respectively increase, leading to euro depreciation.

The nominal exchange rate of the euro has depreciated substantially against the dollar, by about 20%, since early summer 2014 (Chart 4). The ECB Governing Council lowered the key policy rates and introduced new non-standard monetary policy measures already in June and September 2014. The euro is depreciating against the dollar also because economic growth, inflation and interest rates are higher in the US than in the euro area. Against a broader currency basket, the euro has weakened less, by 13%.

Chart 4.



Euro depreciation will improve the external competitiveness of the euro area – and hence of Finland. In 2014, around 65% of Finnish exports went outside the euro area.

Impact of EAPP on Finnish economy

Incorporation of EAPP in the forecast

The Bank of Finland's current macroeconomic forecast for the first time takes into account the Eurosystem's expanded asset purchase programme. Even though the financial markets were

expecting the ECB Governing Council to relax monetary policy, as described earlier, fiscal and monetary policy measures are included in the forecast only after they have been approved by decision-makers.

The Bank of Finland prepares its forecast as part of the Eurosystem staff macroeconomic projections for future developments in the euro area. Hence, the underlying forecast assumptions on e.g. commodity price developments and assessments of future developments in the international economy are in line with those of the Eurosystem staff projections (see forecast assumptions). The Bank of Finland's forecast describes the most probable economic developments at the forecast date, i.e. it is a point estimate.

The forecast assumes interest rates to develop in line with financial market expectations and exchange rates to remain unchanged during the forecast period. The EAPP has impacted on recent developments in interest rates, exchange rates and market expectations about further exchange rate developments as described above. Thus the programme is an inseparable part of the forecast assumptions.

The Eurosystem-wide EAPP also stimulates total demand in Finland's trading partners. These 'second order' effects can have a significant impact on a small open economy such as Finland's. The impact of the programme on growth in Finland's export markets is taken into account in the forecast via the growth forecast for the global economy and the euro area.

Changes in the forecast assumptions transmit to the forecast outcome through a macroeconomic model developed at the Bank of Finland. In addition to technical assumptions, the model forecast includes a wide range of other information and estimates of economic developments based on e.g. the national accounts and the production structure of the Finnish economy. As a stochastic general equilibrium model, the Bank of Finland's forecast model ('Aino') enables analysis of a policy measure impacting on the whole macro economy, such as the EAPP, since the model takes into account both the direct and indirect effects of the measure. In addition, economists estimate the EAPP will pass through to the real economy within a period of about 2 to 3 years, which corresponds to the time horizon of the forecast model. By contrast, the model cannot differentiate that part of the change in the baseline forecast that stems from the EAPP. Hence, the growth contributions presented in the following section are based on technical assumptions and staff macroeconomic projections. For the sake of caution, the main focus is on the direct effects of the EAPP.

Contribution of EAPP to baseline forecast

The assumptions concerning money markets in the Bank of Finland's forecast published in

December 2014 are based on the situation as at mid-November. Thereafter, expectations about the interest rate level – the 3-month Euribor – prevailing in 2015–2017 have fallen by about 0.2 of a percentage point. In addition, Finland's trade-weighted exchange rate has depreciated by around 4%. The EAPP is assessed to have contributed to only a part of these changes in expectations.

The EAPP can be assessed to weaken Finland's trade-weighted exchange rate in the forecast period by about 1% (Table 1). The exchange rate depreciation will improve Finnish exporters' price competitiveness against non-euro area countries, which will accelerate export growth. On the other hand, improved price competitiveness enables domestic export companies to raise their prices. As the euro depreciates, prices of import products rise, in which case imports decline and part of the import products used in domestic production will be replaced by domestic products.

In the model, households and non-financial corporations pay an imputed short-term interest rate that reflects the price of domestic finance, on one hand, and the yield on an internationally allocated investment portfolio, on the other. Unlike in many other euro area countries, interest rates were already low in Finland before the launch of the EAPP. This means the impact of the programme on the level of domestic short-term rates is small relative to the euro area average. The decline in the level of interest rates will reduce businesses' funding costs and the price of capital used in production. Consequently, the fall in interest rates will boost investment and will also reduce businesses' production costs. As interest rates decline, households' loan-servicing costs will also decrease, so that households will increase consumption and investment, e.g. via housing construction.

Exchange rate depreciation and the fall in the interest rates will accelerate growth in domestic and external demand. This will increase the need for labour and production capacity, resulting in a slight further increase in investment and labour force growth. With a growing labour force, the wages bill of the whole economy will increase, enabling further acceleration in private consumption growth.

Growth in demand for both end products and production inputs will increase price pressures in the economy. Since the calculation expects productivity to remain unchanged, non-financial corporations will have to increase their production capacity, which will push up production costs. Production costs will also be inflated by a rise in the prices of intermediate goods imported for production purposes. On the other hand, growing demand will also enable increases in goods prices. This way faster growth in total demand will fuel inflation and the general level of prices will rise slightly. Increased labour demand and higher prices will only be marginally reflected in wage developments over the forecast horizon, so that the EAPP will contribute to labour costs only very modestly.

The EAPP will boost growth in Finland's GDP cumulatively by approximately 0.3 of a percentage point, and inflation by 0.4 of a percentage point in 2015 and 2016. The calculation does not take into account the impact of the programme on euro area economic growth and any accompanying growth in export demand. However, this channel of influence is taken into account in the baseline forecast, in which it boosts growth in the export markets. This increases the growth contribution of the EAPP, but this contribution is markedly smaller than the direct impact.

Table 1.

Contribution of EAPP to Finnish economy			
Annual growth, %			
	2015	**2016**	**2017**
GDP	0.3	1.2	1.3
EAPP contribution	0.2	0.1	0.0
HICP inflation	0.2	1.0	1.5
EAPP contribution	0.3	0.1	0.0
Private investment	−2.5	2.7	2.2
EAPP contribution	0.8	0.3	−0.2
Private consumption	0.2	0.4	0.7
EAPP contribution	0.2	0.2	0.1
Exports	0.6	3.3	4.0
EAPP contribution	0.1	0.0	0.0

Source: Bank of Finland calculations.

Brisker economic growth more likely due to EAPP

Forecasts are made because the future is uncertain, and Bank of Finland forecasts also include an assessment of the key uncertainties surrounding the forecast itself. In the forecasts prepared over the past few years, downside risks have been larger and also more numerous than upside risks. Consequently, the Bank of Finland has generally assessed downside risks to the baseline forecast

as being more likely than upside risks. In actual fact, since the financial crisis, actual developments have often lagged behind the baseline. The Eurosystem's expanded asset purchase programme is one of the key reasons why the present forecast considers that better-than-forecast economic developments, too, are more likely than before.

Sources

Eggertsson, G. – Woodford, M. (2003) The Zero Bound on Interest Rates and Optimal Monetary Policy. Brookings Papers on Economic Activity, Economic Studies Program. The Brookings Institution, vol. 34(1), 139–235.

Glick, R. – Leduc, S. (2012) Central bank announcements of asset purchases and the impact on global financial and commodity markets. Journal of International Money and Finance. Volume 31, Issue 8, 2078–2101.

Joyce, M. – Tong, M. – Woods, R. (2011) The United Kingdom's quantitative easing policy: design, operation and impact. Quarterly Bulletin Q3/2011. Bank of England.

Krishnamurthy, A. – Vissing-Jorgensen, A. (2011) The Effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy. Working Paper 17555. National Bureau of Economic Research.

Thornton, D. (2014) QE: Is There a Portfolio Balance Effect? (2014) Federal Reserve Bank of St. Louis Review. First Quarter 2014, 96(1), 55–72.

Notes

1. Joyce – Tong – Woods (2011). ↑
2. Glick – Leduc (2012) and Krishnamurthy – Vissing-Jorgensen (2011). ↑
3. Glick – Leduc (2012). ↑
4. Eggertson – Woodford (2003). ↑
5. 56% of euro area corporate loans (excl. loans to financial institutions) and 40% of household loans are linked to Euribor rates. In March 2012, the value of outstanding loan agreements was around EUR 4,700 billion. Through a decline in market interest rates, the expanded purchase programme is also transmitted to Finland. The share of Euribor-linked floating-rate loans in the loan stock is the largest in Finland among all euro area countries: 83% of corporate loans and 94% of household loans are linked to Euribor rates of various maturities. ↑
6. Cash and short-term debt securities are substitutes, especially when the level of interest rates is very low. For this reason the Eurosystem has excluded debt securities of less than two years from the APP. ↑

7. Thornton (2014). ↑

Keywords

forecast, general equilibrium model, monetary policy, securities purchases