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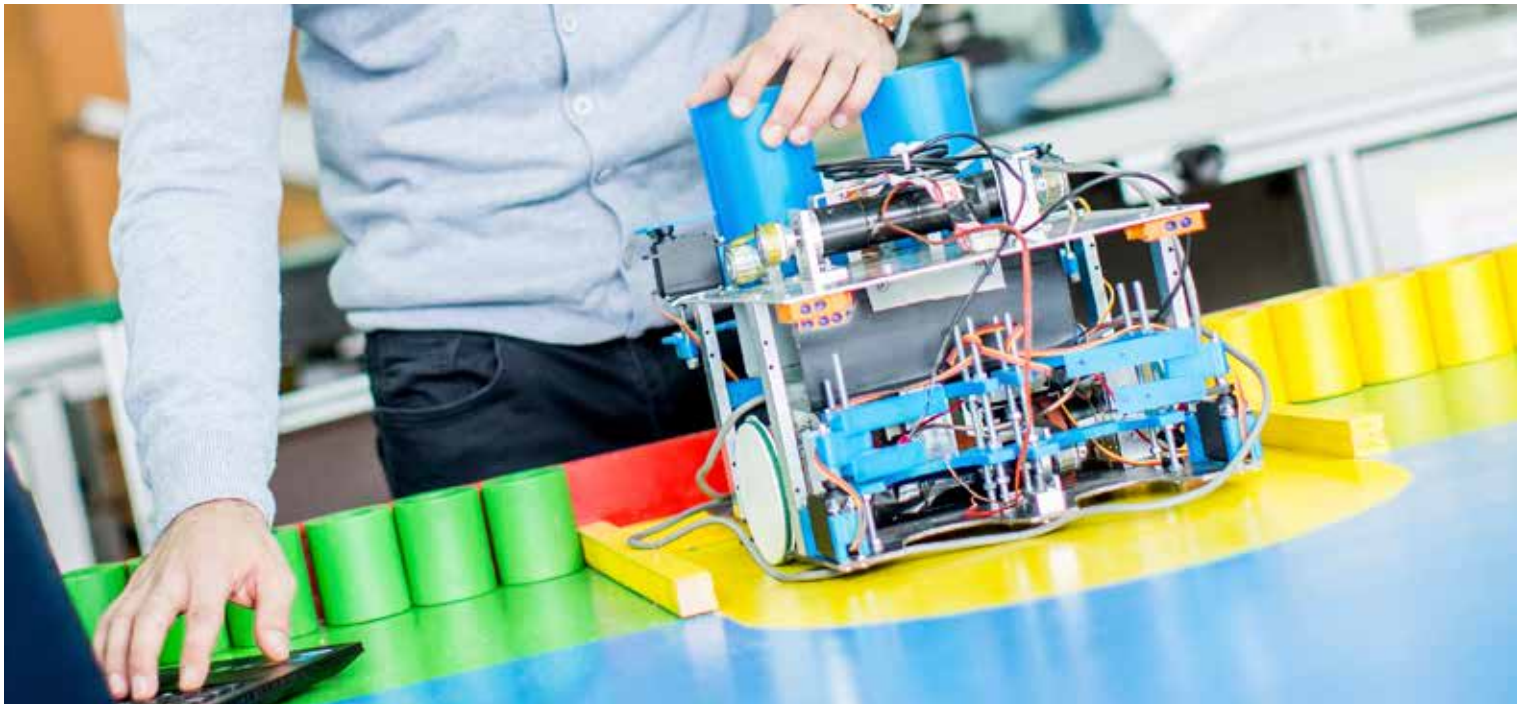

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Contents

Monetary and fiscal policies in the euro area : independent but nevertheless connected

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Introduction

The pre-crisis consensus regarding the conduct of macroeconomic policy largely, or even exclusively, assigns to monetary policy the role of preserving price stability. By doing so, monetary policy also makes a major contribution to macroeconomic stability in the broad sense, for instance by smoothing out cyclical fluctuations. According to this view, and in line with the European governance framework currently in place, fiscal policy does not play an active part in stabilising inflation : above all, it must not be a disruptive factor. It does its job best by making sure that public finances are sound and sustainable, so as not to threaten either price or macroeconomic stability (1). Conversely, the pre-crisis consensus does not foresee any role for monetary policy in preserving sustainable public finances. With both policies having their own specific task – which is also embodied in an independent central bank and clear fiscal rules – they appear to stand in isolation.

Yet the crisis has highlighted numerous links between monetary and fiscal policies. Through its outright monetary transactions (OMT), the European Central Bank (ECB) is (conditionally) supporting government bonds that have come under pressure from the financial markets. In addition, the low interest rate environment – reflecting the slow nominal economic growth – brings down the interest charges that governments have to pay to service their substantially increased debt, while too low inflation and the cyclical contraction in economic activity push up the debt ratio. The introduction of the asset purchase programmes – under which the central banks are buying up mainly government securities – has exerted further downward pressure on the entire yield curve, even pushing the short-term segment into negative territory. These asset purchases (recorded on the assets side of the central bank's balance sheet) are reflected by a corresponding increase in the amount of liquidity that commercial banks hold with the central bank (recorded on the liabilities side). Since central banks usually pay interest on these reserves and as the yield curve has flattened out significantly, central bank reserves and (short-term) government securities have largely become substitutes. The crisis has also called into question the conventional divsion of tasks between monetary and fiscal policies because monetary policy has encountered some limits (i.e. the lower bound for nominal interest rates) in supporting the economic recovery. Consequently, the question arises as to whether fiscal policy should also inject some impetus into the economy.

Research and debate devoted to interactions between monetary and fiscal policies have thus received a new impulse. This article contains some new insight that the crisis has brought. Without wanting to be exhaustive, it mainly draws attention to the importance of a joint analysis of monetary and fiscal policies.

The first part gives an overview of monetary and fiscal policy thinking. It compares the conventional view – which

(*) The authors would like to thank the following NBB colleagues for their valuable comments on this article : Luc Aucremanne, Mélissa Kasongo Kashama, Luc Van Meensel, Arnoud Stevens, Stefan Van Parys, Joris Wauters and Raf Wouters.

(1) Fiscal policy obviously pursues many objectives, but this article focuses on two important macroeconomic tasks : the stabilisation of the economic cycle and the maintainance of sustainable public finances.

proposes a strict division of responsibilities and a clear allocation of tasks among these two policy areas – with an alternative view which focuses specifically on the interactions between these two policy areas. The latter view argues that the combined action of monetary and fiscal policies – in which not only monetary policy but also fiscal policy can play an active part – determines macroeconomic outcomes. The second part discusses the various schools of thought in practice. It concentrates on some recent events experienced during the euro area crisis which have thrown some light on possible gaps in the conventional view. The third part concludes.

1. Different views depending on the monetary policy school of thought

1.1 The conventional view : a strict division of tasks

In the 1960s and 1970s, both monetary policy and fiscal policy played an important role in preserving macroeconomic stability. These two policy domains were quite naturally coordinated for the benefit of the internal as well as external balance. From the 1980s onwards, however, faith in the stabilising capacity of fiscal policy began to wane, shifting in favour of monetary policy. The end result was a consensus focusing on a strict division of tasks : the central bank is responsible for macroeconomic stabilisation (by maintaining price stability, which generally boils down to stabilising output at its potential level) ; the best way the budget authority can contribute to this is by ensuring sound and sustainable public finances.

Monetary policy plays a dominant role in stabilisation[1]

There are all sorts of reasons behind the predominantly stabilising role of monetary policy. In practice, the division of responsabilities appeared to be working. After inflation had spiralled out of control in the 1970s, the new focus of central banks on low and stable inflation rates bore fruit, as there was a definite reduction in macroeconomic volatility from the mid-1980s on (see chart 1). Studies have nevertheless pointed out that, apart from a more effecient monetary policy, the mainly favourable macroeconomic shocks and the structural reforms in the economy (such as more flexible labour and product markets) also helped to stabilise the macroeconomic environment[2]. Theoretically, macroeconomic models have shown that by guaranteeing low and stable inflation, monetary policy would make the best contribution to economic activity[3]. As monetary policy, through setting key interest rates, proved capable of stabilising not just inflation but the output gap too, an active fiscal policy was less necessary for attaining the latter objective.

Furthermore, the stabilising role of discretionary fiscal policy has been called into question. This scepticism has largely been fuelled by the greater acceptance of the Ricardian equivalence hypothesis[4] in a context of rational expectations, as well as by the lack of any empirical consensus on the size of the budget multiplier – i.e. the extent to which a fiscal stimulus influences economic growth. Moreover, fiscal measures are not frequently taken (budgets are usually drawn up once a year), and their design and implemebtation takes time. They therefore risk to only kick in when the economic cycle has already turned, which threatens to make them procyclical. Besides, expansionist measures introduced in bad times are difficult to reverse in good times : a deficit bias may then result in the public debt spiralling out of control. In addition, the crisis legacy from the 1970s (and early 1980s) entailed high deficits and rising debts as fiscal policy was mobilised to support the economy. Consequently, the possibility to deploy discretionary fiscal policy as a countercyclical instrument declined substantially and the priority rather shifted to stabilising and reducing the high levels of government debt.

Unlike active fiscal policy interventions, automatic stabilisers are timely, temporary and targeted. Indeed, in absence of any discretionary action on the part of public authorities, unemployment and social security benefits increase (decrease) in economic downturns (upturns), while tax revenue generally tends to fall (rise), which smooths out cyclical fluctuations. The conventional view thus does give automatic stabilisers a role in evening out economic fluctuations. The bigger the size of the government in the economy, the stronger is the impact of the automatic stabilisers. This is precisely why they are more important in Europe than in the United States. To enable these automatic stabilisers to work freely without generating uncertainty about the sustainability of public debt, it is essential for public finances to be sound.

Sound public finances are also a precondition for monetary policy to effectively play a stabilising role. Both theory and practice have shown that political pressure could prompt a central bank to finance an expansionary fiscal policy by directly lending to governments. The

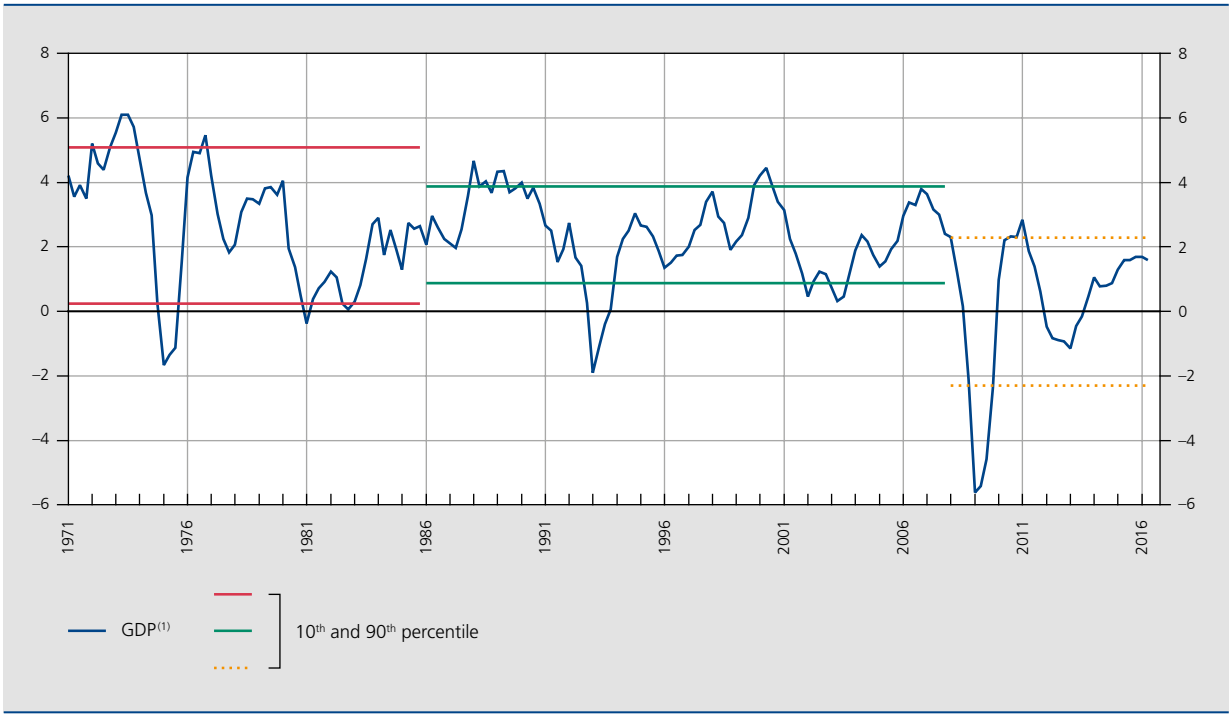
(1) For a more in-depth analysis of the pre-crisis consensus, see, for example, Blanchard *et al.* (2010).

(2) For an overview of the main factors accounting for the "Great Moderation", see Bernanke (2004), for example.

(3) For a discussion on this subject, see Blanchard and Galí (2007).

(4) According to this hypothesis, the private sector will, in reaction to a fiscal expansion and a deterioration of the budget deficit, save more because households and firms assume that the government will once again raise taxation and cut benefits in the future. In its most extreme form, this theory therefore implies that a fiscal expansion does not at all stimulate the economy, just as a fiscal contraction does not slow it down.

CHART 1 SHARP DECLINE IN MACROECONOMIC VOLATILITY IN THE EURO AREA



Sources: AWM database, EC.
(1) Percentage change compared to the corresponding quarter of the previous year.

accompanying fiscal demand impulse can subsequently result in higher inflation and in the longer run, if excessive, in an inflationary spiral, which can in turn have negative repercussions on welfare[1]. Out of fear of this adverse scenario, many countries have made their central banks independent and put them in charge of price stability, while imposing binding fiscal rules on budget authorities.

The European institutional framework

This conventional view is also reflected in the institutional set-up of the Economic and Monetary Union (EMU). An independent European central bank has thus been established, which is responsible for price stability in the whole currency union. The ECB's Governing Council defines price stability as an inflation rate below, but close to 2 % over the medium term. This medium-term perspective gives the ECB a certain degree of flexibility for attaining its primary objective, making it possible to avoid major fluctuations in economic activity and policy rates that would emerge as a result of immediate reactions to all inflation shocks. In this way, the key objective of price stability is thus beneficial for macroeconomic stability as well. Hence, the ECB also contributes towards another objective assigned to it by the EU Treaty, namely supporting general economic policy.

Moreover, fiscal rules were imposed on national authorities. Within a monetary union, there is a much greater incentive to resort to an irresponsible fiscal policy than in a stand-alone country. Fiscal expansions in fact only have a negligible effect on inflation for the monetary union as a whole (something which holds even more true the smaller the country). The central bank will therefore not raise its policy rates as much as it would if it was only watching over price stability in a stand-alone country. Real interest rates in the country conducting an expansionary fiscal policy are thus lower, which should result in stronger economic growth. The higher policy rates for the monetary union as a whole nevertheless imply a cost for the other Member States. In addition, it was feared that financial markets would not in time penalise any big increase in a Member State's public debt by pushing up the interest rate so as to offset a higher risk of default, but that the penalty would come suddenly (a sudden stop). In order

(1) There are many costs associated with high and variable inflation. High and variable inflation implies that economic stakeholders need to make more (inefficient) efforts to adjust prices and wages correctly and, when this is not done frequently enough, it also disrupts the relative price signal (leading to a misallocation of resources). It results in higher risk premiums, and thus higher real interest rates, which slows down investment. It requires a greater effort from monetary policy when it comes to steering real interest rates. Lastly, an unexpected surge in inflation also triggers an arbitrary redistribution of wealth from lenders to borrowers.

to ensure sound public finances in each of the euro area countries, an attempt was thus made to establish market discipline and impose fiscal rules. The prohibition of monetary financing of public debt and a no-bail-out clause were thus combined with fiscal benchmarks that were all written into EU law[1]. These benchmarks were then further developed in the Stability and Growth Pact (SGP): the government deficit could not exceed 3 % of GDP and the public debt could not go over 60 % of GDP, otherwise the debt must be brought down sufficiently towards the reference value. In addition, the SGP requires Member States to achieve fiscal positions in the medium term that are more or less in balance or showing a slight surplus, so that automatic stabilisers can work freely without pushing the budget deficit over the 3 % reference value. The architects of EMU thus did their utmost to ensure that nothing or nobody would deflect the ECB from its price stability mandate; in other words, they endeavoured to ensure as high a degree of monetary dominance as possible[2].

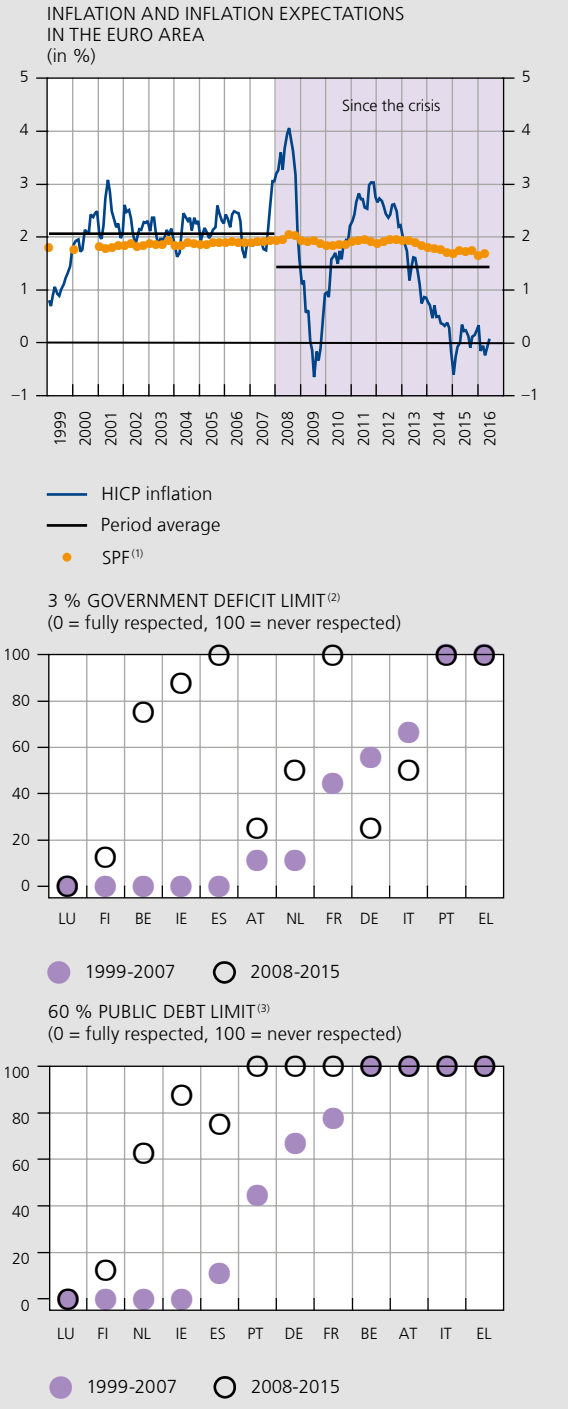
Chart 2 shows that the Eurosystem actually managed to stick very closely to its target over the decade preceding the crisis. Inflation was kept to 2 % on average. On the other hand, the majority of the twelve original euro area member countries did not respect the fiscal rules, often for several years. The Eurosystem nevertheless managed to keep a lid on GDP and inflation volatility in the euro area, so its stabilising role did not come under threat (see also chart 1). But, alongside relatively robust growth and inflation performance, a number of countries have seen the build-up of financial imbalances[3]. Because the pre-crisis consensus did not pay enough attention to the macroeconomic dimension of financial stability and with the analysis of financial risks almost exclusively focused on individual financial institutions, these imbalances remained under the radar. As, at the same time, instruments to tackle these imbalances were lacking, decision-makers faced a difficult task during the crisis.

1.2 Since monetary and fiscal policies are inextricably linked, joint analysis is called for

At the beginning of the 1990s, however, another view also emerged giving both monetary and fiscal policy an explicit role in guaranteeing macroeconomic stability, and price stability in particular. According to this view, rather than just monetary policy on its own, fiscal policy also determines more explicitly how nominal variables develop

(1) See Articles 123, 125 and 126 of the Treaty on the Functioning of the European Union.
(2) See also Praet (2015).
(3) Fur further details and an interpretation of the causes of the crisis in the euro area, see, for example, Baldwin and Giavazzi (2015).

CHART 2 RESPECTIVE ACHIEVEMENT OF THE SPECIFIC TARGET BY THE EUROSYSTEM AND BY NATIONAL BUDGET AUTHORITIES



Sources: EC, ECB, Thomson Reuters Datastream.
(1) Average of the aggregated probability distribution of inflation expectations five years ahead (NBB calculations). Data are extracted from the ECB's quarterly survey of professional forecasters (SPF).
(2) Percentage ratio between the number of years during which the government deficit expressed as a percentage of GDP is above 3 % and the total number of years over the period under consideration.
(3) Percentage ratio between the number of years during which the public debt expressed as a percentage of GDP is above 60 % and the total number of years over the period under consideration.

in the economy. In this article, this alternative view is referred to as the monetary-fiscal theory (in a more narrow form, it is probably better known as the fiscal theory of the price level)[1]. The founding fathers of this approach are Eric Leeper, Chris Sims and John Cochrane; Sargent and Wallace (1981) also reckoned that fiscal policy was playing a role in the behaviour of inflation.

The following takes a more in-depth look at the differences between the conventional monetary theory and the monetary-fiscal theory. The objective here is to highlight some insight from the alternative theory with the help of simple equations, without wanting to be exhaustive though. For more detailed information, readers are referred to the work of the founders of this theory.

The difference between the two views reflects divergent theoretical schools of thought, notably as regards assumptions concerning the behaviour of fiscal policy. The respective frames of thinking are both based on a pair of equilibrium conditions featuring the price level: an equation of exchange and a public debt equation (see chart 3). These two equations are found in all contemporary economic models, albeit more or less explicitly depending on the role given to fiscal policy in determining the price level. Here, both equations solely aim to explain movements in the general price level or inflation. Hence, nothing is said about the stabilisation of the economic cycle or of economic growth. In other words, the analysis here is purely monetary.

In equilibrium, total expenditure for economic transactions (the money supply multiplied by the number of times that each euro is spent annually) is equal to the value of the transactions (equation 1) and the value of outstanding public debt is equal to the discounted value of governments' future primary surpluses needed to repay this debt (equation 2). It should be noted that the latter equation is written in real terms: it is the relative price of public debt – i.e. the nominal value of the outstanding stock of government bonds[2] adjusted for the general price level – which must be equal to the discounted flow of real primary surpluses (government revenue after deducting public expenditure excluding interest charges) that governments are expected to record. This equation displays a parallel with financial asset price-setting: the price of the assets corresponds to the discounted value of revenue flows that these assets are expected to gerenate in the future. In the same vein, economic agents value public debt on the basis of the resources that the government in all likelihood will withdraw from the economy in the future. Note that public debt here refers to the consolidated public debt held by the private sector: it covers not only the budget authorities' debts but also the debt that central banks have recorded on their liabilities side, such as interest-bearing central bank reserves or bank notes. Furthermore, the equation refers to the expected flow of real primary balances.

The "traditional" monetary theory assumes that monetary policy alone is capable of guranteeing price stability in the long term. Equation 1 embodies this view as it illustrates that, assuming a relatively constant velocity of money in circulation (V) and assuming that monetary policy does

(1) Given the explicit attention that the alternative view devotes to fiscal policy for explaining the path of the general price level, the choice of the term "fiscal theory of the price level" seems quite logical at first. Yet it is the interaction between these two policy areas that is crucial, hence our alternative name. Eric Leeper (2016a) also refers to the "real theory of the price level".

(2) In many advanced economies, this mainly consists of nominal debt securities denominated in national currency, although several countries also issue inflation-linked government bonds or foreign-currency-denominated debt; but there are few issues of this kind.

CHART 3 TWO EQUATIONS FEATURING THE PRICE LEVEL

Equation 1
The equation of exchange

Nominal expenditure: $M_t V_t$ = Nominal GDP: $P_t Y_t$

Equation 2
Valuation of government debt[1]

$$\frac{B_t}{P_t} = E_t \sum_{j=1}^{\infty} \rho^{-j} (T_{t+j} - G_{t+j})$$

Real public debt: $\frac{B_t}{P_t}$ = Sum of expectations: $E_t \sum_{j=1}^{\infty} \rho^{-j}$ (Real primary government balances: $T_{t+j} - G_{t+j}$)

where M is money, V the velocity of money in circulation, P the price level, Y real output, B nominal government debt – including central bank liabilities (such as central bank reserves) – held by the private sector, ρ the real discount rate that discounts the value of future surpluses and which, for simplicity, is assumed to be constant here, T tax revenue, and G government expenditure excluding interest charges.

(1) Here, a simplified version of the equation is shown including only short-term government bonds.

not exert any effect on output in the long run, the central bank is in a position to control the price level (P) in the long term, simply by using its monetary policy instrument (i.e. the money supply (M) in this classic equation of exchange). Neither fiscal policy nor government debt have any specific role to play here, even though they are actually at work in the background, as will be explained below.

In practice, the money supply does not constitute a direct monetary policy instrument. It is rather through setting its policy rate that a central bank endeavours to steer inflation (in this process the money supply will also change)[1]. A higher policy rate slows inflation down, whereas a lower interest rate revives it. In the terminology used by Leeper (1991), monetary policy plays an "active" role here in the sense that it adjusts its instrument adequately with a view to stabilising inflation. This means basically that standard models impose a Taylor rule[2] on monetary policy whereby, in response to a rise/fall in inflation, a central bank eventually has to raise/cut the nominal interest rate more than proportionally in order to steer the real rate in the appropriate direction and restore price stability.

Any change in the policy rate in reaction to inflation shocks also has repercussions on governments' nominal interest charges, which brings us to the second equation. A rise in the nominal policy rate is thus reflected in equation 2 by a proportional increase in nominal debt B (the impact on the interest rate is included in the numerator of the left-hand side). Since the central bank applies the Taylor principle, real interest charges, and with them the debt in real terms, also vary. The left-hand side thus becomes bigger than the right-hand side. For equation 2 to hold and for the economy to stay on a stable path, government debt holders must therefore expect the government to raise its primary balances (T-G).

Standard macroeconomic models are indeed based on the assumption (whether implicit or explicit) that governments always adjust their primary surpluses in such a way as to stabilise real debt (in the terminology used by Leeper (1991), governments thus take on a "passive" role)[3] and expectations concerning this passive role are formed correctly. This is why models assign little importance to the fiscal aspect and to a certain extent disregard equation 2, which in this case is tantamount to a budget constraint for governments. According to this line of thinking, an independent central bank that reacts adequately to inflation is seen as sufficient in itself to achieve price stability.

(1) For more information on the precise functioning of an interest rate policy as opposed to a monetary base policy, see Aucremanne *et al.* (2007).

(2) For more information, see notably Taylor (1999).

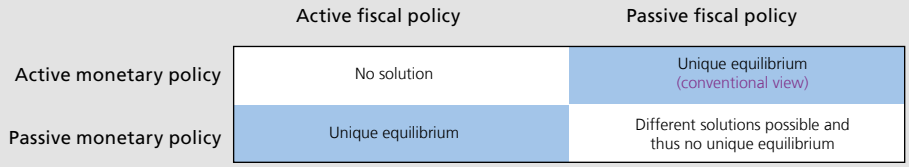
(3) Leeper argues that fiscal policy passively adjusts governments' primary budget surpluses to stabilise real debt and, in this respect, considers the monetary policy stance as an exogenous factor.

However, the monetary-fiscal theory contests the dominance of monetary policy. The fact that the price level (P) also features in equation 2 is emphasised here and implies that fiscal policy may also have an influence on it. This view argues specifically that price stability requires coordination between monetary and fiscal policies, although it might not always be explicitly visible. If governments do not follow the so-called passive rule, restrictive monetary policy will not be able to avert an inflation shock. Sims (2012) and Leeper (2016b) argue as follows: if economic agents are expecting the fiscal policy stance to remain unaltered following a rise in the policy rate, then government bond holders feel better off (they receive a higher rate of return and do not expect the government to raise taxes on the economy) and are therefore tempted to buy more goods and services. Eventually inflation will rise, which goes against the central bank's original objective. Translated into the more "mechanical" terms of equation 2, this means that an increase in P is the only means of stabilising the left-hand side when B increases and the right-hand side remains unchanged. In fact, the monetary-fiscal theory leaves no room for governments defaulting on debt denominated in their own currency because this theory assumes that countries with their own monetary policy want to avoid jeopardising their financial stability.

The monetary-fiscal theory thus provides a less common explanation for the high and accelerating inflation observed in Brazil in the 1980s. Loyo (1999) suggests that this bout of inflation can be explained by the combination of an active monetary policy and an active fiscal policy. By raising its interest rate, the central bank was striving to compress strong inflation. Yet, because the heavier interest burden was not expected to lead to any fiscal consolidation (in other words, the budgetary autority is not taking action to passively stabilise the real public debt), bond-holders felt they were better off, triggering a rise in inflation. So, in this episode, a more restrictive monetary policy led to an even bigger nominal debt and spiralling inflation. According to the monetary-fiscal theory, hyperinflation cannot just have a fiscal origin, as the conventional view proclaims, but can also have a monetary origin. In the first case, spiralling inflation results from the monetary financing of budget deficits, in the second case from the fiscal impact of restrictive monetary policy.

So, the monetary-fiscal theory does not consider equation 2 to be a budget constraint, but rather an equilibrium condition for price stability. To reach equilibrium, the public debt in real terms and inflation must both follow a stable or predictable path. In the monetary-fiscal theory (according to the classification of Leeper (1991), see also chart 4), this objective may be attained by a policy mix of an active monetary policy and a passive fiscal policy (corresponding to the conventional view) as well as by a

CHART 4 DIFFERENT POLICY COMBINATIONS[1] POSSIBLE UNDER THE MONETARY-FISCAL THEORY



(1) Classification by Leeper (1991).

less common combination of a passive monetary policy and an active fiscal policy. The monetary-fiscal theory stresses that some degree of coordination between the two authorities is always necessary if one of them intends to stabilise the price path effectively. In the first policy combination, a restrictive monetary policy puts the brakes on inflation precisely because the government, in reaction to that policy, is assumed to build up primary surpluses. Likewise, an expansive monetary policy is inflationary because governments are supposed to reduce their primary surpluses. When drawing up the SGP rules, the European institutional framework actually foresaw the need for fiscal rules to ensure monetary dominance. However, in the second policy configuration (passive monetary policy and active fiscal policy), it is the budget authority that keeps inflation under control (by determining B and expectations concerning primary balances) while the monetary authority stabilises real debt passively by adjusting its monetary policy stance. This means that, by not reacting at all or insufficiently to inflationary shocks brought on by fiscal policy, the central bank staves off an acceleration of debt and inflation.

By giving free rein to the various interactions between monetary and fiscal policies, the monetary-fiscal theory thus offers a broad spectrum of paths that the economy can follow and which could either put it on track towards equilibrium or lead it away from equilibrium (see chart 4 for an overview). The monetary-fiscal theory thus supplements the conventional theory and gives a more complete picture of the complexity and different aspects of monetary-fiscal coordination.

1.3 What is the "right" view of the world?

The wording of this question is probably too polarising. Based on economic models, monetary policy just like fiscal policy does actually play a role in determining price stability in both theories. The monetary-fiscal theory gives fiscal policy an explicit role, whereas the pre-crisis consensus view does not give it any dominant role and rather tends to disregard it. The monetary-fiscal theory reveals that the conventional approach risks losing sight of some interactions between the two policy areas or making excessive assumptions about the appropriate behaviour of each authority (fiscal policy stabilises debt and monetary policy is able to adjust policy rates without restraint). These gaps certainly proved relevant. The next part of this article looks in more detail at some of the events that punctuated the crisis in the euro area and flagged up where the economic view advocated at the time and the European institutional framework fell short. The monetary-fiscal theory had already noticed the possibility of these problems, as pointed out by the very apt title of a paper by Chris Sims in 1999, "The precarious fiscal foundations of EMU", which would turn out to be quite prophetic. At the same time, the monetary-fiscal theory remains somewhat controversial, in that it is still difficult to implement and makes a range of strong assumptions (for example that it is impossible for a government to default). In certain situations, it can nevertheless provide some valuable insight. The following part will look at these particular cases in more depth.

2. The crisis has revealed gaps in the conventional view and in existing institutions

2.1 In the absence of monetary backing, a self-fulfilling debt crisis could emerge

The monetary-fiscal theory points out that euro area countries actually issue real debt rather than nominal debt. Their debt is in fact denominated in euros, and the issue of euros is not determined by the individual Member States. This situation puts the euro area countries in a more vulnerable position, as financial markets are capable of driving governments to the brink of default in this way.

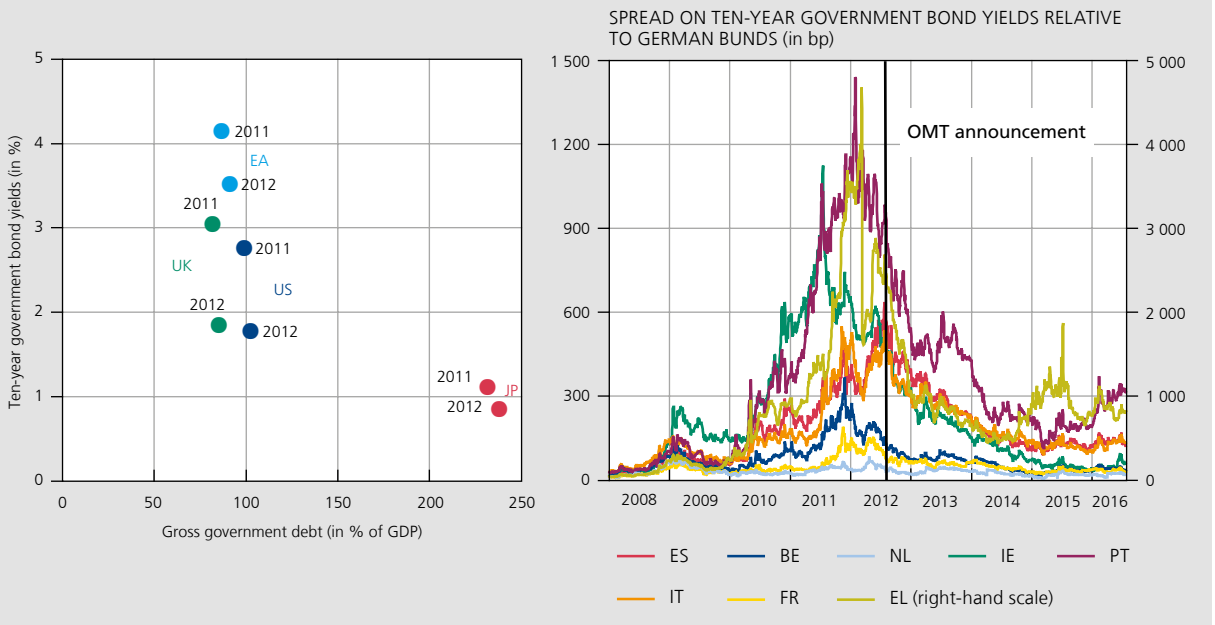
Equation 2 presented in chart 3 above can help to explain that. In order to maintain equilibrium, an increase in real debt needs to go hand in hand with expectations of higher primary surpluses in the future. If, however, it is assumed that a government does not envisage withdrawing resources from the economy or is not in a position to do so (in equation 2, the right-hand side is smaller than the left-hand side), the prospect of default emerges and investors demand higher risk premiums to cover this risk. The story is different when the debt is of a nominal nature. When nominal debt goes up, equilibrium can be re-established through future fiscal consolidation efforts but also via an increase in the price level. The nominal debt is after all just a claim on euros in the future; for the government of a country that has its own central bank, the domestic currency is theoretically available. Consequently, equation 2 can in principle always be respected, which as good as rules out any payment default [1]. The nominal government debt therefore presents no credit risk, although possibly at the expense of price stability.

The conventional view thus rules out this interaction between the government and the central bank for understandable fear of monetary financing and too high inflation. In order to ensure monetary dominance, it therefore calls for the establishment of independent central banks and in the euro area the ECB is even prohibited from monetary financing of public debt. The strict principles set out in the Treaty thus underline the very real nature of the euro area countries' public debt: they imply that the ECB – and for that matter other member countries and the European Union as a whole – would refrain from intervening if the government bond markets (and thus the single currency) were to come under pressure from financial markets. Default of a Member State was acknowledged as a possibility. This is less so in a country that has its own central bank, since the latter can in principle assume the role of lender of last resort on the government bond markets. Merely expecting that this will occur generally tends to have a stabilising effect [2]. The euro area countries were therefore susceptible to self-fulfilling market expectations that could turn a government liquidity crisis into a solvency crisis.

The sovereign debt crisis in the euro area has indeed made the lack of monetary backing all the more evident. While the fiscal fundamentals for the monetary union as a whole over the period 2010-2012 turned out to be no worse than in other advanced economies, the interest rates that euro area governments had to pay on their debt security

(1) The impossibility of government default is one of the key assumptions made by the monetary-fiscal theory.
(2) See also Draghi (2014).

CHART 5 GOVERNMENT DEBT RATIOS AND FINANCIAL TENSIONS



Sources: ECB, IMF, Thomson Reuters Datastream.

issues rose much more than elsewhere (see chart 5) because of the higher risk premiums. The self-fulfilling panic on the markets gained footing in vulnerable countries of the euro area, considerably widening the yield spreads on their government bonds vis-à-vis those from countries regarded as safe havens. While the uncertainty surrounding the sustainability of public debt was indeed justified in some euro area countries, the macroeconomic and financial fundamentals had not deteriorated to the point where such a sharp revaluation was justified. Alongside the prospect of governments defaulting, expectations also arose that some countries could be forced to leave the EMU. This would enable them, fully in line with the monetary-fiscal theory, to resort to using inflation as an instrument to stabilise real government debt. Apart from fears of an explicit markdown of the existing public debt (default risk), doubts about the irrevocability of the euro (redenomination risk) added to the upward pressure on interest rates on government bonds.

Since government bond rates usually serve as a benchmark for other market interest rates, the fragmentation of the bond markets has also disrupted the transmission and uniformity of monetary policy. The ECB has subsequently adopted several measures with the aim of countering the fragmentation in the euro area. In the end, it was the announcement, in the summer of 2012, of OMTs[1] – a programme of conditional purchases of government bonds of euro area countries under pressure – that broke the vicious circle between market expectations and government debt dynamics. In this way, the ECB has taken on the role of lender of last resort on the government bond markets, showing that it was ready to and capable of nipping any (unjustified) attack on a Member State's public debt in the bud.

The OMTs therefore provide an instrument for safeguarding the stability of the financial system in the short term. Long-term solvency, however, requires active efforts to be made by the governments themselves. This principle is not just embodied in the OMT design – the asset purchases can only be made if the countries in question respect the conditions set out in a macroeconomic adjustment programme – but also in the European institutional framework. The strict budgetary rules of the SGP provide for this, for example, but they unfortunately came up short because they were not binding enough. Moreover, it should be pointed out that, on the eve of the crisis, most euro area countries' public finances were not deemed to be problematic. In several countries, concern about public finances only emerged after governments were forced to face up to the repercussions of a burst credit bubble, not only on the macroeconomic front but also with respect to the need to save domestic banks in trouble. Combined with high interest rates reflecting panic on the markets, sluggish economic growth has exerted additional pressure on the sustainability of the government debt. This underlines the importance of monitoring and safeguarding macroeconomic and financial stability, both for public finances and monetary policy. Since the crisis, several initiatives have been taken to this end at the European institutional level. The creation of a banking union should improve supervision of the banking sector and facilitate the winding-up of failed credit institutions without the government having to intervene. The establishment of the European Stability Mechanism (ESM) – which provides conditional financial assistance to countries in difficulty – helps the euro area Member States to better guard against major asymmetric shocks. Lastly, the economic governance has been expanded, and the imbalances in the private sector – such as the build-up of excessive debt for instance – are now being monitored.

2.2 The return to 2 % inflation : does fiscal policy also have a role to play ?

Just like governments, who may struggle to garantee the sustainability of their debt positions when they fall victim to a self-fulfilling market panic, a central bank may, in the event of a deflationary dip in the economy, encounter difficulties in steering real interest rates when for example its policy rate is close to its lower bound (as in the case of the euro area)[2]. Other policy areas may then assist to achieve the objective of the other policy. This insight is a cornerstone of the monetary-fiscal theory which gives full recognition to the essential role of policy coordination, but it is only recently that it has taken on importance in the conventional view, precisely because of the confrontation with exceptional situations. This latter view gives fiscal policy an important role in absorbing the surplus capacity left in the economy when monetary policy starts to hit limits. The monetary-fiscal theory comes to a more radical conclusion since, in such situations it assigns a dominant role to fiscal policy in guaranteeing that inflation stays on a stable and predictable path. Before looking more closely at a potential role for fiscal policy in absorbing the macroeconomic imabalance between savings and investment, the article briefly sets out how the Eurosystem turned out to be virtually the only actor stimulating the recovery in the euro area.

(1) The OMTs are in conformity with European law and, more particularly, do not go against the prohibition of monetary financing since the asset purchases are made on the secondary and not the primary market, are subject to strict conditions that must preserve the incentive for countries to keep their public finances sound and are carried out with a view to safeguarding price stability in the medium term. To date, the OMTs have not yet been activated.

(2) For a description of the challenges that the lower bound on policy rates pose for monetary policy, see for example box 1 in the Annual Report of the National Bank of Belgium (NBB, 2015) and box 1 in Cordemans *et al.* (2016).

In the euro area (from 2009 up to now), monetary policy has been following a practically constant expansive stance, while fiscal policy is less steady

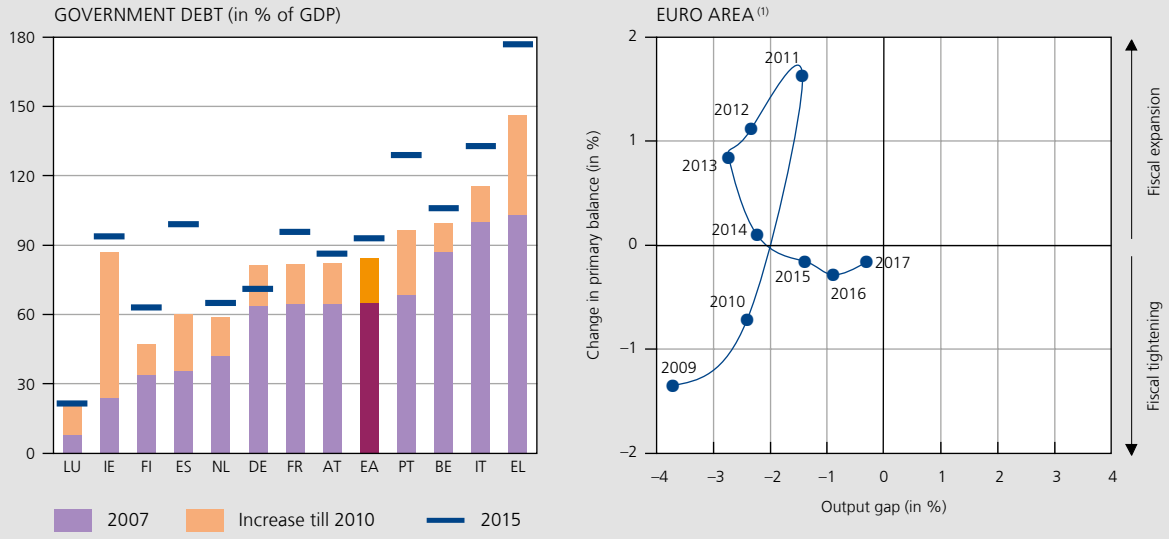
Generally speaking, three phases can be observed in the fiscal policy conducted in the monetary union as a whole (see chart 6): a stimulus phase between 2009 and 2010, a consolidation phase from 2011 to 2013 and more recently, a phase where fiscal policy has followed a more neutral stance. In this regard, changes in the primary government balance adjusted for cyclical fluctuations (the variable appears on the y-axis) are looked at. This balance can be considered a gauge of discretionary fiscal action since it does not take account of either interest charges on the government debt or the impact of the automatic stabilisers.

During the first phase of the crisis, both monetary and fiscal policy measures were adopted in a bid to soften its impact. So, the ECB started by lowering its policy rates in October 2008 before implementing an arsenal of policy measures so that this monetary stimulus would also feed through to households and businesses, despite the turmoil raging in the financial system. More or less at the same time, the European Commission launched its "European Economic Recovery Plan" that has helped to coordinate the discretionary stimulus programmes at both national and European level (given the depth of the recession, automatic stabilisers on their own would not have been enough). The rapid and robust recovery of economic activity which began in late 2009 (see chart 1) proves that this policy mix did indeed bear fruit.

However, as of end-2010, fiscal policy entered a consolidation phase. On the one hand, panic on the financial markets (see section 2.1) forced governments to cut their spending. Drastic budget consolidation measures were required to reduce the uncertainty about the sustainability of government debt and the resultant high risk premiums. On the other hand, the SGP rules required the stimulus to be reversed in due course so that the budget authorities could once again focus their efforts on maintaining sound public finances. It was thought that this was the most efficient way in which governments could help guarantee macroeconomic stability in the longer term. Academic research [1] also found that the short-term effects of a consolidation policy on activity are not necessarily negative (in other words, the fiscal multiplier can also be negative) – as long as it involves adjusting public expenditure and not taxation [2]. A strengthened European fiscal governance framework [3] that puts the emphasis on budgetary discipline – certainly in rhetorical terms – has thus seemed to kill two birds with one stone: encouraging sustainable

(1) See, for example, Alesina and Ardagna (2010) and Alesina *et al.* (2012).
(2) There are several mechanisms that explain the stimulative effect of a fiscal consolidation. For instance, lower public expenditure implies lower taxation in the future, which makes households revalue their permanent income and step up their consumption. A financially sound governement also instils more confidence, which in turn should stimulate consumption and investment.
(3) See, for example, Melyn *et al.* (2015).

CHART 6 EXCESSIVE DEBT COMPELS FISCAL CONSOLIDATION



Source: EC.
(1) The data for 2016 and 2017 are forecasts.

debt reduction without weighing down economic activity, or indeed even helping it.

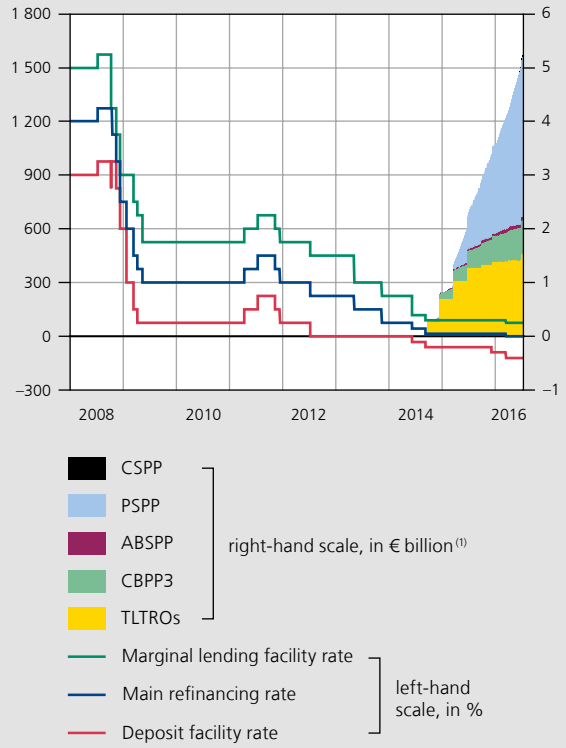
However, chart 6 also shows that the fiscal consolidation phase running from 2011 to 2013 took place in the context of a negative output gap. More recent studies, both theoretical and empirical[1], suggest that, in periods of deep recession, when production capacity is under-utilised and monetary policy has more difficulty offsetting any new negative macroeconomic shocks, a fiscal contraction would hamper economic growth more than in normal times and thus certainly more than in the "expansive consolidation" perspective. Conversely, a higher positive multiplier also implies that a discretionary government stimulus in times of crisis can be a lot more powerful than in normal times (see below). So, there is a growing clamour for fiscal expansion. The modified dialogue of the IMF, among others, which has become more nuanced since the crisis, fits into this picture.

At the euro area level, however, one cannot yet speak of an expansionary fiscal policy. The fiscal stance has become more neutral though since 2014 (and it is expected to stay that way) as the financial tensions had abated significantly and, in many cases, considerable fiscal efforts have been made. Overall, from late 2010 to 2015, monetary policy largely remained the only active player stimulating the recovery. In the first instance, the Eurosystem further expanded its accommodating policy by again lowering its short-term policy rates and introducing balance-sheet measures aimed at transmitting this stimulus uniformly to the rest of the economy. However, by the end of 2014, policy rates were approaching their lower bound, which meant that conventional monetary policy was beginning to reach its limits. In a context of persistently low inflation forecasts and moderate growth dynamics, the ECB was compelled to provide further stimulus and thus started implementing its arsenal of non-standard balance-sheet measures (see chart 7)[2].

Thus, the Eurosystem launched its targeted longer-term refinancing operations (TLTROs) in 2014, which enabled the banks to get cheap long-term financing, albeit on condition that they step up their lending to the private sector. Moreover, the Eurosystem started buying up assets like asset-backed securities, covered bank bonds, sovereign bonds and, more recently, non-financial private sector bonds. By doing so, monetary policy has tried to exert pressure on the whole spectrum of interest rates rather than just steering short-term rates. Once these more favourable borrowing conditions feed through to households and firms, they will boost consumption and investment and thus bring inflation back to a level close to 2 %[3].

With the introduction of these non-conventional measures, the central bank has shown that neither its willingness to act nor its arsenal of instruments for stimulating the economic recovery are yet exhausted. However, as these instruments are new and have not yet been put to the test, it is harder to assess their impact. This can add to the uncertainty among economic agents, in itself unfavourable to economic growth, so that it cannot be excluded that these measures turn out to be less efficient than traditional monetary policy. Moreover, these balance-sheet measures can be accompanied by side effects, another reason why they are rightly qualified as

CHART 7 MONETARY POLICY STIMULUS



Sources: ECB, Thomson Reuters Datastream.

(1) The covered bond purchase programme (CBPP3) started in October 2014, the asset-backed securities purchase programme (ABSPP) followed in November 2014, the public sector purchase programme (PSPP) in March 2015 and the corporate sector purchase programme (CSPP) in June 2016. The first series of TLTROs was launched in September 2014 and the second one in June 2016. The chart reflects the sum of the two.

(1) For theoretical studies, see for example Christiano *et al.* (2011) and Woodford (2011). For empirical research, see for example Blanchard and Leigh (2013) and Auerbach and Gorodnichenko (2012).

(2) For more information or the non-standard balance-sheet measures, see the discussion of euro area monetary policy in the Annual Report of the National Bank of Belgium (NBB (2015) and NBB (2016)).

(3) For more information about operating differences between the traditional monetary policy instrument, notably the policy rate, and the new balance-sheet measures, see Cordemans *et al.* (2016).

non-conventional measures. With inflation running at below-target levels for several years now (see chart 2) and a negative output gap for seven years (see chart 6), additional demand-support measures from other policy areas are thus welcome. So, since the end of 2013, the Governing Council, in the introductory statement made at the end of the monetary policy meetings, has not only insisted on the importance of fiscal consolidation, but also on its composition, which must be growth-friendly. In more recent statements, the Council has emphasised that fiscal policy has to support the economic recovery, especially when there is room for budgetary manoeuvre.

What does eonomic theory say about a bigger stabilising role for fiscal policy ?

The pre-crisis conventional view did not give a major role to discretionary fiscal policy in macroeconomic stabilisation, but the recession changed this. It is mainly in extreme situations that some form of discretionary fiscal policy may be beneficial for supporting aggregate demand. As mentioned above, fiscal stimulus during a deep recession can have a more positive effect on economic activity. Studies highlight particularly that, when monetary policy encounters its limits, the short-term fiscal multiplier can be higher than in normal times. Recent findings thus corroborate ideas going back to Keynes, on the importance of a fiscal expansion when the central bank has exhausted all its means of of relaxing monetary policy.

On the basis of a model developed by Erceg and Lindé (2014) that is both stylised (and therefore simplified) and calibrated (i.e. based on selected parameters that are not estimated but still plausible), the different impact of a government stimulus (in particular a temporary increase in public expenditure of 1 % of GDP) is shown here. It is worth pointing out that, in this model, the sustainability of public finances is a given : following the fiscal stimulus economic agents expect the government to return to budget balances that will keep the debt on a sustainable path in the longer term. The model therefore fits in with the conventional view, as the fiscal policy is passive. It should also be noted that the model-based simulations primarily serve to explain qualitative differences in the magnitude of the fiscal multiplier depending on the various scenarios and not to put a precise figure on its size.

In normal times (see blue line in chart 8), the central bank counters the inflationary effect of a fiscal expansion by raising its policy rate, which enables it to stabilise inflation and the output gap. As inflation remains unchanged, a higher nominal rate leads to a higher real interest rate, which slows down private demand and results in a multiplier of less than 1. This specific case gives a multiplier of 0.2 on impact (see upper right-hand graph). A negative demand shock that weighs so heavily on economic activity and inflation that it pushes the policy rate down towards its lower bound, radically alters the impact of a fiscal expansion. In the simulation, the recession prevents the central bank from raising its nominal rate for two years[(1)]. In this scenario, the inflationary impact of the fiscal stimulus pushes down the real interest rate, which in turn boosts private consumption and investment and thus leads to a fiscal multiplier higher than 1 (here, its value at impact is 2, see upper right-hand graph again). The longer the central bank is constrained by the lower bound (and so the deeper the recession), and the stronger the inflation response, the higher the multiplier. More complex models that take account of e.g. households and/or companies facing liquidity or credit constraints produce even higher multipliers.

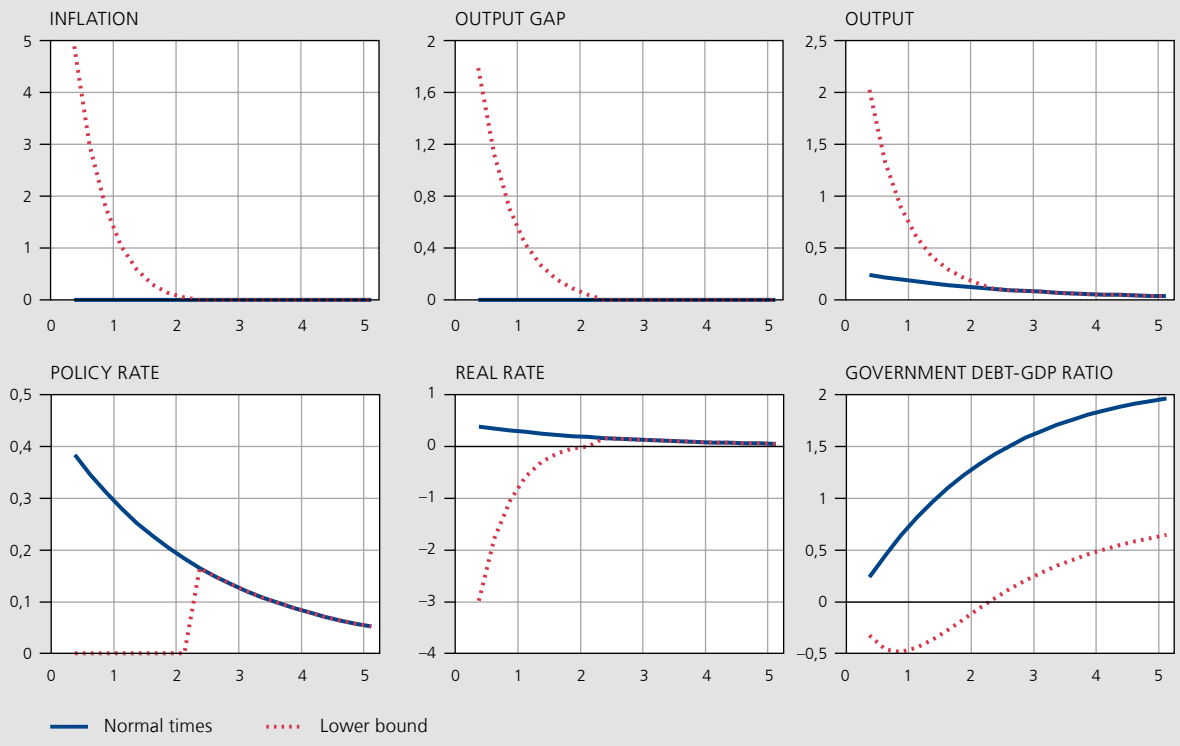
A higher multiplier in bad times also means that a fiscal expansion will not necessarily increase the government debt, on the contrary (see lower right-hand graph). Compared with normal times, a stimulus of the same size should generate higher tax revenue in crisis times, lower interest charges should compress public expenditure and the positive impact on GDP should reduce the debt/GDP ratio. Although not taken into account in this model, a fiscal expansion can also be beneficial for financial stability, as long as it does not undermine confidence in the sustainability of public finances. If the fiscal expansion is sizeable, it can shorten the period in which the central bank sees its scope of action limited by the lower bound and therefore speed up the exit from the low interest rate environment[(2)].

In fact, the model developed by Erceg and Lindé (2014) is a model that embodies the consensus view : the central bank actively ensures price stability (and consequently macroeconomic stability in the broad sense), while (discretionary) fiscal policy passively controls the debt ratio. Recently, the conventional view has qualified that, in exceptional circumstances – such as at the lower bound –, fiscal policy can also be used for guaranteeing macroeconomic stability without however losing sight of the objective of ensuring the sustainability of public finances. The monetary-fiscal theory, which does not set this division of tasks in stone, emphasises from the outset the dominant stabilising role of fiscal policy in a lower bound environment. The mechanism is nonetheless different : instead of a discretionary fiscal stimulus which is

(1) The fiscal expansion considered in this simulation does not have any impact on this timespan.

(2) For an overview of the risks for financial stability that the low interest rate environment entails, see for instance Boeckx *et al.* (2015).

CHART 8 IMPACT OVER FIVE YEARS OF A TEMPORARY INCREASE IN PUBLIC EXPENDITURE



Source: Erceg and Lindé (2014).

expected to be scaled back in the future, it attributes a more radical role to fiscal policy. It should provide a large-scale stiumulus specifically aimed at guaranteeing price stability (see Sims, 2016).

In a lower bound scenario, this theory reckons that the conventional combination of active monetary policy and passive fiscal policy is unrealistic. Monetary policy *de facto* risks becoming passive (the central bank cannot cut its policy rate any further, or in a situation of abundant liquidity, additional M no longer has any impact on the price level in equation 1, see chart 3) and is no longer able to guarantee price stability[1]. Likewise, if the budgetary authority is perceived as being passive, the economy may follow an unstable path, as this combination of passive policies will have difficulty halting a deflationary spiral (resulting from a number of different causes). The passive nature of the budgetary authority notably implies that a rise in the real debt ratio (given that the price level is falling) must be accompanied by growing primary surpluses (equation 2 thus stays an identity, see chart 3). Sims (1999) argues that, in a deflationary depression – when government debt ratios are definitely on the rise too –, a strict interpretation of the original rules of the SGP would impose precisely a passive fiscal policy of this kind. On the other hand, price stability in the monetary-fiscal framework rightly calls for a credible change of regime in favour of an active fiscal policy when monetary policy is no longer able to work actively enough: governments must reduce their primary surpluses without this requiring a full consolidation in the future. If this is perceived as credible by the private sector, this measure should put a stop to a deflationary trend and the higher price level should help stabilise the real debt.

Thus it appears that there is a role reserved for discretionary fiscal stimulus in a lower bound environment. But some nuance and caution is required.

A few comments

First of all, the crisis did not settle the debate on the size of the short-term fiscal multiplier (generally low in normal

(1) It is worth pointing out that the monetary-fiscal theory does not take account of the non-standard monetary policy measures enabling the central bank to continue to steer long-term interest rates and thus to provide further economic stimulus.

times) and, to a lesser extent, its sign (usually positive). A whole host of factors come into play here – notably the monetary policy stance, but for instance also the position in the economic cycle, the composition and duration of fiscal measures as well as the initial debt level[1]. Countries with a high debt ratio may thus have a smaller, or even negative, multiplier. Governments of most euro area countries remain thus confronted with a delicate balancing exercise between preserving sustainability, on the one hand, and macroeconomic stability, on the other hand. Especially when budgetary room for manœuvre is limited, intelligent measures need to be adopted. A growth-friendly but budget-neutral change in the governement budget, on the expenditure side, could for instance consist of a shift from non-productive expenditure towards public investment. The multiplier for the latter generally tends to be high, and moreover can be further raised in an environment of low interest rates and under-utilisation of production capacity.

Next, the monetary-fiscal theory stresses that a fiscal expansion is in itself not necessarily a stimulant. Expectations (and consequently government communication too) about the future path of primary balances are just as crucial for a fiscal intervention to have the desired effect. If policy-makers want an increase in the debt to push prices up, they will have to put in place a credible communication strategy giving reassurances that there will be no future consolidation as a counterpart to the fiscal expansion and that monetary policy will tolerate the subsequent acceleration of inflation towards its target (which will in turn help stabilise the debt ratio).

An example drawn from the stock market world illustrates the crucial role of communication in determining the outcome of an action (see Cochrane 2011 and 2014). If a firm wants to push down the price of its shares to boost their marketability, it will announce a share split. By doing this, the number of shares increase without altering the revenue flows expected or forecast by the firm. The firm is very transparent about this in its communciation to market participants and thus the price per share will decline in a perfectly predictable way. In terms of fiscal policy and applied to equation 2 (see chart 3), the right-hand side remains unchanged (no future fiscal consolidation announced), so an increase in the nominal debt pushes up the price level while the real value of government debt, as with a share split, remains unaltered. If, however, a firm wants to raise real resources via a new share issue, it does its utmost to prevent the share price from declining, the latter meaning a dilution for existing shareholders. To this end, the firm strives to issue an amount of shares equivalent to the expected revenue from the new capital injection. Once again, it strives to convince investors of this via an appropriate communication strategy. In terms of equation 2 and fiscal policy, the right-hand side goes up proportionally as the government debt gets bigger. Consequenlty, the price level remains unchanged. Put in simple terms, the monetary-budgetary theory recommends that, when the central bank is no longer able to fully implement an active monetary policy, thus putting price stability at risk, governments should opt for a "public debt split", rather than a "public debt issue".

Lastly, the monetary-fiscal theory warns of the dangers associated with excessive fiscal inflation. This can arise quite suddenly owing to a simple downward revision of expectations concerning primary balances and thus even without any additional budget deficits occuring. While in the current context, additional inflation may be beneficial, the negative experience with debt monetisation has shown that too much proves to be harmful. Cochrane (2014) thus argues that clear communication by the government (ideally in consultation with the central bank) on the path of budget balances is of paramount importance for steering market expectations in such a way that fiscal policy has the desired effect on economic activity and inflation. In practice, however, that would require a radical change in the institutional framework. In the euro area, such close coordination certainly cannot be taken for granted because monetary policy, being set at the euro area level, has to take account of 19 national budgetary authorities and not just one federal budgetary authority. The following sub-section looks at how the institutional structure of the euro area influences the current policy mix and the options for change now being envisaged.

2.3 The European institutional framework and an optimal policy mix

The monetary-budgetary theory prescribes that price stability (and consequently macroeconomic stability too) always requires some coordination (at least implicit) between the monetary and budgetary authorities. The European institutional framework has not cast this insight aside but has not implemented it optimally either. It was in fact created solely with a view to staving off excessively high inflation; in other words, it was just like the conventional view ill-prepared for a scenario with too low inflation and interest rates at the lower bound. The following examines the way in which some aspects of the budgetary governance framework interact with monetary policy: the overriding attention given to securing sustainable budget positions rather than macroeconomic stabilisation (at least

(1) For an overview of the impact of various fiscal instruments, see for example Nautet *et al.* (2014) and Checherita-Westphal *et al.* (2015).

in theory), a perception of asymmetry and the still purely national focus, all of which make it hard to actually implement an appropriate fiscal stance for the euro area.

Focus on sustainable public finances

When the central bank is concerned about excessively high inflation, binding fiscal rules ought to guarantee an appropriate behaviour on the part of national governments. But, as already mentioned, the monetary-fiscal theory draws attention to the fact that these rules do not necessarily lead to the desired reaction when too low inflation becomes a preoccupation and when monetary policy is approaching its limits. It is therefore encouraging to note that the SGP sees a role for fiscal policy in supporting the economy, albeit on the strict condition that this does not jeopardise public finances.

On the one hand, there are no stimulus restrictions for countries with some fiscal space and, on the other hand, the rules also offer some flexibility for countries that have no or very little fiscal space. For instance, the reference value for the government deficit applies to the headline balance and not the primary balance. In a low interest rate environment where governments see their interest charges fall, this also means that the public authorities have more room for stimulus before overshooting the reference value. This is a prescription consistent with the monetary-fiscal theory which effectively suggests allocating the margin freed up by lower interest charges to smaller primary surpluses. Moreover, the 2005 reform of the SGP introduced the concept of a medium-term objective (MTO). It is in structural terms – and thus with the exception of cyclical effects and one-off factors – that the adjustments to the balance are requested with a view to attaining this objective. In this way, progress towards a sustainable government debt ratio is guaranteed and, at the same time, some demand-side support is possible since automatic stabilisers can work freely and thus less effort is required in bad times. As the structural balance also comprises interest charges, there is in this case too some tolerance for lower interest charges leading to less ambitious targets for primary balances. More recently, the 2011 reform provides for a more general escape clause from fiscal adjustment requirements. Countries can invoke this clause when exceptional circumstances beyond their control are affecting the economy. Furthermore, in 2015, the application of the fiscal rules was relaxed for countries falling under the preventive arm of the SGP. Depending on the position in the economic cycle, a matrix indicates that, in bad times, less effort is needed without the rules being broken. Under the corrective arm of the SGP, Member States may ask to extend the deadline set for correcting their excessive budget deficit.

However, the wider possibility since the crisis of taking stability considerations into account also raises the risk that Member States with no budgetary room are nevertheless authorised to step up spending while countries with budgetary room do not support aggregate demand. This not only raises the question whether the fine balance the SGP aims at between the sustainability of debt in the long term and macroeconomic stabilisation in the short term is (further) undermined in practice, but also whether countries with some fiscal space must be encouraged to make use of it so as to move towards a more expansive fiscal stance for the euro area as a whole. This argument is examined below.

Asymmetry and national focus

Although the SGP has been reformed since the crisis, it is still characterised by a degree of asymmetry – for countries that overshoot the targets, there is not only no limit to stimulate, but no incentive either – and a strictly national focus – so fiscal policy for the monetary union as a whole is simply the sum of individual Member States and is thus not set directly. As a consequence, certain positive spillover effects between countries and policy areas do not materialise. The ECB (2016) also suggests that these two features of the SGP do not necessarily lead to optimal results.

Take, for example, the fiscal consolidation efforts made by almost every country in the euro area since the end of 2010 (see chart 9). Even if this might possibly be justified from a national perspective, the simultaneous implementation of consolidation measures has slowed down the economic recovery[1]. With fiscal policy being more restrictive, it has fallen to the ECB to deal with these shocks so as to put the recovery back on track.

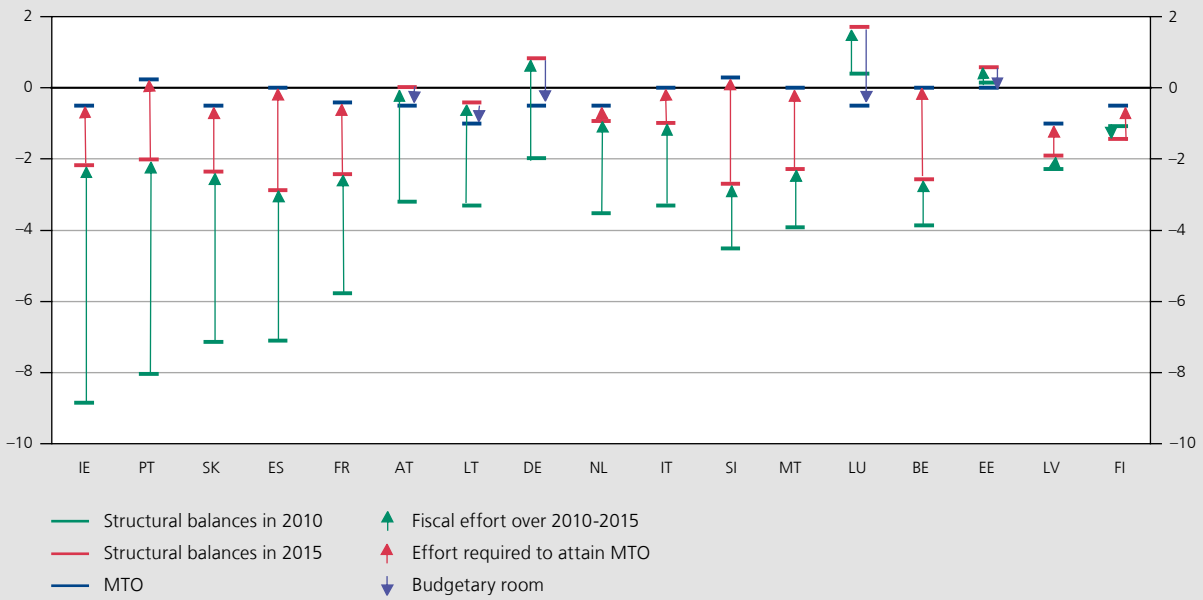
The more neutral fiscal stance for the euro area since 2014 seems to be appropriate but its composition is therefore not optimal (as repeatedly indicated by the Eurogroup)[2]. Countries that have some budgetary room are not applying it and are not obliged to this either (asymmetry concept), while countries that have no budgetary room do not always respect the rules of the SGP. Better coordination between countries thus seems desirable, as a

(1) A study by In't Veld (2013) thus points to the large negative spillover effects caused by the simultaneous implementation of consolidation programmes in the euro area coutries.

(2) See for instance the Eurogroup's statement on the draft budgetary plans for 2016 on 23 November 2015.

CHART 9 ASYMMETRIC FISCAL RULES

Structural balances and MTOs[1] (in % of potential GDP)



Source: EC.

(1) Countries are ranked according to the size of the fiscal improvement observed over the period 2010-2015. Greece and Cyprus are not included because the former is still subject to an adjustment programme and the latter has recently closed such a programme. The MTOs are the new objectives as set in the assessment of the 2016 Stability Programmes and approved by the EC.

fiscal stimulus in the first group would make it easier to eliminate macroeconomic and budgetary imbalances in the other Member States and would create the conditions for a return to price stability.

Blanchard *et al.* (2016), for instance, show that, in a context where interest rates are at the lower bound, an increase in public expenditure in euro area countries with more fiscal space exerts a positive effect on their output and inflation, as well as on output and prices in countries that have been affected the most by the crisis. More specifically, a stimulus in the core euro area countries to the tune of 1 % of EMU's GDP would boost output there by almost 3 % and by just over 1 % in the most vulnerable countries. Because of the lower bound, the fiscal stimulus pushes down the real interest rate in the two regions. In addition, economic activity in the vulnerable countries is supported by stronger net exports owing to the deterioration of the terms of trade and higher domestic demand in the stronger Member States. Arce *et al.* (2015) also reckon that in a lower bound context, a temporary increase in public spending in the stronger Member States exerts substantial positive spillover effects on the vulnerable countries. In addition, if monetary policy backs up this fiscal stimulus with a policy of forward guidance – in other words, the central bank announces that it intends to raise its policy rate a bit later than prescribed by the standard policy rules –, the positive effect already exerted by the national measures is strengthened.

Even if the above-mentioned spillover effects, notably via trade relations, remain limited in size, a fiscal stimulus sends out a positive signal at the aggregate level. It indicates that the euro area is able and willing to call on all policy areas to guarantee macroeconomic stability.

The fiscal stance of the monetary union as a whole as well as its composition, and the interaction with other policy domains thus requires more attention. The establishment of a European Fiscal Board, as set out in the Five Presidents' Report (EC, 2015), is a first step in this direction. Initially, the Board is to advise the European Commission on the appropriateness of the fiscal stance in the Member States as well as in the Monetary Union. By doing so, the aggregated fiscal policy should better fit in with the monetary policy set by the ECB for the euro area and the fiscal effort should be better divided across countries. The ambitions of the Five Presidents' Report go even further: they propose in the longer run setting up a Treasury for the euro area and a central macroeconomic

stabilisation function. The creation of these central fiscal policy instruments should help to better absorb idiosyncratic shocks as well as steer the aggregate fiscal stance more appropriately. That must contribute to implementing a more effective macroeconomic policy mix, in the light of an integral analysis of monetary and fiscal policy.

Conclusion

The crisis has revealed the many interactions between monetary and fiscal policies. After the Eurosystem had already announced back in 2012, in the wake of the sovereign debt crisis, that it was prepared to make targeted interventions on the market of government bonds to guarantee the irreversibility of the euro, it has, in response to the persistently low inflation, set up a large-scale government bond purchase programme. The role attributed to fiscal policy in absorbing suplus capacity in the economy and also in getting inflation back on track to 2 % is another example of an interaction between the two supposedly independent policy areas. While, after the sovereign debt crisis, the focus was mainly on reducing budget deficits, the question that arises today is how an appropriate fiscal stance for the Monetary Union as a whole can contribute to a faster recovery and an inflation rate in line with the central bank's target.

By combining insight from the academic literature with the experience gained in the euro area throughout the crisis years, this article attemps to provide a non-exhaustive overview of how monetary and fiscal policy together determine the path of key macroeconomic variables.

According to the the conventional view, price stability must be guaranteed by monetary policy, which has all the necessary instruments to this end. Fiscal policy contributes by ensuring the sustainability of public finances. But the two policy areas nevertheless only focus on their own objective: they are neither in a position to nor allowed to help one another. This view was also translated into the original European institutional framework which features key elements as an independent central bank, a formal prohibition of monetary financing and strict budgetary rules based on preventing any slippage in public finances.

In the literature on the "fiscal theory or the price level" (which we refer to in this article by the wider term of monetary-fiscal theory), however, this conventional view is just one of the possible policy constellations. This theory allows a wider range of behaviour of both fiscal and monetary policies, which is why it argues in favour of a joint analysis of the two policy domains. As there is no such joint analysis in either the conventional view or in the institutional architecture of EMU, both monetary and fiscal policies were put to the test by the crisis, as the central bank was constrained in lowering policy rates and governments saw liquidity probems turn into solvency problems. Monetary policy and fiscal policy have proved to be independent but also more closely connected; a more holistic approach has opened up some new insight.

Progress has certainly been made thanks to the various policy initiatives – for instance, the OMTs have been approved and the new European Fiscal Board should help work out an appropriate fiscal stance for individual Member States as well as for the Monetary Union, so that fiscal policy can align with monetary policy. EMU will nevertheless benefit from further steps towards a fiscal union as set out in the Five Presidents' Report. An integral analysis of monetary and fiscal policy can help effectively translate these proposals into concrete measures.

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The distribution of household wealth in Belgium : initial findings of the second wave of the Household Finance and Consumption Survey (HFCS)

Ph. Du Caju (*)

Introduction

Households' total financial assets and liabilities can be derived from a country's financial accounts, and their total real assets estimated on the basis of home ownership and property prices. These macroeconomic sources reveal little or nothing about the actual distribution of household wealth, as this requires data at household level. This is why the Household Finance and Consumption Network (HFCN) conducts a wealth survey in the euro area countries, known as the Household Finance and Consumption Survey (HFCS). Methodological aspects of the survey were described in HFCN (2013a) and extensive international comparisons were reviewed in HFCN (2013b). How the HFCN works, how the HFCS was organised in Belgium and the findings of the first wave (2010) were reported in Du Caju (2013). This article draws on the preliminary findings of the second wave of the HFCS in Belgium (conducted in 2014) to analyse the structure and distribution of Belgian household wealth, and compares these with the findings of the first wave (2010) as pertaining to Belgium. The international findings of the second wave are not yet available; a joint HFCN report is planned for the end of 2016.

This article breaks down into three sections. The first section discusses the content and organisation of the HFCS, briefly outlining this survey of the financial situation of households and explaining how the data is made up. The second section is devoted to the breakdown of household assets and liabilities, distinguishing between real and financial assets. The HFCS uses a broad definition of real and financial assets of households, and invariably asks households 1) whether they own selected assets, and 2) how much those assets are worth. The survey thus does not only reveal the participation rate (how many households and which investment instruments) but also the valuations of these investments. The third and final section wraps up on an analysis of net household wealth, paying particular attention to the distribution of wealth across households and comparing this with the income distribution. The article ends on the initial conclusions to be drawn from the HFCS's second wave in Belgium.

1. The Household Finance and Consumption Survey

In 2008, the Governing Council of the European Central Bank (ECB) decided to conduct a survey on the financial behaviour of households in the euro area, which became known as the Household Finance and Consumption Survey or HFCS. A specific research network, called the Household Finance and Consumption Network (HFCN), was set up for this purpose, comprising researchers, statisticians and survey specialists from the ECB, national central banks, some national statistical institutes and external consultants. The National Bank of Belgium is responsible for Belgium's HFCS.

(*) The author would like to thank Laurent Van Belle for his cooperation in setting up the HFCS and for statistically processing the data..

The network aims to supplement existing macroeconomic financial accounts data with microeconomic information at individual household level, to conduct specific scientific research and policy-relevant analyses, and to learn about aspects related to the distribution of assets and liabilities. The HFCS was designed to support the Bank's and the Eurosystem's analyses of monetary and macroprudential policies. Data which reflect the heterogeneity of the household sector, such as those collected by the HFCS, can usefully supplement macroeconomic and financial statistics by adding information on distribution (notably on the asymmetric distribution of wealth). HFCS data permit analysis of specific groups of households key to policy-making, e.g. the lowest and highest income and wealth deciles, excessively indebted households and households facing credit constraints.

In Belgium, the survey is conducted by the Bank without the direct involvement of any statistics institute[1] as in some other euro area countries. Within the Bank, the Economics and Research and the General Statistics Departments work closely together on the general set-up of the survey and on processing and analysing its findings. The fieldwork, i.e. the actual collection of information through face-to-face-interviews of households, is outsourced to an external agency by public tender and then followed up by the Bank.

The HFCS provides detailed data at household level about a range of aspects, covering households' wealth (real and financial assets and liabilities) as well as related variables, including their income and demographic characteristics. The actual HFCS questionnaire is fairly comprehensive and the questions are answered by the person best informed about the household's financial situation. It should be noted that the HFCS records the value of the assets and liabilities as estimated by the households themselves. Where useful and possible, the interviewers encourage respondents to consult relevant documents such as bank statements, tax returns etc. This is not possible for all types of assets, of course, residential property being a case in point, and estimated values will not necessarily always match real market values.

The network ensures that a harmonised survey is organised across the countries of the euro area. The first wave of interviews was held in 2010 in most countries, including Belgium (2 324 households), and the results were published in 2013. The second wave took place in 2014 in most countries – including Belgium (2 238 households) and the results are scheduled to be in the public domain before 2016 is out. The aim is to carry out these surveys once every three years, with a third wave planned for 2017 and the results out in 2019. For other countries, data are not yet available and the results for Belgium have not yet been made public, so this article will provide only a rough outline based on preliminary data. More detailed studies on a variety of sub-aspects will follow.

(1) The Directorate General of Statistics provides detailed demographic data on the basis of which the Bank is able to take a stratified sample from the National Register of Natural Persons – no robust survey could be carried out without such collaboration.

2. Belgian household wealth: composition and trends

This section analyses the breakdown and distribution of household wealth, with a distinction made between real and financial assets. Components considered are which assets are held by which households and how much those assets are worth. The following aspects come into play:

- the participation rate: the share of households – as a percentage of the total population of households – owning a particular asset type. The participation rate captures the distribution of balance sheet items across households;
- the conditional median value: this only considers households holding selected asset types and indicates the median value of these in euros for these households. The median (p50 percentile) is the value of a given variable such that half of households own less and the other half more; the median reflects the value for a typical household right in the middle of the distribution. The other percentile values (p1to p99) reflect other points in the distribution;
- the error margin: the error margin is defined as twice the standard error of the estimated parameter (percentile value), resulting in a confidence interval of approximately 95 %. The survey arrives at estimates based on a sample of the population, and errors are inevitable. Error margins increase as the sample used to estimate a variable's percentile value gets smaller and its spread wider.

2.1 Real assets

In terms of real assets, the survey makes a distinction between property (real estate) and other types of real assets. Real estate first and foremost comprises a household's main residence if they are home owners and, second, any other property they may own, e.g. second homes, holiday homes or rented properties. One of the unique features of the HFCS is that it is not limited to property but also takes account of other real assets. A second category is

TABLE 1 REAL ASSETS

(participation[1] and median value[2])

	Real assets	Main residence	Other real estate	Vehicles	Valuables	Self-owned businesses
HFCS I (2010)	89.8 %	69.6 %	16.4 %	77.2 %	15.4 %	6.6 %
	219.8	248.3	173.3	6.2	5.0	49.3
	(14.1)	(9.5)	(29.4)	(1.2)	(2.7)	(30.1)
HFCS II (2014)	88.5 %	70.3 %	18.5 %	76.2 %	12.6 %	8.5 %
	250.7	249.7	176.8	6.9	5.9	55.5
	(11.6)	(1.4)	(29.1)	(1.0)	(2.1)	(48.2)

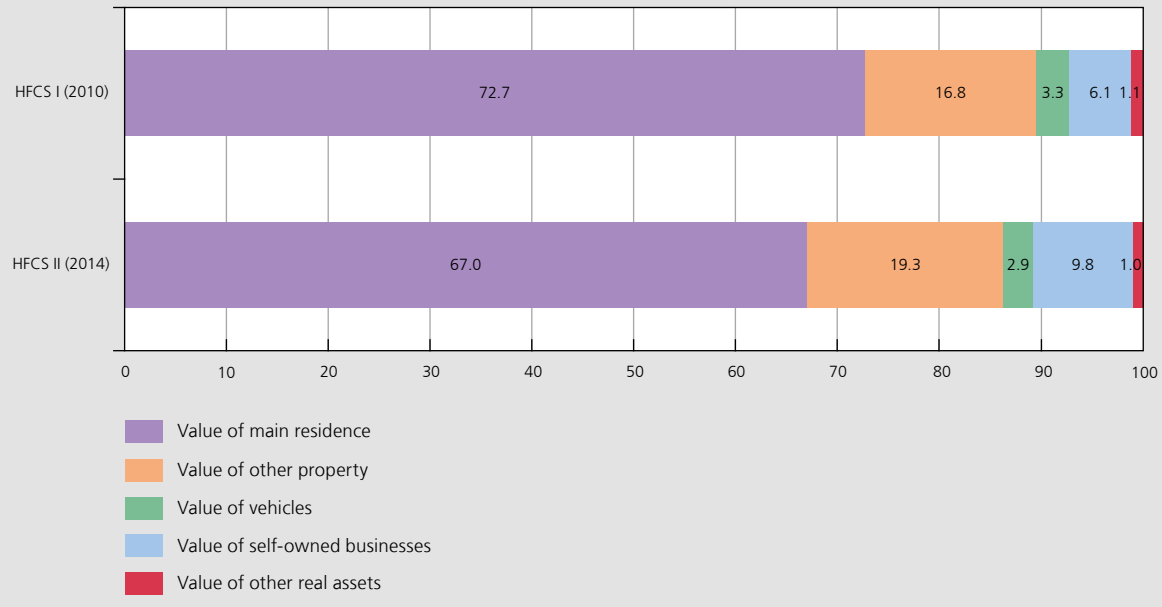
Source: NBB (HFCS 2010 and 2014, preliminary data).
(1) Participation rate as a percentage of households.
(2) Conditional median value in thousands of euros, with the error margin (twice the standard error) in thousands of euros in brackets.

vehicles, primarily cars, but also motorbikes, boats, aircraft and caravans. The HFCS also takes stock of a series of valuable items that may form part of a household's real assets, asking about things such as jewellery, art, antiques, and other collections that might have value. A final key component of real assets surveyed is business assets, such as a household's own, non-listed companies, e.g. self-owned businesses and family companies. If, say, a household holds property via such a company, its value will be included in the company's total value and not in the household's direct property holdings.

The vast majority of households in Belgium (88.5 % in 2014) own real assets, the principal item being the household's main residence. HFCS findings show that 70.3 % of Belgian households owned their main residence

CHART 1 BREAKDOWN OF HOUSEHOLD REAL ASSETS

(percentage share of the total value of real assets)



Source: NBB (HFCS 2010 and 2014, preliminary data).

in 2014. The typical family in the group of households owning their own homes in Belgium will be looking at a property value of € 249 700 (conditional median value). This is virtually unchanged from 2010 (€ 248 300).

In addition to their main residence, 18.5 % of Belgium's households owned other property in 2014, which is more than in 2010 (16.4 %). Error margins related to the median value (€ 176 800) of this other property are relatively high due to the wide spread of these properties – from modest chalets to multiple properties generating returns – and the relatively small number of observations in the sample. Over three-quarters of households own one or more vehicles. As for their business ventures, 8.5 % of Belgian households report running one or more businesses of their own. The median value of this asset item came to € 55 500 in 2014, compared with € 49 300 in 2010, once again allowing for a wide error margin in view of the wide spread and the small number of observations. Lastly, about one in every seven households reports owning other valuables among their real assets.

All things considered, real asset ownership has remained fairly stable from the first HFCS wave in 2010 to the second in 2014. Investment in other properties, in addition to households' main residences, was clearly up. Households' increased interest in owning other property also shows up in the breakdown of their real assets, with other property accounting for a growing proportion of the portfolio alongside the main residence in 2014 when compared with 2010. Other property saw its weighting increase to 19.3 % from 16.8 %, which may reflect the low interest rate environment and an excess of resources at Belgian households looking to invest safely.

2.2 Financial assets

The HFCS assumes a broad definition of financial assets but excludes cash. Financial assets primarily include deposits: sight accounts and savings and term accounts. Investment funds comprise all investments in mutual funds, regardless of their underlying securities (shares, bonds, property, etc.). The bonds and savings notes included in the HFCS are individual assets and not the securities underlying mutual funds. These may have been issued by a State, a bank or another type of company. As with bonds, the HFCS makes a distinction between individual shares and shares as the securities underlying a mutual fund. The voluntary pensions and life insurance item only takes into account the value of voluntary individual schemes and insurance, and leaves out public pensions and any sectoral or company pension schemes or insurance – which in Belgium means that this item only includes the third pillar. Individual households typically find it hard if not downright impossible to estimate how much their public pensions and any voluntary sectoral or company pensions are actually worth.

To arrive at total financial assets for households, the HFCS also factors in the values of a variety of other products, but here these are not reported and analysed separately. Examples of such products include investment accounts managed by third parties, options, futures, index certificates, precious metals etc., as well as assets with third parties, e.g. loans to family or friends.

For the purpose of analysis, a distinction is made between deposits (current and savings account), investment funds, bonds and savings notes, listed shares, and voluntary individual pension schemes or life insurance. Virtually all

TABLE 2 FINANCIAL ASSETS
(participation[1] and median value[2])

	Financial assets	Sight accounts	Savings accounts	Mutual funds	Bonds and savings notes	Shares	Voluntary pensions and life insurance
HFCS I (2010)	98.0 %	93.7 %	76.5 %	17.6 %	7.5 %	14.7 %	43.3 %
	26.5	1.3	11.8	20.3	30.4	5.0	19.8
	(3.2)	(0.2)	(2.6)	(5.6)	(18.7)	(3.7)	(3.0)
HFCS II (2014)	97.9 %	97.1 %	76.6 %	21.0 %	7.8 %	11.0 %	44.4 %
	28.5	1.8	16.0	28.2	12.1	9.5	16.7
	(3.4)	(0.3)	(2.9)	(9.2)	(4.5)	(4.6)	(1.9)

Source: NBB (HFCS 2010 and 2014, preliminary data).
(1) Participation rate as a percentage of households.
(2) Conditional median value in thousands of euros, with the error margin (twice the standard error) in thousands of euros in brackets.

households in Belgium have one or more sight accounts, while three-quarters also have one or more savings accounts. By contrast, participation in other financial assets is smaller, although households do tend to participate more in voluntary pensions and life insurance, i.e. in the third pension pillar.

In 2014, a typical Belgian household had savings accounts averaging € 16 000, compared with € 11 800 in 2010. Only 11 % of households owned individual shares of listed companies, amounting to a median value of no more than € 9 500 per household, whereas in 2010 the percentage of households that directly invested in shares still stood at 15 %. Less than 8 % of households had bonds or savings notes, with a median value of € 12 100 in 2014, compared with € 30 400 in 2010. It would appear that direct investment in shares and bonds has declined in favour of mutual funds. These investment funds, which may also have shares and/or bonds as their underlying securities, were held by 21 % of Belgian households in 2014, up from 17.6 % in 2010. The typical investment in such funds (conditional median value) amounted to € 28 200 per household, compared with € 20 300 in 2010. Investment funds have obviously gained greater popularity among the Belgians. The third pension pillar is a key item in many households' financial assets, a type of investment that is also influenced in part by the value and certainty or uncertainty of statutory pensions and any sector or company pensions. In Belgium, nearly 45 % of households own this type of financial asset.

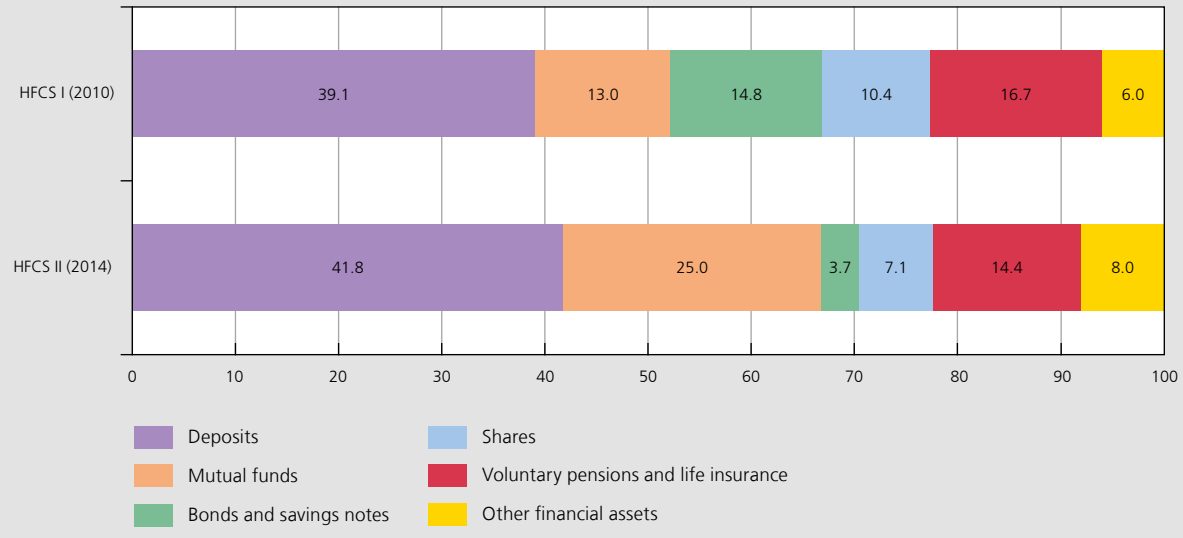
All things considered, financial asset ownership remained fairly stable from the first HFCS wave in 2010 to the second in 2014. That said, Belgian households have clearly shifted their investments away from direct share and bond holdings, and are now visibly focusing their financial investments more on mutual funds.

The breakdown of total financial asset portfolios clearly reflects the changed preferences of households. Shares and bonds held in mutual funds have become more important than direct asset holdings. In the HFCS sample, investment funds currently account for one-quarter of households' financial portfolios. The weightings of direct share and bond holdings have correspondingly shrunk.

Respondents in the first wave had given advance notice of the shifts noted in the second wave – from direct investment in shares and bonds to mutual funds, and a greater interest in property (specifically property other than households' main residences). At the time, households expressed caution about direct investments in the markets and growing confidence in property investments (see Du Caju, 2012).

CHART 2 BREAKDOWN OF HOUSEHOLD FINANCIAL ASSETS

(percentage share of the total value of financial assets)



Source: NBB (HFCS 2010 and 2014, preliminary data).

Taking together all real and financial assets of households, we find a very uneven distribution across the population. To gain a clearer picture, we divide households into five equal groups (quintiles) according to the total value of their assets (from low to high) and establish what proportion of total household wealth is held by each of these quintiles. The figures show that the poorest group (the lowest quintile) has virtually no assets, while the wealthiest 20 % of households (the highest quintile) own over half of total assets. The distribution of total assets has not changed much from the first to the second HFCS wave, although there may be a relative decline at the top. Once again, error margins surrounding these estimates increase as we ascend in the household wealth tables. Section 3 will return to this issue.

TABLE 3 DEBT

(participation[1] and median value[2])

	Loans	Mortgage loans		Non-mortgage loans
		Main residence	Other property	
HFCS I (2010) . . .	44.8 %	28.5 %	3.2 %	24.2 %
	39.0	66.7	56.9	5.2
	(8.3)	(10.3)	(24.6)	(1.3)
HFCS II (2014) . .	48.4 %	31.9 %	4.7 %	25.2 %
	49.8	79.1	59.2	6.7
	(9.0)	(11.2)	(12.7)	(1.6)

Source: NBB (HFCS 2010 and 2014, preliminary data).
(1) Participation rate as a percentage of households.
(2) Conditional median value in thousands of euros, with the error margin (twice the standard error) in thousands of euros in brackets.

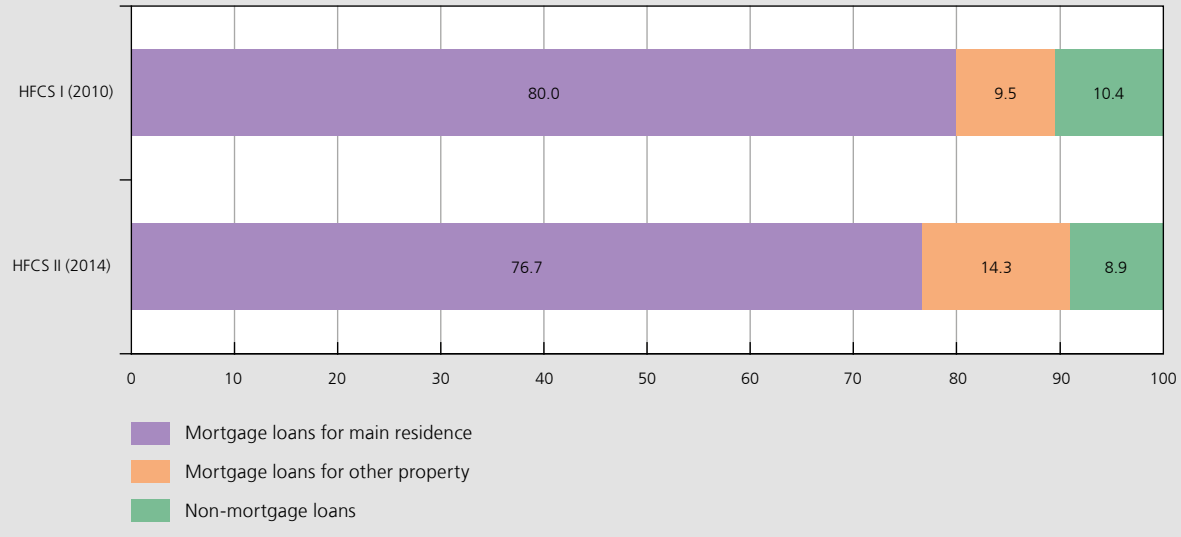
2.3 Debt

Asset ownership is not the only area covered in the HFCS. The survey also enquires into any debts respondents might have, distinguishing between mortgage loans – to pay for a household's main residence or other property – and non-mortgage loans. Other debts featuring in the HFCS are credit lines and bank overdrafts, debit balances on credit cards, and other loans such as car loans and consumer credit. The participation rate of Belgian households in the credit market rose to 48.8 % in 2014 from 44.8 % in 2010.

Households with mortgage loans on their main residence saw the median amount outstanding rise to € 79 100 from € 66 700. Increased ownership of other property has also sparked an upturn in loans for this type of property. Other credit – mostly consumer credit, but also credit card debt and debts with private individuals – was also up slightly and was owed by around one-quarter of households, typically in the shape of smaller amounts.

CHART 3 BREAKDOWN OF HOUSEHOLD DEBT

(percentage share of the total value of debt)



Source: NBB (HFCS 2010 and 2014, preliminary data).

HFCS second wave results reveal that, in 2014, both participation and outstanding amounts were up on 2010 showings for all types of loan. In line with changes in investment in other property and the increased proportion of these assets in household wealth, the composition of household debt also changed somewhat between 2010 and 2014. Mortgage loans for other property, in addition to the main residence, accounted for a higher proportion of household debts in 2014 (14.3 %) than in 2010 (9.5 %).

2.4 Income and debt

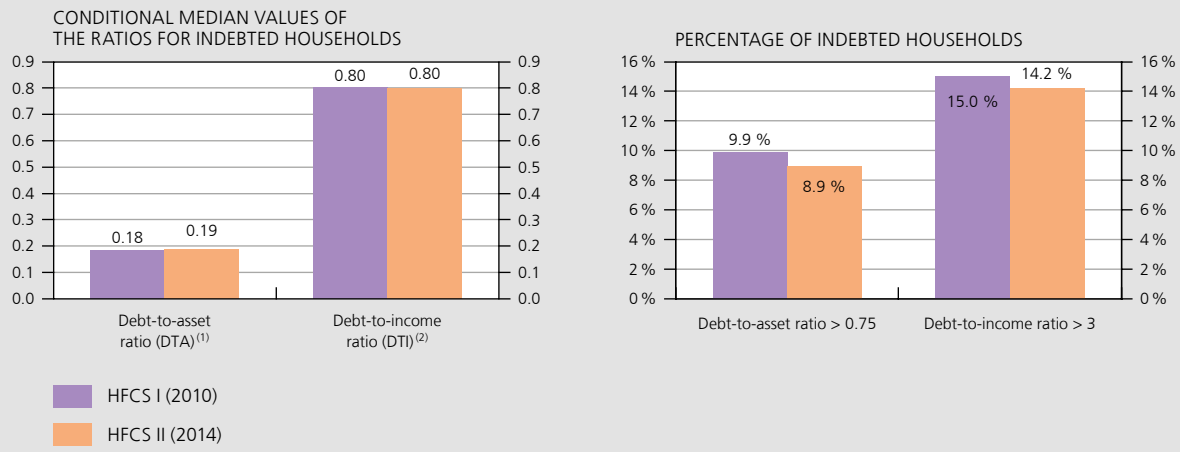
Debt sustainability does not depend on the size of the debt alone. HFCS data allow us to map structural features such as the risk profiles of indebted households by calculating a number of risk measures at household level. Households have trouble repaying their debts when their income is not sufficient to meet their scheduled debt repayments and when they do not have sufficient assets to meet these payments or repay (a proportion of) the outstanding debt when their sources of income suddenly dry up. Survey data at household level also offer the advantage of assessing separate groups of indebted households so that information is available about the distribution of debts and assets across those households. To assess the risk profiles of households' debt burdens, three risk measures are calculated that relate debt or debt repayments to a household's income or assets, respectively:

- the debt-to-asset ratio (DTA): a household's outstanding debt divided by the – self-assessed – value of the assets at the time of the interview;
- the debt-to-income ratio (DTI): a household's outstanding debt divided by its annual gross income at the time of the interview;
- the debt-service-to-income ratio (DSTI): monthly repayments of the (mortgage) debt divided by the household's gross monthly income at the time of the interview.

As for the ability to repay debt from current income flows, the typical indebted household is found to have a DTI of 0.8, while the conditional median value for the DTA is at 0.19. These ratios remained stable between the two HFCS waves. However, median values give only a very partial picture, and when debt ratios linked to income or liquid assets exceed critical values, risks increase that households will be unable to meet their debt commitments (see Du Caju *et al.*, 2014 and De Backer *et al.*, 2015). As such, there is the proportion of indebted households with a DTA in excess of 0.75 – i.e. with total debt accounting for more than 75 % of total assets – or a DTI exceeding 3, meaning that more than three times their annual gross income is required to repay their debts. These groups shrank somewhat in the 2010-14 period,

CHART 4 HOUSEHOLDS' DEBT BURDEN

(debt indicators for indebted households)



Source: NBB (HFCS 2010 and 2014, preliminary data).

(1) A household's outstanding debt divided by the self-assessed value of the assets at the time of the interview.

(2) A household's outstanding debt divided by its annual gross income at the time of the interview.

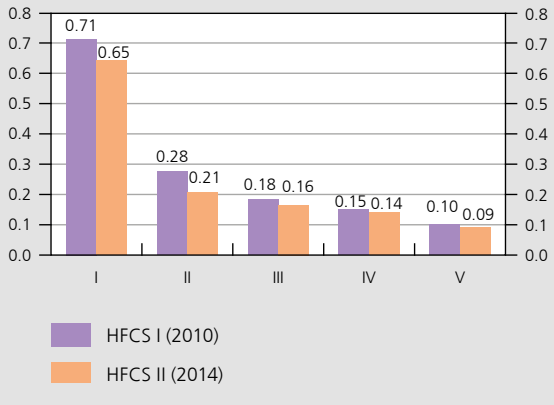
with the proportion of households with DTA > 0.75 coming down to 8.9 % from 9.9 %, and that of households with DTI > 3 falling to 14.2 % from 15.0 %.

A different perspective is gained by relating monthly debt repayments to income (DSTI), an approach that is especially relevant to mortgage debt. As it turns out, the burden of mortgage loan repayment (DSTI) is relatively high for low-income households with mortgages. We should not forget, however, that Belgian households tend to be comparatively young when they first get onto the property ladder, that is to say when their incomes are still likely to grow. What is more, Belgium has only a very small proportion of mortgage loans with very long terms to maturity or on which no capital is repaid, implying steeper periodical repayments. However, these intrinsically favourable features of the Belgian mortgage market do make for higher numbers of households facing high DSTIs. HFCS data suggest that DSTIs have specifically declined in the lower income quintiles and the burden of mortgage loan repayment would appear to be falling relatively faster for households on lower incomes.

This might well be one effect of a more rigorous approach to assessing credit files and agreeing loans on the part of banks. In the aftermath of the financial crisis, and partly also at the urging of their regulators, banks have turned more cautious in their lending. The bank lending survey (BLS) also suggests that banks have tightened up their loan standards post-crisis and it is not unlikely that tighter conditions are hitting lower-income households relatively harder.

CHART 5 REPAYMENT BURDEN FOR MORTGAGE LOANS

(mortgage-debt-service-to-income ratio (DSTI)[1], by income quintile)

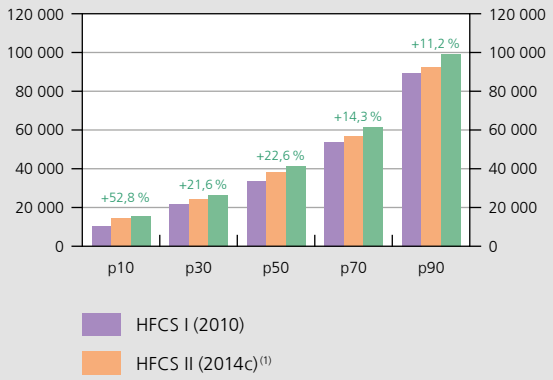


Source: NBB (HFCS 2010 and 2014, preliminary data).

(1) Monthly repayments of the mortgage debt divided by the household's gross monthly income.

CHART 6 GROSS HOUSEHOLD INCOMES AS RECORDED IN THE HFCS

(percentile values in euros, inflation adjustment)



Source: NBB (HFCS 2010 and 2014, preliminary data).

(1) 2014 incomes in 2010 euros, inflation adjustment (HICP) between 2010 and 2014.

Another notable finding concerns how household incomes have developed between 2010 and 2014. HFCS data reveal that the incomes of Belgian households in the lower income deciles increased more sharply in relative terms than did those in the higher income deciles. At the lowest end, household incomes tend to be made up of income-replacement benefits and income from labour, which – from the first HFCS wave to the next – were propped up by indexation and policy measures aimed at ensuring employment. By contrast, the highest household incomes have a relatively greater amount of income derived from financial assets, which was squeezed by the financial crisis and low interest rates. What is more, earned incomes at the higher end often also include a variable component, like premiums and bonuses, and these variable pay components may also shrink in times of crisis.

The HFCS questionnaire surveys annual earned incomes and other sources of income, such as wealth (rents, interest and dividends) and transfer incomes (benefit payments). Like other household surveys, it records gross incomes, as these may be compared internationally. That said, a large group of households do not think in terms of gross income and the Bank this time decided to allow second-wave HFCS respondents to state net amounts, which were then converted to gross amounts using the prevailing tax rules. In so far as the distinction between gross and net is harder to grasp for less educated respondents, and the difference between gross and net more important for earned income than for income from wealth, this methodological improvement might in part explain why HFCS incomes have staged relatively stronger

growth at the bottom of the distribution between the first and the second wave.

The economic situation (financial crisis, low interest rates) coupled with methodological improvements in the income questions (a choice of net or gross amounts, converted afterwards) could help explain why lower incomes recorded relatively stronger increases and therefore also why the proportion of households with high income-related debt indicators was smaller in the second wave. Despite this, the proportion of households with excessive debts – as measured by high DTAs, DTIs or DSTIs as described above – remained fairly stable in the period.

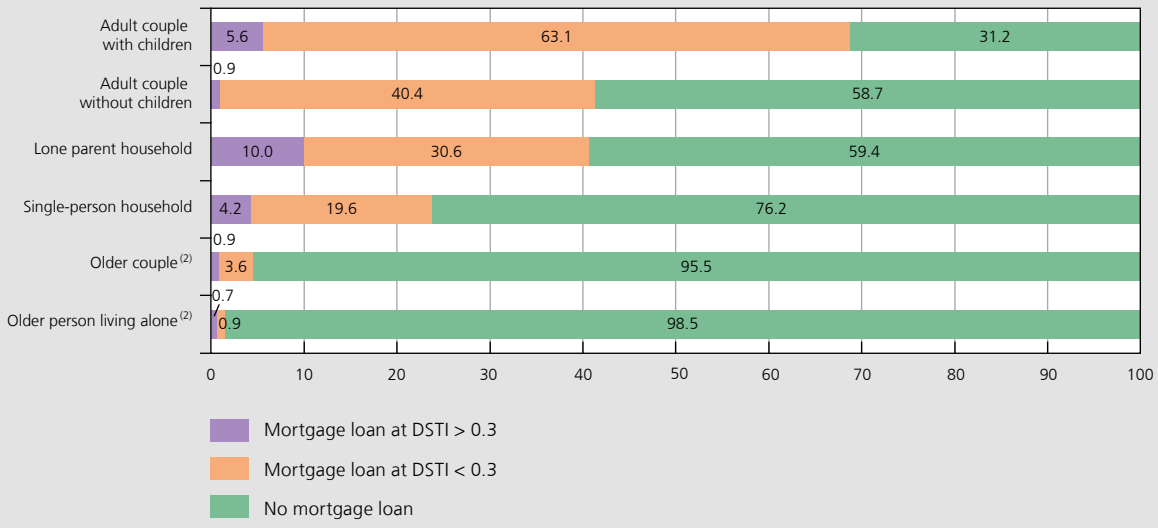
Mortgage debt is not equally easy to shoulder for all types of households. Here, too, HFCS findings prove enlightening, as households can be divided into families with and without children. This distinction to a large extent determines housing requirements and spending patterns. Division by age is another possibility – i.e. whether or not the adult(s) in the household have reached the age of 65, as this influences income perspectives and savings behaviour, and whether or not they are a couple, which helps to determine their potential financial resources. Six groups of households emerge : adult couples with children, adult couples without children, lone parent households, single-person households, older couples (at least one of whom is 65 years or older) and older people living alone. Debt positions can be described for each of these types of family : no mortgage loan, a mortgage loan at a DSTI < 0.3 or a mortgage loan at a DSTI > 0.3.

Breaking down households by household type and by debt position is highly revealing, allowing identification of potential pockets of risk in the mortgage market in the shape of steep DSTI ratios, particularly for lone parent households and to a lesser extent also single-person households. The survey shows that one in ten lone parent households need over 30 % of their household income to pay their mortgage, i.e. one in four households with this level of debt in this category. These potential pockets of risk in the mortgage market are analysed by the Bank as part of its macroprudential policy.

In summary, the results for the second HFCS wave point up the importance of distribution aspects for the Bank's macroprudential policies. The data show that a substantial proportion of mortgaged households spend a significant share of their income on repaying debt, particularly (young) households with relatively low incomes. These results confirm how vulnerable Belgian households' mortgage debt positions are to loss of income, specifically as a result of an unemployment shock (see Du Caju *et al.* (2014) and Du Caju *et al.* (2016)).

CHART 7 MORTGAGE DEBT BURDEN, MORTGAGE DEBT-SERVICE-TO-INCOME (1) (DSTI) RATIO, BY HOUSEHOLD TYPE

(as a % of the total number of households of a particular type in 2014)

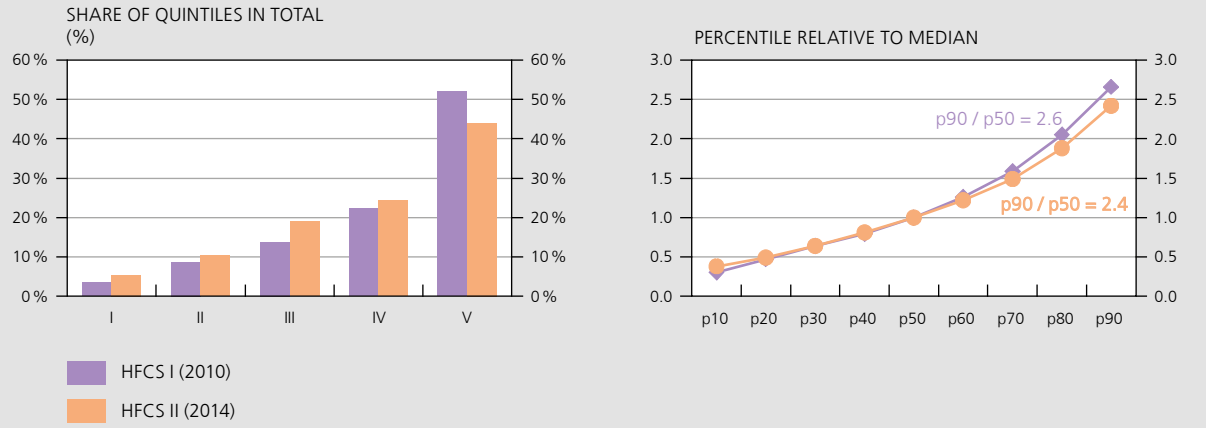


Source : NBB (HFCS 2010 and 2014, preliminary data).

(1) Monthly repayments of the mortgage debt divided by the household's gross monthly income.

(2) (At least one person) over the age of 65.

CHART 8 DISTRIBUTION OF GROSS HOUSEHOLD INCOME



Source: NBB (HFCS 2010 and 2014, preliminary data).

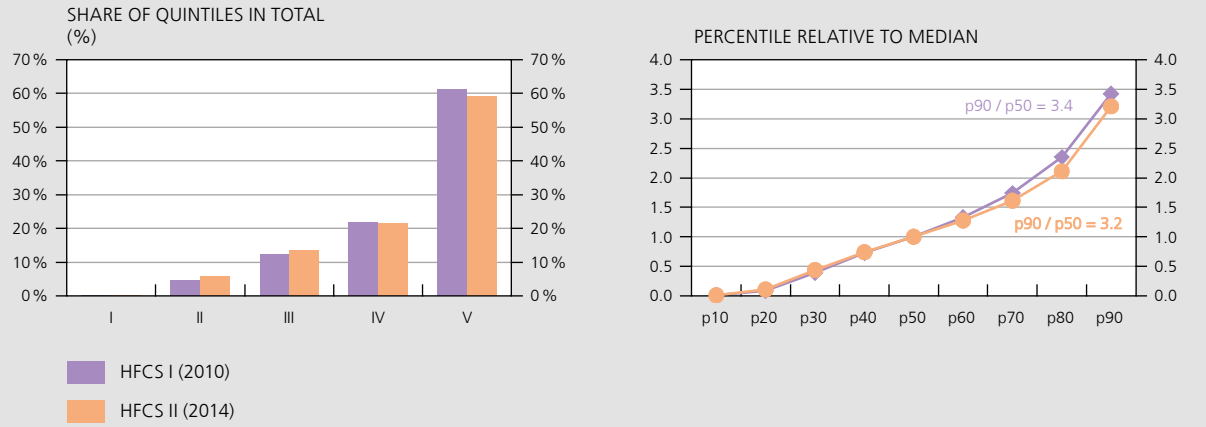
3. Distribution of income and wealth of Belgian households

In addition to data about wealth, the main topic of the survey, the HFCS collects information on household income as a supplementary variable. After all, wealth is built up by the accumulation of savings from income in addition to inter-generational transfers – e.g. gifts and inheritance – and inter-sectoral transfers, i.e. transfers to the government via taxation. This makes it possible to study simultaneously the distribution of wealth and income across households.

3.1 Income and wealth

The spread of gross household income can be established by breaking households into income quintiles. Looking at the share of each of these quintiles in total income of Belgian households, we find that the lowest

CHART 9 NET WEALTH DISTRIBUTION



Source: NBB (HFCS 2010 and 2014, preliminary data).

income quintile accounted for a mere 3.5 % in 2010 and for 5.4 % in 2014. At the other end of the distribution, the share of the highest income quintile shrank to 44 % in 2014 from 52 % in 2010.

The gross income distribution – and its unevenness – can also be captured by expressing the various percentile values relative to the median. This reveals that the ratio between the 90th percentile (p90) and the median (p50) came down to 2.4 in 2014 from 2.6 in 2010. This implies that the gross income of a household in position p90 – i.e. a household with an income exceeding that of 90 % of the country's households and which could be described as a 'typical' high-income household – is 2.4 times the income of a median household. These numbers reveal a slight drop in the income inequality in gross terms at the top end of the distribution.

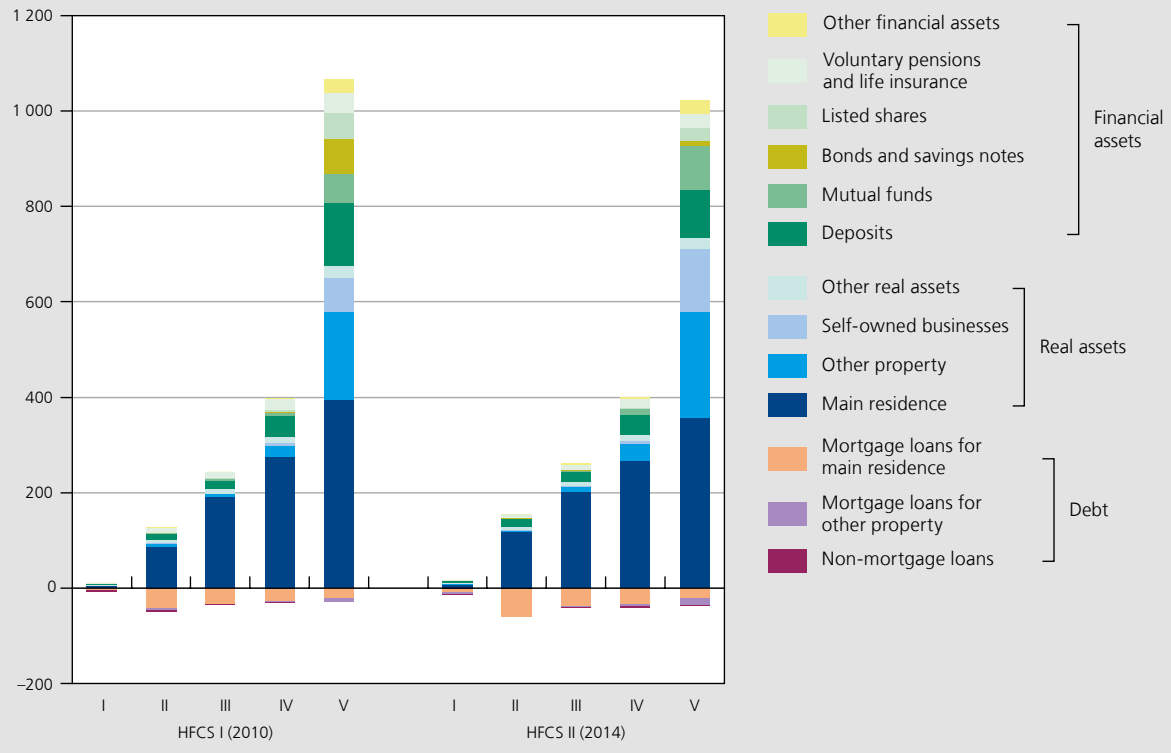
All things considered, Belgium's income distribution remained fairly stable in the period between 2010 and 2014, possibly showing a slight relative fall at the top of the distribution related to lower income from financial assets.

Just as in other countries (see Du Caju, 2013), the distribution of net wealth in Belgium reveals greater inequality than do incomes, even if both have moved more or less in step between the first wave in 2010 and the second in 2014. The poorest households own hardly any assets and the top 20 % of wealthiest households accounted for over 59 % of total net Belgian household wealth in 2014, compared with 61 % in 2010. Looking at percentile values for net wealth relative to the median, we find the ratio between the 90th percentile (p90) and the median (p50) to have edged down to 3.2 in 2014 from 3.4 in 2010. This implies that a household in position p90, i.e. whose net wealth outstrips that of 90 % of the country's households, owns net assets 3.2 times as great as the net wealth of a median household.

All in all, household wealth appears to have remained fairly stable while possibly having undergone a slight relative decline at the top. It should again be emphasised that the error margins for estimating wealth deciles become greater at higher points on the household wealth scale. This aspect is the subject of Section 3.3.

CHART 10 COMPOSITION AND DISTRIBUTION OF NET WEALTH

(average value of assets and liabilities in thousands of euros, by wealth quintile)



Source: NBB (HFCS 2010 and 2014, preliminary data).

The HFCS affords an opportunity to analyse the make-up of household wealth across the entire distribution of wealth. In other words, we can establish the composition of the assets of wealthy households and compare this with those of less wealthy households. The size and composition of net wealth is indeed found to vary greatly between the wealth quintiles.

Households in the lowest wealth quintile own little in the way of assets, which typically comprise deposits and other real assets (vehicles or other valuables). Wealth in the three intermediate quintiles, which we might refer to as the middle classes for the sake of convenience, primarily takes the shape of home ownership, plus deposits. This group typically also has the largest amount of outstanding mortgage debt. In contrast, wealthier households tend to own residences with higher average values than middle-class households, but these account for less than half of their total wealth. The wealthy also own other types of property, whose share has risen to 23 % of net wealth in the highest wealth quintile in 2014 from 18 % in 2010. Mortgage loans to pay for other property are typically also taken out by wealthier households.

Deposits, voluntary pensions and life insurance are among the assets found in all quintiles, even if their average values are small in the lowest quintile. Other financial assets and self-owned businesses (independent companies) are found virtually only in the highest wealth quintile. As noted in section 2, households have shifted away from direct investment in the equity and bond markets and now have more investments in mutual funds. With such assets held almost exclusively by wealthier households, it is this particular group's portfolio decisions that determine overall statistics. The average weighting of investment funds in net household wealth in the highest quintile was up to 9 % from 6 % between the first and second wave. Listed shares saw their weighting drop to 3 % from 5 %, with bonds and savings plunging to 1 % from 7 %. There is one caveat, though: financial assets are less well recorded in surveys than real assets, debt and incomes, and the wealthiest households – which own the majority of these financial assets – are the hardest to get to agree to these interviews (see section 3.3). The available survey data therefore make it challenging to measure the actual size of the shift in these assets. That said, these patterns also show up in the macroeconomic statistics of Belgium's financial accounts.

3.2 Joint distribution of income and wealth

As the HFCS records both income components and assets, this enables us to analyse their joint distribution. This shows incomes and household wealth to move virtually in tandem. Households boasting high incomes typically also have great wealth: 37 % of households in the highest income quintile are also firmly in the highest wealth quintile. Conversely, households on low incomes typically also have little wealth: half of households in the lowest income quintile also rank in the lowest wealth quintile. That said, some households report low incomes but a high level of wealth, such as pensioners or those left an inheritance: 6 % of households in the lowest income quintile rank among the highest wealth quintile. At the other end of the spectrum are households with high incomes but little wealth, such as young, highly educated double-income families: 4 % of households in the highest income quintile rank in the lowest wealth quintile.

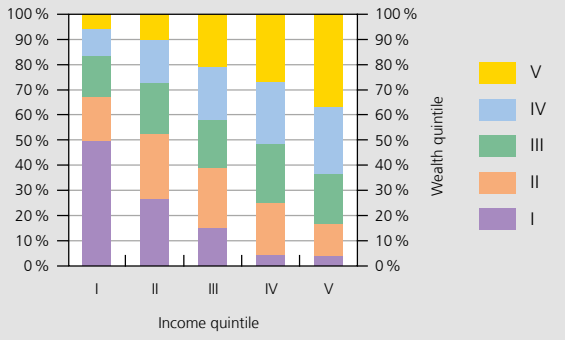
Composition and development of household income between 2010 and 2014 differ depending on the level of household wealth. Using HFCS data to illustrate this, we distinguish between labour income (employee or self-employed), income from capital (interest, dividends and rental income), transfer income (pensions, unemployment benefit and other income-replacement benefits), and debt repayments.

Income from capital is (of course) found mainly in the group of wealthiest households and came down between 2010 and 2014, primarily in the wake of lower interest rates.

It goes without saying that the various income and wealth quintiles comprise the whole range of household types.

CHART 11 JOINT DISTRIBUTION OF INCOME AND WEALTH

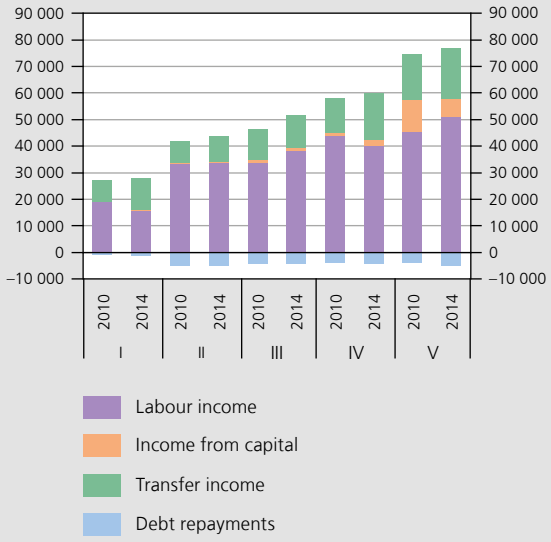
(as a % of the total number of households per income quintile in 2014)



Source: NBB (2014, preliminary data).

CHART 12 COMPOSITION AND DEVELOPMENT OF HOUSEHOLD INCOME BY WEALTH QUINTILE

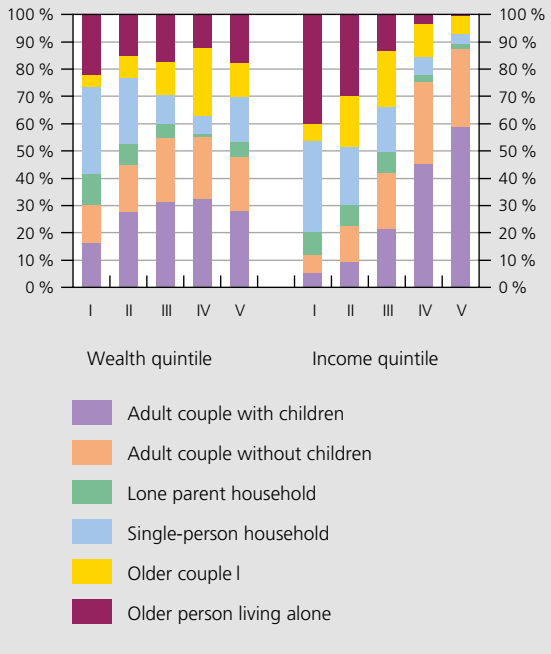
(average income by wealth quintile in 2010 and 2014)



Source: NBB (2010 and 2014, preliminary data).

CHART 13 HOUSEHOLD TYPES IN WEALTH AND INCOME QUINTILES

(household types as a % of total households per quintile, in 2014)



Source: NBB (HFCS 2014, preliminary data).

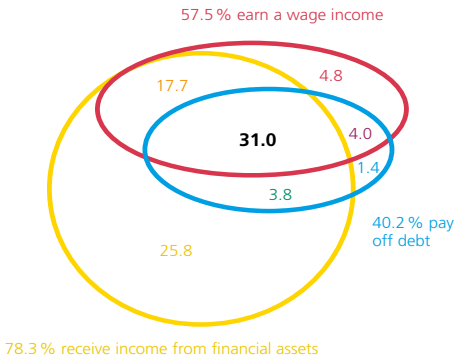
Here, too, the HFCS results are telling. The highest income quintile has relatively few older households (at least one person over 65) and scarcely any older people living alone. However, the highest wealth quintile has relatively large numbers of older people: their income may take a sometimes steep downward turn after retirement, but savings accumulated over their working lives often provide a significant amount of wealth. The comparatively tougher position that single people – with or without children – find themselves in is also borne out by the data: these groups are mostly found in the low income and wealth quintiles. By contrast, adult couples with children are strongly represented among high incomes, but are more evenly spread across wealth quintiles.

Family status is not the only way to distinguish households. Monetary policy, which has been marked by low interest rates and non-conventional measures post-crisis, influences households' financial positions in a variety of ways. In assessments of the differentiated impact of this mix of policies, a distinction is often made between households that save and those that borrow, but transmission mechanisms and the ultimate effects of monetary policy are so complex that too simplified an analysis may produce a highly distorted view. After all, monetary policy also contributes to a stable financial environment that is supportive of growth and employment, and so also affects households' labour incomes and the security of these. The distinction between savers, borrowers and employees is only of limited use, as households may belong to a range of these categories.

In effect, HFCS data enable us to simply illustrate this complexity. Households which enjoy labour income from

CHART 14 A TYPOLOGY OF BELGIAN HOUSEHOLDS

(as a % of the total number of households per income quintile in 2014)



Source: NBB (2014, preliminary data).

dependent employment and also derive income from financial assets (and so receive interest or dividends) or which repay debt[1] (and therefore pay interest) accounted for nine out of ten of all Belgian households in 2014. It also turns out that one-third of households feature in all three categories: they earn wages, have financial income and repay debt. What is more, the vast majority of households that repay debt also enjoy income from financial assets and vice versa. And most employees also have financial income. It should be obvious by now that the population cannot be broken down into clear-cut groups that do or do not benefit from any specific monetary policy measure.

3.3 Household wealth in Belgium: the details

Net household wealth is the sum of all assets, both real and financial, less the sum of all outstanding debt, both mortgage and non-mortgage. As such, net wealth is the main indicator of the richess of any household and therefore deserves a more detailed analysis. To this end, we calculated multiple percentile values of net household wealth on the basis of the data collected in the two HFCS waves of 2010 and 2014, with values adjusted for HICP inflation between the first and second wave. Next, we completed our estimates of the percentile values with 95 % confidence intervals. These intervals, which are particularly asymmetric for the distribution's extreme values, provide an indication of the uncertainty and error margins that attend survey data.

The median value of net wealth, i.e. the value of the p50 percentile for a household right in the middle of the distribution, was estimated at € 206 100 in in 2010, with a confidence interval ranging from € 192 000 to € 221 800. For 2014, these figures were estimated at € 218 600 for median net wealth, with a confidence interval ranging from € 203 800 to € 235 300. Adjusted for inflation, the 2014 median value of net wealth worked out at € 202 500 in 2010 euros. In nominal terms, then, estimated net wealth of median Belgian households went up slightly between 2010 and 2014, but this increase is not significant. In fact, net wealth even declined in real terms (adjusted for inflation), but again, this was no significant change. We may therefore conclude that the net wealth of median households remained virtually unchanged between the survey's two waves.

The same finding applies to other points in the distribution of net household wealth. In 2010, households in the lowest wealth quintile recorded net wealth of less than € 17 900, with a confidence interval ranging from € 11 200 to € 26 700 to estimate this p20 percentile value. In 2014, the confidence interval of the same p20 percentile ranged between € 15 100 and € 28 100 and the actual percentile value is pegged at € 23 300, i.e. € 21 600 in 2010 euros, adjusted for inflation. Once again, the change between the two waves is relatively small and not significant.

At the other end of the distribution, households in the wealthiest decile were looking at net wealth of over € 704 100 in 2010, with a confidence interval ranging from € 663 000 to € 775 200. For 2014, this p90 percentile value is estimated at € 701 600, at an interval of between € 626 100 and € 783 000. Adjusted for inflation, the percentile value fell to € 650 000 but even here the estimated decline is not significant given the size of the confidence intervals.

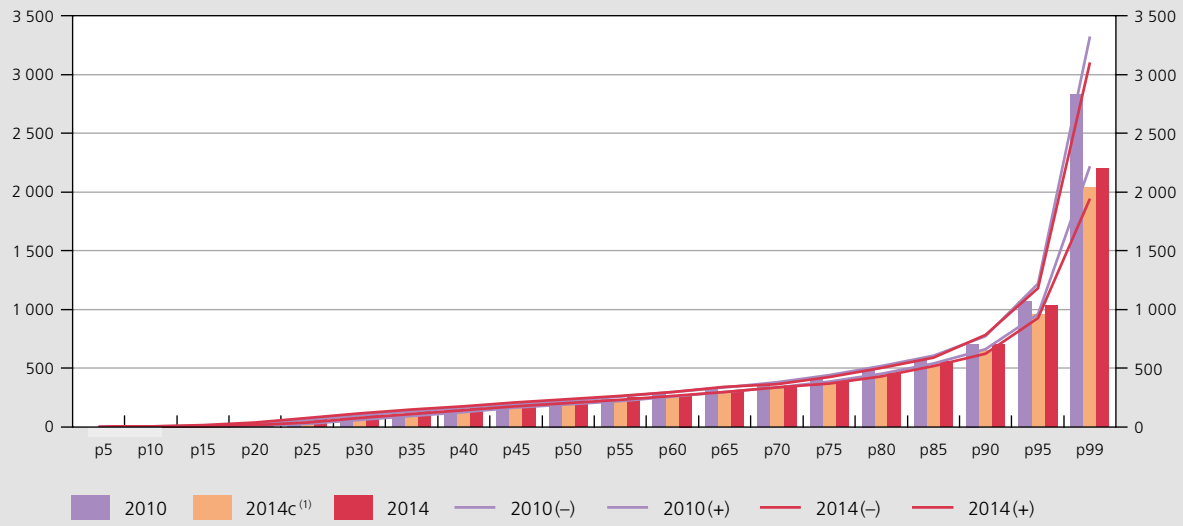
When using survey data for detailed analysis over time or in terms of groups of households, we should again emphasise that these data are estimates with error margins that tend to increase as the analysed group of data becomes smaller or more diverse. If we apply this to the distribution of net wealth in percentiles, error margins become greater as we ascend the wealth ladder. By the time we get to the top percentiles, these error margins have grown very high indeed, as estimates reflect a very small group of very diverse households. The estimated net wealth value for the 99th percentile would appear to have dropped to around € 2.20 million in 2014 from around € 2.80 million in 2010, i.e. € 2.04 million when adjusted for inflation. However, these estimates are hedged about with such wide error margins that even this drop is statistically not significant.

Incidentally, the spread in this group of wealthiest households is very large: despite a reduced lower bound to the wealthiest percentile of the population, these wealthiest households' share of total net wealth has hardly budged: the 20 % wealthiest households hold around 60 % of Belgium's total net wealth (61 % in 2010 and 59 % in 2014). If we drill deeper by investigating even smaller groups of the population, without losing sight of our caveat pertaining to error margins, we find that the top 10 % of wealthiest households hold an unchanged share of 43-44 %, that the top 5 % own 30-31 %, and that the 1 % of wealthiest households account for 12 % of the total net wealth of Belgian households. It should however be noted that significant error margins for extreme values in the data make these surveys less suited to analyses of smaller groups, such as the share of the 1 % wealthiest households in total wealth. What is more, the wealthiest households do not usually rank

(1) Households making periodic repayments are a smaller group than the wider indebted group of households. A number of this wider group were not making any repayments at the time of the interview, such as households with debts that will be repaid in one instalment, e.g. credit card debt and debts to private individuals, and households with payment problems.

CHART 15 DETAILED DISTRIBUTION OF NET WEALTH IN BELGIUM

(percentile values, inflation adjustment and error margins in thousands of euros)



Source: NBB (HFCS 2010 and 2014, preliminary data).

(1) 2014 net wealth as expressed in 2010 euros, adjusted for inflation (HICP) between 2010 and 2014.

among the respondents[1] and survey findings may well underestimate the actual wealth at the top.

This is corroborated when we compare the aggregated HFCS results with macroeconomic statistics in Belgium's financial accounts and property estimates. Such a comparison may be constructive even if it should not be taken as a benchmark, as survey concepts, populations and the macroeconomic sources do not exactly match, while macroeconomic statistics are equally subject to inaccuracies. As it turns out, the survey records incomes, debt and real assets remarkably well in Belgium, but less so financial assets, even if it still does this better than in the other countries[2]. This is not surprising as financial wealth is very unevenly distributed and highly concentrated in a very small proportion of the population, which, as we have said, is hard to survey.

(1) The wealthiest households in the sample of such surveys typically report a net wealth of no more than some tens of millions of euros, significantly below the couple of billion that the wealthiest households in most countries own.

(2) A comparison of total HFCS values with macroeconomic statistics that are conceptually as little different as possible (but never perfect) shows that labour incomes (total wage bill) in the HFCS dovetail nicely with macroeconomic data (110% in the first wave and 104% in the second). The same applies to property (113% in the first wave and 101% in the second) and to a somewhat lesser extent also to outstanding mortgage debt (88% in the first wave and 93% in the second). This match is decidedly smaller for deposits (77% in the first wave and 56% in the second), but still better in Belgium than in the other countries surveyed (greater than in all other countries in the first wave and more than in the countries for which informal information related to the second wave is available)..

Conclusion

Drawing on the findings of the Household Finance and Consumption Survey (HFCS), this article discusses the structure, income distribution and wealth of Belgium's households. Reviewing both real and financial assets as well as debt, its outcome is an analysis of net household wealth. More specifically, it uses preliminary data to outline the second wave of the HFCS in Belgium (2014) and to compare its results with those of the first wave (2010).

Initial results suggest that income and wealth distribution have remained fairly stable from the first to the second wave. The 20 % of wealthiest households continued to account for around 60 % of total net wealth (61 % in 2010 and 59 % in 2014). Breaking the figures down further, the proportion held by the top 10 % of wealthiest households was unchanged at 43-44 %, with the 5 % wealthiest holding 30-31 % and the top 1 % holding 12 % of total net household wealth in Belgium.

However, it should be noted that error margins apply to survey data and that these can be quite significant for any extremes in such findings. This makes survey data, though often the only available source, less suitable for analysing smaller groups, such as the top 1 % of households and the share of wealth attributable to these. And this becomes even more of a problem in the analysis of

individual assets, as some are typically owned only by a small number of households. What is more, the wealthiest households do not usually rank among the respondents and survey findings may well underestimate the actual wealth at the top.

Home ownership accounts for the bulk of the wealth of Belgium's middle classes, supplemented mainly by deposits. This group typically also has the largest amount of outstanding mortgage debt. In contrast, wealthier households tend to own residences with higher average values than middle-class households, but these account for less than half of their total wealth. The wealthy also own other types of property, their own independent businesses and financial assets other than deposits, such as equities, bonds and investment funds, which incidentally are almost exclusively found among these particular households.

A comparison of survey findings for 2010 and 2014 reveals increased investment in – and loans attracted towards – other property, in addition to households' main residences. The survey also finds that households have shifted away from direct investment in the equity and bond markets and now have more investments in mutual funds. With such assets held almost exclusively by wealthier households, it is this particular group's portfolio decisions that determine this overall outcome.

Income and wealth distribution are pretty much in step: high-income households typically enjoy great wealth while low-income households do not. That said, some households report low incomes but a high level of wealth, such as pensioners or those left an inheritance: 6 % of households in the lowest income quintile rank among the highest wealth quintile. At the other end of the spectrum, the survey identifies households with high incomes but little wealth, such as young, highly educated double-income families: 4 % of households in the highest income quintile rank in the lowest wealth quintile.

Relatively few older households – and almost no elderly people living alone – are found in the highest income quintile, whereas a fairly large proportion are in the highest wealth quintile. Also clear from the figures is the tough position faced by single-person households, both those without children but particularly those with: most of these are in the low income and wealth quintiles. Income from capital – i.e. interest income, dividends and rental income – came down on average in the 2010-14 period, mainly due to lower interest rates.

While it is difficult for surveys to completely capture financial assets – due to the high concentration of such assets among a small group of households – they reflect real assets, debt and income much more accurately and comprehensively. As a result, these data lend themselves extremely well to prudential risk analyses of credit markets. Survey findings reveal increased participation and higher outstanding amounts for all types of loans. A rather more detailed analysis points to potential pockets of risk in the mortgage market, particularly for lone parent families and to a lesser degree also single-person households. It finds that one in ten single-parent households need over 30 % of household income to repay their mortgage – that is one in four households with debts in this particular category.

The preliminary findings of the Bank's wealth survey will be processed in the Household Finance and Consumption Network (HFCN) and released at the end of 2016, together with the same data for other euro area countries. The third HFCS wave is set for 2017, with findings scheduled to be published in 2019.

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For more information about the HFCN and the HFCS, go to the website of the European Central Bank:
http://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_hfcn.en.html

Belgium's inward and outward foreign direct investment

C. Duprez
Ch. Van Nieuwenhuyze (*)

Introduction

Belgium receives substantial foreign direct investment (FDI). In 2014, the stock of inward FDI amounted to 216 % of GDP (1). On the basis of that ratio, Belgium ranks 14th in the world, compared to 25th in terms of nominal GDP. According to a survey by EY (2015) covering around 800 international investors, Belgium is the fifth most attractive European country. Those investors state that Belgium's advantages concern a central location in the EU, the availability of a trained workforce, opportunities for research and development, an accessible range of subsidies and government support, and the availability of industrial sites. Conversely, they cite the following drawbacks : the burden of taxation, high labour costs, major traffic congestion problems, the power of the trade unions, and lengthy, complicated administrative procedures (2).

Many governments endeavour to attract FDI. The economic literature lists some of the advantages for the host countries. FDI forms a stable source of finance, has a technological impact, contributes to the formation of human capital, facilitates integration into international trade, and fosters a more competitive climate for firms.

(*) This article has benefited from contributions by H. Dewachter, E. Dhyne, L. Dresse and Ch. Piette, and valuable work in preparing the data by A. Antoons and her team.

(1) According to the UNCTAD data.

(2) See for example Bisciari and Piette (2007).

(3) The measure was also justified by the aim of reducing the difference in tax treatment between debt financing and equity financing. See Burggraeve *et al.* (2008) for more information. As a rule, the rate for calculating the tax deduction is equal to the average interest rate on the Belgian government's 10-year linear bonds in the third quarter of the last year but one before the tax year in question.

(4) See http : / / www.business.belgium.be for more information.

However, some of those favourable effects are less important for the advanced countries because they can rely on domestic funding sources, and enterprises are closer to the efficiency limit. Nonetheless, FDI creates international links which facilitate inclusion in global value chains and may lead to the transfer of knowhow and expertise. Yet FDI also brings disadvantages, such as the loss of control over decision-making in certain key sectors, the fact that multinationals have less concern for social aspects and the environment, or the more volatile tax base.

Belgium has introduced various measures to attract FDI. In the past, firms centralising the financial transactions of their group enjoyed special tax status via the system of coordination centres. Subsequently, after the European Commission had decided that the system of coordination centres was incompatible with the rules on state aid, the risk capital allowance – known as the notional interest deduction – was introduced into Belgian tax legislation and came into force in 2006. That measure aims to strengthen the capitalisation of firms based in Belgium by offering them the opportunity to deduct from their tax base an amount of notional interest on their "adjusted" equity capital (3). Other arrangements, such as the tax rulings, withholding tax exemption on certain dividends, or the measures to promote research and development, complete the arsenal of measures for attracting FDI (4). Alongside the federal government, regional agencies also try to encourage investment in their Region (Flanders Investment & Trade, Brussels Invest & Export, Agence wallonne à l'Exportation et aux Investissements étrangers).

Generally speaking, outward FDI by Belgium receives less attention[1]. Traditionally, outward FDI causes unease because people often see it as the first step towards potential relocation of the activity. Furthermore, Belgium has fewer major international players than neighbouring countries[2]. Nevertheless, in 2014, almost 600 Belgian parent companies made outward FDI. That investment is beneficial, facilitating access to new markets or resources which in Belgium are either unavailable or more expensive. It also leads to productivity gains and economies of scale for the firm – as does inward FDI – by improving the organisation of the production chain. At macroeconomic level, it is a means of mobilising savings in the case of a net creditor country like Belgium. In contrast to portfolio investments, it guarantees some power of decision which can have a favourable influence on the return.

(1) However, see Dhyne and Guerin (2014) for an analysis of the impact of FDI made by Belgian firms for the first time.

(2) According to UNCTAD, in 2013 the neighbouring countries had multiple companies in the world's top 100, but Belgium had only one (AB Inbev).

This article aims to examine the recent economic implications for Belgium of inward and outward FDI. The first section describes the global context and developments concerning Belgium. The second section looks at the financial aspects, focusing attention on a specific characteristic that distinguishes Belgium from most of the advanced countries, namely its negative net FDI position. Inward FDI by other countries exceeds Belgium's outward FDI. The low return on Belgium's outward FDI and the impact of that on the current account balance is also discussed. The third section aims to describe the real aspects of FDI, outlining the share of the multinationals in value added and employment and their contribution to the trade balance. This section also assesses the role of inward FDI as a source of finance for real investment in Belgium. Finally, in view of the instances of multinationals deciding to terminate or scale down their activities in Belgium in recent years, this section analyses the survival chance of subsidiaries in Belgium and developments in employment since the economic crisis of 2008-2009.

Box – Foreign direct investment: concepts and definitions

If an entity acquires a lasting interest in an entity established in another country, that constitutes FDI. The term "lasting interest" implies that there is a long-term relationship between the direct investor and the investment enterprise, and that the investor exerts a significant influence over the strategy of that enterprise. On the basis of the IMF rules, it is assumed that there is a lasting interest, and hence FDI, if the investor owns at least 10 % of the capital or voting rights in a foreign enterprise.

If the investor is a foreign company which acquires a stake in a domestic company (i.e. subsidiary), that constitutes inward FDI. Outward FDI occurs if domestic companies (i.e. parent companies) invest in foreign firms[1].

Via the direct investment flows, the investor builds up an FDI position, also referred to as the outstanding amount. However, the change in a position over time does not depend solely on the FDI flows, since that position is also influenced by revaluations, i.e. price or exchange rate fluctuations, and by other adjustments such as the rescheduling or cancellation of debts.

FDI comprises the initial transaction (10 % minimum), subsequent financial transactions (including those below 10 %) between the two entities, and loans between sister companies belonging to the same international group. Those participating interests may take the form of the establishment of a business or institution (known as greenfield investments), or mergers and acquisitions.

There are two main categories of FDI:

– Equity investments comprise share capital, subscriptions to capital increases, investments in property and reinvested earnings, i.e. the reserved, undistributed part of the subsidiaries' current operating profits.

(1) In this article, if the source permits, we measure direct investment on the basis of the assets and liabilities that a country accrues via direct investment. According to the BPM6 terminology, those assets and liabilities exceed the outward and inward investment respectively, since loans by subsidiaries to their parent company are deducted from the latter.

– The "other capital" or "loans between affiliates" category comprises loans between the direct investors and the firms in which they have invested, and loans between enterprises belonging to the same group and established in different countries, even if those enterprises have no direct link in the form of company capital.

This analysis is based on data concerning FDI flows, outstanding amounts and income, collected in accordance with the principles of the 6th edition of the balance of payments manual (BPM6)[1]. However, the analysis period is short since those data are available only from 2008, or even from 2013 in the case of the new series introduced by the BPM6 such as income from FDI. The income, which is recorded as a current account item, consists of interest, dividends and reinvested earnings. It does not include revaluations of the outstanding amounts. Here it should be pointed out that interest and dividends are not included in the FDI flows, in contrast to reinvested earnings.

Finally, it is worth clarifying the point that FDI exists where a firm holds a stake (of more than 10 %) in a foreign firm. The latter may, nevertheless, be an institution with a purely financial object, not performing any genuine economic role for the country where it is based. In addition, the group of Belgian multinationals does not comprise just the leading large firms in the private sector : small firms or public enterprises may also have foreign shareholdings or even be partly foreign owned.

(1) See IMF (2009) for more information.

1. Global and national trends

Similar to other forms of cross-border financing, FDI (both inward and outward) has declined since the financial crisis, especially in the European Union. This section describes some international trends and examines whether the recent developments in Belgium are connected with them. While section 1.1 analyses the flows, section 1.2 takes a closer look at the stock of FDI and examines whether they accord with economic theory.

1.1 Developments in direct investment flows

In global terms, FDI has expanded enormously in recent decades, far outpacing the growth of GDP and world trade. Annual FDI is currently around a hundred times the level prevailing in the early 1970s, and by the end of 2014 totalled $ 1.2 trillion. By way of comparison, exports increased by a factor of 60 over that period, and GDP grew by a factor of 20.

FDI is generally regarded as a measure of financial integration since it involves cross-border financing. On the basis of that investment, financial integration has gradually gained ground compared to trade integration. The literature refers to an interaction between financial integration and trade integration. That interaction is said to operate in both directions (Aizenman and Noy, 2006). On the one hand, an increase in international trade stimulates demand for international financing, and therefore FDI : on the other hand, FDI – especially if it is aimed at vertical integration at international level – stimulates exports and imports[1].

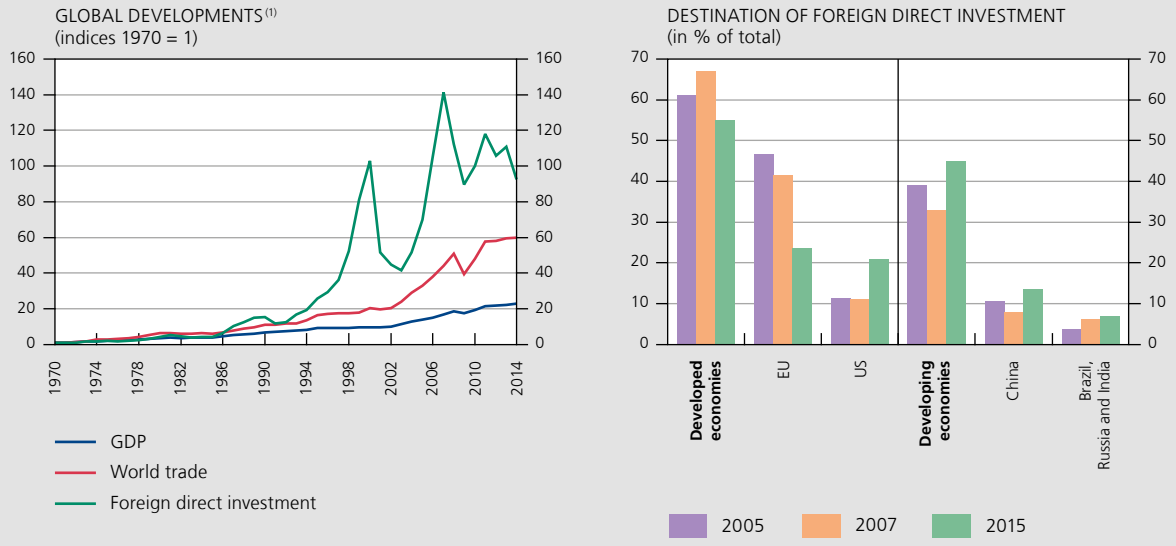
Financial flows are more volatile than trade flows, because FDI is sensitive to changes in risk appetite and risk perception. Fluctuations in asset prices also generate volatility. Mergers and acquisitions are recorded at market value, and there is often a surge in the number of acquisitions at times when prices are relatively high and the financial markets are booming. For instance, FDI peaked when the stock markets reached a high point just before the dotcom crisis in the early 2000s and the financial crisis of 2007-2008. A transaction (e.g. an acquisition) may also trigger multiple financial transactions and therefore drive up the FDI figures, e.g. if the acquisition is made via an intermediate entity such as a holding company.

The share of the developed economies – and especially the European Union – in total inward FDI declined considerably as a result of the financial crisis, in favour of the emerging economies. Before the financial crisis the EU[2] still attracted almost half the total FDI, but in 2015 its share was down to 24 %. That is largely due to less

(1) Vertical integration means that the production of a good or service is divided into various stages which take place in different countries in order to exploit comparative advantages and cut costs. This is in line with the concept of "global value chains". Conversely, horizontal FDI amounts to producing the same product in another country.

(2) In this article the statistics for the EU and the euro area are the aggregate figures for the individual countries ; they therefore include investments between the various Member States.

CHART 1 INTERNATIONAL DEVELOPMENTS IN FOREIGN DIRECT INVESTMENT FLOWS



Sources: OECD, UNCTAD.

(1) Nominal developments. Foreign direct investment measured on the basis of inward foreign direct investment, world trade measured on the basis of goods exports. Theoretically, inward FDI should tally, at global level, with outward FDI, and exports should tally with imports. In practice, however, there are statistical discrepancies between these concepts.

intensive FDI flows between the various EU Member States. In the EU, not only was there a steep fall in cross-border capital movements via the banks, there was also a slump in FDI[1]. The United States proved more resilient, although the increase in FDI in 2015 was probably due to a number of group restructurings, and does not indicate a lasting recovery (UNCTAD, 2016).

The growing importance of the developing economies in FDI implies that their accelerating economic growth is also accompanied by closer financial integration, both between one another and with the rest of the world. Another contributory factor is a less stringent regulatory framework governing openness to foreign capital (e.g. more flexible foreign capital approval procedures, abolition of limits on foreign board members) (OECD, 2015). Their share in the total FDI received was estimated at 45 % in 2015. The BRIC countries receive roughly half of all direct investment flowing into the developing economies. Among the BRIC countries, China succeeded in attracting the most FDI. Similar conclusions emerge on the basis of outward FDI, though the developing economies have a smaller share of that owing to their net debtor status.

As in the EU, FDI in Belgium declined in the wake of the financial crisis. Since 2013, there has actually been disinvestment (i.e. negative flows averaging 3 to 5 % of GDP per annum). That concerns both FDI in Belgium and Belgian FDI in other countries, whereas over the period 2008-2012 both still averaged around 20 % of GDP per annum. However, the strong growth and sharp fall in FDI must also be viewed against the backdrop of the notional interest deduction scheme. As a result of that tax advantage, FDI in Belgium comprises a large proportion of "capital in transit", i.e. capital that enters the country and in most cases leaves again immediately. When that capital enters Belgium, it often takes the form of equity, for tax reasons: when it leaves Belgium, it does so in the form of an (intra-group) loan.

Although there is no direct macroeconomic method of measuring capital in transit[2], the composition of the direct investment flows suggests that a decline in capital in transit since 2013 is largely responsible for the reduction in FDI. The rest of the world primarily scaled down shareholdings in Belgium, while Belgium cut its lending to the rest of the world. Exactly the opposite happened during the upswing phase in 2008-2012, when Belgium

(1) However, during the crisis, direct investment was initially the least affected form of cross-border financing. Direct investment is generally less volatile than portfolio investment and other forms of investment (Lipsey, 1999), presumably because of its long-term character.

(2) An analysis of all flows associated with capital in transit requires individual data at firm level since some flows offset one another as a result of aggregation: see section 3.2.

TABLE 1 BELGIUM'S INWARD AND OUTWARD FOREIGN DIRECT INVESTMENT FLOWS

	Average annual flow (in % of Belgian GDP)		Share of holding companies in outstanding amounts (in % of the total)
	2008-2012	2013-2015	2014
Foreign direct investment in Belgium	**22.0**	**–4.8**	**38.2**
Equity and reinvested earnings	12.6	–3.9	38.9
Loans	9.3	–1.0	36.9
Foreign direct investment by Belgium	**18.5**	**–3.1**	**34.2**
Equity and reinvested earnings	6.2	4.5	14.5
Loans	12.2	–7.6	46.5
p.m. Average rate of the notional interest deduction over the period considered (in %)	*3.8*	*2.3*	

Source: NBB.

mainly received FDI in the form of equity, and Belgian FDI principally took the form of loans. The decline in capital in transit is due to the diminished advantage offered by the notional interest deduction. That advantage was eroded mainly by the decline in the long-term yield on Belgian government bonds to which it is linked.

The share of holding companies in the various forms of FDI also reveals that capital in transit consists largely of equity when it enters Belgium and largely of loans when it leaves the country. Capital in transit is frequently channelled via a holding company established in Belgium. Holding companies[1] represent a relatively large proportion of the total equity capital that Belgium attracts (38.9 %) and of the loans that Belgium grants (46.5 %). Their weight in other financial transactions is smaller, especially in the acquisition of equity in other countries (14.5 %).

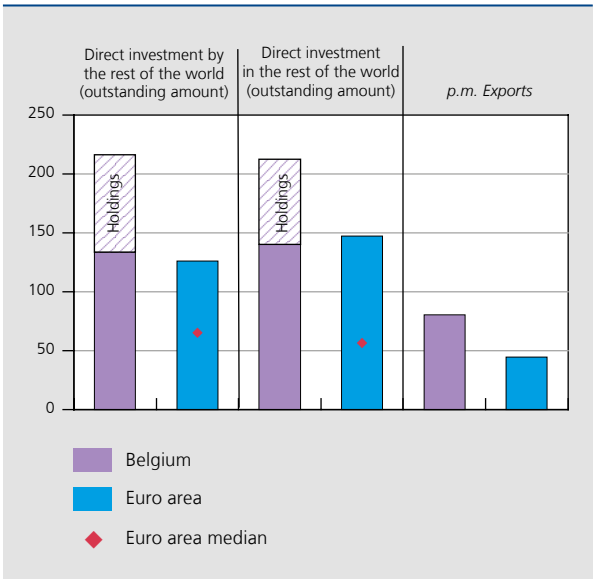
1.2 Outstanding foreign direct investment and link with the level of economic development

Alongside its important trading relations, Belgium also maintains close financial links with the rest of the world. The ratio of inward and outward FDI to GDP (216 % and 213 % of GDP respectively in 2014) is considerably higher in Belgium than in the euro area (126 % and147 % of GDP respectively)[2]. FDI thus confirms Belgium's status as a small, open economy.

However, much of that investment comprises capital in transit. The substantial share of holding companies in Belgium's inward and outward FDI is notable.

CHART 2 FOREIGN DIRECT INVESTMENT: OUTSTANDING AMOUNTS

(in % of GDP, 2014)



Sources: ECB, NBB.

(1) Holding companies are identified as firms belonging to the sector "Captive financial institutions and money lenders" (S.127) in the national accounts.

(2) As mentioned earlier, the euro area figures were calculated as the aggregate of the Member States and – as in the case of the individual countries – include direct investment with both countries outside the euro area (extra) and countries in the euro area (intra). The official balance of payments and IIP statistics for the euro area only take account of relations with countries outside the euro area. According to those data, inward and outward direct investment (extra euro area) came to 66 % and 84 % of GDP respectively in 2014.

Excluding those holding companies, the scale of Belgium's outstanding FDI is comparable to that of the euro area. Yet Belgium is still among the countries with a relatively high degree of financial openness. Holding companies are also active in other countries, but it is not possible to adjust for that on the basis of the figures. The euro area total is also driven up by a few countries where FDI is extremely high in relation to GDP, such as Luxembourg (a ratio of over 8 000 % of GDP), where it can be assumed that capital in transit likewise predominates (Genson, 2013). For that reason, it may be more useful to make comparisons with the median for the euro area, for which the degree of openness is considerably lower than for Belgium (see chart 2).

The impact of capital in transit is one factor that makes it difficult to link the scale of FDI to the structural characteristics of an economy, and also makes it hard to examine whether a country ranks high or low in terms of attracting or effecting foreign direct investment. In that regard, it is advisable to take net outward FDI (i.e. the difference between outward and inward FDI) as the basis. Capital in transit has no impact here because its balance is in principle zero.

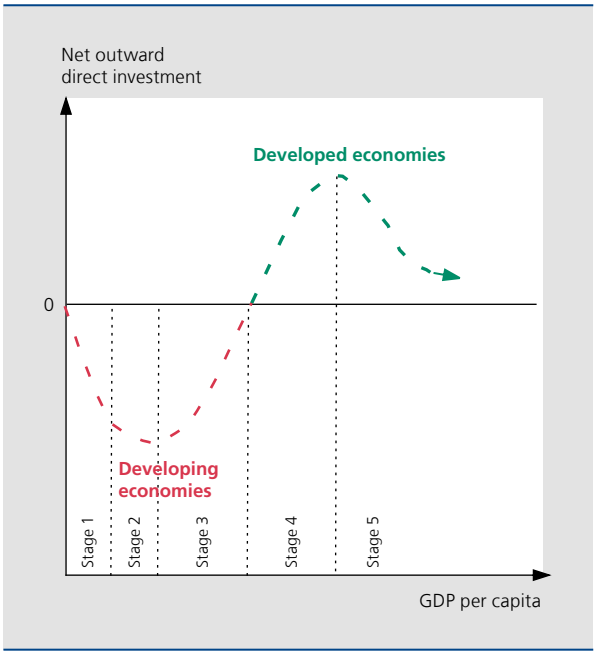
The relatively sparse literature on the scale of FDI therefore focuses on that net concept. According to Dunning (1981), the scale of net outward FDI depends on an economy's stage of development. He identifies the following five stages:

- Stage 1: net outward FDI is zero or slightly negative, both inward and outward FDI are negligible. A small negative balance may be due to natural resources that attract foreign investment. This concerns the least developed economies with few if any "location advantages" (the country's attractiveness in economic and legal terms);
- Stage 2: the net direct investment position becomes more negative as a result of more inward FDI exceeding the outward FDI. These countries feature increasing location advantages, especially the expansion of a legal framework, a growing market, a reduction in the investment risks and the presence of cheap labour;
- Stage 3: although the net FDI is still negative, outward FDI is now also rising as a result of increasing "ownership advantages" [(1)] for businesses in the country (businesses become more competitive, partly as a result of the transfer of expertise associated with inward FDI). Inward FDI begins to slow down because rising labour costs begin to weaken the location advantages, and particularly the comparative advantage in labour-intensive production;
- Stage 4: the net direct investment position is now positive. As a result of increasing ownership advantages, firms in these countries become ever more likely to expand abroad (market-seeking): the location advantages of the home country also diminish as a result of the constantly rising labour costs, so that resident companies invest in other countries (efficiency-seeking);
- Stage 5: since – according to Dunning – countries progress from stage 1 to stage 4, once all countries have ultimately reached stage 4 it is theoretically impossible for them all to have a positive FDI position. These economies would thus enter a stage 5 in which they alternate between temporary deficits and temporary surpluses.

On the basis of the level of incomes in the developed economies (including Belgium), which can be measured according to per capita GDP, those economies can be expected to have positive net outward FDI, while the developing economies receive net investment.

Data for 2014 show that Dunning's theory offers a satisfactory explanation for the scale of the net outward FDI recorded by the various economies in the world, albeit with the notable exception of Belgium. Among the developed economies, which predominantly feature

CHART 3 DUNNING'S DEVELOPMENT PATH FOR FOREIGN DIRECT INVESTMENT



Sources: Dunning (1981), NBB.

(1) Advantages associated with the undertaking such as specific production techniques, management quality, or a brand name.

TABLE 2 NET OUTWARD DIRECT INVESTMENT[1]: OUTSTANDING AMOUNTS
(in % of GDP, 2014)

Developing economies	**–11.6**	**Developed economies**	**7.8**
Africa	–19.6	European Union	6.8
Asia and Oceania	–49.3	Belgium	–3.4
China	–3.4	Germany	16.0
India	–6.0	France	21.2
Latin America and the Caribbean	–21.3	Netherlands	97.8
South-Eastern Europe and CIS	8.2	United States	5.2
Russia	2.9	Other developed economies	6.8
p.m. BRIC	*–5.2*	**Total world**	**0.0**

Sources: ECB, UNCTAD, NBB.
(1) Difference between outward and inward FDI, a positive (negative) figure indicates the accrual of net claims (liabilities) on the rest of the world.

a decidedly positive net FDI, Belgium is in a slightly negative position, which means that the country receives more direct investment than it makes itself in the rest of the world. That is at odds with Belgium's level of development whereby, in view of the normally accompanying savings surplus for an economy, there should be a net flow of finance from Belgium to the rest of the world, and not the opposite situation as revealed by the FDI data[1].

2. Financial aspects: does direct investment offer the Belgian economy a financial return?

On the basis of the new data on FDI (the new accounting rules (BPM6) make provision for recording the resulting income, see Box) – the financial return on FDI can be analysed in greater detail. More generally, the income associated with FDI is part of the income from investment in the rest of the world, which includes other forms of investment as well as FDI. The net income that a country receives from those financial transactions with the rest of the world contributes to the current account, and therefore to an economy's net wealth. Section 2.1 begins by examining whether Belgium earns an income from its financial transactions with other countries, or whether it has to make a payment to the rest of the world, and what is the contribution from FDI in that. Section 2.2 then looks at the return generated by FDI: it also tries to explain that return on the basis of the scale and composition of the FDI.

(1) It should be noted that the Belgian economy does actually have a financing surplus, but it mainly flows to the rest of the world in the form of portfolio investments and other investments (primarily via the financial sector), so that little if any of it takes the form of direct investment.

2.1 Income from financial transactions with the rest of the world

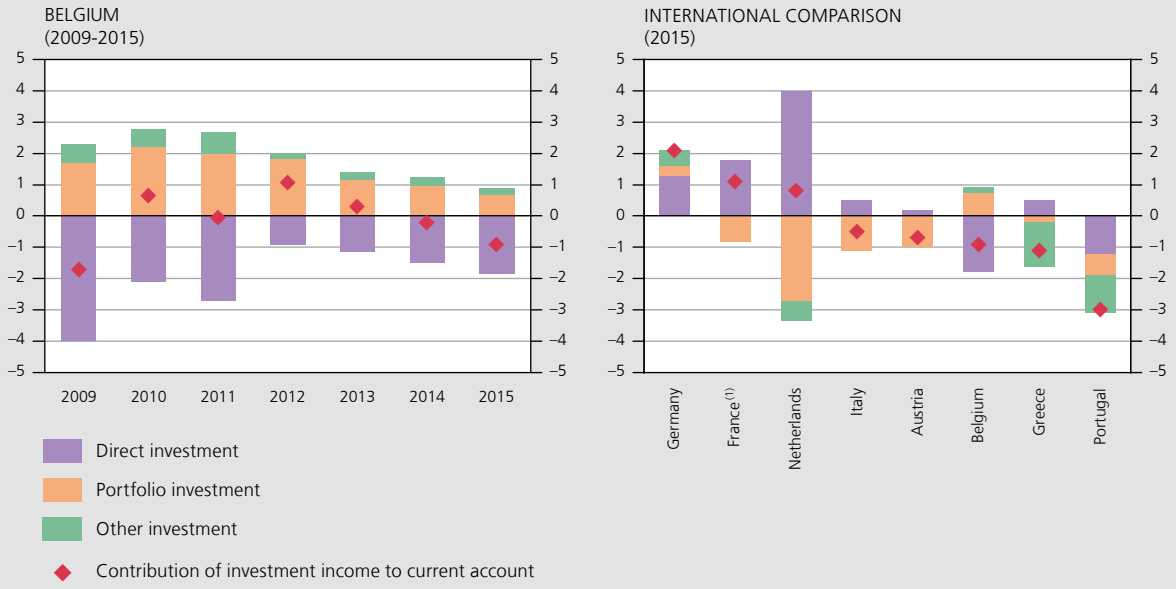
The funds that a country invests abroad or borrows from other countries in a given year are recorded in the financial account of the balance of payments. The assets built up via those instruments are evident from the statistics on the international investment position (IIP). Apart from FDI, there are three other main types of financial instruments: portfolio investment, other investment (including financial derivatives) and official reserves.

Portfolio investment includes investments in equities and bonds, as does FDI, except that in this case there is no question of an investment aimed at acquiring a lasting interest in an undertaking. While FDI often takes place between undertakings (mergers and acquisitions, etc.), portfolio investments are often made by individuals and may or may not be made via the financial sector. Other investments are claims in the form of cash, deposits or loans. Owing to their nature, they are built up mainly via financial intermediaries (banks). Unlike in the case of non-financial corporations, lending between banks is not regarded as direct investment but as other investment, even if there is a direct investment relationship. Finally, reserve assets are claims on the rest of the world which are readily available to and controlled by the monetary authorities.

All these financial claims/liabilities generate income (dividends, interest). A country whose claims on the rest of the world exceed its liabilities generally records a positive net income, when the assets and liabilities have a similar

CHART 4 NET INVESTMENT INCOME

(in % of GDP)



Sources: EC, ECB, NBB.

(1) Latest complete data for France: 2012.

composition. A country with more liabilities than claims will generally have to make a net payment to the rest of the world. The positive or negative balance can be seen from the investment income balance[1].

Considering Belgium's very substantial net claims on the rest of the world (net foreign investment – also known as the net international investment position (NIIP) – came to € 254 billion or 62 % of GDP at the end of 2015), the net income generated by those net claims is relatively small. Since 2014, the net income recorded on them has actually been negative (€ –3.7 billion or –0.9 % of GDP in 2015).

A breakdown of investment income by functional classification shows that Belgium records an adverse balance mainly for FDI. In 2015, the associated net payment to the rest of the world came to € 7.5 billion, or 1.8 % of GDP. That is an atypical situation within the euro area, since most countries acquire a positive net income from their direct investment relationships.

The investment income is influenced by both a volume and a price effect. The volume effect is determined by the outstanding amount of net FDI: the price effect by the return achieved on the FDI in and by Belgium, and the difference in return between the two. The return depends amongst other things on the composition of the FDI.

An unfavourable volume effect is the primary reason why Belgium records a lower income on FDI than neighbouring countries. The net outward FDI is much lower than in Belgium's neighbouring countries, and is actually slightly negative (–0.5 % of GDP in 2015). The somewhat negative net position for FDI is odd in view of the very substantial total net investment by Belgium in the rest of the world (62 % of GDP). The Belgian economy thus builds up its wealth mainly in the form of portfolio investment and other investment, and to a far lesser degree via FDI. This could be because of the considerable financial wealth of Belgian households, which is channelled to the rest of the world mainly via the financial sector. It should also be noted that the strong positive FDI position of neighbouring countries, and more particularly the Netherlands, is determined primarily by the presence of some large multinationals, such as Shell and Unilever.

(1) That balance is part of the primary income balance which in turn forms part of the current account. The investment income balance is also one of the differences between the gross national product (GNP) and gross domestic product (GDP). If the investment income balance is positive, GNP – *ceteris paribus* – is higher than GDP. Although the investment income balance is negative for Belgium, Belgium's GNP was 0.8 % higher than its GDP in 2015 as a result of other primary income, more specifically the net income from frontier work. However, the positive difference between GNP and GDP in Belgium has narrowed since 2012 as a result of the deterioration in the investment income balance.

TABLE 3 NET INTERNATIONAL INVESTMENT POSITION (NIIP)[1]: INTERNATIONAL COMPARISON
(in % of GDP, 2015)

	BE	DE	FR	EA	NL
Direct investment	–0.5	18.6	22.2	20.9	97.9
of which: equities	–46.7	27.5	22.5	17.1	57.3
Portfolio investment	27.2	3.1	–35.1	–28.7	–49.7
Other investment	29.8	22.2	–10.3	–2.4	13.2
Reserve assets	5.4	5.3	5.8	6.2	5.2
NIIP	**61.9**	**49.2**	**–17.4**	**–4.0**	**66.6**

Sources: ECB, NBB.
(1) Difference between external assets and external liabilities. A positive (negative) figure indicates net claims (net liabilities) on the rest of the world.

2.2 Return on foreign direct investment

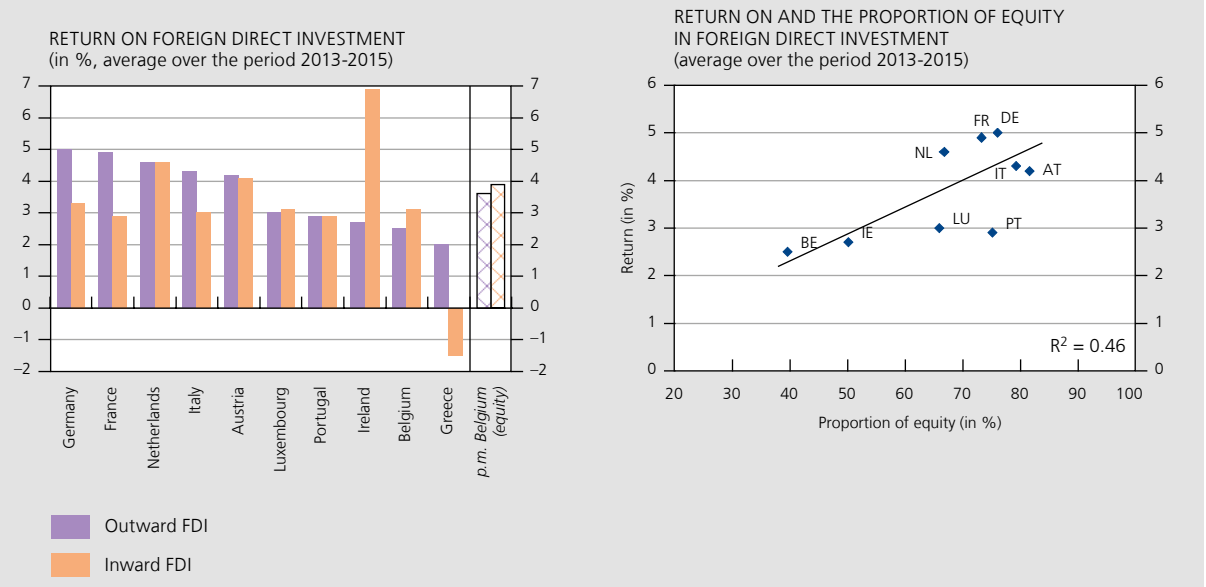
The net income that a country receives on its direct investment relationships with the rest of the world depends not only on the volume effect (i.e. the net position) but also on a price effect (i.e. the return).

(1) This concerns the part of the earnings that is not paid out in the form of dividends but still accrues to investors as a result of their direct investment.

The return can be calculated as the ratio between the income generated by the FDI in a given year (interest, dividends and reinvested earnings[1]) and the outstanding amount of FDI in the previous year. Any changes in the valuation of the FDI position (e.g. as a result of fluctuating share prices or exchange rates) are not regarded as income according to this definition.

Over the period considered (2013-2015), the return on Belgium's outward FDI averaged 2.5 %. The return that

CHART 5 RETURN ON AND THE PROPORTION OF EQUITY IN DIRECT INVESTMENT



Sources: EC, ECB, NBB.

the rest of the world received on direct investments in Belgium came to 3.1 %. Since the return on the liabilities exceeds that on the assets, Belgium records a negative net income on its FDI, including in view of its slightly negative net direct investment position.

This adverse result is attributable to an abnormally low yield on Belgium's direct investment in other countries, rather than an abnormally high yield on Belgium's liabilities, because the return on direct investment in Belgium is comparable to that in neighbouring countries. However, the return that Belgium makes on direct investments in the rest of the world is the second lowest among the euro area countries for which data are available.

The low return is due to the composition of Belgium's FDI. In contrast to neighbouring countries, Belgium's outward foreign direct investment consists mainly of (intra-group) loans. Generally speaking, countries whose FDI consists mainly of equity – and therefore not loans – make higher returns. The unfavourable composition of the FDI in that respect is also evident from the clear negative net position in equities (table 3). The direct investment that Belgium receives in the form of equity from the rest of the world exceeds its own FDI in that form by 46.7 % of GDP. That outcome is attributable largely to capital in transit[(1)].

(1) When this capital enters Belgium it often takes the form of equity for tax reasons (notional interest deduction); when it leaves Belgium it often does so in the form of a loan.

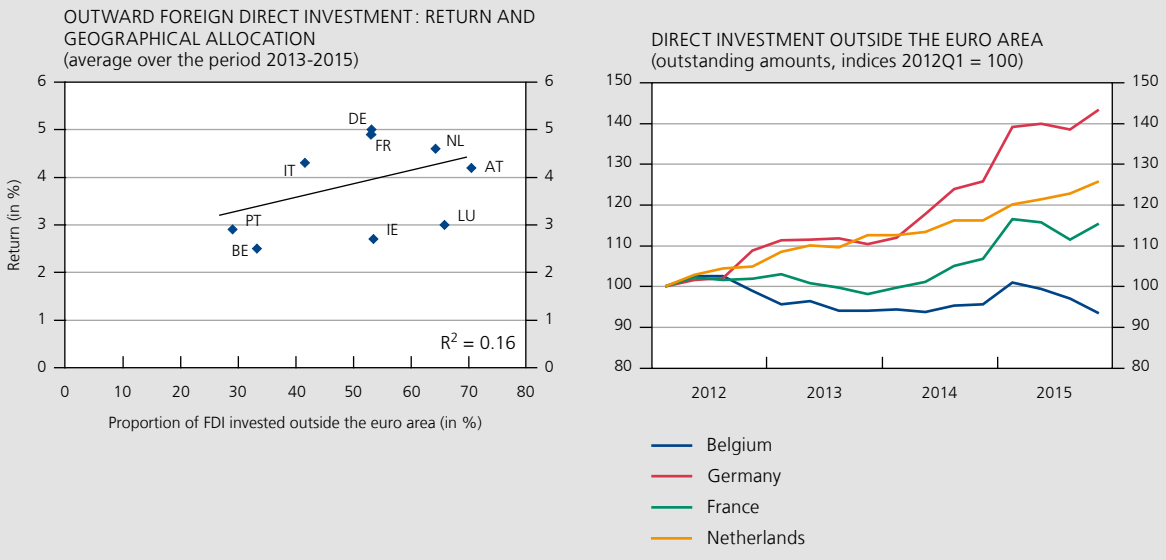
But even where Belgium's direct investments take the form of equity capital, the return is still lower (3.6 %) than that achieved by neighbouring countries on their total direct investments (equity and loans combined). This shows that apart from the chosen financial instrument (equity versus loans) there are other factors accounting for the disappointing return.

The return that other countries make also illustrates that FDI offers a potentially high yield. Over the period 2013-2015, the neighbouring countries made a return on their FDI of 4.4 %, and that was in a low interest rate environment. The high return nevertheless has to be weighed against the risk incurred, which in the case of direct investment is generally greater than for other forms of investment. It should be noted that the return on direct investments also includes the retained earnings and/or the realised loss.

The higher return that other countries make is perhaps attributable to the fact that their FDI focuses more on riskier markets, such as the emerging economies, where yields often exceed those in the developed economies.

The return does indeed appear to have a positive link with the proportion of their FDI that countries invest in markets outside the euro area. Belgium's direct investment is heavily concentrated on the European market: markets outside the euro area account for only a third of the total direct

CHART 6 OUTWARD FOREIGN DIRECT INVESTMENT: RETURN AND GEOGRAPHICAL ALLOCATION



Sources: EC, NBB.

investment, whereas neighbouring countries place (considerably) more than half of their direct investment outside the euro area. It should be noted that Belgium's strong concentration on the European market is due largely to direct investment in Luxembourg (Belgium's main investment destination, representing 20 % of its total direct investment). Since most of that consists of direct investment in holding companies and investment funds based there, it is likely that Belgium ultimately holds more outside the euro area than these figures indicate. But even assuming that most of the direct investment via Luxembourg is held outside the euro area[1], the share of those markets in Belgium's outward FDI is still relatively small.

Measured by the outstanding amount, the neighbouring countries have also systematically stepped up their direct investment outside the euro area since 2012, while Belgium has seen its outstanding direct investment decline (–6.5 %) on those markets, so that its market share has fallen. The neighbouring countries therefore seem to have taken greater advantage of the faster growth outside the euro area.

(1) On average, 66 % of direct investment by Luxembourg in 2015 was destined for investment outside the euro area.
(2) The firm data generally form the principal source for producing the macroeconomic aggregates. As a rule, the data need to undergo processing in order to compile these statistics, e.g. processing to comply with the current statistical rules, extrapolation if the collected data are not exhaustive, correction if they are clearly incorrect, or arbitrage to ensure consistency with other statistical series.

3. Real aspects : typology of multinationals and impact on Belgium's real economy

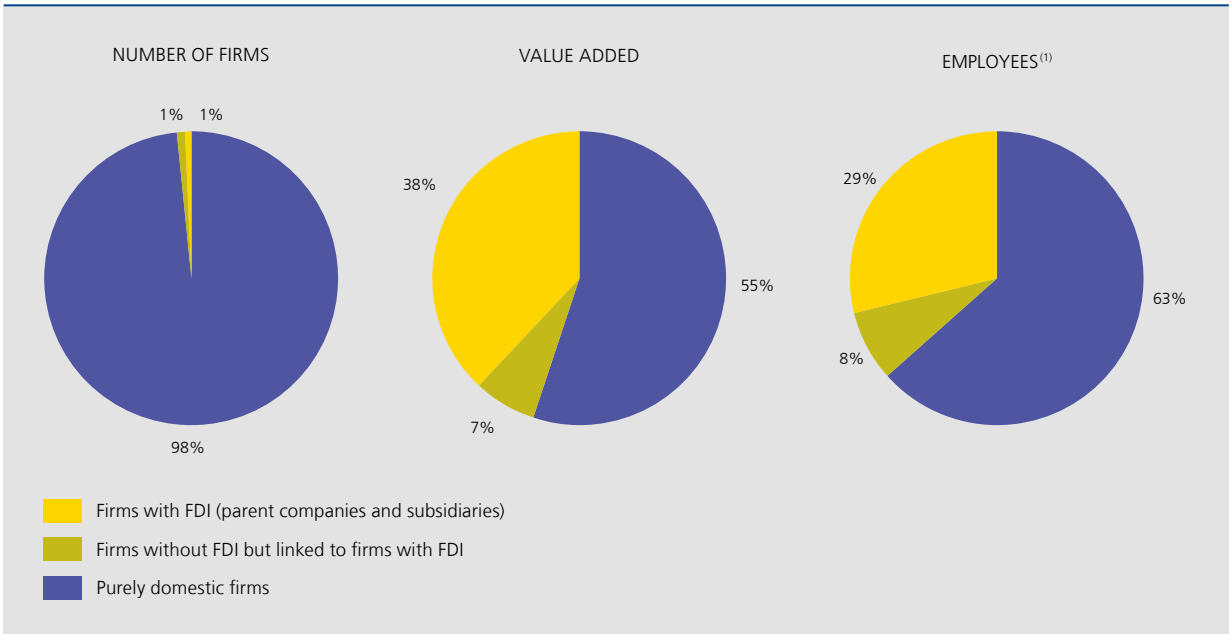
The rest of this article uses firm data to gain an accurate idea of the influence of FDI on the real economy. On that basis, it is possible to estimate the share of the multinationals in value added and employment, and their contribution to the trade balance and real investment. To that end, the firm data on FDI from the balance of payments were linked to the firm data from the Central Balance Sheet Office and the foreign trade. Those databases have a high coverage ratio since they concern almost all non-financial corporations in the private sector, excluding the self-employed. However, it is worth mentioning that firm data, despite their quality, are non-adjusted gross data, in contrast to the available macroeconomic statistics[2].

3.1 Weight of the multinationals in the Belgian economy

The use of firm level data makes it possible to break down value added and employees on the basis of a direct investment relationship (if any) with the rest of the world. To arrive at an accurate diagnosis, resident non-financial corporations excluding self-employed people were divided into

CHART 7 WEIGHT OF THE MULTINATIONALS IN THE BELGIAN ECONOMY

(2014, total of non-financial corporations in the private sector, excluding self-employed people)



Source : NBB calculations.
(1) In full-time equivalents.

three categories. The first comprises the multinationals, i.e. firms effecting inward or outward FDI. That therefore includes the Belgian parent companies with subsidiaries in other countries, and the Belgian subsidiaries of foreign parent companies. The second category comprises firms which have no FDI of their own but are usually linked to multinationals. In practice, they either own more than 50 % of a firm in the first category, or are more than 50 % owned by such a firm. In a way, they can be called firms with an "indirect" investment relationship with the rest of the world. Finally, the purely domestic firms complete the typology. They have no FDI relationships[1] and are not linked to multinationals.

Belgium has relatively few multinationals and associated firms. In 2014, they represented 2 % of the non-financial enterprises in the private sector excluding self-employed people. It should be noted here that the multinationals comprise around 2 100 Belgian subsidiaries of foreign groups, compared to about 600 Belgian parent companies. Although the multinationals are relatively few in number, together with their associated companies they nevertheless create 45 % of value added and employ around 37 % of wage earners. Their small number combined with their economic importance indicates that the multinationals are generally very large. Since their share of value added outweighs their share of employees, it can also be said that the apparent productivity of wage earners in multinationals is relatively higher.

As well as that, multinationals often also act as a catalyst for an economy's productivity. The economic literature demonstrates spillover effects in that connection. Thus, according to NBB (2016), purely domestic firms that deal with multinationals in buying or selling intermediate goods and services are more productive than other purely domestic firms.

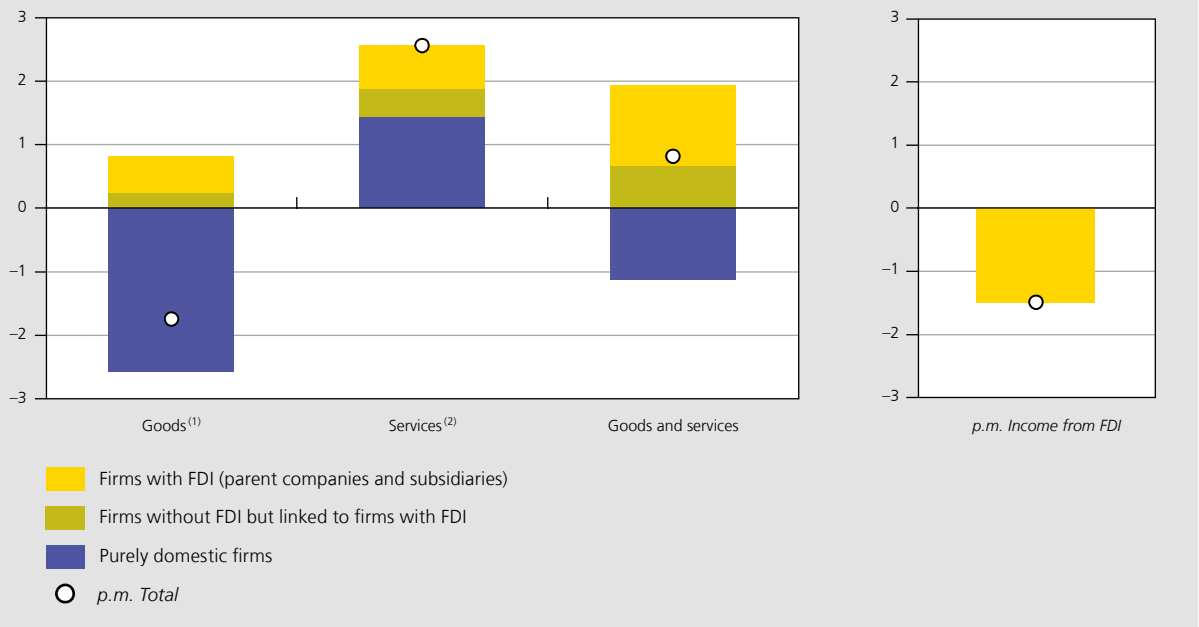
The multinationals and their associated firms also play a crucial role in international competitiveness. On the basis of certain assumptions[2], it is possible to estimate their direct

(1) They have no FDI relationships – neither flows nor outstanding amounts – for the year in question.

(2) The foreign trade figures concerning international trade in goods cover only about 90 % of the total flows, because the trade reporting obligations in the EU are subject to thresholds which have changed over the years. In 2015, a firm only needs to report trade flows in the EU if they exceed € 1 million in the case of exports or € 1.5 million in the case of imports. However, since the surveys include all multinationals, it was assumed that domestic firms accounted for the trade in goods not recorded in the microeconomic data. Conversely, in the case of services, no assumption was made because the data are collected via a survey covering a representative sample of firms which cannot be guaranteed to include all the multinationals. With the exception of the amounts that individuals spend on travel, which therefore do not appear in the data collected, the coverage of international trade in services nevertheless exceeds 85 %.

CHART 8 WEIGHT OF THE MULTINATIONALS IN NET EXPORTS

(2014, estimates of the direct contribution to the current account of non-financial corporations in the private sector excluding self-employed people, in percentage points of GDP)



Source : NBB calculations.

(1) Estimates based on foreign trade data according to the national concept.

(2) Estimates based on the balance of payments survey.

contribution[1] to the trade balance. In 2014, that contribution was positive for both goods and services. According to the estimates, it came to almost 1.9 percentage points of GDP in 2014. In contrast, purely domestic firms[2] made a negative contribution to the trade balance, in particular because they imported more goods than they exported.

It is interesting to compare the net exports of the multinationals with the findings on net income from FDI set out in section 2.1. Although the FDI income paid to the rest of the world exceeds the FDI income received from the rest of the world, the multinationals' exports of goods and services nevertheless exceed their imports. In the end, those two findings have opposing effects on the current balance, which comprises both items[3]. However, we must avoid the hasty conclusion that the proceeds from the exports of goods and services produced by multinationals in Belgium are repatriated to other countries, because we are talking about net exports here, not profits. Also, section 2.1 showed that the negative FDI net income is due mainly to the low return on outward FDI.

3.2 Foreign direct investment, a source of finance for real investment?

So far we have analysed the economic weight of multinationals in regard to value added, employment and contribution to the trade balance. However, FDI is often also mentioned as a potential source of finance for real investments, such as purchases of machinery or land, or construction projects, but also expenditure on research and development, patents, etc. To test this statement on the basis of Belgian data for the period 2008-2014, it is necessary to conduct a detailed analysis of capital movements between Belgian multinationals and the foreign companies in their group.

Such an exercise sheds further light. The FDI flows reported in the available macroeconomic statistics and described in section 1.1 mask a part of the financial transit movements. Those transit operations, primarily seen in Belgian subsidiaries of foreign parent companies, increase the inward and outward capital flows.

First, many Belgian multinationals receive a capital contribution from foreign companies in the group and lend to foreign group companies in the same year. Those movements are due partly to the notional interest scheme that provides an incentive for firms based in Belgium[4] to increase their equity capital, particularly by means of foreign capital. However, they can offset that transaction by granting a loan in exchange to group companies based elsewhere in the world. Next, in the same year, new loans are also granted and existing loans are redeemed, as certain subsidiaries in Belgium perform the role of financial centre for their whole group by simultaneously receiving and granting loans. Finally, financial movements may offset one another at aggregate level. For instance, some multinationals may receive capital while others provide capital for foreign firms in their group.

Between 2008 and 2014, the total capital inflow[5] via FDI relationships averaged more than € 800 billion a year. The capital outflow was similar in size. That is true both for Belgian subsidiaries of foreign parent companies and for Belgian parent companies, but the amounts involved are much greater for the former. However, those movements largely offset one another at macroeconomic level.

This capital in transit is not confined to a small group of firms, or just a few holding companies. Every year, almost 90 % of Belgian multinationals received capital from a foreign firm in their group. In about 42 % of those cases, the capital outflow exactly matched the inflow. For 36 % of those multinationals there was also a capital outflow to foreign companies in the group, although it was smaller than the inflow. Nonetheless, that outflow averaged over 80 % of the incoming amounts. Finally, just 22 % of those multinationals received foreign capital without at the same time exporting capital. Here it should be noted that financial transit operations are not confined to subsidiaries of foreign groups, since the percentages for Belgian parent companies on their own are similar. As already pointed out, however, the amounts involved are smaller.

To determine whether foreign resources are used to finance real investment, the annual net inflow of foreign capital was first calculated for each firm by deducting the capital outflow from the inflow. Next, we examined the correlation between that annual net inflow and real investment on an annual basis[6]. This comparison made

(1) The exercise only takes account of the direct contribution. It is possible that, in producing goods or services for export, multinationals purchase intermediate goods and services from Belgian firms which must first import them. However, it is difficult if not impossible to estimate this indirect contribution to the trade balance.

(2) By definition, the direct contribution of purely domestic firms to the trade balance originates only from firms which export and/or import, as other purely domestic firms do not engage in trade in goods or services with foreign firms.

(3) It should be noted that it is impossible to calculate the total direct contribution of multinationals to the current account balance in the absence of data on the net proceeds of portfolio investments.

(4) Here it should be noted that the scheme applies equally to both multinationals and purely domestic firms.

(5) More specifically, with regard to loans, a capital inflow (or outflow) is defined from the point of view of the Belgian firm as an increase (decrease) in the debt towards the foreign counterparty in the liabilities of the Belgian firm, or a fall (rise) in the claims on the foreign counterparty in the assets of the Belgian firm. In regard to the equity capital, a capital inflow (or outflow) from the point of view of the Belgian firm is defined as either an increase (decrease) in the equity by the foreign counterparty in the liabilities of the Belgian firm, or as a fall (rise) in the stake owned by the foreign counterparty in the assets of the Belgian firm.

(6) By focusing solely on firms with positive real investments, since demand for finance does not arise in the case of asset sales (real disinvestment). The exercise takes no account of any time lag between the financing and the real investment. However, econometric analysis reveals that there is a negative link between the net inflow of capital in year t and the real investment in t+1, while the link is positive, albeit with a very low coefficient, if the net inflow of capital and the real investments occur in the same year.

it possible to determine the proportion of that real investment potentially covered by that net inflow. This is a question of potential funding, because if the inflow of foreign money coincides with the real investment, there is no formal certainty that the inflow was actually used to fund that investment.

The results of that analysis are shown in chart 9, indicating that between 2008 and 2014, multinationals accounted for 33 % of real investment in Belgium. Part of that, namely 9 percentage points, was potentially funded by a net inflow of foreign capital. The remaining real investment by multinationals, 24 percentage points, was funded via alternative sources, such as bank finance or domestic internal finance. For Belgian firms linked to multinationals, there appears to be a correlation between their real investment and the net inflow of foreign capital into the group to which they belong amounting to 2 % of real investment in Belgium. Once again there is no certainty about the source of funding, as no information is available on any transfer between the group entity recording the capital inflow and the associated firm making the investment. It is only possible to state that, at group level, the real investment and the net inflow of foreign capital took place simultaneously.

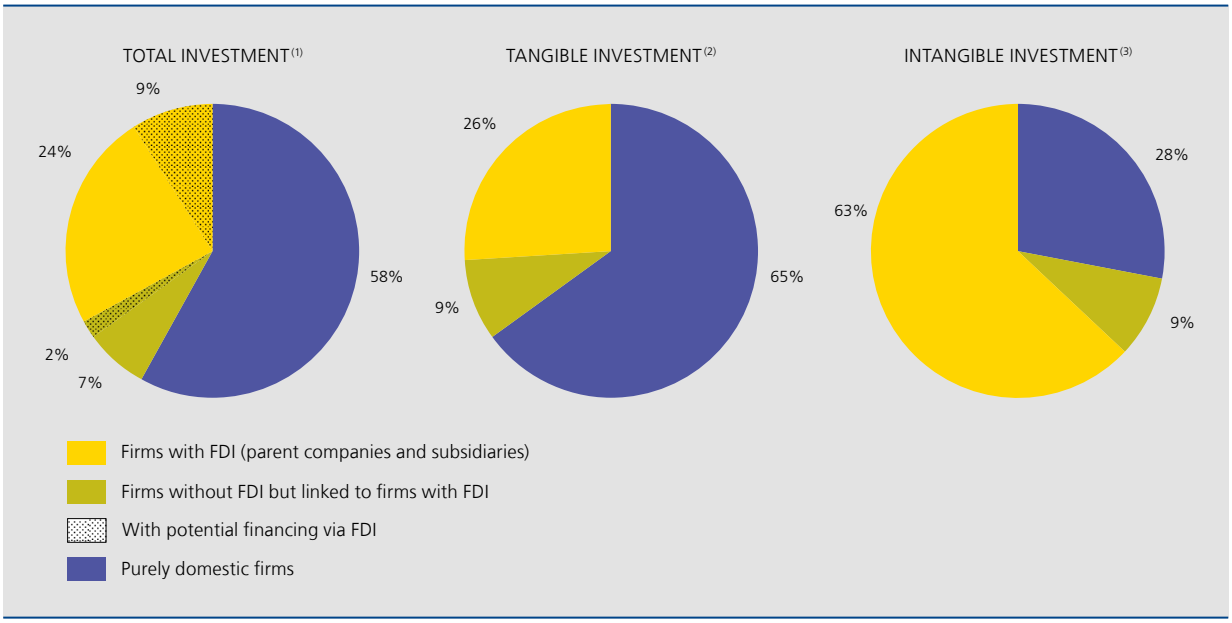
Overall, 11 % of total real investment in Belgium was therefore potentially financed with foreign capital. For information, the amounts in question represent less than 1 % of the total inflow of foreign capital. Although that is considerable, it can ultimately be said that a large proportion of it relates to financial transit, and only a very small percentage funds real investment in Belgium, even in a crisis period when it may be more difficult to raise finance on the local market.

The economic literature contains few articles on that subject, partly because access to firm data is limited. Ali-Yrkkö and Leino (2014) conducted a study of this kind on the basis of Finnish data. Their conclusions tally fairly closely with this analysis. In particular, they show that FDI flows feature substantial financial transit. They also conclude that the capital inflow makes a minimal contribution towards funding the real economy in Finland.

Multinationals perform a crucial role for growth potential. Together with their associated Belgian firms, they accounted for 42 % of real investment in Belgium between 2008 and 2014, although only a small proportion of that was funded with foreign capital. Those results are not attributable to exceptional investments occurring only in

CHART 9 REAL INVESTMENT AND POTENTIAL FINANCING VIA FOREIGN DIRECT INVESTMENT

(period 2008-2014, total of non-financial corporations in the private sector excluding self-employed people)



Source : NBB calculations.

(1) Total real investment is determined on the basis of the company balance sheets. The figure provides an estimate of the gross investment in fixed assets included in the national accounts and is obtained as the difference between purchases and sales of fixed assets.

(2) Tangible investment, determined on the basis of the tangible fixed assets on company balance sheets, includes plant and machinery, equipment, furniture, rolling stock, leasing and similar rights, assets under construction and advance payments.

(3) Intangible investment, determined on the basis of the intangible fixed assets on company balance sheets, comprises research and development costs, concessions, patents, licences, knowhow, trademarks and similar rights, and goodwill.

one year, since a similar breakdown is evident for capital stocks.

The analysis can be refined, as real investment is subdivided into tangible investment, that accounts for the major proportion, and intangible investment. The share of multinationals in the latter, which includes research and development costs, concessions, patents and licences, is relatively larger. That is due partly to the fact that only large firms – many of which are multinationals – have the resources to fund that type of investment. However, the proceeds from intangible investment benefit the whole group, and not just the institutions established in Belgium. Equally, Belgian firms owned by international groups can benefit from research conducted by sister firms in other countries. Conversely, the geographical aspect is much stronger for tangible investment comprising land, buildings, plant and machinery, equipment, furniture, rolling stock, etc., because those investments are directly linked with the domestic production of goods and services. However, multinationals account for a relatively smaller share of that type of investment.

3.3 Multinationals' survival and developments in employment since 2008

Since 2008 the press has contained reports on various multinationals slashing their workforce in Belgium, or even terminating their activities. In that connection, it is useful to conduct an econometric analysis of the survival of businesses between 2008 and 2014 according to their status. This sub-section sets out the findings separately for parent companies and subsidiaries, since the two categories of multinationals differ greatly from one another[1]. The first two specifications of the econometric exercise reveal that the chance of a parent company or subsidiary active in 2008 still being active in 2014 is 15 percentage points higher than for purely domestic firms. However, that is largely attributable to the fact that multinationals are generally bigger. Large firms have a much better chance of survival than small ones, for which the turnover rate is much higher. The same can be said of the most productive firms. The effects of size (specification 3) and productivity (specification 4) were therefore neutralised. The difference in the chance of survival between parent companies and purely domestic firms is no longer significant if the firms are roughly the same size (and the same productivity). Conversely, the chances of survival of subsidiaries are considerably smaller than those of purely domestic firms of the same size (and the same productivity). That finding is in line with the statement that subsidiaries of foreign groups have weaker local roots than domestic firms with the same characteristics, as it is easier for foreign groups

(1) The multinationals were divided according to the nationality of their parent company. If the parent company is a foreign (Belgian) firm, the multinational is placed in the group of subsidiaries (parent companies).

TABLE 4 MULTINATIONALS' CHANCES OF SURVIVAL – ECONOMETRIC RESULTS[1]

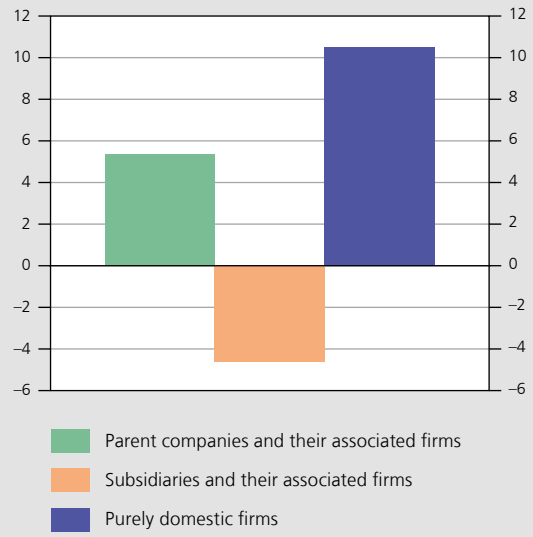
(differences with respect to purely domestic firms)

	Marginal effects on chances of survival between 2008 and 2014			
	(1)	(2)	(3)	(4)
Parent company	0.152***	0.152***	–0.027	0.017
	(0.017)	(0.017)	(0.023)	(0.022)
Subsidiary	0.150***	0.142***	–0.086***	–0.068***
	(0.009)	(0.010)	(0.014)	(0.014)
Number of employees (in log)			0.088***	0.084***
			(0.001)	(0.001)
Productivity (in log)				0.013***
				(0.000)
Sectoral dummies	No	Yes	Yes	Yes
Number of observations	143 323	143 292	143 292	143 292

Source: NBB calculations.

(1) The table shows the average marginal effects obtained on the basis of a probit-regression conducted on a sample of firms in which paid employment was not equal to zero in 2008. It is assumed that a firm has survived if it was still active in 2014 and had more than zero jobs at that time. The 2008 values are used as the explanatory variables. The standard deviations are shown in brackets. The entry *** indicates a significance threshold of 1 %; if there is no entry, the significance threshold of 10 % was not reached.

CHART 10 EMPLOYMENT IN THE PERMANENT FIRMS[1]
(changes between 2008 and 2014, in %)



Source: NBB calculations.
(1) Firms are regarded as permanent if they had more than zero employees in 2008 and 2014 and did not change their status during that period.

to transfer their activity to other production locations, particularly in periods of weak economic activity.

However, the impact on employment is not confined to the disappearance of firms. In the permanent firms, i.e. those active in 2008 and in 2014 and not changing their status during that period[1], there were also changes in employment, which was up by more than 10 % for purely domestic firms and by almost 5 % for parent companies and their associated Belgian firms, whereas it was down by almost 5 % for the subsidiaries of foreign groups and their associated firms in Belgium. Although these developments occurred in a difficult economic climate, they again appear to indicate that multinationals are less firmly anchored, particularly the subsidiaries of foreign groups.

However, the total change in employment in the subsidiaries of foreign groups and their Belgian associated firms was less favourable than that in the permanent firms alone. In order to determine the total change in the number of jobs, job losses resulting from the disappearance of certain firms and job creation in new firms are also taken into account, though that criterion has the disadvantage that changes of status are also included.

(1) Permanent firms are defined more specifically as firms with more than zero employees in 2008 and 2014 which did not change their status during that period. The three types of status in question are (i) purely domestic firms, (ii) subsidiaries and their associated Belgian firms, and (iii) parent companies and their associated Belgian firms.

Conclusion

This article analyses the economic impact of Belgium's direct investment, both inward and outward. On the basis of new data, the article examines whether direct investment relationships with other countries generate an income for the Belgian economy, and what contribution they make to the real economy.

Alongside its important trading relations, Belgium also maintains close financial links with the rest of the world. The direct investment confirms Belgium's status as a small, open economy. The ratio between the outstanding volume of Belgium's inward and outward FDI and GDP (208.7 % and 208.2 % of GDP respectively at the end of 2015) is considerably higher than the average for the euro area countries (132 % and 156 % of GDP). However, a substantial part of that FDI concerns capital in transit, partly as a result of the policy aimed primarily at attracting direct investment, especially by means of tax incentives such as the notional interest deduction.

In net terms, and thus corrected for capital in transit, the direct investment that Belgium receives exceeds its direct investment in other countries. At the end of 2015, net outward investment thus stood at –0.5 % of GDP. This is an atypical situation for a developed economy with a substantial net savings surplus (62 % of GDP at the end of 2015). The Belgian economy builds up its assets in other countries in the form of portfolio investment and investment via the financial sector, rather than via direct investment.

Belgium loses net income to other countries on its direct investment relationships (–1.8 % of GDP at the end of 2015), and that weighs on the current account. This adverse financial outcome is due both to the low net outward FDI and to a relatively low return on Belgium's direct investments in other countries (2.5 % over the period 2013-2015) in comparison with the return that other countries achieve on investments in Belgium (3.1 %). The relatively meagre yield on Belgium's outward FDI – including compared to what neighbouring countries make on their FDI (4.4 %) – is attributable partly to the composition of FDI. For instance, Belgium's outward FDI comprises a large volume of intra-group loans (and therefore relatively few participating interests in the form of equity), and markets outside the euro area are under-represented.

Firms that establish direct investment relationships with other countries are of great economic importance in

real terms. Although they are relatively few in number (1 % of the total number of firms in the private sector in 2014), they create a substantial share of the value added (38 %) and have a large number of employees (29 %). However, they have also suffered as a result of the economic crisis, which primarily affected jobs in Belgium-based subsidiaries of foreign groups to a much greater extent than jobs in Belgian parent companies and purely domestic firms.

Moreover, multinationals play a key role in external competitiveness by making a considerable contribution to Belgium's net exports (1.3 percentage points of GDP in 2014). They boost growth potential by accounting for 33 % of real investment in the private sector (and in particular 63 % of research and development), though the bulk of that is not funded by incoming foreign capital.

The substantial weight of multinationals in Belgium illustrates the importance of a policy that focuses on the attractiveness of the Belgian economy. Nonetheless, tax incentives such as the notional interest deduction often result in FDI that comprises a significant proportion of capital in transit, which is not a source of funding for real investment. At the same time, direct investments by Belgian firms in other countries should not be disregarded. Raising the volume of outward FDI would diversify the Belgian savings surplus and could potentially yield a higher income for the Belgian economy, certainly if the return on outward FDI would approach that in neighbouring countries.

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How to stimulate entrepreneurship in Belgium ?

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H. Godefroid (*)

Introduction

It is generally acknowledged that entrepreneurship is very important for a country's economic growth. Numerous institutions at both national and international level are therefore conducting research on this subject. This concerns both governmental organisations such as the OECD and the EC, and private initiatives such as the Global Entrepreneurship Monitor (GEM). Among other things, the many studies that these organisations publish quantify the performance of the different countries and list the various factors which may affect the development of entrepreneurship. The list of these potential determinants is generally very long, as there are many factors that influence the decision on whether or not to establish a self-employed activity or a business. It is not only financial and economic factors, but also more sociological issues that are significant here, such as attitudes towards entrepreneurship or the approach to risk.

It is often suggested that Belgium's entrepreneurship performance is mediocre. However, few studies provide convincing evidence of that, let alone investigate the reasons for it.

The purpose of this article is to provide a succinct overview of entrepreneurship in Belgium. In that respect, it analyses the two arguments mentioned above. It also examines the main factors encouraging or inhibiting the establishment of businesses, and Belgium's performance in that regard compared to other countries. By listing the weaknesses, it is possible to identify the main areas where efforts may be required.

The article comprises four sections. The first section concerns the current entrepreneurship situation in Belgium, comparing it with the situation in other European countries. It deals with both self-employed activity and business creation. The second section looks at the link between entrepreneurship and economic growth, and describes the various forms of entrepreneurial activity. Section 3 sets out the factors which may influence entrepreneurship and analyses Belgium's position in regard to each factor. Finally, the fourth section records a series of recent measures designed to stimulate entrepreneurship in Belgium. The article ends with some conclusions and final remarks.

1. Demography of entrepreneurs

Since it has multiple dimensions, entrepreneurship can be defined in various ways. It is a broad concept that the EC defines as follows: "Entrepreneurship is the mindset and process to create and develop economic activity by blending risk-taking, creativity and/or innovation with sound management, within a new or an existing organisation" (EC, 2012). In that respect, an entrepreneur is therefore not only a self-employed person in the usual sense but is also primarily a developer of innovative activities. Entrepreneurship thus comprises numerous facets and can be analysed from various angles. A first indicator of the scale of entrepreneurship is the proportion of the population of working age pursuing a self-employed activity, with or without staff. The creation of new businesses combined with the rate at which firms close down is also

(*) The authors wish to thank E. Dhyne for his comments on an earlier version of this article, and M. Lunati (OECD) for the data supplied.

a measure of the dynamism of a country's business population. These two concepts are complementary since they each describe a specific dimension of entrepreneurship. Moreover, some more detailed breakdowns are available for only one of the two definitions; by looking at both, it is therefore possible to examine additional dimensions.

However, it must be remembered that these data do not offer a complete picture, notably in regard to the implications for employment. New businesses are often small start-ups generating few jobs in the early stages of their development, while the disappearance of some large companies may entail significant job losses. Nonetheless, this dynamic may also favour economic activity and the optimal functioning of the labour market, as the labour which is "freed up" in this way can be redeployed to new and expanding activities.

1.1 Self-employed workers

Various sources can be used to assess the number of self-employed workers. In the specific case of Belgium, we first have the data collected by the National Institute for the Social Security of the Self-Employed (NISSE), which is responsible for managing social security for the self-employed. These data give the number of self-employed workers who are affiliated to social insurance funds; the data are currently available for the period 1995-2015. Various breakdowns are possible. For instance, a distinction can be made according to whether the self-employed activity is the main job, a second job or a retirement activity. These results can then be further refined according to age, nationality, branch of activity, etc.

The national accounts are a second exhaustive source. These data, which are also available for the period 1995-2015, only concern people who are self-employed in their main job; if those with a self-employed activity as their second job were included, that would lead to overestimation of total employment according to the national accounts, as those people often are already included as employees (in their main job). Use of a harmonised methodology within the EU permits international comparison of the results. However, except for a breakdown by branches of activity, a more detailed analysis is not feasible.

(1) The aggregate results are available on the Eurostat website up to 2015. However, to obtain more detailed data, it is necessary to use the microdata supplied by Eurostat, which are available up to 2014.

(2) If an employment contract exists, the person concerned is regarded as an employee.

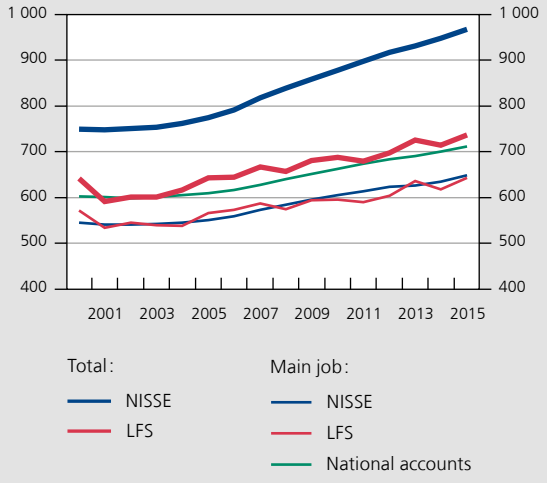
(3) See http://www.inasti.be/sites/rsvz.be/files/publication/brochure_conjoints_aidants_06_2016.pdf.

Finally, the labour force survey (LFS) can also be used. In that survey, the people polled provide information on the occupational status (civil servant, employee, self-employed) that best describes their main job, and their second job if any. These data permit international comparison and detailed breakdowns, and are available for the various countries from the date that they first took part in the LFS; in Belgium's case, that is 1983. The latest results concern 2015 (1).

The NISSE and LFS data permit a distinction between the 'genuine' self-employed and their 'helpers' who regularly assist or stand in for self-employed people without being tied by any employment contract (2). Examples include assisting spouses. For social security purposes, they are regarded as self-employed workers with the same rights and obligations (3), and are therefore registered with the NISSE. Nevertheless, they are excluded from the analysis in this article because in all probability they can not be considered genuine entrepreneurs. However, the national accounts data do not permit that adjustment, since the NAI only publishes the total number of people with a self-employed main occupation, including helpers. In order to compare the number of self-employed people excluding helpers according to the three sources, the number of helpers was therefore estimated for the national accounts and that figure was deducted from the total number.

CHART 1 SELF-EMPLOYED WORKERS (1) IN BELGIUM ACCORDING TO VARIOUS SOURCES

(thousands of persons)



Sources: EC (LFS), NAI (NBB estimate), NISSE.

(1) Excluding helpers.

In regard to the various methodologies used, the three sources present divergent figures for the number of self-employed. If only those self-employed in their main occupation are considered, the estimated number based on the national accounts is higher than that for the other two sources. According to the national accounts, there were around 711 000 self-employed people in 2015, whereas the NISSE and LFS figures came to around 648 000 and 643 000. However, since 2000, these three sources have displayed a fairly similar trend in the number of self-employed people : the figures remained stable up to 2004 before rising at a broadly comparable rate.

If we consider not just those self-employed in their main occupation but the total number of self-employed people (still excluding helpers), the divergences between both available sources are even greater. In 2015, the NISSE recorded almost 970 000 self-employed people, including those self-employed in a second job and pensioners taking up this form of activity. The LFS recorded a total of just under 740 000 people pursuing a self-employed activity as their main job or their second job.

The rest of this sub-section is based on the LFS data. The LFS is a survey, not an exhaustive source, but compared to the NISSE it has the advantage of permitting international comparison of the results. The LFS is based on a broader concept than the national accounts (as it includes secondary self-employed activity) and it permits a very detailed breakdown of the findings from multiple angles.

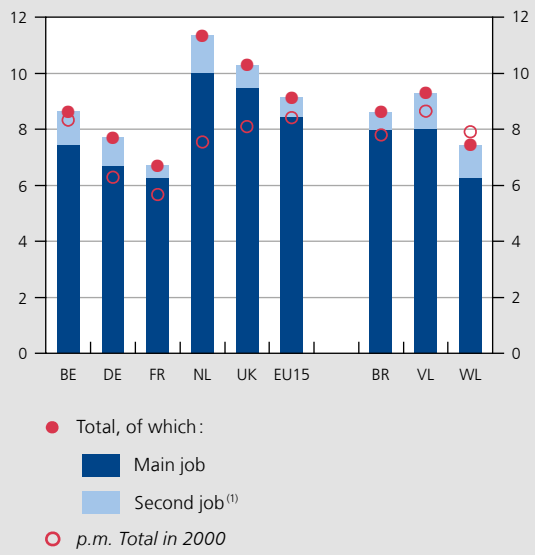
The roughly 714 000 self-employed people recorded by the LFS in Belgium in 2014 (the latest year for which detailed microdata are available) represented 8.6 % of the total population between 15 and 74 years of age. They were mostly self-employed in their main job (7.5 %), but around 1.2 % of people from this age group were employees in their main job who were pursuing a self-employed activity as a second job.

That proportion puts Belgium slightly below the EU15 average[1], which stood at 9.1 %. The difference in relation to the European average is due exclusively to people self-employed in their main job, as Belgium has a higher proportion of self-employed workers in a second job. Compared to the four main neighbouring countries, Belgium is ahead of Germany and France but behind the United Kingdom, and especially the Netherlands. Within Belgium, Flanders has the highest proportion of self-employed workers (9.3 %), followed by Brussels and Wallonia (at 8.6 and 7.4 % respectively).

(1) The "new" EU Member States (which joined the EU in 2004 or later) are excluded from the comparison because their economic structure is still too different from that of the other EU Member States. That is why the EU15 is used as the benchmark.

CHART 2 SELF-EMPLOYED WORKERS[1] IN BELGIUM AND IN THE EU15 IN 2014

(in % of the population aged between 15 and 74 years)



Source : EC (LFS).
(1) Excluding helpers.

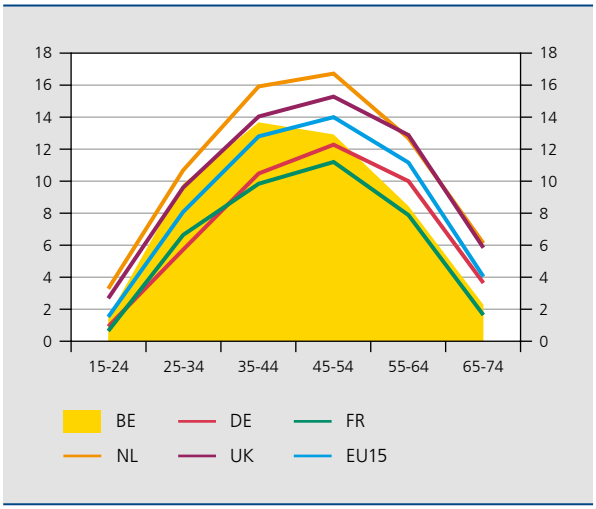
But it should be noted that there has been virtually no change in the proportion of self-employed workers in Belgium since 2000, when it stood at 8.3 %, whereas that ratio has risen significantly in the four neighbouring countries, especially in the Netherlands, but also in the EU15 in general. In Brussels and Flanders, the percentage of self-employed workers likewise increased over that period, but the rise was largely offset by the decline in Wallonia.

The LFS results can be broken down according to age and nationality, among other things. In most EU countries, the proportion of self-employed workers in the population gradually increases with age, before declining after the age of 55. It is interesting that, up to the 35-44 age group, the percentage of self-employed workers in Belgium exceeds the European average and the figures for the four reference countries (excluding the Netherlands). While that proportion continues to increase up to the 45-54 age group in those four countries and on average in the EU, it already declines for that group in Belgium. From that age group onwards, Belgium has a much lower proportion of self-employed entrepreneurs than most other EU Member States.

As regards the breakdown by nationality, the large proportion of self-employed workers among nationals of countries

CHART 3 SELF-EMPLOYED WORKERS[1] IN BELGIUM AND IN THE EU15 IN 2014, BY AGE GROUP

(in % of the corresponding age group)



Source: EC (LFS).

(1) Self-employed in main and second jobs. Excluding helpers.

which joined the EU after 2003 is particularly striking (15 % of the population concerned). That is doubtless due to the restrictions on taking up salaried employment in Belgium, applicable to citizens of Bulgaria and Romania (joined in 2007) and Croatia (joined in 2013) in the first years following the accession of these countries. Since those restrictions did not apply to self-employed activities, self-employed status was attractive as a legal means of gaining access to the Belgian labour market. For Romanians and Bulgarians, this transitional period continued until the end of 2013, while for Croatians it ran until mid-2015[1].

1.2 Business creation

Three main data sources regarding business creation are available

There are various ways of measuring business creation. For that purpose, this article uses three data sources concerning Belgium. Although some of those data are available monthly, this section only considers annual movements since the aim is to highlight structural trends.

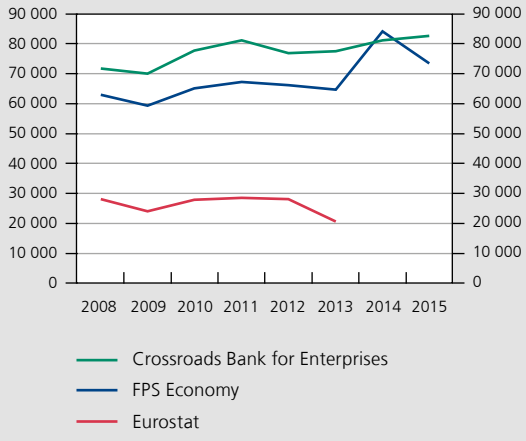
All entities engaging in a commercial activity must register with the Crossroads Bank for Enterprises. That includes not only those subject to VAT but also those which are VAT-exempt, associations, self-employed workers, etc. The new business numbers can be extracted from the data in question. Available since 2005, these data show business creation from an administrative angle.

The data compiled by FPS Economy only concern entities registering for VAT. They indicate new registrations (entities subject to VAT for the first time, those coming under the VAT regime again, and changes of registered office). The data cover both the business operators and the legal entities subject to the VAT legislation. Available since 2008, they show business creation from the tax angle.

Since these two sources only provide information on business creation in Belgium, they do not permit international comparisons. For that purpose, it is necessary to use the Eurostat data on business demography. Those data cover all the EU countries. For Belgium, they are based on the statistics concerning entities subject to VAT. They are adjusted and modified to measure business creation from an economic point of view (see below) and to ensure the international comparability of the data. At present, these data are available for the period from 2008 to 2013.

Comparison of the data obtained from the three sources shows that the way in which business creation is determined (from an administrative, tax or economic point of view)

CHART 4 NUMBER OF BUSINESS CREATION IN BELGIUM ACCORDING TO VARIOUS SOURCES[1]



Sources: EC, Crossroads Bank for Enterprises, FPS Economy.

(1) The data from the Crossroads Bank for Enterprises identify business creation via new registrations of company numbers. The data from FPS Economy comprise new registrations (entities subject to VAT for the first time, those coming under the VAT regime again, and changes of registered office). The Eurostat data are based in Belgium's case on the statistics for those subject to VAT, but they are adjusted to measure business creation from an economic point of view and to ensure international comparability of the data.

(1) For more information, see the FPS ELSD website: http://www.emploi.belgique.be/defaultTab.aspx?id=4886.

is not neutral. Although the pattern is fairly comparable over time, there are significant differences in the level of business creation depending on the source considered. Figures for business creation in Belgium in 2013 from the economic angle (20 694) were only a third or a quarter as many as those recorded in the tax data (64 610) and the administrative data (77 471).

In that connection, it is worth clarifying the criteria that Eurostat uses to define a business creation. According to Eurostat, a business creation must involve the creation of new production factors. It therefore excludes:

- Enterprises that are created by merging production factors or by splitting them into two (ore more)
- Newly established businesses that take over the activity of pre-existing businesses
- Any change in the legal form of an existing business
- Reactivation of businesses that ceased trading less than two years ago
- Any temporary association or joint venture not involving the creation of new production factors.

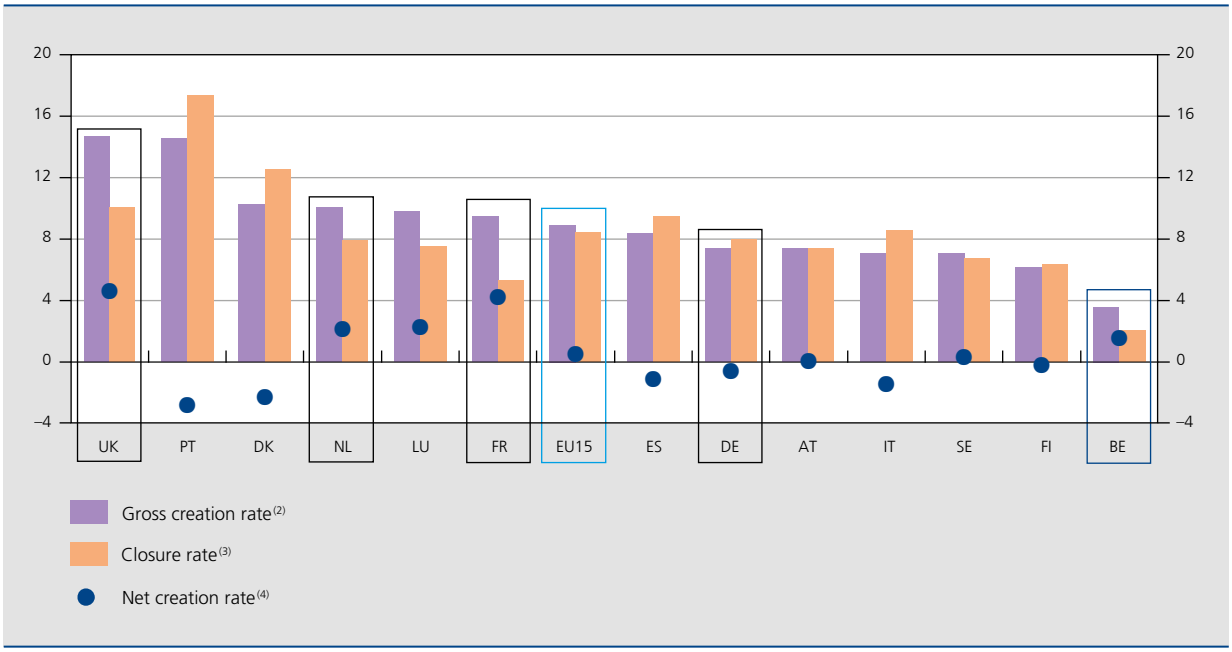
The definition of business creation applied by Eurostat therefore includes only some of the new businesses in the fiscal or administrative sense of the term; that accounts for the significant difference compared to the two other data sources.

The analysis which follows uses the Eurostat data because they permit an economic interpretation. Furthermore, the other sources do not make any international comparisons possible. The data published by Eurostat also have the advantage of being less susceptible to legal changes which may influence business creation from a fiscal or administrative angle. For instance, the abnormally large number of business creations according to the FPS Economy data in 2014 was due to lawyers becoming subject to VAT. The 2014 Eurostat data would not class all those new people subject to VAT as business creations in the economic sense.

Belgium has the lowest gross business creation rate in the EU15

Four indicators can be identified for the purpose of measuring business demography. The first is the gross creation rate. That is equal to the ratio between the number of businesses created during a specified period (year *t*) and

CHART 5 GROSS AND NET BUSINESS CREATION RATES IN BELGIUM AND IN THE EU15[1] IN 2013
(in %)



Source: EC.
(1) EU15 except Ireland and Greece.
(2) Number of business creations in *t* divided by the number of businesses active in *t*.
(3) Number of business closures in *t* divided by the number of businesses active in *t*.
(4) Difference between the gross creation rate in *t* and the closure rate in *t*.

the number of businesses active in *t*. The second is the closure rate, which indicates the ratio between the number of businesses closing down in *t* and the number of businesses active in *t*. The net creation rate corresponds to the difference between the gross creation rate in *t* and the closure rate in *t*. Finally, the business churn rate can be determined by adding together the gross creation rate and the closure rate during year *t*. This last indicator offers information on the general dynamics of a country's economic fabric. To operate at maximum efficiency, an economy requires the least productive businesses to close down in order to free up means of production, and needs new businesses offering good growth prospects to be established and developed.

In 2013, the latest year for which data are available, Belgium's gross creation rate – at 3.6 % – was the lowest in the EU15. That result was similar to the findings in the preceding five years and therefore indicates a structural weakness in Belgium's economy in terms of business creation. In neighbouring countries, the situation is quite different. In France and the Netherlands, the gross creation rate exceeded the EU15 average of 8.9 %. Conversely, Germany scored below that average, but still had a business creation rate which was twice as high as Belgium's. The United Kingdom and Portugal had the highest gross creation rates in the EU15, at almost 15 %.

Although the number of businesses set up in Belgium is small, the number of closures is also low: in structural terms, the business closure rate in Belgium is among the lowest in the EU15. In 2013, 2 % of businesses closed down. In the EU15 on average – and in Germany and the Netherlands – the percentage was four times as high. In France, it was almost triple the Belgian figure.

The combination of a gross creation rate and a closure rate which are among the lowest in Europe implies a very low business churn rate. In that respect, the Belgian economy displays a structural shortage of entrepreneurial dynamism. In contrast, the United Kingdom emerges as a country with a highly dynamic production fabric.

Although the level of business creations and closures was very low in Belgium in 2013, the net creation rate was positive and exceeded the EU15 average (1.6 % compared to 0.5 %). Since 2008, the first year for which data are available, that net creation rate has been positive in each year, indicating that the number of businesses in Belgium is steadily increasing. While three neighbouring countries (France, the Netherlands and the United Kingdom) also recorded a net rise in the number of businesses, Germany has seen a slight decline in the business population each year since 2009.

More businesses are created in certain branches of activity

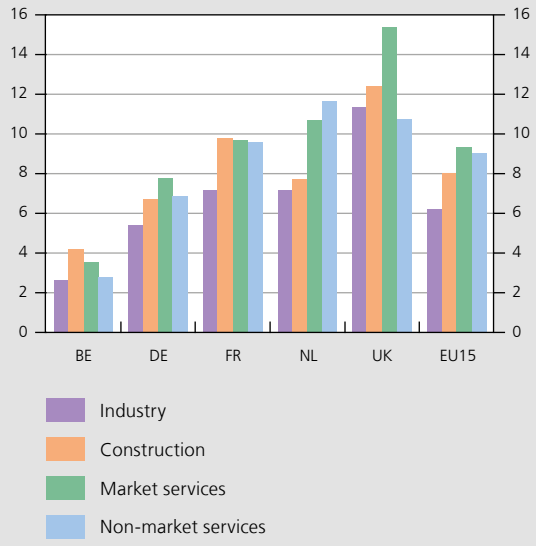
The creation of businesses is not equally dynamic in all branches of the economy. In Belgium, the gross creation rate for all the sectors analysed (industry, construction, and market/non-market services) was lower than in neighbouring countries and was also below the EU15 average. In all those countries, and in the EU15, the gross creation rate is lowest in industry. In contrast, in the services sector – in both market and non-market services – business creation is more dynamic. In 2013, Belgium's highest gross creation rate was in construction. Those findings have remained unchanged since 2008.

Net creation rates by branch of activity also display a divergent picture. In the EU15, the total number of businesses in industry and construction declined in 2013, while the number of businesses in market and non-market services continued to rise. That trend was also apparent before 2013 and indicates the growing importance of the services sector in European economies.

As in France, the Netherlands and the United Kingdom, all sectors of the Belgian economy recorded a positive net creation rate. Although the creation rate in market services in Belgium is higher than the EU15 average,

CHART 6 GROSS CREATION RATE BY BRANCH OF ACTIVITY IN 2013[1]

(in %)



Source: EC.
(1) EU15 except Ireland and Greece.

it was still lower than in neighbouring countries with the exception of Germany, where the number of businesses declined in all branches in 2013, as it had done in each of the preceding years.

Flanders records the largest number of business creations while the Brussels-Capital Region is the most dynamic

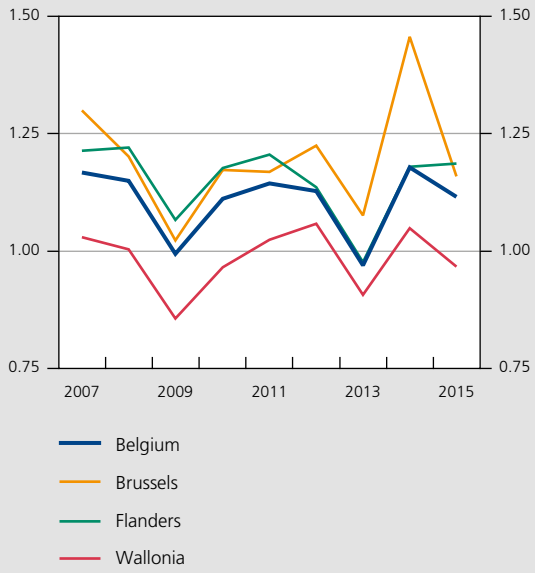
The Eurostat data do not permit analysis of business creation by Region. That analysis is therefore based on the data from FPS Economy. The new VAT registrations were broken down by Region according to the location of the head office. That criterion is not neutral, and could in particular drive up the figures for the Brussels-Capital Region, as many (new) firms opt to locate their head office in the capital while pursuing their economic activities in another part of the country.

The share of the three Belgian Regions in business creation has been fairly constant since 2008. In 2015, of the businesses subject to VAT in Belgium for the first time, around 57 % had their head office in Flanders, 14 % in Brussels, 25 % in Wallonia and, finally, 4 % in another country. If these data are compared with the regional percentage of the total number of VAT-registered businesses, we observe that the proportion of firms with their head office in Brussels has been rising gradually since 2007. In the Walloon Region, the opposite trend is apparent, while Flanders is maintaining its position.

For a more detailed comparison of the business churn rate at regional level, the entrepreneurial dynamics of a Region can be examined on the basis of the ratio between the number of businesses subject to VAT for the first time and the number of closures. The higher that ratio, the greater the extent to which business creations compensate for business closures. Conversely, if that ratio is less than 1, business creations are insufficient to offset business closures in the year in question.

The Walloon Region displays the weakest entrepreneurial dynamism, with a business creation/closure ratio which is regularly less than 1. Consequently, the businesses created there only make up for some of the business closures. Conversely, in Flanders and Brussels, entrepreneurial dynamism is generally more favourable (creation/closure ratio higher than 1).

CHART 7 ENTREPRENEURIAL DYNAMISM[(1)] IN BELGIUM AND IN THE REGIONS



Sources: FPS Economy, NBB calculations.

(1) Ratio between the number of businesses subject to VAT for the first time and the number of closures. The regional breakdown is based on the location of the head office. The data on businesses with a head office in another country were disregarded.

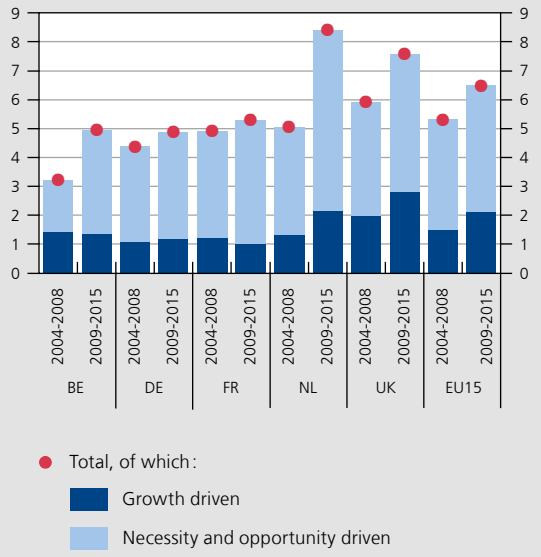
2. Forms of entrepreneurship and economic growth

Two major reasons for becoming an entrepreneur...

The means of measurement used in the previous section make no distinction between the various reasons for setting up a business. There are numerous motives, but the literature highlights two in particular. The first type of person setting up a business is interested mainly in making a living or in personal development. Those people set up their own business as an alternative to working as employees. The aim of these entrepreneurs, driven by "necessity" or "opportunity" is therefore either to achieve an income sufficient for themselves and their family, or to increase their income. Such entrepreneurs include, for example, the unemployed who open a small shop, or business executives who set up their own consultancy. The second type of business creator, the "growth-driven" entrepreneurs, mainly wants to seize the opportunity to create and develop an economic project that can generate wealth and jobs, rather than just aiming to make a living or increase their income.

CHART 8 TOTAL EARLY-STAGE ENTREPRENEURIAL ACTIVITY (TEA)[1] AND REASONS FOR BECOMING AN ENTREPRENEUR

(in %, arithmetical averages in the years in question)



Sources : GEM, NBB calculations.

(1) Percentage of the 18-64 age group establishing a firm or running a business no more than 3 ½ years old.

The data collected and analysed by the Global Entrepreneurship Monitor reveal the contribution of these two motives for setting up a business (see for example GEM, 2016). Those contributions are measured as a percentage of Total early-stage Entrepreneurial Activity (TEA), which indicates the proportion of people aged from 18 to 64 years setting up or running a business which is no more than 3 ½ years old. The analysis considered two periods in order to ascertain the structural trend in these various reasons for becoming an entrepreneur, namely a pre-crisis period (from 2004 to 2008) and a post-crisis period (2009 to 2015).

As in the Netherlands, the United Kingdom and the EU15 in general, the TEA has risen in Belgium since the economic and financial crisis. In this country, that increase – from 3.2 % to 4.9 % – is attributable entirely to necessity-driven or opportunity-driven entrepreneurship. In a period of weak growth with limited job prospects, more people evidently opted to set up their own business.

Conversely, growth-driven entrepreneurship has not expanded in Belgium since the crisis, whereas it did so in other European countries. Between 2009 and 2015, that rate (1.4 %) was below the EU15 average (2.1 %) and lower than the figures for the United Kingdom (2.8 %) and the Netherlands (2.2 %), though it exceeded the rates in Germany (1.2 %) and France (1.0 %).

These distinctions between the various forms of entrepreneurship undoubtedly have varying implications for the dynamics of business creation in terms of economic performance and efficient allocation of the means of production.

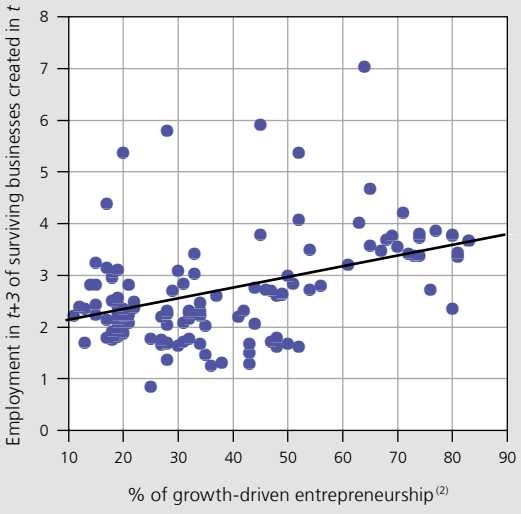
… with varying growth prospects

The influence of entrepreneurship on economic growth has already been analysed many times, for example in Acs (2006), Naudé (2013) and Kritikos (2014). There appears to be a consensus in the literature concerning the impact of entrepreneurial motivations on economic activity. The various forms of entrepreneurship do not all generate growth. The two categories of entrepreneur therefore have a divergent impact on economic performance. It seems obvious that entrepreneurship driven by necessity or opportunity will generate less economic growth in the long term.

In addition, our analysis reveals that – in the case of the 28 EU countries – a higher proportion of growth-driven

CHART 9 GROWTH-DRIVEN ENTREPRENEURSHIP AND AVERAGE EMPLOYMENT AFTER 3 YEARS IN NEW BUSINESSES[1]

(EU, firms created between 2005 and 2010)

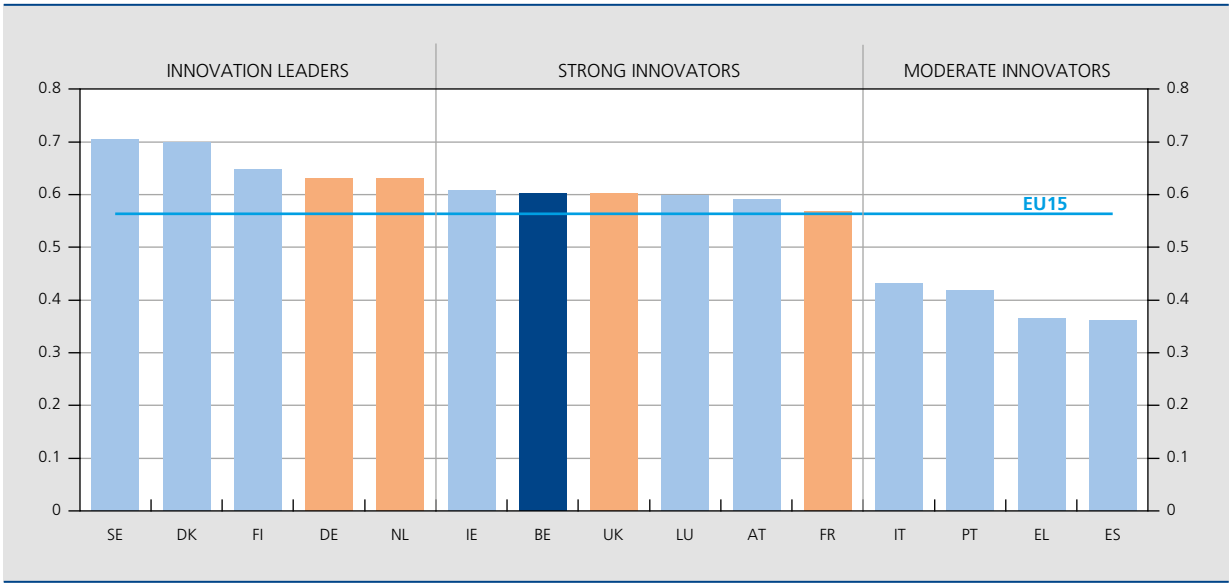


Sources : EC and NBB calculations.

(1) Significant correlation at 1 %. The results are similar for employment in firms surviving for one to five years after being set up.

(2) Proportion of businesses set up as limited companies in the total number of businesses established.

CHART 10 EUROPEAN INNOVATION SCOREBOARD [1] IN 2015



Source: EC.
(1) Scale from 0 (not very innovative) to 1 (highly innovative).

entrepreneurs has a significant correlation with stronger growth of the newly created businesses for up to five years after their establishment. That growth is measured on the basis of the average employment in those firms for the years 2008 to 2013; the percentage of growth-driven entrepreneurs is equal to the proportion of businesses set up as a limited liability company.

For instance, examination of the situation after three years shows a positive correlation between the percentage of growth-driven entrepreneurs in *t* and average employment in the new firms in *t+3*. That positive correlation may indicate a greater likelihood of survival for those businesses, but also stronger growth if they do survive. The first phenomenon is probably less marked because growth-driven entrepreneurs develop potentially riskier projects; the evident correlation is therefore attributable mainly to the second phenomenon.

Apart from encouragement for the creation of businesses, the subsequent development of young enterprises with high potential is therefore also crucial for promoting economic growth.

Growth-driven entrepreneurship is also often presented in the literature as a source of radical innovations. The extent of that type of entrepreneurship could therefore influence the innovative character of an economy. For example, by introducing new products or production processes, innovative entrepreneurs step up the pressure of competition on existing firms, forcing them to innovate too, or go out of business. It should be noted that while growth-driven entrepreneurship can reinforce the innovative character of an economy, it also develops more readily in an innovative economic environment. By creating and disseminating new knowledge, innovative economies have the highest rates of business creation.

In regard to the innovation ecosystem, Belgium is in a relatively favourable position compared to other European economies and therefore offers a fertile environment for creating businesses. On the basis of the data from the European Innovation Scoreboard (EC, 2016), Belgium in common with the United Kingdom and France is classed as a "Strong Innovator" on the grounds of innovation performance which is better than the EU average, but not as good as that of the top performers in that respect, namely the Nordic countries, Germany and the Netherlands.

3. Entrepreneurship determinants

3.1 Method used

As already mentioned, numerous factors influence entrepreneurship. It is therefore not easy to determine exactly why some countries perform better than others. The various institutions that produce publications on the subject,

such as the Global Entrepreneurship Monitor (GEM), the International Institute for Management Development (IMD), the World Bank, the World Economic Forum (WEF), the OECD and the EC, use their own sets of determinants which also encompass a multiplicity of indicators, some borrowed from other institutions. The choice of determinants from one institution or another is therefore more a question of presentation rather than implying major differences of content.

In this article, we opted to use the classification applied by the OECD and the EC. Those institutions identify six types of determinants. One of them, namely the type concerning the creation and dissemination of knowledge, was disregarded in this section as its causal connection with entrepreneurship may work both ways. That is why innovation and Belgium's performance in that respect were discussed in the previous section. Conversely, in the case of the other five groups of determinants, it is intuitively more evident that they influence entrepreneurship but are not influenced by it.

The five types used relate to the regulatory framework, market conditions, access to finance, entrepreneurial capabilities and the entrepreneurship culture. For each group, the OECD put together a set of relevant indicators reflecting their various facets. For instance, the "regulatory framework" group comprises indicators concerning administrative burdens, taxes and regulations governing the product and labour markets. The "market conditions" group includes, *inter alia*, indicators measuring access to foreign markets and the degree of government interference in the economy. "Access to finance" is ascertained by means of a set of indicators concerning access to debt financing and the stock market, for example. In the case of "entrepreneurial capabilities", the indicators concern the population's level of education and the quality of existing management training. Finally, "entrepreneurship culture" comprises the results of surveys on how society views entrepreneurs, the fear of failure, etc. The full list of these indicators is given in OECD (2015).

For each EU15 country, the data on the various indicators selected by the OECD were first collected in a database. However, some of the series were unavailable or incomplete, and the number of indicators for the "entrepreneurial capabilities" and "entrepreneurship culture" categories was very small. The OECD list was therefore supplemented with fuller and complementary series. Altogether, the database thus comprised around 50 indicators (see annex). Of course, it is impossible to examine them all in a single article. Moreover, some indicators are clearly more relevant than others as determinants of entrepreneurship. We therefore used a method summarising for each group of determinants the common information contained in different indicators (see below).

To allow for the use of this technique, the series underwent some adjustments to resolve a number of problems. The annual data relating to a number of indicators – and more particularly those obtained from surveys – proved to be rather volatile. Moreover, the series were expressed in different units, e.g. in percentages of a different variable or on a scale of 0 to 7. Finally, the interpretation of the indicators was not always unequivocal, with conditions more favourable to entrepreneurship having a higher score in some series and a lower score in others[(1)]. For all the indicators, we therefore took the average over the period 2009-2015, and that also resolved the problem of the absence of data for some years. All the series were also normalised around the EU15 average[(2)] and if necessary the data were inverted so that a higher value means a climate more favourable to business creation for all the indicators.

A correlation analysis on the series thus obtained was then conducted per group in order to check whether there was a positive link between the various indicators which were deemed to provide more or less comparable information. Despite the inversion, it emerged that, in each group, some series had a negative correlation with the other indicators, implying that they contained apparently contradictory information. That is unsurprising since the indicators were chosen solely on the basis of their supposed ability to reflect a particular aspect of the group of determinants, whereas in practice – e.g. for the survey results – it is not always clear how the results should be interpreted. The series with a negative correlation were therefore disregarded.

That left a total of 30 series. As regards the regulatory framework, they included, amongst other things, the costs and procedures entailed in setting up a business (–)[(3)], redundancy protection (–) and the protection of property rights. Market conditions were assessed, for example, by means of indicators reflecting the barriers to trade and investment (–) and the governmental share in the economy (–). In the case of access to finance, the country's credit rating and the availability of venture capital were among the indicators used. Entrepreneurial capabilities were assessed on the basis of indicators such as the proportion of people with higher education qualifications and the rate of participation in lifelong learning, or the

(1) This concerns, for example, the costs and procedures involved in setting up a business or the fear of failure, which are used as indicators in the regulatory framework and the entrepreneurship culture respectively.

(2) This implies that, for each indicator on its own, the gross data were standardised. Thus, the scale of all the indicators is comparable, and the EU15 average is systematically equal to zero, facilitating the subsequent interpretation of the results.

(3) A (–) sign after an indicator means that the data in question were inverted.

TABLE 1 ENTREPRENEURSHIP DETERMINANTS USED FOR THE ANALYSIS

Groups	Number of indicators used
Regulatory framework	12
Market conditions	4
Access to finance	6
Entrepreneurial capabilities	4
Entrepreneurship culture	4

Source : NBB.

quality of management schools. Finally, the entrepreneurship culture indicators included, for instance, the status of entrepreneurship and the fear of bankruptcy (–).

A synthetic indicator was then constructed for each group, by applying the 'principal components' method which permits amalgamation of the common information contained in a number of series. Since the various indicators were arranged in groups, the first principal component can be considered an aggregate indicator for the group in question[1]. This method also has the advantage that a weighting is implicitly assigned to the various basic series in order to calculate the principal component : thus, the series which contain the most information (in the statistical sense) have a higher weighting in the calculation of the synthetic indicator[2]. By applying the weightings thus obtained to the values of the countries' basic indicators, we get, for each country and each of the five groups, a single figure which provides a synthetic picture of the country's position in that group of entrepreneurship determinants. That permits comparisons both between countries and in relation to the EU15 average which, by construction, is always equal to zero.

3.2 Results obtained

Overall, the results show that various sub-groups of countries can be identified within the EU15. The southern Member States (Greece, Italy, Portugal and Spain) are invariably at the bottom of the ranking. Conversely, the Nordic countries (Denmark, Finland and Sweden) almost always score best. Ireland, the Netherlands and the United Kingdom are also among the best performers in a number of determinant groups. The other countries are in an intermediate position. This general ranking of the countries broadly corresponds to their performance in regard to entrepreneurship.

Nevertheless, the five groups of determinants produce varying results, indicating that they do actually comprise a number of different factors that influence entrepreneurship.

In four of the five determinant groups, Belgium scores above the EU15 average ; but that average is dragged down in each case by the southern Member States in particular. It is in the "market conditions" group that Belgium holds the best relative position : it is ranked fourth out of 15, behind the Netherlands, the United Kingdom and Ireland. Given that Belgium is a small open economy, the fairly good score for this determinant is not surprising. In regard to the regulatory framework, access to finance and entrepreneurial capabilities, Belgium ranks sixth or seventh, well behind the best performing countries.

The main obstacle to entrepreneurship in Belgium appears to be the weak entrepreneurship culture. While the differences between most of the EU15 countries are minor in this determinant group, Belgium ranks last of them all.

Closer examination of each of the four indicators used to measure the entrepreneurship culture reveals that, in every case, Belgium is at the bottom of the ranking of the 15 Member States. That is especially true of the series measuring the willingness to start a business if there is a risk of failure (13th) and the indicator for the status of successful entrepreneurs (15th).

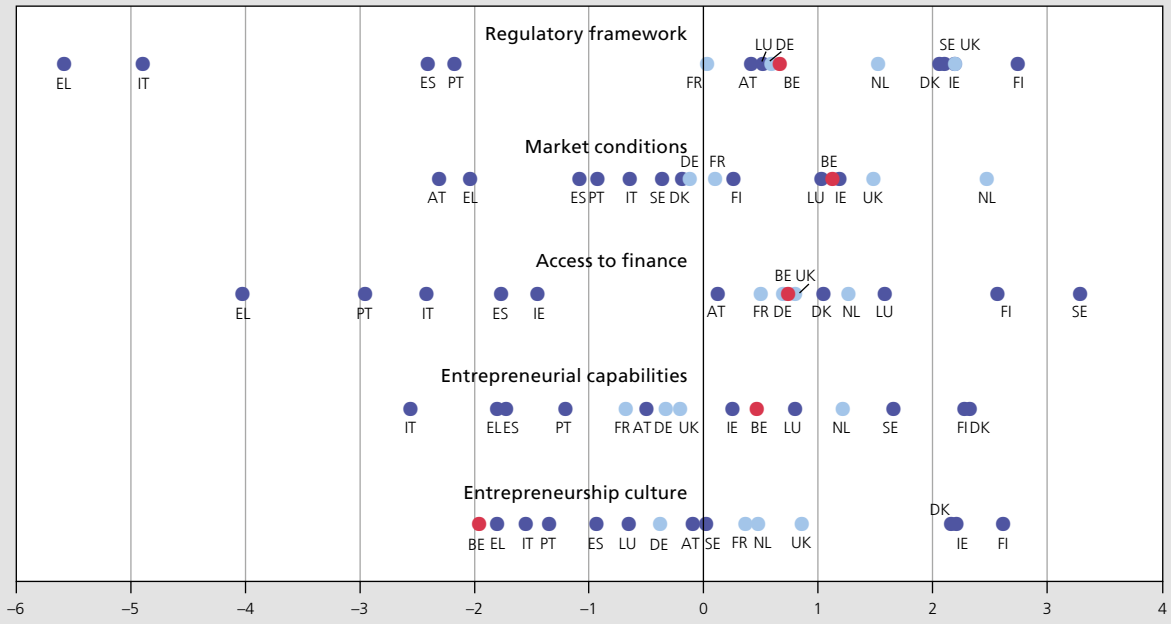
The relatively favorable evaluation of market conditions is mainly linked to the limited barriers to trade and investment. For the other three determinant groups where the synthetic indicators place Belgium in an intermediate position, the basic indicators taken individually provide a fairly mixed picture. As regards access to finance, Belgium is systematically in the middle of the ranking. In terms of the regulatory framework and entrepreneurial capabilities, Belgium is positioned just above the EU15 average, because some factors are considered highly favourable while others score badly. In the first group, the procedure for starting up a business and bankruptcy proceedings are assessed as very positive, but onerous administrative constraints were highlighted in relation to reporting and authorisation, etc. As regards entrepreneurial capabilities, the high quality of Belgian

(1) The principal components analysis aims to summarise the information in a set of mutually correlated variables on the basis of a smaller number of principal components obtained by orthogonal transformations of the original variables. Each of the principal components captures part of the heterogeneity in all the indicators. The method is defined so that the first principal component is the one that captures the largest proportion of the total variance in the original variables. Subject to certain conditions, it can be regarded as the synthetic indicator which best summarises the information contained in the set of indicators.

(2) This is an important advantage over other methods. Another possibility, for example, would have been to consider a simple average of the series. However, in that case, all the series get the same weighting and aspects covered by more than one series implicitly get a higher weighting than other dimensions.

CHART 11 POSITION OF BELGIUM AND THE EU15 COUNTRIES IN THE FIVE DETERMINANT GROUPS

(countries ranked from left to right according to whether the determinants are less or more favourable to the development of entrepreneurship; EU15 average = 0; averages 2009-2015)



Sources: EC, ECB, GEM, IMD, IMF, OECD, WEF, World Bank, NBB calculations.

management schools was mentioned, and the education system is recognised as meeting the needs of a competitive economy; conversely, the rate of participation in lifelong learning is still rather low.

4. Recent measures

The various levels of government in Belgium have taken a number of measures to encourage the establishment of businesses. On the basis of information obtained from sources such as the National Reform Programme 2016, we can list some of the recent initiatives designed to promote entrepreneurship.

Administrative simplification and improvement in self-employed status

There have been various reforms aimed at simplifying the regulatory framework. For example, at federal level, the SME Plan launched in February 2015 aims not only to improve the social security status of self-employed workers and encourage business creation but also to offer SMEs the optimum regulatory framework. As regards the social security status of self-employed workers, the plan includes an assessment of the reform of social contributions for the self-employed and gradually bringing the minimum pension for the self-employed into line with that for employees. The harmonisation of these two forms of social security status could encourage individuals to consider setting up a business as an alternative to paid employment.

The Regions have also taken various initiatives

In 2015, the business support programmes in the Brussels Region were streamlined to reinforce the synergies between the various bodies and offer a single point of access to support services and assistance for business creation and innovation. In Brussels, there were also initiatives concerning support for job-seekers to help them set up their own business.

In Flanders, the *Agentschap Innoveren & Ondernemen*[(1)] was set up in 2009. Here, too, the aim was to group together all the business support services and instruments. There were also administrative simplification measures concerning such matters as obtaining environmental permits.

(1) http://www.vlaio.be/

Better access to finance for new businesses

In 2015, the federal government introduced a measure to facilitate access to finance for SMEs and innovative firms. The tax shelter for that type of business is a personal income tax credit for individuals wishing to invest in a new firm. Subject to certain conditions, this tax credit may amount to 45 % of the sum invested. This new opportunity forms part of a radically altered system of funding for young, innovative companies. This initiative could provide a rapid response to the new funding needs of such businesses. The tax shelter forms part of the Start-up Plan established by the federal government, which also includes other measures (new tax rules for crowdfunding, reduction in labour costs for firms hiring staff, etc.) aimed at young entrepreneurs.

In the Walloon Region, a draft Decree was approved in 2015, providing tax incentives aimed at mobilising household savings in favour of young SMEs. In Flanders, the *Participatiemaatschappij Vlaanderen* (PMV) offers a single formula designed to facilitate firms' access to finance.

Fostering the entrepreneurship culture

Measures have also been taken – including in education – with the aim of encouraging the entrepreneurship culture in Belgium.

In Wallonia, entrepreneurship is one of the four aspects of the SME Plan for the period 2015-2020. A *Générations entreprenantes 2015-2020* programme was adopted in that connection, scheduling a range of measures aimed at promoting entrepreneurship in schools. Examples include the promotion of entrepreneurship schools, entrepreneurship training for teachers, and the introduction of schemes providing guidance and monitoring for student-entrepreneurs (sponsorship and incubator systems).

Similar initiatives also exist in Flanders. In 2015, building on earlier initiatives, the Flemish Region launched an educational action plan aimed at encouraging entrepreneurship and entrepreneurial spirit. The objective is to activate entrepreneurial potential among students and job-seekers.

Conclusions and closing remarks

There are myriad ways of defining and assessing entrepreneurship. Measures include not only business creation but also the proportion of self-employed workers in the population of working age. Various sources can be used to quantify these two concepts. In order to allow for an economic interpretation and to permit international comparison, this article is based on data from Eurostat and the LFS.

In 2013, new firms accounted for 3.6 % of the total number of businesses in Belgium; this was the lowest gross creation rate in the EU15, where the average was more than twice as high at 8.9 %. Gross creations were below par in all the main branches of activity. These findings are valid since 2008, the first year for which the relevant data are available. The relative number of business closures also appears to be very low compared to levels in Europe. That implies a lack of dynamism in the population of Belgian firms. The "creative destruction" process – i.e. the continuous creation of new businesses and the closure of the least productive firms, optimising the allocation of the existing production factors and boosting potential growth – is therefore poorly developed in Belgium.

In 2014, 8.6 % of the population aged between 15 and 74 years pursued a self-employed activity, putting Belgium in a middle position among the EU15 Member States – where the average came to 9.1 % – and among the neighbouring countries. The Belgian figures are driven up slightly by a large proportion of self-employed workers who are nationals of one of the new EU Member States. In comparison with other European countries, Belgium has fewer self-employed workers in the 45+ age group. While a marked rise has been recorded elsewhere in Europe since 2000, Belgium has seen hardly any increase.

The meagre rise in the number of self-employed workers in Belgium is due partly to divergences between the Regions. Both the data on business creation and those on the percentage of self-employed workers indicate that Flanders and Brussels are the principal drivers of entrepreneurship in Belgium, while Wallonia is lagging behind in relative terms.

Entrepreneurship may take various forms, with a varying impact on economic growth. Entrepreneurs acting out of necessity or opportunity generate less economic activity than growth-driven entrepreneurs. Innovation is one of the routes whereby growth-driven entrepreneurship can influence economic activity. That is therefore the form of enterprise which must be stimulated the most. In the period 2009-2015, roughly 28 % of young Belgian firms belonged to this last category, a figure slightly below the EU15 average (33 %).

Entrepreneurship has many dimensions, and is therefore influenced by numerous factors. After the example of the

OECD and the EC, the article identifies five main groups of determinants. Various indicators are combined for each group to describe their different aspects. The 'principal component' analysis makes it possible to calculate for each of the five groups of determinants a synthetic indicator which ranks all the EU15 Member States.

The analysis shows that Belgium does relatively well among the EU15 as regards market conditions, and has an average score for the regulatory framework, access to finance and entrepreneurial capabilities. Conversely, as regards the entrepreneurship culture, Belgium ranked lowest among the EU15 between 2009 and 2015.

There is scope for improvement in all the groups of determinants. In recent years, the various governments have introduced a number of measures concerning several aspects, such as a tax shelter for start-ups and a reduction in some of the administrative burdens. It is good that an effort is being made to improve the determinants of entrepreneurship. However, two comments are called for. First, the measures concerning such a broad range of determinants need to be mutually complementary, and the actions taken at the various levels of government must be properly coordinated.

It is also necessary to establish the right priorities. Since the very weak entrepreneurship culture in Belgium appears to be the major impediment to the creation of businesses, it is vital to promote a positive image of 'becoming an entrepreneur', reducing the fear of failure and the associated stigma, and encouraging creativity and risk-taking so that starting a business is seen as a very attractive and worthwhile choice of occupation. However, that is undoubtedly the determinant over which the government has least control; moreover, changing the culture is a long-term process. Stimulating entrepreneurship therefore requires a determined approach via various channels, including the media and the schools, where some initiatives have already been taken. Such a change of culture can do much to safeguard and enhance the future prosperity of Belgium.

Annex

LIST OF INDICATORS OF ENTREPRENEURSHIP DETERMINANTS (BASED ON OECD, 2015)

Regulatory framework		
Burden of government regulation	Survey responses to the question: for businesses, complying with administrative requirements (permits, regulations, reporting) issued by the government in your country is (1 = burdensome, 7 = not burdensome).	World Economic Forum, *Global Competitiveness Report*
Costs required for starting a business	The official cost of each procedure in percentage of gross national income (GNI) per capita based on formal legislation and standard assumptions about business and procedure.	World Bank, *Doing Business*
Number of procedures for starting a business	All generic procedures that are officially required to register a firm.	World Bank, *Doing Business*
Procedures time and costs to build a warehouse	Corresponds to an average of three measurements: 1) Average time spent during each procedure, 2) Official cost of each procedure, and 3) Number of procedures to build a warehouse.	World Bank, *Doing Business*
Time for paying taxes	Time it takes to prepare, file and pay the corporate income tax, VAT and social contributions. Time is measured in hours per year.	World Bank, *Doing Business*
Cost – Average cost of bankruptcy proceedings	The cost of the proceedings is recorded as a percentage of the estate's value.	World Bank, *Doing Business*
Time – Average duration of bankruptcy proceedings	Time is recorded in calendar years. It includes appeals and delays.	World Bank, *Doing Business*
Recovery rate	The recovery rate estimates the percentage that claimants (creditors, tax authorities and employees) recover from an insolvent firm.	World Bank, *Doing Business*
Enforcing contracts – Time	Time is recorded in calendar days, counted from the moment the plaintiff files the lawsuit in court until payment. This includes both the days when actions take place and the waiting periods between.	World Bank, *Doing Business*
Difficulty of hiring	Measures whether laws or other regulations make it difficult for firms to use temporary labour (fixed-term contract and agency workers) (0 = no restrictions at all, 6 = severe restrictions).	OECD, *Employment protection indicators*
Intellectual property protection	Survey responses to the question: in your country, how strong is the protection of intellectual property, including anti-counterfeiting measures (1 = extremely weak, 7 = extremely strong)?	World Economic Forum, *Global Competitiveness Report*
Property rights	Survey responses to the question: property rights, including over financial assets, (1 = are poorly defined and not protected by law, 7 = are clearly defined and well protected by law).	World Economic Forum, *Global Competitiveness Report*

LIST OF INDICATORS OF ENTREPRENEURSHIP DETERMINANTS (continued 1)

Market conditions		
Barriers to trade and investment	This indicator measures explicit barriers and other barriers to trade and investment. It is based on qualitative information on laws and regulations collected periodically and turned into quantitative indicators.	OECD, *Product Market Regulation Indicators*
Services Trade Restrictiveness Index (STRI)	This indicator is calculated on the basis of a standardised database on policies relevant to trade and investment in force in each country.	OECD, *Services Trade Restrictiveness Index Regulatory Database*
Government enterprises and investment	The data reflect the number, composition and share of output supplied by state-run enterprises and government investment as a share of total investment.	IMF, World Bank, UN National Accounts and World Economic Forum
Buyer sophistication	Survey responses to: purchasing decisions are (1 = based solely on price, 7 = based on a sophisticated analysis of performance)?	World Economic Forum, *Global Competitiveness Report*
Access to finance		
Country credit rating	The indicator is based on an assessment by the *Institutional Investor Magazine Ranking*.	IMD, *World Competitiveness Yearbook*
Ease of access to loans	Survey responses to: how easy is it to obtain a bank loan in your country with only a good business plan and no collateral (1 = extremely difficult, 7 = extremely easy)?	World Economic Forum, *Global Competitiveness Report*
Lending margin	The lending rate minus the deposit rate (based on an average of annual rates for each country).	ECB
Venture capital availability	Survey responses to: how easy is it for entrepreneurs with innovative but risky projects to find venture capital in your country (1 = extremely difficult, 7 = extremely easy)?	World Economic Forum, *Global Competitiveness Report*
Venture capital	Private equity investment.	OECD, *Entrepreneurship Finance Database*
Capitalisation of secondary stock	An assessment of the efficiency of stock markets providing finance to companies (1 = worst, 10 = best).	IMD, *World Competitiveness Yearbook*
Entrepreneurial capabilities		
Population with tertiary education	Percentage of the population aged between 30 and 34 years with university degrees or higher education qualifications (ISCED 1997 level 5-6).	Eurostat
Quality of management schools	Survey responses to: the quality of national business schools is (1 = extremely poor, 7 = excellent, among the best in the world)?	World Economic Forum, *Global Competitiveness Report*
Participation in education and training	Percentage of the population aged 25 to 64 that took part in education or training in the past four weeks.	Eurostat
Education system	The education system meets the needs of a competitive economy (IMD WCY executive survey based on an index from 0 to 10).	IMD, *World Competitiveness Yearbook*

LIST OF INDICATORS OF ENTREPRENEURSHIP DETERMINANTS (continued 2)

Entrepreneurship culture		
High status successful entrepreneurship	Percentage of persons in the 18-64 age group who agree with the statement that in their country successful entrepreneurs have high status.	Global Entrepreneurship Monitor (GEM)
Opinion about entrepreneurs	Survey responses to : overall opinion about entrepreneurs (self-employed, business owners), ranked against managers in large companies and professionals.	EC, Flash Eurobarometer
Fear of failure	Percentage of 18-64 age group who see good opportunities but state that fear of failure would prevent them from setting up a business.	Global Entrepreneurship Monitor (GEM)
Risk for business failure	Survey responses to : willingness to start a business if there is a risk that it might fail.	EC, Flash Eurobarometer

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Why is investment in the euro area continuing to show only weak recovery ?

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S. Cheliout
E. De Prest
S. Ide
W. Melyn

Introduction

In the aftermath of the global financial crisis, investments in the euro area were cut dramatically and, eight years on, they have not yet returned to their pre-2008 levels. Investment is a significant, highly cyclical component of demand and its steep fall and subsequent weak dynamics to a large extent explain the seriousness of the recession and the uphill struggle to return to growth in the euro area. Low levels of capital spending do not merely depress demand but also undermine an economy's long-term growth potential, getting in the way of the broadening of the capital stock and the spread of innovative technologies, and so putting the brakes on wealth and job creation.

This article sets out to explain the recent developments in euro area investment. More specifically, it explores the factors hindering a capital spending revival and the European policy initiatives that have been taken to remedy the situation.

The article is structured as follows: a first, rather more descriptive section, investigates whether the post-crisis investment dynamics in the euro area are exceptional, both from an historical and international context. After all, past financial crises also brought lengthy periods of slow investment growth in their wake and the current crisis has not left capital spending unscathed in other advanced countries. Next, our analysis gauges whether subdued investment trends are a general phenomenon affecting the euro area or whether they have only hit selected countries and investment components which had recorded extraordinarily strong expansion prior to the crisis – in which case the decline would represent a normal correction of an untenable situation, in which past accumulated excess capacity is being reduced.

Section 2 focuses on business investment. More than government spending or investment in residential property, capital spending by companies is a key driver of an economy's production potential and competitiveness. Subdued economic growth and excess capacity have reduced the need for capital spending, but a weak business cycle alone does not explain business investment dynamics. Other factors, as legacy of the financial crisis, also depress investment to a lesser or greater degree, e.g. a high level of indebtedness, less favourable borrowing conditions and uncertainty.

We cannot rule out that, in addition to these short- and medium-term influences, a number of fundamental changes in the past decades may have impacted underlying investment development. Secular trends such as demographic changes and globalisation, as well as the shift to a service-based economy, are addressed in section 3. The final section assesses initiatives taken at European policy level in response to weak investment growth, before drawing a number of conclusions.

1. Investment in the euro area: recent developments

Unusual downturn from global and historical perspectives

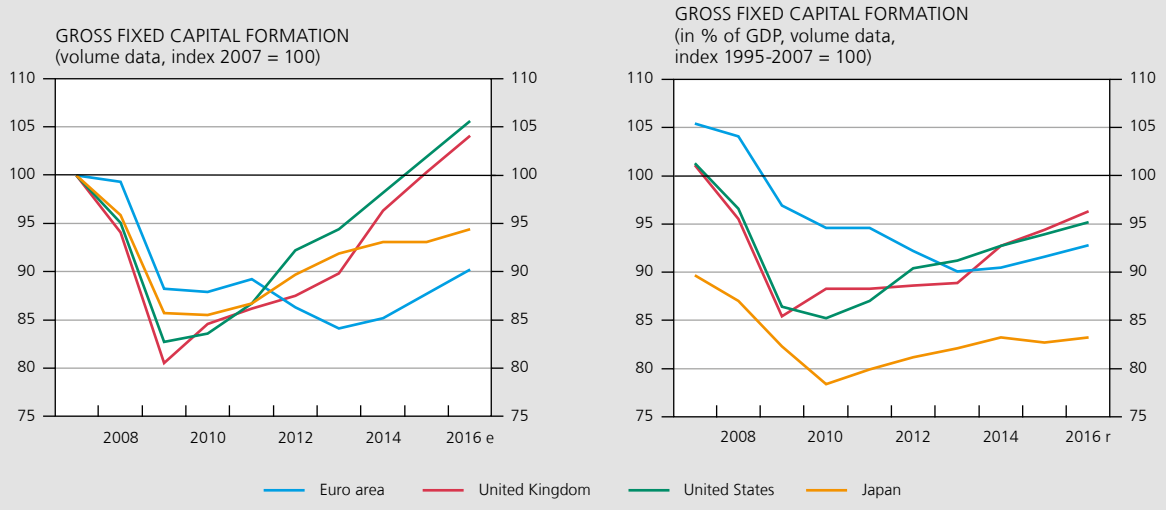
The initial impact of the financial crisis on capital spending in the euro area appeared less worrisome than in the other major advanced economies, as investment volumes contracted even harder in the United States and the United Kingdom in 2009. But with capital spending staging a firm recovery in these two countries in the two years after, the differences were minor during the first phase of the financial crisis. By 2012-13, however, euro area investment resumed with its fall in the wake of the sovereign debt crisis, pushing the euro area straight back into recession. Since then, Europe's recovery has been subdued. Investment volumes may have been inching up since the end of 2014, but the European Commission's spring projections (EC, 2016b) suggest that their level in 2016 would still remain well below pre-crisis peaks[(1)]. In the United States, the United Kingdom and Japan, by contrast, the recovery carried on and capital spending in the former two countries has in the meantime surpassed its pre-crisis highs in real terms.

(1) We should remark here that euro area investment has recently staged an unexpected advance, recording a surprisingly dynamic increase in the fourth quarter of 2015 and turned into the largest contributor to economic growth then. However, a variety of one-off factors would seem to have been the cause, as the first quarter of 2016 saw this uptick decelerate. The EC is predicting capital spending growth to further moderate as 2016 progresses.

Note, however, that this pre-crisis level is only a snapshot of the state of play at the time. Taking as our reference the average ratio of investment-to-GDP measured over a longer period of time, i.e. 1995-2007, in the euro area, the latter happened to be higher than its long-term average in the year before the financial crisis broke – a possible symptom of an unsustainable situation, and unlike in the United States and the United Kingdom, where investment as a percentage of GDP was around these countries' averages in 2007. Japan's ratio was even below average at the time, reflecting years of decline after its asset bubble burst in the early 1990s. In view of this, the fall in the euro area's investment ratio may be argued to comprise a persistent component in as much as it is a correction to previously excessive capital spending. This aside, however, investment-to-GDP in the euro area still languishes well below its long-term average, while the American and British ratios are already drawing closer.

From a historical perspective too, euro area investment ratio developments are also fairly exceptional. IMF research (2014a) into the repercussions of financial crises since the 1970s found that such crises typically come with a deep recession, followed by a rather slow recovery, as it takes time to address imbalances – e.g. excessive debt – built up in the run-up to the crisis. What is more, investment tends to be more volatile and cyclical than other spending components and is typically also harder hit in times of crisis. A 'normal' financial crisis would see the investment-to-GDP fall by an average three percentage points three years after its onset, and the IMF puts this at nearly four

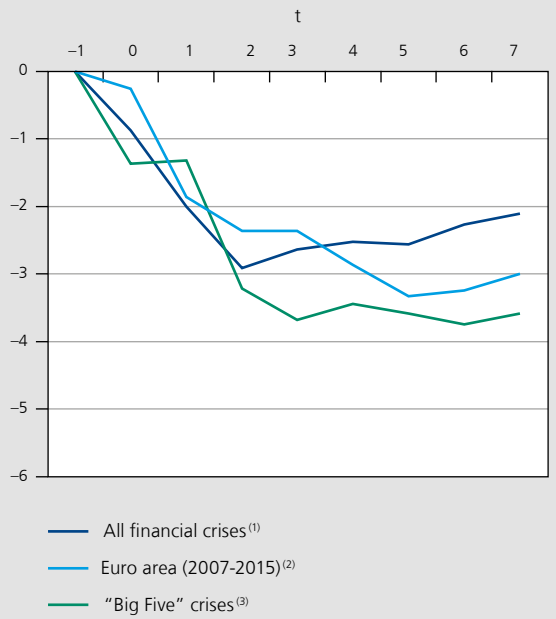
CHART 1 INVESTMENT: AN INTERNATIONAL COMPARISON



Source: EC.

CHART 2 INVESTMENT: A HISTORICAL PERSPECTIVE

(in % GDP, volume data, percentage points)



Sources: EC, IMF.

(1) The full sample of financial crises between 1970 and 2007 as identified by Laeven and Valence (2012).

(2) t = 0 captures the onset of the financial crisis. This is 2008 for the euro area.

(3) Spain (1977), Norway (1987), Finland (1991), Sweden (1991) and Japan (1992).

percentage points for the worst systemic crises. The effects tend to be quite persistent and it can take years for the investment ratio to return to its earlier levels.

Initially, the investment ratio in the euro area had all the hallmarks of a 'normal' financial crisis. The first few years saw capital spending cut back by as much as one would expect and it started to revive post-crisis, yet at a clearly slower pace. However, the second shock – i.e. the sovereign debt crisis – nipped the tentative recovery in the bud and prompted a fresh adjustment of the investment ratio to well below the average for normal financial crises, and more in line with the overall falls recorded in five other full-on systemic financial crises. This double-dip pattern is the great marker of the current crisis.

Broad and steep falls across sectors and Member States, followed by a subdued and a heterogeneous recovery

In the early stages of the crisis, the decline of investment was a generalised phenomenon, falling across sectors and Member States. This followed a period of robust investment[1] dynamics in a number of countries – particularly in residential property. Both household investment, which more or less corresponds to residential property spending, and investment by non-financial corporations had shrunk by 15% by 2009. Having first stabilised, household investment contracted further and did not reach its nadir until 2013, at nearly 20% below its pre-crisis showing. It has since recovered slightly. By contrast, business investment started to pick up in 2010 and exceeded pre-crisis levels by 2015[2]. Diverging trends in government investment are explained by fiscal stimulus in the early years after the crisis, followed by fiscal consolidation. In 2008, and more particularly in 2009, government investment continued to stage significant growth on the back of infrastructure spending by euro area Member States under the European Economic Recovery Plan. From 2010, not until this plan had run its course and the necessity of fiscal tightening became apparent did government investment undergo a sharp contraction. However, more recently – in 2015 – government investment has started to inch up thanks to slightly more accommodative fiscal policies. In all, household investment accounted for more than half of the drop in total investment in the post-crisis period.

A closer look at investment in the euro area's biggest Member States and in some peripheral countries reveals a general downward trend, but also that Greece, Ireland, Spain and Portugal recorded the steepest falls. Before the crisis, these four economies were characterised by unsustainable macroeconomic conditions, e.g. excessive debt and overcapacity in the residential property market, that eventually contributed to triggering the euro debt crisis. All four[3] received financial assistance in return for economic adjustment programmes aiming at fiscal health among other goals, by cutting government investment to meet programme requirements. With the exception of Greece, their investment has bottomed out and Ireland's in particular is on the mend.

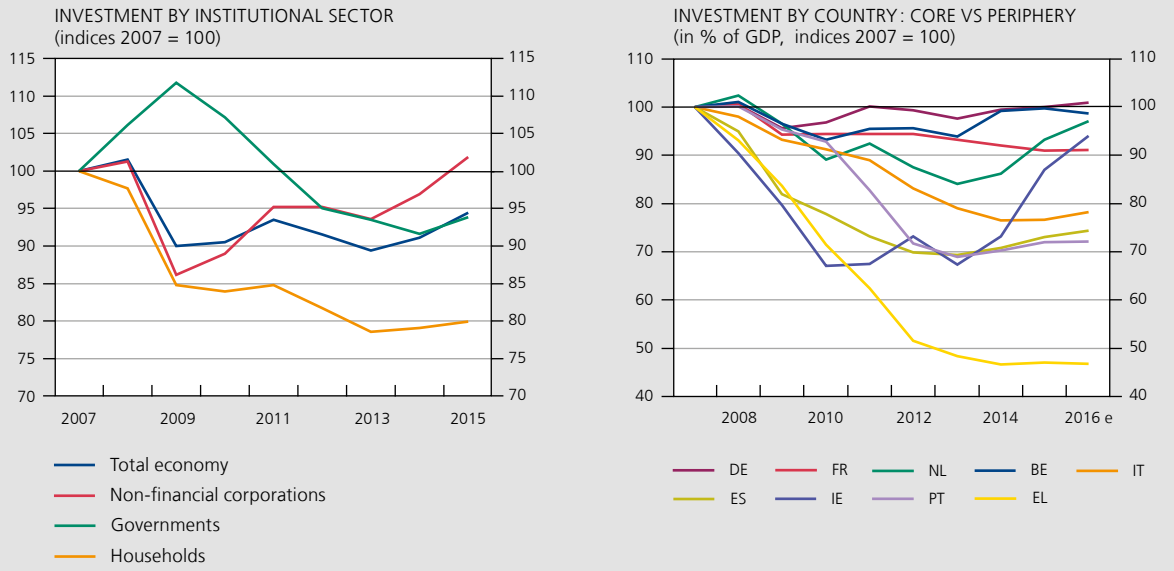
After its initial slowdown, the investment situation in a number of other euro area countries – such as Germany, the Netherlands and Belgium – took a turn for the better in 2011 but the subsequent euro debt crisis combined with moderate growth prospects kept capital spending at more moderate growth in the next few years, albeit that Germany bucked the trend in 2007. The EC's spring projections (EC, 2016b) see no immediate robust investment growth for these countries, the Netherlands being the exception. Most notably, France and Italy, two of

(1) Data for investment by sector are only available in value. The rise in the investment deflator explains the difference between the total investment decline in the 2008-15 period by value and by volume (chart 1).

(2) Investment in equipment – a key component of business investment for which volume data are available – was still some 5% below pre-crisis levels by 2015 in real terms.

(3) Cyprus also received financial assistance and implemented an economic adjustment programme.

CHART 3 INVESTMENT: EURO AREA INSTITUTIONAL SECTORS AND COUNTRIES



Source: EC.

the biggest countries in the euro area, have not shown any clear signs of reviving investment since 2009. In fact, Italy has been facing a protracted and uninterrupted fall of over 20 % in cumulative terms when compared with 2007, while the same figure works out at around 10 % for France. This is worrying, as these two countries are not merely big players in the euro area – they were also not, or much less, bogged down by macroeconomic imbalances than were the peripheral countries when the crisis hit; their investment declines cannot therefore be interpreted as a correction of excessive pre-crisis spending.

In part, then, weak investment in the euro area may be explained as an adjustment to previous excessive spending and to overcapacity in the pre-crisis period, particularly of household investment in residential property, which were more pronounced in some Member States than others. As we have observed, these effects may be quite persistent as excess capacity needs to be eliminated before the investment ratio can pick up, if to a lower, more sustainable level than before. We would do well to recall that the crisis in German construction dragged on for years after the property boom of the first half of the 1990s: having peaked in 1994, it took 15 years before investment in residential property had recovered a little relative to GDP, and even in the first quarter of 2016 this investment ratio was still nearly 25 % below record highs notched up 20 years previously.

All that said, weak investment in the euro area has not been limited to countries that had seen property bubbles, and households are not the only part of the economy feeling the pain; other sectors have also been affected. The next sections now move on to investigate the possible reasons for disappointing investment. Section 2 looks at the short-term situation and focuses on business investment. Section 3 covers a number of longer-term trends.

2. Explaining recent business investment developments

In the euro area, business investment has also remained mediocre since the financial crisis. The category of business investment accounts for the largest part of total investment – around 55 % – and is therefore also a key demand component. It is vitally important for sustaining and expanding an economy's growth potential – more so than investment in residential property or government investment.

The economic literature suggests a variety of factors that may influence capital spending decisions of corporations. Traditional determinants are (expected) demand and earnings, as well as the real cost of capital. More recent research[(1)] points to the importance of other

(1) See Barkbu *et al.* (2015), IMF (2015), IMF (2014b).

factors such as a corporation's financial health (including its debt ratio and cash position), access to sources of external funding (e.g. bank lending conditions, market-based funding), and uncertainty. In the aftermath of the financial crisis, some or all of these factors may also help to explain more particularly weak investment dynamics.

A simple econometric model demonstrates that business investment is trailing what might be expected in view of GDP developments, both in the euro area at large and for most individual countries. If we add into our basic model a number of the factors as discussed above, a more comprehensive explanation of lacklustre investment emerges for quite of few of these countries.

Weak economic growth and the accelerator model

According to the simplest available investment model (the accelerator model), corporations are mainly driven by their expectations of demand. Empirical research shows that this model generally explains business investment trends fairly well[1].

A protracted period of little or even negative economic growth – the deep recession post-financial crisis, the subdued revival in 2010-11, the double-dip GDP contraction in the wake of the sovereign debt crisis and, subsequently, the tentative recovery and tepid outlook for the following couple of years – has made it less imperative for corporations to expand their production capacity.

The standard specification of the accelerator model is:

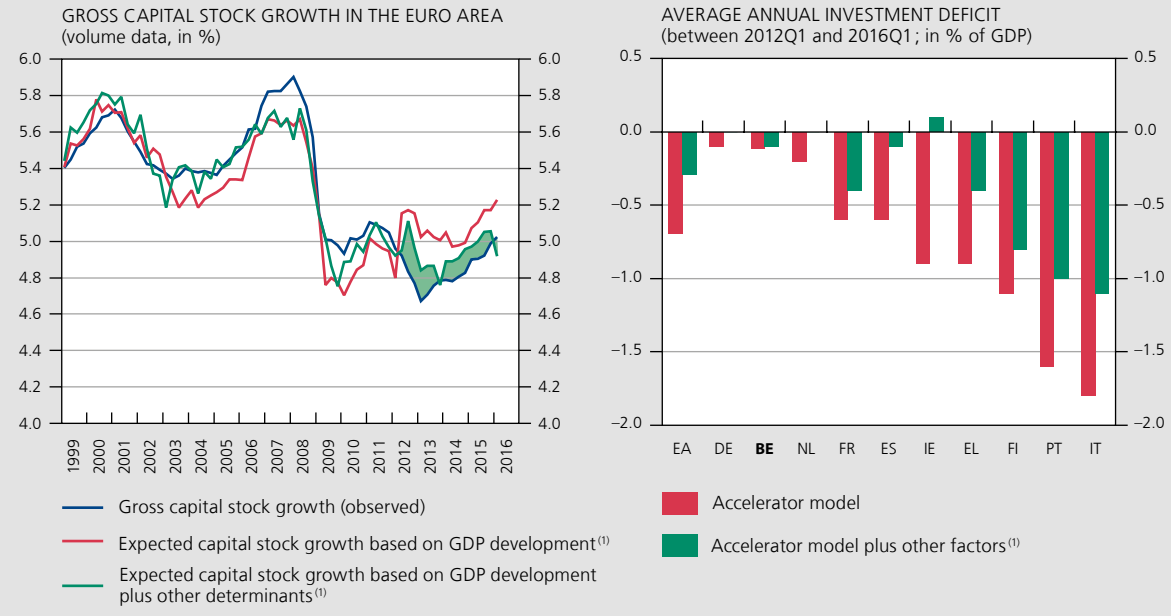
$$\frac{I_t}{K_{t-1}} = \frac{\alpha}{K_{t-1}} + \sum_{t=1}^{N} \beta_i \frac{\Delta Y_{t-i}}{K_{t-1}} + \delta + e_t$$

The hypothesis underpinning the model denotes that changes in the desired (net) capital stock (K) are proportional to changes in GDP (Y). The desired capital stock – factoring in its depreciation (δ) – then determines gross investment dynamics (I).

The model largely explains trends in capital spending since 1999, confirming the exceptional nature of the investment boom in the run-up to the financial crisis (2004-08) and the fiscal stimulus support to economic activity in the 2009-10 period, which came in the shape of infrastructure

(1) Only nominal data and no volume data are available for business investment, and various proxies have been proposed in the literature. A number of researchers have deflated nominal business investment using the total investment deflator. Others, such as the EC (EC, 2013) use real non-residential investment, as this consists primarily of business investment given its small proportion of public investment. This article has adopted the latter approach.

CHART 4 LAGGING INVESTMENT DYNAMICS RELATIVE TO GROWTH AND ADDITIONAL FACTORS



Source: NBB calculations based on IMF (2015).

(1) Expected capital stock growth is the outcome of an estimate by the so-called accelerator model, plus additional factors where necessary, e.g., real bank lending rates, corporate debt ratios, financial restrictions on production and political uncertainty.

spending among other investment. Since 2012, at the culmination of the sovereign debt crisis, investment has dipped below what might be expected based on economic growth, both in the euro area at large and in most individual countries. As a percentage of GDP and on an annual basis, the average investment shortfall is largest in Ireland, Greece, Finland, Portugal and Italy, while it is very small in Belgium, Germany and the Netherlands.

As GDP trends fail to explain the lack of momentum in investment volumes since 2012, we are expanding the accelerator model to include other potential determinants, with a number of factors qualifying as candidates in the euro area [(1)].

Funding conditions

Companies often need to rely on external funding resources if they are to realise their investment projects. In the euro area, they typically turn to bank lending rather than tapping the markets by issuing debt or equities – this was the typical external funding structure for non-financial corporations right up to the financial crisis. This crisis, which hit both banks and companies hard, triggered a sharp contraction in the flow of bank credit to companies and a short-lived revival was subsequently wiped out by an even harder squeeze related to the sovereign debt crisis. It would appear that bank lending is now reviving somewhat, while the shortfall in bank loans during the crisis was partly offset by higher issuance of debt securities, whose funding costs were sharply down because of financial investors' search for yield.

The market for corporate bonds remains fairly limited in size and offers a real alternative only to bigger corporations. Only in France, whose companies tend to be larger than in many other countries of the euro area, does the corporate bond market appear to be a stable funding instrument, and the French corporate bond segment accounts for around half of all euro area issuances. Germany and Italy, by contrast, account for issuance of no more than 10 % and 13 % respectively of all corporate bonds in the euro area.

Post-crisis bank lending to non-financial corporations has been dismal in all euro area countries, but particularly in the Member States that were hardest hit by the financial crisis and which, more often than not, had enjoyed significant credit growth in the period leading up to the crisis, such as Ireland, Spain and Portugal. Both demand and supply factors contributed to the downturn in credit volumes. On the demand side, companies shelved their capital spending plans to wait out the economic situation and so needed less external funding. On the supply side, euro area banks to a greater or lesser degree faced increasing non-performing loans and depreciation, liquidity shortages and reduced profitability. They also found themselves subject to new and stricter regulation, including more demanding capital requirements. Coping with the legacy of the crisis in a weak and uncertain business cycle, banks became more selective when granting new loans – even more severely so in the more vulnerable countries. The seriousness of the recession deeply impacted their balance sheets and increased credit risks. Worse, the financial crisis, and particularly the sovereign debt crisis, fragmented the financial markets in the euro area and made it difficult for banks in these countries to find funding at reasonable conditions. In response, the Eurosystem introduced a variety of non-conventional measures to meet banks' liquidity needs directly. Its efforts were unable to prevent the emergence of an unequal playing field in credit supply in the euro area, with vulnerable Member States facing higher lending rates and tighter credit conditions that may well have curbed investment.

That said, the highly expansionary monetary policies pursued by the Eurosystem since the onset of the financial crisis have brought the euro area historically low interest rates, including those on bank lending to companies, in the core countries at least. The increasingly urgent search for yield in the markets also reduced yields on corporate bonds to all-time lows and sparked rallies in the equity markets.

Having become even more marked from 2010, when the crisis had turned into a sovereign debt crisis and one country after another (Greece, Ireland, Portugal and Spain) proved in need of financial aid, the above-mentioned financial fragmentation also created greater divergence in the interest rates that banks in the various Member States charged to companies, through the effects of the negative feedback loops between the financial sector and the government sector. Eurosystem cuts in base rates in 2011 and 2012 failed to feed through into bank lending rates, suggesting that monetary transmission mechanisms were dysfunctional. From mid-2012, rates started to converge again following the announcement by the ECB President of far-reaching measures. These materialised in the autumn of 2012 when the ECB's Governing Council approved the OMT (outright monetary transactions) programme. A fresh drive towards greater convergence started in 2014 in the shape of a number of supplementary non-conventional measures by the Eurosystem, culminating in the

(1) For ease of understanding, we have divided the euro area into three distinct groups of countries that score more or less the same on the additional factors: the core countries of the euro area (Germany, France, the Netherlands, Belgium, Finland), the programme countries (Greece, Ireland and Portugal) and the "in-betweens", i.e. Italy and Spain.

announcement and implementation at the start of 2015 of the expanded asset purchase programme (APP).

Yet the gap between the euro area countries remains wide, as it also reflects the very different credit risks in the various countries as well as the solvency of their banks. In addition, the fall in inflation and inflation expectations has caused real interest rates to rise since 2013 [1].

Steeper interest rates may not be the only thing putting companies off capital spending; they may also face funding restrictions as banks impose stricter lending conditions. The ECB's bank lending survey, for instance, showed that tighter credit conditions were a major curb on funding for non-financial corporations in the shape of lending in the early days after the onset of the financial crisis and at the height of the sovereign debt crisis, particularly in programme countries. Since then, nearly all euro area countries report a net easing.

More relevant even than what banks report is how companies themselves perceive their funding options. The EC's quarterly business confidence survey also investigates any factors that might hamper production. Across the euro area, companies have recently been reporting fewer financial restrictions, but clear differences remain and – particularly in the programme countries – companies continue to identify funding as an issue. We should also note that even in the core countries these figures have yet to recover to their pre-crisis levels. An alternative indicator is the survey on the access to finance of small and medium-sized enterprises (SAFE) jointly conducted by the ECB and EC every six months. It finds that, unlike large corporations, SMEs in the programme countries continue to report funding shortfalls. More than large corporations, SMEs rely heavily on the banking sector which in some countries is still not on an even keel. By unfortunate circumstances, SMEs – whether considered in terms of employment or added value – account for a large proportion, way above the euro area average, in Greece and Portugal but also in Italy and Spain, making their funding issues even more acute.

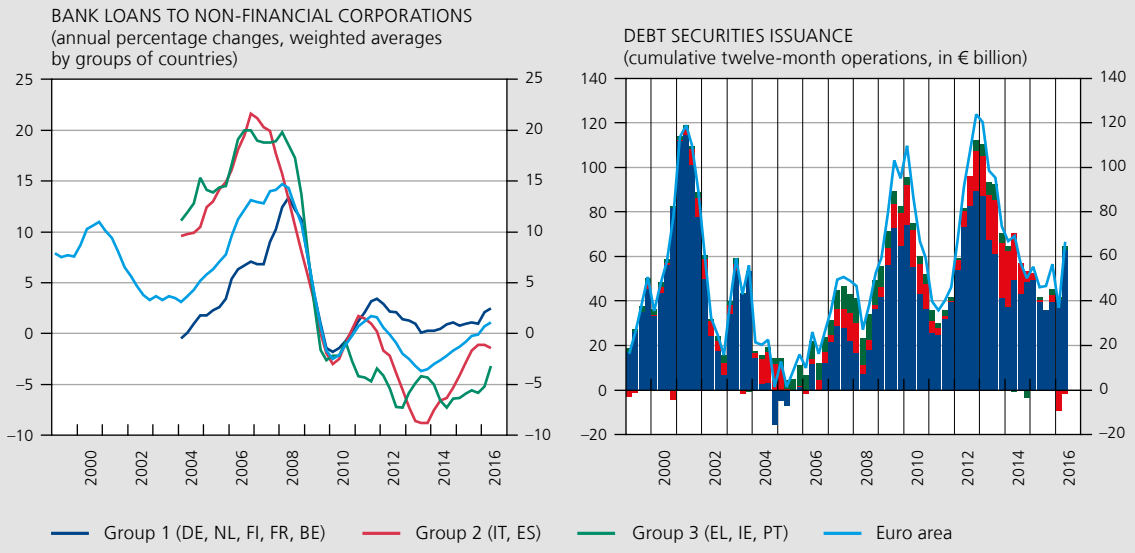
Business surveys to a large degree confirm the outcomes of the bank lending survey, in as much as the past few years have seen greater relaxation of credit conditions and easier access to funding. That said, banks would appear to be taking a more upbeat view of the situation than companies, and *a fortiori* SMEs in the vulnerable countries.

Deleveraging

The years before the financial crisis had seen a rapid credit expansion, triggering surging debt ratios at non-financial

(1) Real interest rates are typically calculated using inflation expectations, which have remained more stable than inflation data. However, inflation expectations are available only for the euro area and for some of the largest Member States.

CHART 5 FALLING CORPORATE BANK LOANS AGAINST INCREASING ISSUANCE OF DEBT SECURITIES



Source: ECB.

corporations in the euro area. Supported by sanguine growth expectations, low risk perception and easy credit conditions, these debt dynamics in their turn underpinned relatively fast economic growth, rising asset prices and a general climate of optimism. A self-reinforcing interaction emerged between credit expansion and – the perception of – the economic situation, resulting in high debts which, as the financial crisis laid bare, made companies exceedingly vulnerable to shocks. The crisis ushered in a drastic reversal in market sentiment, upward revisions of risk, falling asset prices and a deep recession, all factors affecting expected income flows, repayment capacity and companies' credit ratings.

Corporations may find themselves under pressure to reduce their debt positions for different reasons. First off, they may decide to restructure their balance sheets of their own accord in order to better handle any additional shocks. Also, against a background of economic recession and subdued recovery, companies may shelve their capital spending plans, and therefore be in less need of immediate access to additional loans. Supply factors may also prompt deleveraging when banks prove more selective in their loan offerings. The latter channel may be significant for smaller companies that have less access to alternative funding. Whatever the reasons or context may be, deleveraging can be a major drag for business investment.

In the aftermath of the crisis, most countries embarked on a deleveraging process, as witnessed by the decline in debt ratios of non-financial corporations from their previous peak levels. That said, the reduction was rather limited overall and amounts to a mere fraction of the rises recorded in the run-up to the financial crisis. One reason is the poor economic growth of the past few years, as deleveraging efforts through negative credit flows – both demand and supply-driven – and the consequent reduction of outstanding nominal debt were in part offset by contracting economic activity and low inflation. In Greece, the fall in GDP virtually wiped out the benefits of active deleveraging.

Today's debt levels suggest that non-financial corporations might well continue to deleverage, as in fact is necessary if debt ratios are to become more sustainable. However, sustainability is a complex concept on which there is no consensus, neither on its definition nor on an appropriate measure. As a result, a variety of researchers have plumped for multi-dimensional approaches, with country-specific factors also coming into play in many of these, leading to a benchmark per country. Recent estimates by the EC, based on the methodology proposed by Bricongne *et al.* (2016)[1], suggest that, at end-2014, non-financial corporations needed to engage in additional deleveraging, particularly in Ireland, Portugal and Greece and to a lesser degree also in Spain[2][3].

Uncertainty

Uncertainty is also frequently cited as a conclusive explanation for subdued investment dynamics in the euro area, as research[4] finds that companies will put off investment decisions in an unpredictable environment until more information becomes available. Such behaviour is attributable to a feature specific to capital spending, i.e. its irreversibility. Once made, an investment is typically difficult and costly to dismantle and its remaining value often a mere fraction of its original cost. In addition, uncertainty influences lenders, who are likely to charge a higher risk premium in their lending rates and to impose more stringent terms and conditions.

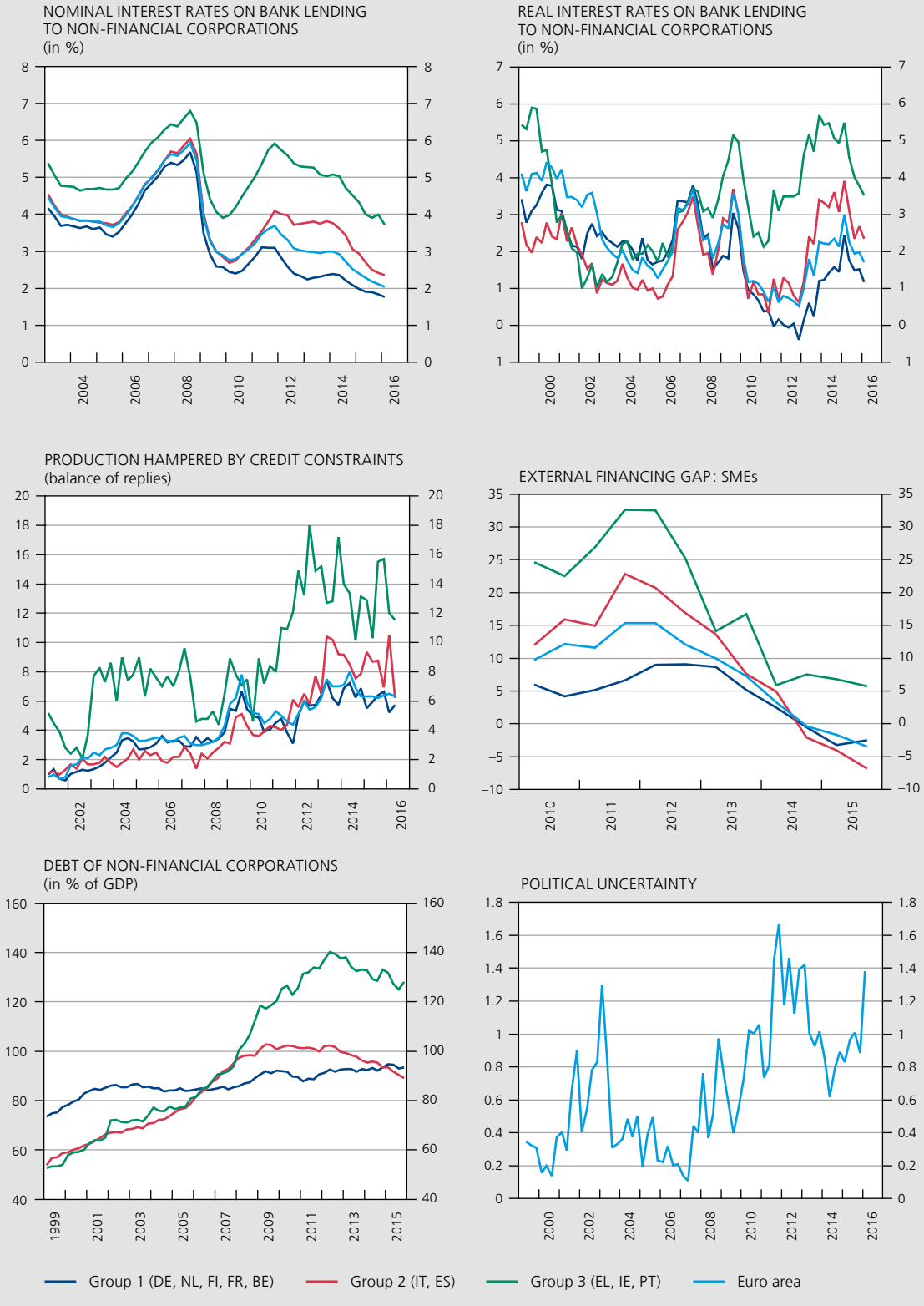
Uncertainty is hard to quantify and there is no clarity on the best gauge for tracking its impact on business investment. Recent literature on the subject often includes an indicator representing political uncertainty, e.g. the Economic Policy Uncertainty Index on the basis of news items reported in the media as established by Baker *et al.* (2013). This indicator has risen markedly since the start of the financial crisis until it attained a clear peak at the euro area sovereign debt crisis. Political uncertainty has come down in the past few years but has remained more pronounced than it was before the crisis, while any temporary new tensions, such as those at the beginning of 2016, cannot be excluded.

Expanded accelerator model

If we add some of the above factors into the standard specification mix – i.e. real bank lending rates, corporate debt ratios, the indicator of financial constraints on production, as well as the political uncertainty index – the expanded accelerator model turns out to explain fairly well the recent trends in the investment ratio. Its improved explanatory value is particularly marked in the peripheral countries and even spectacular for Spain and Ireland. Uncertainty, financial constraints, size of the debt and real interest rates turn out to have had a massive impact on investment dynamics in these countries. Other studies have produced similar results[5], and policy measures

(1) The benchmark for "sustainable" debt was estimated on the basis of previous episodes of deleveraging. See also EC (2014).
(2) Deleveraging needs are estimated between 10 % and 20 % for Ireland, Portugal and Greece; for Spain this is less than 10 %.
(3) The EC has played down the need for further deleveraging in Ireland, as the important increase of corporate debt ratios can be due to cross-border (intra-group) loans.
(4) See amongst others Dixit and Pindyck (1994); Carruth *et al.* (2000).
(5) See also Barkbu *et al.* (2015).

CHART 6 EVOLUTION OF THE ADDITIONAL INVESTMENT DETERMINANTS FACTORED INTO THE EXPANDED ACCELERATOR MODEL



Sources: EC, ECB, OECD, Thomson Reuters Datastream, NBB calculations.

would seem in order in as much as these factors still get in the way of investment. Despite these advances, recent developments in the business investment ratios are still partly unexplained for Italy, Finland, Portugal and Greece.

3. Secular investment trends

Section 2's analysis focused on factors that might help to explain investment trends in the short term. The past decades have seen a number of structural changes in the world economy that may have caused more secular trends in investment, e.g. the shift to service-based economies, globalisation and its related offshoring of activities to emerging countries, shorter useful life of capital goods and demographic trends. This section focuses on these developments as well as on their impact on capital spending.

Shift to a service-based economy

The drop in the investment ratio is linked by some to the relative contraction of the industrial sector and the shift to an expanding, less capital-intensive services sector. This hypothesis is difficult to test as very few countries produce capital stock data broken down by sector. However, in Germany – a country for which these data are indeed available – there do not appear to have been any major shifts in the larger sector categories over the past two decades. The share of services in total value added has not increased at the expense of manufacturing industry. Differences in average capital intensity across sectors are limited and, in fact, utilities and energy companies – i.e. highly capital-intensive industrial branches – now account for a slightly bigger share of the total economy.

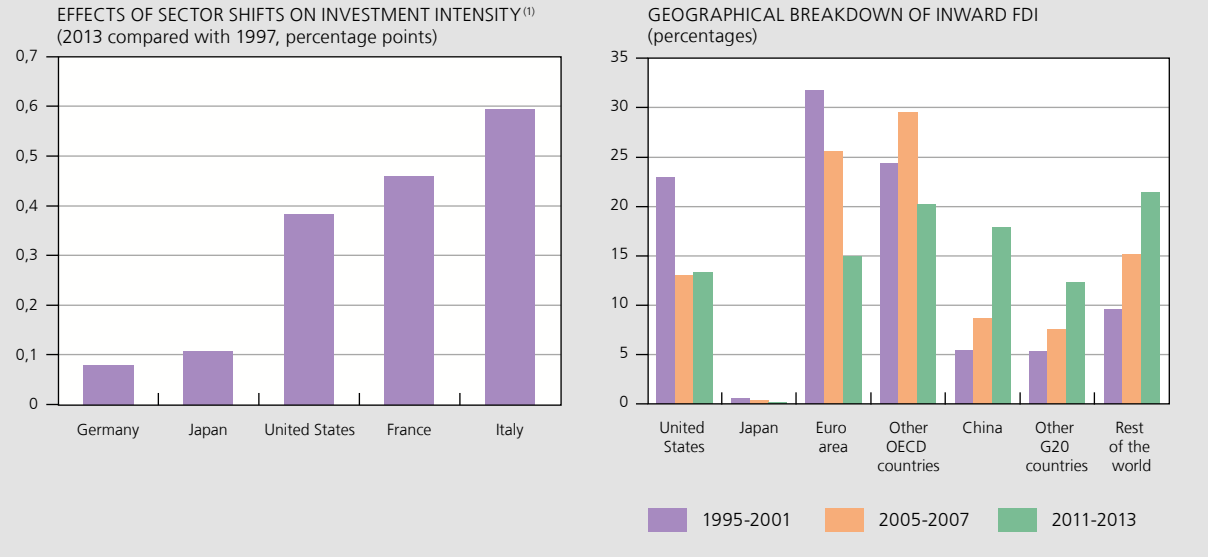
Using a related concept of investment intensity, defined as investment measured relative to value added by industry, an OECD[(1)] analysis found that for a group of countries the investment intensity of the services sector tends to be significantly below that for industrial sectors including mining, energy and utilities. What is more, a number of OECD countries have seen these less investment-intensive services claim a bigger share of the total value added. Still, the shift has not been significant enough to have a clear impact: actual 2013 investment intensity compared with estimates, based on an unchanged sector breakdown as of 1997, shows only a minor effect, even if it does work out at around 0.5 percentage point for Italy and France.

Globalisation, global value chains and offshoring

Global investment flows have radically changed over time. Domestic investment activity in the advanced economies

(1) OECD (2015).

CHART 7 SECULAR TRENDS



Source: OECD.
(1) Nominal investment relative to nominal gross value added.

is often assumed to have partly shifted to other parts of the world as global value chains developed and production was offshored. However, empirical research has not been able to establish beyond a doubt whether foreign investment is replacing domestic investment activity (substitution) or supplementing it (complementarity).

This is a complex issue and, to date, no clear conclusions can be drawn about the impact on the advanced economies, as the make-up of relevant statistics complicates empirical work. One oft-used measure is the flow of foreign direct investment (FDI), but besides capital goods purchases, it also includes financial flows such as mergers and acquisitions. Other data make use of investment by multinational corporations – including their subsidiaries –, but these are only available for a few countries.

Inward FDI provides a first clue about changing flows, showing that the share of OECD countries has shrunk significantly in the past two decades – including in the post-crisis euro area – in favour of the emerging economies, and particularly China. This may be attributed to the downward trend in domestic investment activity in the advanced countries. At the same time, the OECD finds that post-crisis investment activity by foreign subsidiaries of multinational corporations has risen relative to GDP in a number of OECD countries, including in the euro area.

If we take as a proxy data on investment by foreign subsidiaries of multinational corporations from the United States and Japan, we find that outward investment from advanced economies has grown over time and that such capital spending accounts for an increasing share of total group investment. It is assumed that offshoring of activities by multinational corporations typically integrated horizontally – i.e. whose different facilities produce the same products – will cause substitution effects and impact negatively on economic activity in the corporation's home country. By contrast, vertically integrated multinationals looking to use foreign investment to split their production process via global value chains may generate activity that is complementary to the home market, e.g. the supply of intermediate inputs. This may imply relatively higher investment abroad, but does not necessarily mean a concomitant fall in absolute domestic market investment levels. All of this makes it hard to predict at the outset what the overall effect will be. The outcomes of country-specific empirical studies are mixed: while positive effects have been identified for the US economy in some cases, these same effects are reportedly negative for Germany[1].

Capital goods depreciated more quickly

The OECD also points out that average depreciation rates have gone up on the back of a greater share of investment with a shorter useful life, such as ICT and some types of intangible investment. In effect, then, investment should exceed historical reference levels to prevent net investment and net capital stock from shrinking.

Demographic trends

Demographic prospects suggest that European population ageing will have a highly detrimental impact on labour supply; in fact, this is already happening in some countries, such as Germany. As growth potential shrinks, less investment is said to be necessary (see below). It is also true that capital and labour are never fully complementary, such that more capital-intensive production practices and more investment may both be targeted. To counteract the demographic effects on economic growth, countries will initially have to push up the activity rate, for instance by having people work longer and – in order to make better use of the potential of the working population – by cutting structural unemployment, which has grown in a number of countries since the crisis due to hysteresis effects. Reducing youth unemployment should be a particular focus, as joblessness in those vital initial stages of people's careers rapidly leads their human capital to become obsolete or underdeveloped, and destroys their productive potential.

Growth and investment interacting

There is a great deal of interaction between economic growth and investment. On the one hand, higher growth requires greater investment to keep up capital stock and, with it, the capital intensity of growth; while, on the other hand, a protracted spell of below-par investment ratios will be detrimental to potential growth. Capital investment contributes directly to the creation of capital stock and indirectly to its implicit technological progress[2], resulting in a longer-term steady state equilibrium between growth and investment. At this point, however, quite a few advanced economies appear stuck in a less favourable "double bind" of subdued growth and low investment ratios[3]. This begs the question to what extent investment might serve as

(1) Braunerhjelm *et al.* (2004); Herzer (2008); Herzer and Schrooten (2008).

(2) According to EC estimates (Buti, 2014), a drop in the investment ratio of five percentage points would reduce potential growth by around 0.5 % in the longer term.

(3) The OECD (Lewis *et al.,* 2014) calculated the deviation between the current level of investment and a reference level equal to a steady-state equilibrium of the investment-to-GDP ratio, given a level for the pace of depreciation, a constant capital-to-output ratio and the growth rate of the economy. The OECD is assuming long-term GDP projections based on a return to pre-crisis potential growth rates for the OECD region, for the United States and for the euro area. It established that current investment levels are significantly below their reference points, with the shortfall amounting to over 2.5 percentage points of GDP in one-third of the OECD countries.

a lever to break the "bad" equilibrium. However, some observers[1] believe that potential growth, particularly in the euro area, is on a downward trend driven by a combination of slowing productivity growth and demographic developments, and that this will result in a permanently lower equilibrium ratio of investment relative to GDP. In this scenario, additional investment would only boost demand temporarily and cause overcapacity; too little profitability would require scaling down this investment at a later date. True, investment can only serve as a lever to break the impasse of slow growth and lagging investment if it is highly targeted, appropriately productive, and profitable. The focus should be on capital spending with serious growth-boosting potential, particularly through the use of new technologies. R&D and ICT are most often put forward as areas for investment in this context.

4. Policy initiatives

Although GDP remains a key determinant of cyclical investment trends, Section 2 demonstrated that a number of other factors also need to be considered when explaining weak investment dynamics since 2012, in particular uncertainty, deleveraging, diverging bank lending rates and funding constraints on SMEs. Uncertainty is the outcome of a whole host of circumstances and is often driven by global events that European policy-makers have no control over. And, of course, that policies themselves become a source of uncertainty is something they should avoid at all cost. Deleveraging, the second factor in this list, is proceeding gradually and should continue to run its course. Given the seriousness of the problems, however, policy is and will remain vital and the sheer array of factors holding back investment demands a wide-ranging package of policy measures to address the issue.

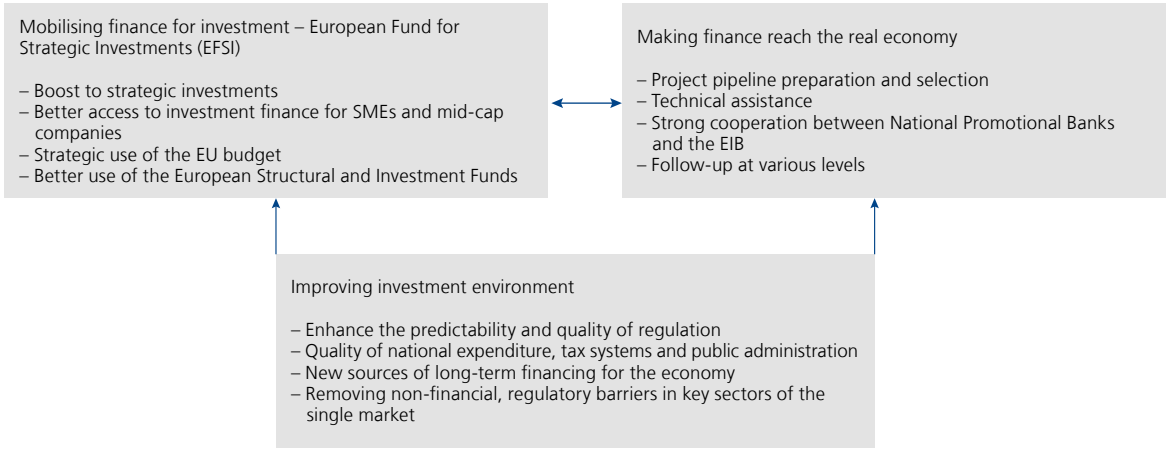
Monetary policy should first of all continue to support the smooth operation of channels for monetary transmission – i.e. base rates to be passed on to bank lending rates – and so try to reduce the fragmentation of bank rates. By stabilising inflation expectations, monetary policy will also continue to control real interest rates, while the remit of prudential policy governing bank lending is to monitor banks' balance sheet positions and so indirectly combat distortions of lending supply in the euro area. Where needed, non-performing loans will have to be written down appropriately and the capital base of banks shored up.

The Juncker investment plan for Europe

The major impact on investment trends of factors such as uncertainty and SME funding issues shows up a need for specific measures to address them. The euro area was also in dire need of a catalyst to help break the double bind of slow economic growth and lagging investment, and the Investment Plan for Europe, which was put forward by the then Commission President Jean-Claude Juncker in November 2014, would appear to go some way towards addressing these issues. It aims to reduce the impact of

(1) Gros (2014).

CHART 8 THE THREE PILLARS OF THE INVESTMENT PLAN FOR EUROPE



Source: EC.

uncertainty and improve the overall investment climate. It specifically targets SMEs and mid-cap companies and focuses on types of investment of which the risk profiles are too high to be financed by the private sector alone – higher even than the typical risk profile the European Investment Bank (EIB) uses when lending. The same drive also saw the launch of the Capital Markets Union (CMU) initiative, whose aim, amongst others, is to make funding easier for SMEs. Section 4 examines the main features of the plan and its initial results one year on. The section ends on the CMU initiative.

Investment Plan for Europe: structure and operation

The Investment Plan for Europe consists of three mutually reinforcing strands.

Mobilising additional financing for investment

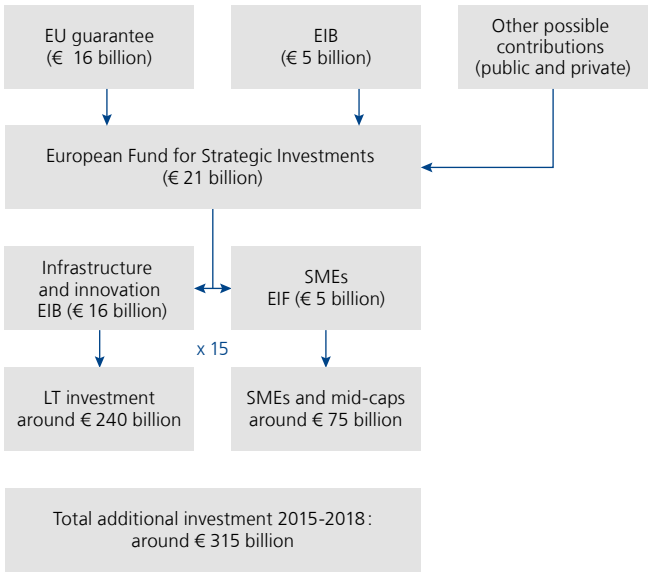
The first pillar is to mobilise financial resources to flow into additional investment. Created for this express purpose in July 2015 [1], the European Fund for Strategic Investments (EFSI), a special EIB fund, aims chiefly to improve the capacity for higher-risk financing in the EU. The Fund does not finance projects itself, but provides EU guarantees to back project finance by the EIB and the European Investment Fund (EIF), which is part of the EIB Group. Under the plan, an entirely new mechanism is introduced when compared with existing European financing structures, based on putting up guarantees instead of direct allocation of subsidies: it helps to mobilise existing sources of funding without loading down the public finances of individual Member States.

EFSI aims to mobilise at least € 315 billion in public and particularly private investment within the space of three years, up until mid-2018. It started off with a € 16 billion guarantee in the EU budget and the EIB allocated € 5 billion, adding up to sizeable seed capital of € 21 billion. This amount may be supplemented with contributions from private investors or Member States, either directly or via National Promotional Banks or similar institutions. The EC assumes that for every euro guaranteed by EFSI, € 15 can be invested in the real economy. The € 21 billion in guarantees should potentially unlock € 315 billion in investment [2].

The Fund complements and enhances ongoing initiatives to support investment such as the European Structural and Investment Funds (ESIF) and current EIB project finance. EFSI aims to support projects with high

(1) EC (2015a) and EC (2015b).
(2) The EC considers this multiplicator effect of 1:15 a conservative average, based on previous experience with EU programmes and on EIB experience.

CHART 9 EUROPEAN FUND FOR STRATEGIC INVESTMENTS (EFSI): STRUCTURE



Sources: EC, EIB.

added value for society and economy, and will divide the estimated additional € 315 billion investment into two separate windows : three-quarters of the resources (€ 240 billion) will be earmarked for higher risk-taking of long-term investment, such as strategic investment of European interest in infrastructure, particularly in broadband and energy networks, as well as transport infrastructure, education, research and innovation, renewable energy and energy efficiency. The remainder of € 75 billion will be set aside to enhance access to risk capital in Europe for SMEs (up to 250 employees) and mid-cap companies (up to 3,000 employees), with EIF in charge of operational implementation.

We should note here that the "additional" investment of € 315 billion is meant to supplement existing investment and that project qualification criteria should ensure that resources are effectively allocated to new, higher-risk projects for sectors and companies targeted by the plan. The principle of additionality is key and ensures that EFSI aid addresses sub-optimal situations in which such projects would not otherwise be carried out.

Making additional finance for investment reach the real economy

The second pillar of the plan involves taking targeted initiatives to make sure that the extra investment finance generated by EFSI meets the needs of the real economy. This means channelling money to viable projects with a real added value for the European economy.

In concrete terms, the EIB has set up the European Investment Advisory Hub (EIAH). The EIAH offers a single point of access to advisory and technical assistance services at every stage of the development of a project, for promoters, investors and public authorities. The Hub provides guidelines on the best advice for specific projects.

In addition, the European Investment Project Portal (EIPP), operational since June 2016, will assist investors in search of potentially viable projects. The portal is managed by the EC and comprises a list of projects supportive of EU goals and scheduled to start in the next three years, with or without EFSI financing.

Improving the investment environment

The third pillar of the plan consists of providing greater regulatory predictability, removing barriers to investment and further reinforcing the Single Market by creating optimal conditions for investment.

The regulatory framework, at national as well as European level, needs to be simple, clear, predictable and stable in order to incentivise investments with a longer-term horizon. The aim is not to deregulate, but to enhance regulation, by removing the obstacles to economic growth, by minimising costs and ensuring sustainability of investment in the social and environmental arenas.

Another important initiative undertaken – and a major progress – concerns the setting of new sources for long-term financing of investment, including steps towards a Capital Markets Union (CMU). In time, the CMU should help bring about a more diverse supply of finance by complementing bank financing with deeper capital markets. It is therefore an important medium- to long-term component of the investment plan (see below for further details).

Lastly, it is imperative that barriers to investment in the Single Market are removed. More specifically, this will require reforms in such areas as energy and transport, transport infrastructure and systems, the Digital Single Market, services and product markets, research and innovation, and foreign investment flows.

A first assessment of the plan

According to July 2016 figures, € 20.4 billion had been approved for EFSI projects, breaking down in to 289 operations. The EIB-linked window – i.e. innovation and infrastructure projects – accounts for the bulk of this amount at € 13.6 billion, while the EIF – SMEs and mid-cap companies – mops up € 6.8 billion. Together, these transactions are projected to return a total investment of € 115.7 billion at maturity. These initial outcomes would appear to match the plan's objectives, with total expected investment now at about one-third of the amount to be reached at the end of the three-year period. Investment projects are chiefly found in the sectors research, development and innovation (25 %) and energy (23 %) ; the EIF portion earmarked for SMEs accounts for 26 % of all agreed projects.

A note of caution is in order : a study by Claes and Alvaro (2016a) reviewed compliance with the additionality criterion, i.e. whether only higher-risk and viable projects had been selected that could not have been completed within other existing financing structures. The study uncovered numerous similarities between new EFSI projects and the usual projects that the EIB takes on outside the plan. That said, the study also found EFSI projects to be relatively higher-risk, in keeping with the plan's objectives.

Government investment

The main purpose of policy initiatives should be to mobilise business investment. However, government investment is also part of the problem, as years of restructuring have taken their toll[1]. By cutting capital spending, Member States opted for the easiest way to meet their fiscal obligations, and government investment that sharply boosts productivity – e.g. economic and social infrastructure in areas such as energy or scientific research, development and innovation – may also be eligible as targeted investment projects under the Juncker Plan. Governments being allowed to constitute themselves as contributors to invest in EFSI projects, it was agreed that the EC would take a more relaxed view of such capital spending within the fiscal surveillance framework of the Stability and Growth Pact[2].

As for all other investment outside the Juncker Plan, the preventive arm of the new Stability and Growth Pact guidance now boasts a so-called 'investment clause' allowing Member States engaging in government investment to diverge temporarily from their medium-term budgetary objectives or fiscal adjustment paths. As Melyn *et al.* (2016) argue, the clause may only be invoked under very strict conditions, which are only met by a very few countries. This may call for a complete overhaul of the way in which government investment is treated in the Stability and Growth Pact so as to ensure that such spending is looked on more favourably.

Next steps

The EC is looking to extend the duration of EFSI beyond its initially agreed period of three years[3] and will present the appropriate legislative proposals in the autumn of 2016. It will also enhance the current EFSI operations, imposing a more rigorous application of the additionality principle and expanding the SME window. Joining up with other European funds, such as the European Structural and Investment Funds, will give EFSI much more clout, while EFSI will also help develop a market for sustainable/green projects by including green bonds[4] in its arsenal of financial instruments.

CMU initiative

The EC's CMU initiative, which ties in with the third pillar of the Juncker Plan, aims to remove impediments to the integration and development of a genuine single capital market and to further scale back the fragmentation along national borders that still marks the European financial markets. This would make companies less dependent on bank lending as they would be better able to find alternative sources of finance. The realisation of the CMU would particularly benefit SMEs by enabling them to tap the capital markets, possibly even in countries other than their own Member States[5]. The 2015 Action Plan set out priority measures to have a CMU in place by 2019[6]. Some of these have since led to concrete measures, but many are still in process:

– *More sources of finance for corporations and SMEs and easier access to the equity markets.* The start-up phase of new activities should be able to draw on a range of new types of financing in addition to bank lending (money-lending and donor platforms, peer-to-peer lending and crowdfunding). The next phase, in which raising funds to expand activities is typically difficult, should promote the use of shareholders' equity or venture capital. The EC has set up two new mutual investment funds[7] and launched a public consultation at the beginning of 2016.

  The securitisation market could be developed further and serve as an instrument to diversify risks and strengthen banks' lending capacity. New legislative proposals by the EC, approved by the Ecofin Council on 8 December 2015[8], define a number of simple, transparent and standardised (STS) securitisations and revised the prudential requirements for banks' investments in STS products.

  Lastly, in November 2015, the EC proposed to review the current Prospectus Directive in order to enhance its efficiency and reduce the burden on smaller companies[9]. As a detailed document setting out company information, terms and conditions, and the risks of investment, a prospectus serves as a passport to capital markets for corporations seeking funding and it is vital that it does not become an unnecessary hurdle.

– *Promoting long-term investment*. The new European Long Term Investment Fund (ELTIF) Regulation, adopted in April 2015, aims to attract and raise capital from

(1) See Melyn *et al.* (2016) for a detailed analysis of government investment.
(2) Such financial contributions by national governments will be ignored in the review of the budget efforts under the preventive and corrective arms of the Stability and Growth Pact, and are considered exceptional one-off measures. See Melyn *et al.* (2016).
(3) EC (2015d).
(4) Green bonds comprise all types of bond instruments that are exclusively used to finance or refinance green projects in order to promote progress on environmentally sustainable activities.
(5) Establishing the CMU should also promote risk-sharing across borders within the EU via private capital flows, and therefore reduce the need for public risk-sharing mechanisms.
(6) The Action Plan has since been reviewed in a follow-up report of April 2016 (see EC, 2016a).
(7) European risk capital funds and European social entrepreneurship funds.
(8) The proposals were still before the European Parliament for consideration in the summer of 2016.
(9) The Council is to agree on a general approach in the summer of 2016.

private and institutional investors (life insurers, pension funds and investment funds) for longer-term projects such as infrastructure[1]. In addition, retail investors (including households) have significant savings in the shape of bank accounts and are only marginally involved in the capital markets. To help them better leverage their savings – often accumulated in view of their pensions – by way of the capital markets, at the end of 2016 the EC will investigate the creation of a strategic framework for a European market for individual pension savings products.

– *Promoting cross-border investment by removing persistent obstacles in the shape of diverging tax treatments and national rules and regulations, particularly insolvency laws*. To align national procedures, the EC will put forward a legislative proposal at the end of 2016 on the subject of companies' insolvency frameworks (including preventive restructuring and debt repayment of bankrupt companies). In doing so, it should be able to benefit from its experience with its 2014 Insolvency Recommendation, from properly functioning national schemes, as well as from the findings of the consultation that closed in June 2016.

Conclusions

Investment dynamics in the euro area have remained subdued since the financial crisis: capital spending is languishing below its long-term average and recovery is dragging its heels. From both a global and a historical perspective – i.e. compared with previous post-crisis periods – subdued investment dynamics are a highly unusual state of affairs. This weakness may persist as a partial adjustment to previously excessive spending, particularly by households on residential property. That said, business investment has also yet to stage a major recovery.

Drawing on the accelerator model, this article has demonstrated that, although GDP remains a key determinant of cyclical investment trends, a set of other factors have also contributed to weak capital spending dynamics since 2012, particularly in Italy and Spain and in countries subject to adjustment programmes. Uncertainty plays a not insignificant role, while limited financing possibilities also serve to squeeze investment plans. SMEs more specifically find it hard to meet their funding needs, as they, more than large corporations, recourse to the banking sector, and in some countries this is still not on an even keel. Other factors that feed into subdued investment include the process of debt deleveraging at non-financial corporations and the fragmentation of the financial markets, which has resulted in diverging interest rates offered to clients by banks in different euro area countries.

In addition to these factors – which primarily help to explain short-term capital spending developments – a number of structural changes have taken place in the past decades that may have triggered more secular trends in investment. This is a complex theme, however, and the current state of research does not allow for any clear-cut conclusions about the impact on capital spending of the gradual shift to a more service-based society or the globalisation in the advanced economies. Demographic trends, such as population ageing, are claimed by some to reduce the need for investment, but one might equally argue that more capital-intensive production practices should precisely be implemented to offset negative effects on growth.

The euro area appears to be stymied by the twin challenges of slow economic growth and lagging investment, and a catalyst was needed to reverse this double bind. The Investment Plan for Europe, proposed by Commission President Jean-Claude Juncker in November 2014, attempts to address these issues by increasing funding capacity through the creation of an investment fund, and by improving the general investment climate. Specifically targeting SMEs and mid-cap companies, the plan focuses on selected types of investment with the risk profiles that are too high to be financed by the private sector alone. To date, the fund has committed about one-third of its resources to a variety of investment projects. The same drive also saw the launch of the Capital Markets Union initiative, whose aim is to create a fully integrated European capital market in due course and which should make funding easier for SMEs. While a lot has been achieved, this initiative is still very much on the drawing board.

Investment is not merely a key component of demand; it also determines future growth potential and therefore deserves policy-making attention. In view of the many persistent obstacles in the way of more robust investment dynamics, there is scope for further policy initiatives in various domains.

(1) Accordingly, the EC changed its Solvency II rules in both February and May 2016, making it easier for insurance companies to invest in infrastructure projects and ELTIF long-term projects.

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Should government investment be promoted ?

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R. Schoonackers
P. Stinglhamber
L. Van Meensel

Introduction

In Belgium, government investment relative to GDP has halved since the early 1970s and the country now ranks among the group of European nations whose governments invest the least, while current public spending remains comparatively high. Other euro area countries, too, are looking at low levels of government investment, some because of significant restructuring in the aftermath of the financial crisis. Such investment feeds into the long-term growth potential of an economy and therefore needs extra nurturing and encouragement, without prejudice, of course, to necessary consolidation of public finances and ensuring their sustainability.

This article breaks down into three sections. The first analyses components of public investment, tracing its development and comparing the situation in Belgium with that elsewhere in Europe. The second section discusses the macroeconomic impact of government investment and highlights numerous reasons why it should be promoted. The third section reviews the various arenas that would stand to gain from higher public investment – desirable in the current climate – and ends by making a number of conclusions.

1. Breakdown and development of government investment

1.1 Government investment in Belgium

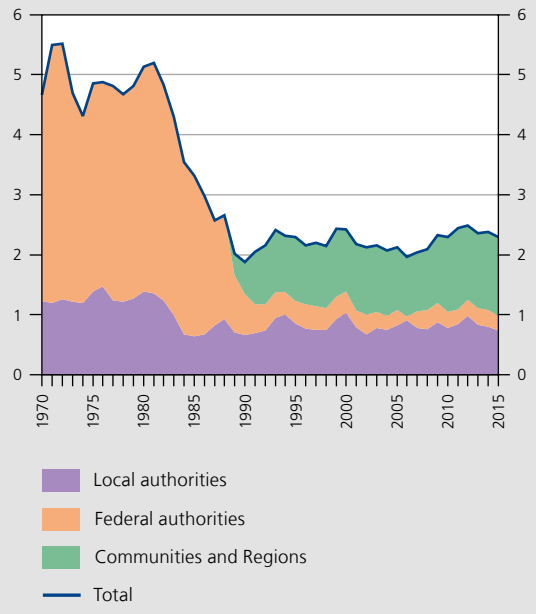
1.1.1 Definition

Government or public investment is defined as gross fixed capital formation by the government : the balance of purchases and sales of fixed capital by the federal government, social security, the Communities and Regions, and local authorities. Fixed capital can encompass buildings, construction, transport equipment, information or telecoms infrastructure, weapons systems, R&D spending, etc. In 2015, general government investment in Belgium worked out at € 9.4 billion, or 2.3 % of GDP.

A broader definition of government investment might also include investment subsidies granted by the government to a plethora of entities in the non-profit sector that serve the public interest (hospitals, nursing homes, etc.). Although not part of the general government sector in the narrow sense as defined in the national accounts, these entities typically receive public sector money to fund their capital spending. A broad definition allows for a wider gauge of government spending, not just in its strictest but also in a broader sense. The latter definition puts government spending at a total of € 13.8 billion in 2015, or 3.4 % of GDP. That said, the rest of this article uses the narrow definition of

CHART 1 GOVERNMENT INVESTMENT IN BELGIUM

(government investment by sub-sector[1], in % of GDP)



Sources: NAI, NBB.

(1) The national accounts did not consider the Communities and Regions a full-fledged sub-sector until 1989. All data predating 1995 – for which the National Accounts Institute does not provide statistics in keeping with the ESA 2010 methodology – have been retropolated to reflect the growth percentages in the national accounts according to ESA 1995.

government investment, i.e. gross fixed capital formation by the government.

1.1.2 Breakdown

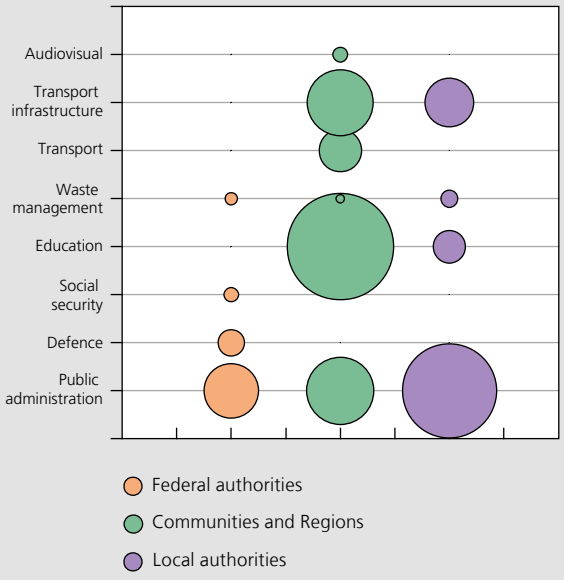
In 2015, the Communities and Regions accounted for over half of government investment in Belgium. Local authorities invested around one-third of the government capital spend, albeit that their share fluctuates in keeping with a six-year electoral cycle typical of their mandate. Federal government, which includes social security, invests very little indeed and accounts for only one-tenth of the total Belgian government investment bill.

Around 40 % of government investment is earmarked for public administration in its broadest sense, while the remainder depends on the mandate of the various government policy levels. Investment in education, which accounts for nearly one-third of investment spending, is carried out at the level of the Communities and Regions and, to a lesser degree, at the local authority level. The same is true for transport infrastructure, which absorbs a total of nearly one-fifth of capital spending by the Belgian government. Investment in public transport, one-twentieth of the total, is made exclusively at the regional level, as the Belgian national rail company, the SNCB, is not part of the public sector according to the national accounts definition. Lastly, defence takes 3 % of the investment spend and is the exclusive domain of the federal government.

Government investment comes in many different shapes, e.g. buildings (purchased or built), construction (particularly road construction or civil engineering), equipment, intangible assets. The appropriation of investment largely determines the forms it takes: the bulk of the money invested in public administration and education targets purchases and construction of buildings. Meanwhile, transport infrastructure encompasses not merely spending on roads (including tunnels and bridges) but also civil engineering projects (ports, canals, dikes, locks, etc.) and other construction works (underground network, drainage, etc.). Investment in equipment largely ends up in public transport and defence, while intangible assets include R&D investment and chiefly pertain to education. Note that capital spending on construction works has shrunk in the past decade, while other types of investment have held up much better.

CHART 2 GOVERNMENT INVESTMENT IN BELGIUM: BREAKDOWN BY SUB-SECTOR AND BY LEVEL OF GOVERNMENT

(shares of total government investment[1], 2015)



Sources: NAI, NBB.

(1) The size of each circle reflects the share in total government investment.

TABLE 1 GOVERNMENT INVESTMENT: BREAKDOWN BY CATEGORY

(in € million, 2015)

	1995	2000	2005	2010	2015
Buildings	**800**	**1 031**	**1 466**	**1 960**	**2 888**
Purchases	44	67	–1	4	105
Construction	755	965	1466	1957	2782
Construction works	**2 034**	**2 655**	**1 828**	**1 978**	**1 960**
Road building	738	962	956	967	1096
Civil engineering	440	337	374	479	402
Other	857	1 357	498	533	462
Other investment	**1 629**	**2 204**	**3 058**	**4 202**	**4 399**
Equipment	658	981	1 409	1 842	1 808
Intangible assets	971	1 223	1 650	2 360	2 591
Sub-total (excluding defence)	**4 463**	**5 890**	**6 351**	**8 140**	**9 247**
p.m. Investment in defence	*393*	*381*	*274*	*258*	*169*
Total	**4 857**	**6 271**	**6 626**	**8 398**	**9 416**

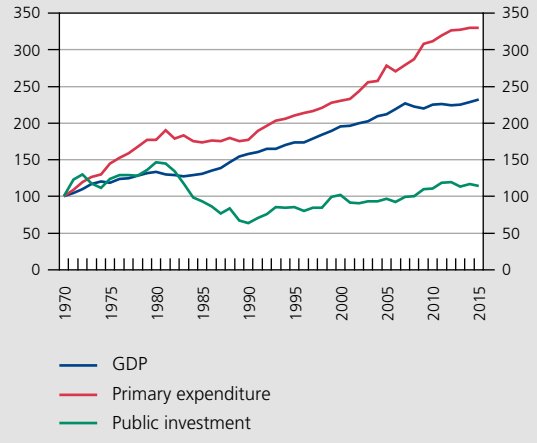
Sources: NAI, NBB.

1.1.3 Development

Government investment and total primary expenditure have been diverging since 1970, with the first recording growth below that of GDP and the other having risen faster than economic activity. In fact, government investment growth has only slightly exceeded inflation levels recorded in the period.

CHART 3 BELGIAN GOVERNMENT INVESTMENT HAS BARELY INCREASED IN REAL TERMS

(index 1970 = 100, by volume)



Sources: NAI, NBB.

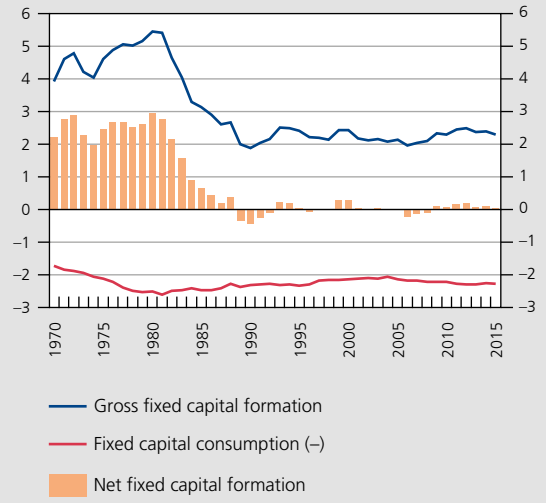
As a result, government investment relative to GDP has halved between 1970 and 2015 and today only accounts for 2.3 % of GDP, compared with a peak of 5.5 % in the early 1970s. The slowdown started with the 1980s fiscal consolidation effort, as capital spending is easily scrapped or shelved at times of austerity whereas measures needed to manage current expenditure are unpopular. However, by the end of the 1980s, capital spending had stabilised and since then it has ranged between 2 % and 2.5 % of GDP.

The relationship between government investment and total primary expenditure shows an even more striking trend, as funds earmarked for investment have been cut by nearly two-thirds since the 1970s. Currently, government investment spending accounts for less than 5 % of total primary expenditure.

Of course, this drop in gross investment has also affected net investment. Net fixed capital formation (or net investment) is defined as the difference between gross fixed capital formation (i.e. gross investment) and the consumption of fixed capital (depreciation of fixed assets due to normal wear and tear). Since the late 1980s, new investment has hardly kept up with the depreciation of fixed assets from previous investment. As a result, net

CHART 4 BELGIAN GOVERNMENT INVESTMENT SPEND BARELY COVERS DEPRECIATION

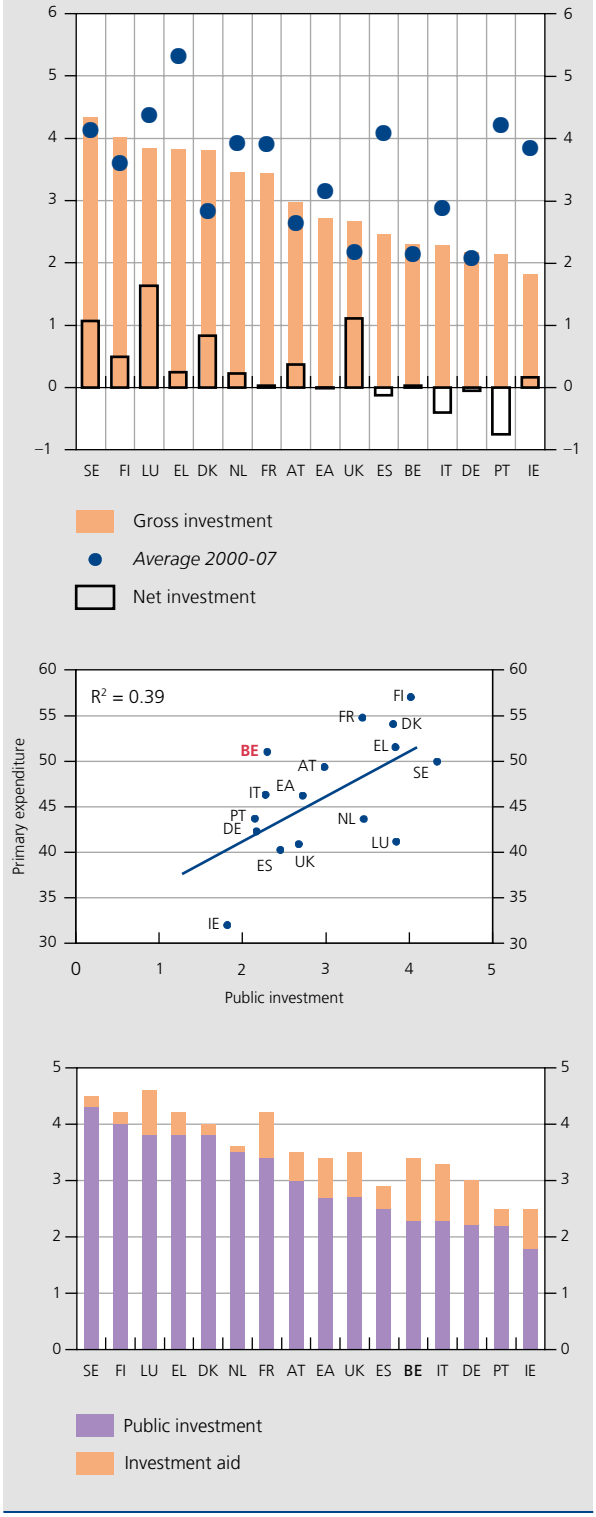
(in % of GDP)



Source: EC.

CHART 5 GOVERNMENT INVESTMENT IN BELGIUM AMONG THE LOWEST IN EUROPE

(in % of GDP, 2015)



Source: EC.

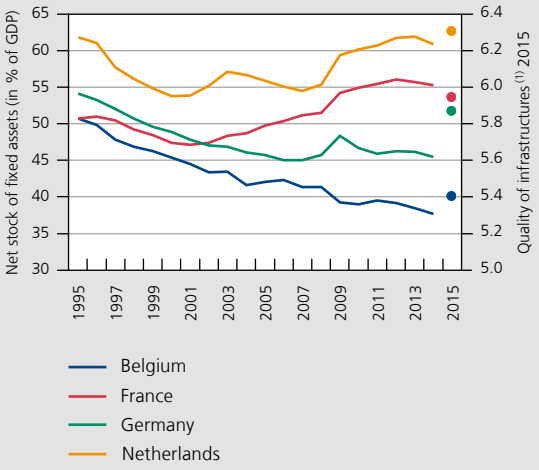
investment has been negligible and in some years even turned negative.

1.2 International comparison

Across Europe, the financial crisis caused many embattled countries to slash their government investment budgets, e.g. Ireland, Portugal and the Mediterranean countries. Greece excepted, these countries and Belgium are now at the bottom of the league table in terms of government investment. Germany is also in this group: much like Belgium's, its subdued pre-crisis government investment levels have hardly budged since. By contrast, Scandinavian governments are investing at twice these levels, i.e. close to 4 % of GDP. In France and the Netherlands too, public investment is considerably higher than in Belgium.

The comparison becomes even more stark when total public spending is factored in. Europe-wide, a measure of correlation emerges between the level of government investment and total primary expenditure, while Belgium stands out for a combination of weak investment and high spending. Among its fellow countries with primary expenditure at over 50 % of GDP, Belgium has the lowest government investment relative to GDP. In fact, six other Western European countries manage to invest more than Belgium, while typically spending less overall. The governments of the other countries are looking at low capital spending ratios, but also at significantly lower primary expenditure than in Belgium.

CHART 6 NET STOCK OF PUBLIC SECTOR FIXED ASSETS, REFLECTING THE QUALITY OF INFRASTRUCTURE, IS RELATIVELY SMALL IN BELGIUM



Sources: EC, World Economic Forum.

(1) Respondents rate the quality of infrastructure (e.g. transport, telephony, energy) on a scale of 1 (highly underdeveloped/among the worst in the world) to 7 (extensive and efficient/among the best in the world).

Considered in its broadest sense, Belgium's government investment more closely reflects the European average, which is to say that the sum of direct investment and government-funded investment subsidies is more in line with the situation elsewhere in Europe.

A cumulation of net investment over time results in the stock of public capital – i.e. the net stock of fixed assets. In relation to GDP, this capital stock has recorded a virtually uninterrupted decline in Belgium since 1995. Up until 2005, Germany saw similar trends but its stock of public capital has since stabilised. By contrast, the Netherlands is now back at its 1995 levels while France has managed to increase its stock of public capital in the same period. A country's stock of fixed assets is reflected in the quality of its infrastructure and the World Economic Forum conducts a survey to rate countries in a league table that mirrors their stock of public capital pretty accurately. Belgium finds itself below its main neighbouring countries and not just for its infrastructure in general but more specifically for its road and rail network and its airport infrastructure. Only its port infrastructure is rated as ahead of its peers, coming in below the Netherlands but above Germany and France.

Belgium's underperformance compared with its neighbouring countries suggests that it is not merely possible but also appropriate to promote government investment in Belgium. Section 2 sets out the reasons justifying a boost to capital spending.

2. Macroeconomic impact of government investment

Government investment typically has a positive effect on economic activity and an economy's productive potential, as demonstrated by the output elasticity of the government's capital stock, i.e. the sum of all past government investments and their depreciation. Numerous empirical studies have tried to quantify output elasticity for a range of countries and periods. Bom and Ligthart (2015) have compiled an interesting survey of these studies that highlights the wide distribution of their outcomes. A meta-analysis helps to mostly explain away this variability, and they find that the output elasticity of the government's capital stock averages around 0.08 in the short term and around 0.12 in the long term. This implies that a 1 % increase in the stock of public capital boosts long-term GDP by 0.12 %.

Government investment makes itself felt through a range of transmission channels, which may be very different depending on the period under review and the nature of the investment. This section will first review these transmission channels and then establish what the impact is of an increase in public investment, using investment multipliers that capture the extent to which boosting such investment influences economic activity. The actual strength of these multipliers relates to various factors also discussed in the section.

2.1 Investment stimulus: a review of transmission channels

In the short term, any increase in government investment will typically boost demand in the economy and exert an immediate upward impact on GDP. After all, such investment classifies as public spending and features under the spending aspect of GDP. Its impact is generated by way of production and so adds value and is a source of income generation.

Over the long term, government investment feeds into the supply side of the economy as it helps raise general economic productivity. And it is precisely this positive externality that makes government investment such a strong policy instrument for facilitating long-term, sustainable economic growth. The precise impact of government investment in the longer term will of course depend to a large extent on the nature of

the investment, e.g. investment in R&D, education and infrastructure will chiefly benefit an economy's production capacity. Spending on R&D, for instance, involves both direct stimulus – through the impact on productivity and innovation within a country – and an indirect effect insofar as it enables a country to better absorb technology available elsewhere in the world. This absorption capacity also benefits from general educational attainment levels in an economy, to which investment in education is a major contributor. Lastly, investment in infrastructure has a key role to play, as it is a major input in the production process and supports the productivity of private production factors labour and capital. An economy's production capacity will be enhanced and agglomeration effects achieved through investment in transport networks, as these efficiently connect manufacturers and consumers; in utilities, as it facilitates energy provision and enhances energy independence; and in communication networks, as this facilitates sharing and spreading of information and knowledge. After all, corporations are more likely to set up operations in areas benefiting from such infrastructure investment, and economic activity will concentrate in areas such as ports and business parks and so generate significant benefits of scale. What is more, focused investment in infrastructure also encourages private investment and reinforces the long-term impact of government investment.

2.2 Short-term and long-term investment multipliers

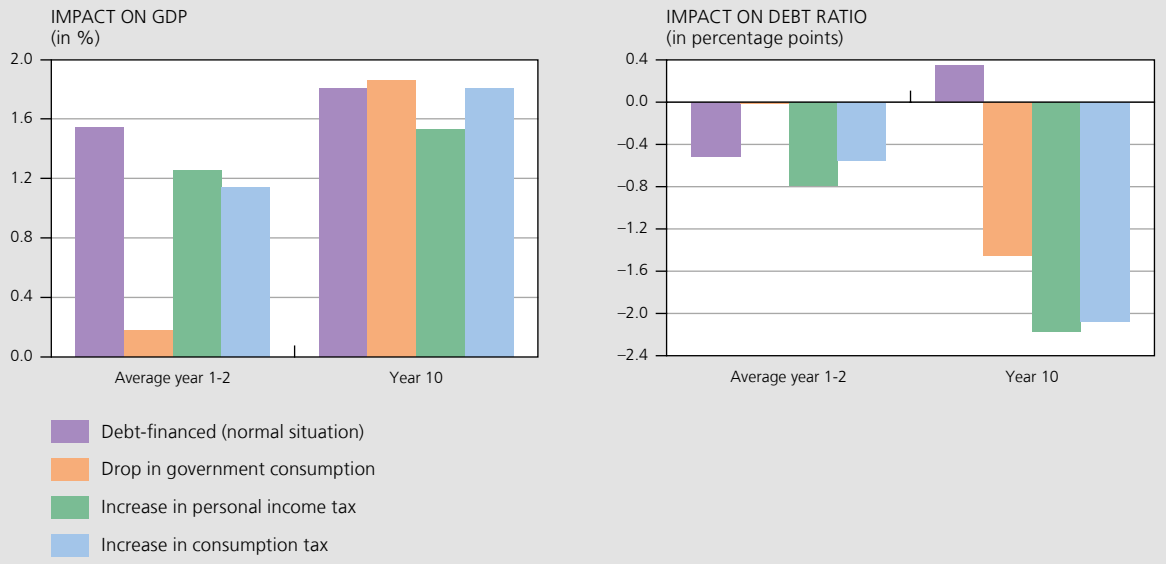
Numerous econometric models and empirical studies confirm that investment multipliers are positive, both in the short term and in the rather longer term, but their exact impact depends on a range of factors, such as the period under review, the nature of the investment, the method of funding and the monetary policy response.

To demonstrate the importance of factors determining the size of the multipliers, we present the outcomes of the ESCB simulations based on the EAGLE model[1], calibrated for four countries and/or groups of countries, i.e. for Germany, for the United States, for the rest of the euro area and for the rest of the world. The model helped establish the effects of a temporary increase in government investment of 1 % of initial GDP and for a period of five years, before gradually returning to its original level as a percentage of GDP. The model assumes an investment stimulus in Germany, but its impact on GDP and on the debt ratio is equally representative of other large euro area countries.

(1) The Euro Area and Global Economy model (EAGLE model), a basic version of which was discussed in Gomes *et al.* (2010), is a micro-founded strong theoretical model for the analysis of spillovers and interdependencies of policy measures.

CHART 7 INVESTMENT MULTIPLIERS VARY ACCORDING TO FUNDING METHOD

(relative to situation without investment stimulus[1])



Source: ESCB (simulations using the EAGLE model).

(1) An increase in government investment of 1 % of GDP over five years.

The normal situation will see additional government investment funded by an expansion of government debt, and assumes that governments are able to borrow at risk-free rates. This article ignores the impact of any steep risk premiums due to rising government debt and of possibly limited access to financial markets for countries with little or no budgetary scope. It also assumes that markets will anticipate the ECB monetary policy response across the board, as well as an absence of any restrictive measures in the first two years after the investment stimulus. This normal situation should see an upward effect on GDP triggered by higher government investment as early as in the first two years after the investment stimulus. Long-term, GDP should advance further by nearly 2 % compared with a situation without investment stimulus. Although investment is funded by higher government debt, the debt ratio stands to contract in the short term on the back of favourable GDP trends, while higher GDP will also curb the long-term rise of the debt ratio.

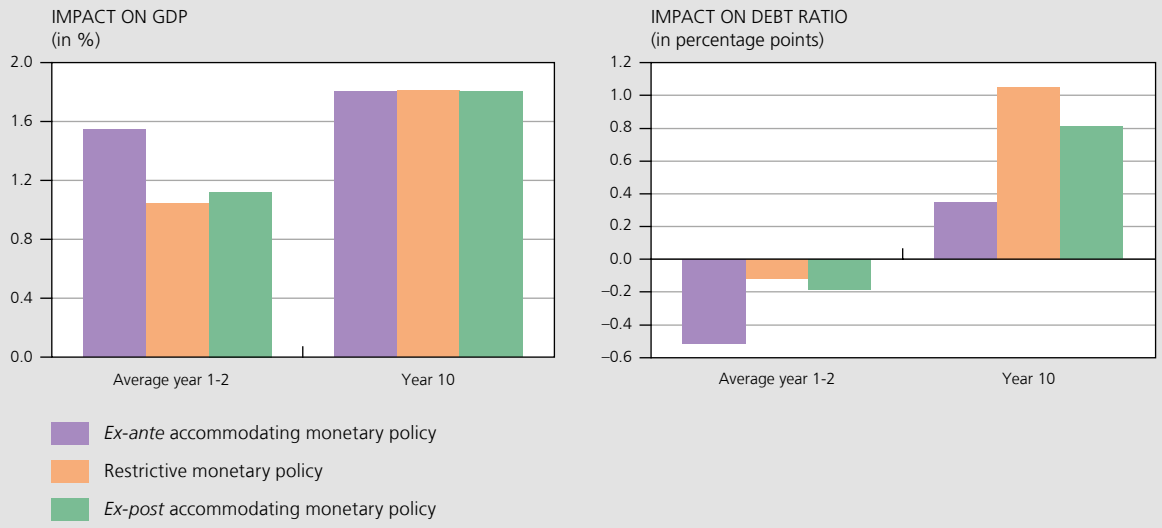
The size of investment multipliers hinges crucially on how additional government investment is paid. If funded by higher personal income tax or consumption levies, its upward short-term effect on GDP will typically be slightly lower than that of an investment stimulus programme driven by higher government debt. The short-term impact is virtually wiped out if the government pays for investment by cutting consumption, as this almost neutralises the positive demand effect of higher capital spending. Long-term, financing methods appear to be much less important for the GDP impact and investment multipliers are almost the same for the various funding methods. By contrast, debt ratio developments are deeply affected by the choice of funding : if the investment stimulus does not involve more debt creation but is budget neutral, the debt ratio will contract sharply both in the short and in the longer term.

Meanwhile, the monetary policy response also matters for the macroeconomic consequences of any investment stimulus. As discussed above, the normal situation sees the ECB opt for accommodating policies of which the economic agents take full advantage. However, if such policies are only implemented *ex-post* and cannot therefore be anticipated in full, or if the ECB switches to restrictive policies, positive demand effects would be much more subdued in the short term and involve smaller multipliers. In these two cases, debt ratio developments would also be a lot less favourable.

Multiplier size will also reflect the degree to which a specific investment by the government boosts the economy's productive capacity. The normal situation assumes that all government investment is productive and enhances the productive stock of public capital. If government investment is less efficient because, say,

CHART 8 MONETARY POLICY RESPONSE CONTRIBUTES TO SIZE OF INVESTMENT MULTIPLIERS

(relative to situation without investment stimulus[1])



Source : ESCB (simulations using the EAGLE model).
(1) An increase in government investment of 1 % of GDP over five years.

only half of new spending actually boosts the productive stock of public capital, its short-term and long-term impact on GDP will be much smaller and its debt ratio will develop much less favourably. In the extreme event of no government investment turning out to be productive and output elasticity of government capital being reduced to nil, the long-term impact on GDP will be lost completely and the debt ratio will shoot up.

Bom and Ligthart (2015) have demonstrated, among other things, that the average output elasticity of government capital goods is relatively high for regional and local authorities, which might suggest that these authorities tend to focus on investment commanding the biggest multipliers: spending on so-called core infrastructure – roads, port infrastructure, rail and airports – would appear to have a bigger upward impact on production potential than other government investment, such as on buildings[1].

The benefits of government investment are of course also greater when processes informing investment spending are more efficient and ensure that the best projects are delivered at the lowest possible cost. The IMF's Public Investment Management Assessment (PIMA, 2015) serves as a useful tool to shift processes to optimum decision-making, focusing on planning (including effective coordination between the various policy levels), on allocating investment to the right sectors and projects (based on transparent criteria and a long-term view) and own implementing selected projects on time and on budget.

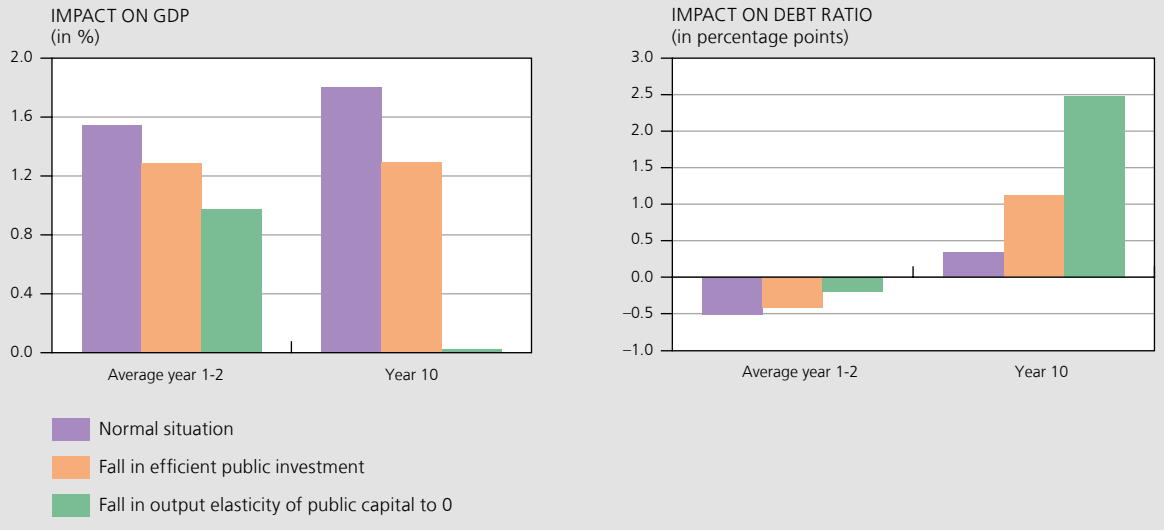
Lastly, an investment boost in one euro area country also has positive spillover effects on the GDP of the other countries in the euro area, as this stimulus boosts domestic demand and increases prices relative to those in other countries, and encourages more exports in the rest of the euro area. The extent of the spillover effect depends on the country giving the investment boost, the monetary policy response and the method of funding. Chart 10 captures the impact of an investment stimulus in Germany on the GDP of other euro area countries. Positive spillover effects are mainly short-term, sharply decline in the case of *ex-post* accommodating monetary policy and virtually disappear if the ECB adopts restrictive policies to curb inflation caused by rising demand.

The effects we have identified in these simulations are confirmed by a range of empirical analyses, including recent work by Abiad *et al.* (2015). Putting the average short- and medium-term macroeconomic impact of an unanticipated increase in government

(1) Most studies ignore military installations and equipment.

CHART 9 MORE EFFICIENT GOVERNMENT INVESTMENT, HIGHER MULTIPLIERS[1]

(relative to situation without investment stimulus[2])



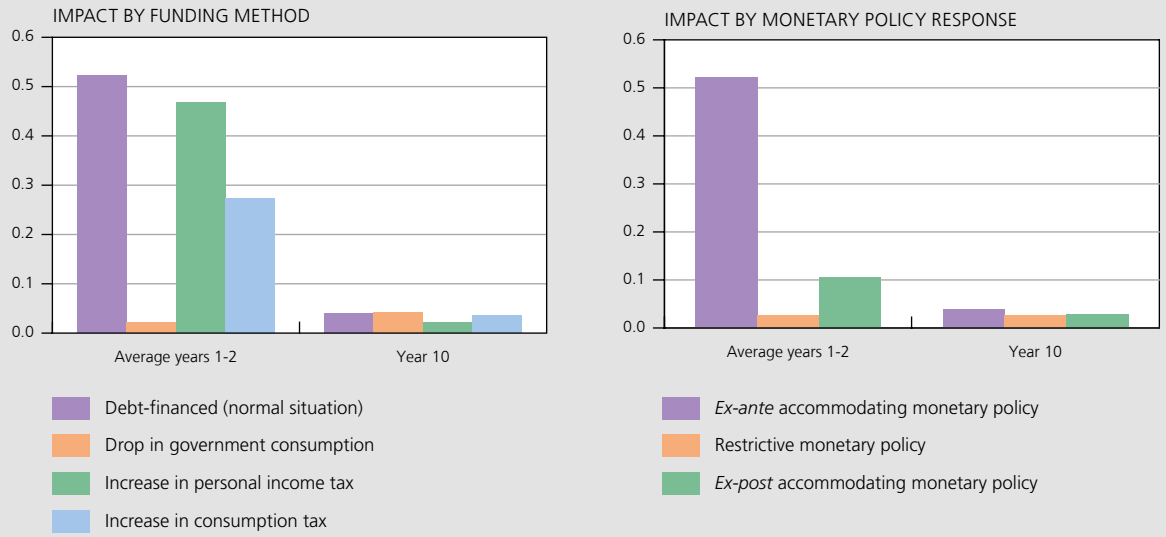
Source: ESCB (simulations using the EAGLE model).

(1) The normal situation puts output elasticity of the stock of public capital at 0.10, which is in keeping with the findings of Bom and Ligthart (2015).

(2) An increase in government investment of 1 % of GDP over five years.

CHART 10 INVESTMENT STIMULUS IN GERMANY: IMPACT ON GDP IN REST OF EURO AREA

(relative to situation without investment stimulus[1], in %)

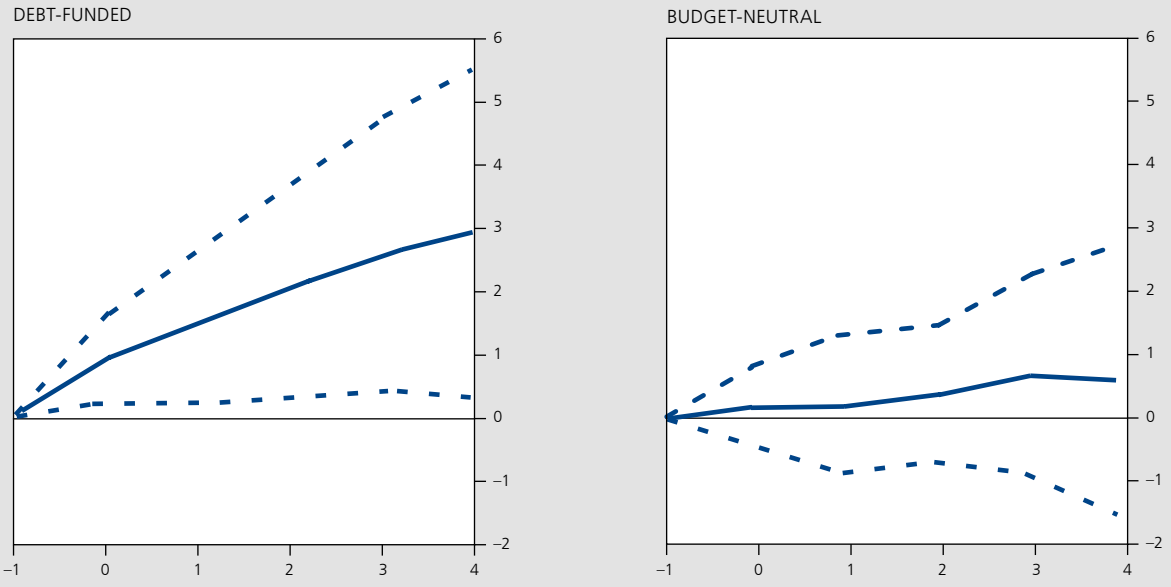


Source: ESCB (simulations using the EAGLE model).

(1) An increase in government investment of 1 % of GDP over five years.

CHART 11 IMPACT ON GDP OF AN UNEXPECTED INCREASE IN GOVERNMENT INVESTMENT OF ONE PERCENTAGE POINT OF GDP[1]

(in %)



Source: Abiad *et al.* (2015).

(1) The space between the dotted lines captures the 90 % confidence interval.

investment at one percentage point of GDP over one year, these authors have reviewed OECD countries in the 1985-2013 period and calculated actual government investment in any one year compared with analyst predictions in October of the same year. This prediction error serves as a proxy for the unexpected trend in government investment and helps to pinpoint the impact on GDP of a change in investment. Their findings also corroborate the importance of funding methods: four years on from an unexpected investment stimulus of one percentage point of GDP, real output is found to be some 3 % higher if funded by debt creation, with the impact reduced to 0.5 % if additional investment is offset and does not impact the government's budget balance. On the whole, their findings support the conclusion that government investment benefits an economy's production capacity.

3. How to promote government investment?

Section 1 found that government investment in Belgium is currently relatively low, as it is in many other European countries. The authorities would be well advised to raise it, as weak government investment gets in the way of sustainable economic recovery and actually hampers the economy's future potential.

In fact, promoting investment was a key strand of the strategy set out by the European Commission when Jean-Claude Juncker took over in November 2014 and proposed reviving the European economy and creating jobs without taking on any new debt. Mobilising investment, a renewed commitment to implement structural reforms and the need to continue to aim for fiscal responsibility inform the European Union's new, integrated economic policy approach. Simultaneous, coordinated action in these three domains is believed to be crucial for restoring confidence, for eliminating the uncertainty hampering investment and for maximising the mutually reinforcing effects of the three strands. As part of the new, integrated approach, in January 2015 the Commission released guidance on a flexible application of the rules of the Stability and Growth Pact to strengthen the link between structural reforms, investment and budgetary responsibility. This guidance and their Investment Plan for Europe are among the key initiatives promoting investment by the Juncker-led European Commission.

This section describes recent European initiatives aiming to boost investment and suggests a few alternatives for encouraging government investment.

3.1 Recent initiatives to promote government investment

3.1.1 Investment Plan for Europe

The Investment Plan for Europe, also known as the Juncker Plan, was launched by the Commission in November 2014 and became operational in mid-2015. Its primary aim is to encourage investment across Europe, and particularly investment that crucially supports the economy's production potential – i.e. all investment and not just public investment.

The plan's implementation and outcomes to date are discussed at length in the article by Butzen *et al.* (2016) in this edition of the Economic Review.

3.1.2 Stability and Growth Pact: flexible on investment

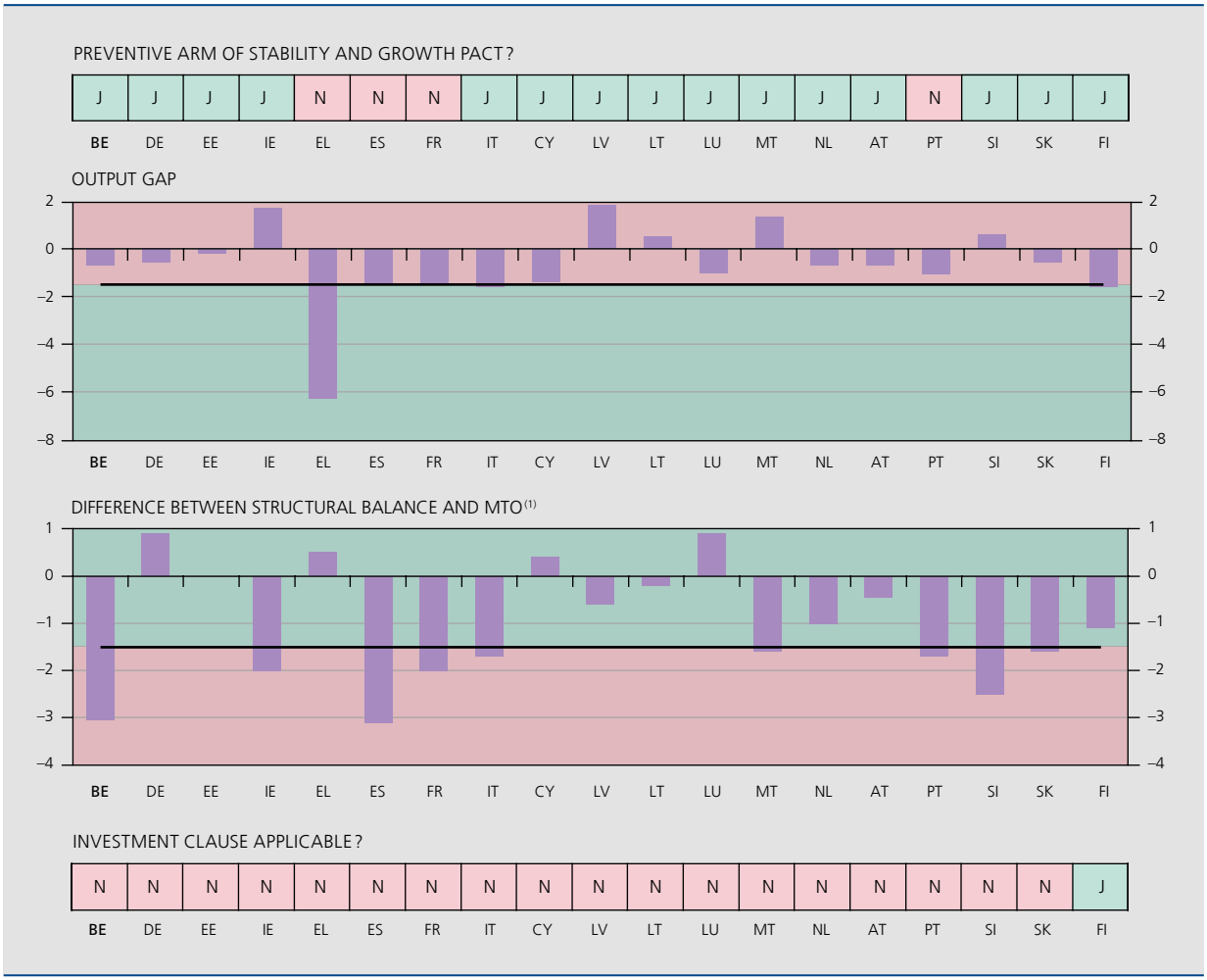
In January 2015, the Commission set out how it would use maximum flexibility in the Stability and Growth Pact rules to pursue growth-friendly fiscal policies. To this end, it will factor in economic conditions in Member States when imposing efforts under the preventive arm, encourage effective implementation of structural reforms and promote investment.

Member States are given scope to promote investment by temporarily deviating from their medium-term objectives under the preventive arm of the Stability and Growth Pact or from their budgetary adjustment paths to this objective[1]. However, Member States can only invoke the clause under very strict conditions, e.g. when they are facing negative GDP growth in volume terms or if their GDP lags way behind potential and causes a negative output gap in excess of 1.5 % of GDP. National investment spending only qualifies if the relevant projects are co-financed by the EU as part of its structural and cohesion policies, trans-European networks and the Connecting Europe Facility, or if they are co-financed by the European Fund for Strategic Investments (EFSI). Any such financial back-up is required to lead to a real increase in investment levels, while temporary deviations may not cause a Member State to exceed the 3 % fiscal deficit target and a safety margin should be observed. What is more, the Member State is required to make up for the deviation within the timescale of its stability or convergence programme, i.e. within four years of invoking the investment clause. The Commission will ensure compliance with the latter criterion by demanding that the gap between a country's structural balance and its medium-term objective may not exceed 1.5 percentage

(1) Section 3.2.2 has more on the Stability and Growth Pact.

CHART 12 APPLYING INVESTMENT CLAUSE CRITERIA

(data for 2016, as a % of potential GDP, unless otherwise stated)



Source: EC.

(1) In percentage points of GDP.

points of GDP. This condition may be considered very strict indeed, as only a few countries meet it: five euro area Member States in 2015, to be precise, while only Greece and Finland were still eligible in 2016.

The Commission will also encourage investment by adopting flexibility on national financial contributions to the EFSI. It will ignore these contributions when determining budgetary efforts achieved under the preventive or corrective arms of the Stability and Growth Pact, as these are considered exceptional, one-time measures that do not affect underlying budgetary positions. What is more, the Commission will refrain from initiating excessive deficit procedures if a Member State temporarily exceeds its deficit reference value merely as a result of its EFSI contributions. The Commission will factor out such contributions when assessing any breach of the debt reference value.

3.2 Alternative suggestions for promoting government investment

Despite fresh EU initiatives to promote capital spending by the government in the past few years, public investment has remained relatively subdued. The current European framework has come under attack from some commentators arguing that too little is being done to encourage public investment. Various suggestions have been made to remedy the problem, roughly breaking down into two categories: changes to the statistical treatment of investment and changes to fiscal rules.

3.2.1 Statistical rules

Some observers take issue with the statistical rules to be observed for the inclusion of government investment

in the general government accounts, themselves part of the national accounts. These rules have to comply with the guidelines of the European System of National and Regional Accounts (ESA). ESA 2010 is currently in force but the philosophy underpinning the ESA system has not changed since its first version in 1970.

ESA thinking considers investment a category of spending and therefore a negative influence on the overall balance. This makes sense: funding the investment either increases debt or reduces financial assets. The actual spend is recorded when economic ownership is transferred. The purchase of a capital item, then, will involve charging the full amount at the point of transfer, while the construction of an investment asset will involve attribution as the work progresses and invoices are received or paid.

One thing that has changed in the past few years is that Eurostat is enforcing compliance with some rules much more rigorously and inspecting Member States more closely on their compliance. This increased strictness primarily relates to the definition of government scope, i.e. the institutions ranked among the public sector; a range of alternative types of funding of capital spending; and public private partnerships to build, run and maintain buildings and equipment for some government services by private companies. Eurostat's 2004 methodology manual on government deficit and debt prescribed fairly easy rules governing these partnerships but their actual application remained strict and the rules were tightened up further when Eurostat switched to ESA 2010. Statistical data should really reflect economic reality, and any classification of investment within or outside the public sector should mean addressing the question of economic ownership, not legal ownership. A distortion of statistical rules is not a desirable state of affairs in any event and it is imperative that Eurostat issues clear rules, applied transparently and complied with scrupulously by all EU Member States.

3.2.2 Stability and Growth Pact fiscal rules

A significant proportion of suggestions and proposals to promote government investment call for changes to the European governance framework for public finances, as captured in the rules of the Maastricht Treaty and the Stability and Growth Pact. This framework has both a preventive arm aimed at avoiding untenable budgetary situations and a corrective arm covering remedial actions for Member States facing excessive budget deficits or debt[1]. A medium-term objective is the key element of the preventive toolkit[2] and specifies a specific reference value for individual countries' budget deficits/surpluses, expressed in structural terms. Countries that fail to achieve their medium-term objectives are required to take adjustment measures to converge to their objective at appropriate speeds. The corrective arm still imposes the two original criteria of the Maastricht Treaty. The first is that a government's nominal budget deficit should not exceed 3 % of GDP, unless it has been coming down significantly and consistently and has reached a level close to its reference value or unless the breach is exceptional and temporary and the deficit is close to the reference value. Secondly, current government debt should not exceed 60 % of GDP or, if it does, should be moving towards this reference value at a satisfactory pace.

Proposed changes to the European budget framework typically involve the implementation of the classic golden rule for funding public finances[3]. This states that current expenditure should be covered by current receipts and should not be defrayed from borrowings. Investment spending, by contrast, may be paid from borrowings. Several arguments in favour of this golden rule come up repeatedly: that, in economic terms, government investment is a source of potential future growth and so of tax revenues; that it is socially imperative to ensure intergenerational equity, meaning that the benefits of government investment are spread across years and sometimes even generations; that allowing capital spending to be funded through borrowing also spreads the costs over time; and lastly that, from a financial perspective, investment is considered an asset that may serve as collateral for the loan agreed to fund it.

Some economists also cite cyclical reasons when arguing the case for the golden rule for funding, i.e. that capital spending may serve to stabilise economies. However, government investment is not a suitable countercyclical policy instrument as preparing, realising and implementing it efficiently requires a great deal of time.

The debate over the implementation of the golden rule has been raging for years and flared up again in the discussions over further changes to the Stability and Growth Pact. A quick recap of a few recent suggestions: Wim Moesen (2016) suggests allowing governments to run deficits to the amount of their gross capital spending. A proponent of a narrow definition of investment (tangible fixed assets), he pushes for the introduction of the golden rule as it puts budget discipline where it belongs, i.e. with current transactions. Another golden

(1) Melyn W., L. Van Meensel and S. Van Parys (2015).

(2) Medium-term objectives (MTOs) are set down in Member States' stability or convergence programmes and should meet a number of minimum requirements, i.e. at least –0.5 % of GDP for euro area countries, although they may be pegged at –1 % of GDP in countries with debt ratios well below 60 % of GDP and which are looking at minor risks to the sustainability of their long-term public finances.

(3) The Fiscal Compact also imposes a golden rule: that the general government should either be looking at a balanced budget or a surplus. This rule is considered to have been met when the structural balance meets the country's MTO or if it is observing the agreed adjustment path towards this objective.

rule proposal was put forward in 2014 by the Bruegel think-tank (Barbiero and Darvas (2014)). They propose the introduction of an asymmetric golden rule to protect public investment in bad times by allowing governments to raise the agreed structural deficit by the net investment total, while the usual Stability and Growth Pact rules should remain in place at all other times. Henri Bogaert (2016) put forward yet another interesting suggestion : that the calculation of medium-term budgetary objectives (MTOs) be changed to factor in net government investment as well as the potential growth of economic activity, the debt ratio and the cost of an ageing population.

One alternative to the introduction of a golden rule could be to replace gross capital spending with depreciation of investment in overall balance calculations, easing the current overall balance of general government by the net investment amount and thus keeping out of the way of any investment stimulus. This echoes a proposal made in 2004 by Olivier Blanchard and Francesco Giavazzi, who cite as one of its advantages that, once the adjusted budget balance reaches a virtual equilibrium, the debt ratio would move towards the government's stock of public capital over time.

To date, the Commission has ignored all of these suggestions to incorporate a golden rule in its proposed reforms of the Stability and Growth Pact. Its main reasons are that it is arguably difficult to define the expenditure categories covered by such a rule ; that public spending disruptions might occur and a preference for physical infrastructure emerge ; and that a golden rule might encourage current expenditure posing as capital spending. Following the reforms of the Stability and Growth Pact in 2005 and 2011, no further changes to the rules of the Pact are currently being negotiated. That said, it is recommended that serious thought is given to a change in the treatment of public investment in the Stability and Growth Pact, as post-financial crisis restructuring of public finances has hit public investment hard in a number of countries. This would appear to be the way to promote public investment in the current climate of low government investment, weak demand and low inflation, low potential growth and low interest rates. More particularly, it makes solid sense to reconsider the suggestion to take into account depreciation on government investment instead of capital spending – always assuming, of course that budgetary responsibility and the long-term sustainability of public finances remain intact.

Conclusions

Government investment typically has a positive effect on economic activity and an economy's productive potential. However, levels of public investment in Belgium and a great many other euro area countries are currently at a low ebb, making it advisable to give them a boost.

In fact, promoting investment was a key strand of the strategy set out by the European Commission when Jean-Claude Juncker took over, taking the shape of its Investment Plan for Europe. The investment clause in the Stability and Growth Pact likewise aims to promote public investment, but its criteria are quite rigorous and only a few countries qualify.

Despite these initiatives to promote capital spending by governments in the past few years, public investment has remained subdued and the question arises whether investment may be stimulated through a change in the statistical treatment of investment or changes in European budgetary rules.

As for the statistical treatment of investment, the ESA 2010 methodology provides clear basic rules that do not need redrafting. That said, it is imperative that Eurostat provides clarity on the rules and their application, obviating any misunderstanding about the recognition of investment by way of public private partnerships or other alternative methods of funding.

As for the European fiscal rules under the Stability and Growth Pact, serious consideration should be given to the way public investment is handled and to making its treatment more favourable. This might be done by replacing investment spending by depreciation on public investment when setting the budget balance, implying that the overall government balance is adjusted for net investment. Facilitating an investment boost, this would be highly desirable in the current climate of low government investment, weak demand and low inflation, low potential growth and low interest rates.

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Summaries of articles

Monetary and fiscal policies in the euro area: Independent but nevertheless connected

Before the onset of the financial and economic crisis in 2007, one seemed to know a good recipe for effective macroeconomic stabilisation. In a nutshell, an independent central bank with its interest rate instrument guarantees price stability and the fiscal authority, in order not to interfere, ensures that public finances are healthy. The crisis, however, challenged the standard policy framework, as the latter did not foresee the many interactions between monetary and fiscal policy that emerged during the crisis. This article discusses some of these interactions in the euro area and thus promotes better insight into the complex links between the two policy domains.

JEL codes: E52, E58, E61, E62, E63

Key words: euro area, monetary policy, fiscal policy, coordination, macroeconomic stabilisation, inflation.

The distribution of household wealth in Belgium: Initial findings of the second wave of the Household Finance and Consumption Survey (HFCS)

The article draws on the preliminary findings of the second wave (2014) of the Household Finance and Consumption Survey (HFCS) to analyse the structure and distribution of household wealth in Belgium, and compares these with the findings of the first wave (2010) as pertaining to Belgium. All things considered, income and wealth distribution in Belgium have remained fairly stable. A comparison of survey findings for 2010 and 2014 reveals increased investment in – and loans attracted towards – other property, in addition to households' main residences. The survey also finds that households have shifted away from direct investment in the equity and bond markets and now have more investments in mutual funds. With such assets held almost exclusively by wealthier households, it is this particular group's portfolio decisions that determine this overall outcome. Income from capital – i.e. interest income, dividends and rental income – came down on average in the 2010-14 period, mainly due to lower interest rates. This type of income is primarily found in the wealthiest households. Survey findings reveal increased participation and higher outstanding amounts for all types of loans. A more detailed analysis points to potential pockets of risk in the mortgage market, particularly for single-parent families and to a lesser degree also single-person households.

JEL codes: D14, D31

Key words: household finance, wealth distribution, income distribution

Belgium's inward and outward foreign direct investment

The article analyses the size and the economic impact of Belgium's foreign direct investment (FDI), both inward and outward. Outstanding FDI figures confirm Belgium's status as a small, open economy. However, a large proportion of that investment is capital in transit, partly owing to government initiatives which in past years aimed to attract FDI, particularly by means of tax incentives such as the notional interest deduction. In net terms, and thus excluding the impact of capital in transit, inward FDI exceeds outward FDI. This is an atypical situation for a developed economy with a substantial savings surplus.

Belgium's FDI relationships entail a loss of net income to the rest of the world. This adverse financial result is due partly to the low level of net outward FDI, but also to a relatively low return on Belgium's outward FDI. However, FDI relationships do have a favourable impact on Belgium's real economy. Firms receiving inward or engaging in outward FDI generally achieve higher productivity and make a positive contribution to Belgium's net exports. As regards employment in Belgium, the economic crisis affected jobs in Belgium-based subsidiaries of foreign groups to a much greater extent than jobs in Belgian parent companies and purely domestic firms.

JEL codes : F21, F23, F30, G30

Key words : foreign direct investment, investment income balance, multinationals, productivity

How to stimulate entrepreneurship in Belgium ?

While the creation of businesses is very important for economic growth, Belgium's performance in that regard has been below the EU15 average for many years. The same can be said of the percentage of self-employed workers in the population of working age. As well as establishing that fact, this article tries to identify some of the reasons behind it.

Being multidimensional in character, entrepreneurship is influenced by numerous factors. They are grouped into five main categories. Belgium does fairly well in regard to market conditions, and is average in terms of the regulatory framework, access to finance, and entrepreneurial capabilities. However, in regard to its entrepreneurship culture, Belgium was at the bottom of the EU15 ranking between 2009 and 2015. That therefore appears to be one of the main factors explaining Belgium's poor performance in regard to setting up new businesses.

Consequently, it is vital to promote a positive view of entrepreneurship, helping to reduce the fear of failure and the associated stigma, and to encourage creativity and risk-taking. Stimulating the entrepreneurial culture requires an approach based on multiple channels, including schools and the media. Such a change of culture could make a significant contribution towards preserving and enhancing the future prosperity of Belgium.

JEL codes : L26, M13, 031

Key words : entrepreneurship, determinants, entrepreneurial culture

Why is investment in the euro area continuing to show only weak recovery ?

Since the onset of the global financial crisis, investments in the euro area were cut dramatically and they have not yet returned to their pre-2008 levels. Low levels of investments do not merely depress demand – a highly cyclical component – but also undermine an economy's long-term growth potential. The article attempts to explain the recent evolution of euro area investment. More specifically, it investigates the factors hindering a capital spending revival and the European policy initiatives that have been taken to remedy the situation.

From both an international and a historical perspective – i.e. compared with previous post-crisis periods – we are looking at a highly unusual state of investment's recovery which drags on. There may possibly be a persistent component to the

shortfall, in as much as it is an adjustment to previously excessive spending, particularly by households on residential property. That said, business investment has also yet to stage a major recovery.

Focusing on business investment, it is apparent that subdued economic growth has combined with underutilised production resources to clearly reduce the necessity of such investment. But a weak business cycle alone does not explain business investment dynamics : this article draws on the accelerator model to demonstrate that a set of other factors also underlies the weak investment dynamics since 2012, e.g. uncertainty, financing restrictions, ongoing deleveraging and fragmentation of the financial markets.

In addition to these short-term factors, a number of structural changes have taken place in the past decades, changes that may have triggered more secular trends. This is a complex theme, however, and it is unclear what the impact on capital spending has been of globalisation and the shift to a service-based society in advanced economies. Demographic trends, and particularly population ageing, are claimed by some to necessitate less investment, but one might equally argue that more capital-intensive production practices should be implemented to offset negative effects on growth.

The euro area appears to be stymied in an unfavourable equilibria of slow economic growth and lagging investment. The Investment Plan for Europe attempts to break this adverse loop by increasing funding capacity through an investment fund, and by improving the general investment climate. Also known as the Juncker Plan, its aim was to generate € 315 billion of investment within three years – and a year on it looks more or less on track to achieve this aim. The same drive also saw the launch of the Capital Markets Union initiative, whose aim is to create a fully integrated European capital market in due course and which should make funding easier for SMEs. However, this initiative is still very much on the drawing board.

JEL codes : E22, E60,

Key words : investment, accelerator model, secular trends, Juncker Plan, euro area

Should government investment be promoted ?

Public investment is currently at a low level in Belgium and in many other European countries. However, public investment has a very positive impact on economic activity and on an economy's production potential. It is therefore advisable to boost that investment, though of course without impairing the consolidation of public finances necessary to safeguard their sustainability.

The article offers an overview of public investment and the initiatives for promoting it. A first section analyses the components of public investment, describes the trend in that investment and compares the situation in Belgium with the European picture. A second section examines the macroeconomic impact of public investment and sets out numerous arguments explaining why that investment needs to be increased. The last section looks at the various possible ways of encouraging an increase in public investment, which is desirable in the current circumstances. The article ends with some conclusions.

As regards the statistical treatment of investment under the ESA 2010 methodological framework, the basic rules are clear and it is not desirable to redraft them. As regards the application of the European fiscal rules under the Stability and Growth Pact, serious consideration should be given to revising the way in which public investment is taken into account, with a view to more favourable treatment of that expenditure. This could be done by replacing investment expenditure with the amortisation of public investment when determining the relevant budget balance.

JEL codes : E22, E60, E61, E62, H50, H54, H60

Key words : public investment, investment multipliers, Stability and Growth Pact, Belgium, Europe.

Abstracts from the Working Papers series

299. Economic importance of the Belgian ports : Flemish maritime ports, Liège port complex and the port of Brussels – Report 2014 by G. Van Gastel, June 2016

The paper is an annual publication issued by the Microeconomic Analysis Service of the National Bank of Belgium and provides an extensive overview of the economic importance and development of the Flemish maritime ports, the Liège port complex and the port of Brussels for the period 2009-2014, with emphasis on 2014. Focusing on the three major variables of value added, employment and investment, the report also provides some information based on the social balance sheet and an overview of the financial situation in these ports as a whole. These observations are linked to a more general context, along with a few cargo statistics.

300. Misalignment of productivity and wages across regions ? Evidence from Belgian matched panel data by F. Rycx, Y. Saks, I. Tojerow, July 2016

The paper is one of the first to estimate how the region in which an establishment is located affects its productivity, wage cost and cost competitiveness (i.e. its productivity-wage gap). To do so, the authors use detailed linked employer-employee panel data for Belgium and rely on methodological approaches from both Hellerstein and Neumark (1995) and Bartolucci (2014) to estimate dynamic panel data models at the establishment level. Their findings show that inter-regional differences in productivity and wages are significant but vanish almost totally, both in industry and services, when controlling for a wide range of covariates, establishment-fixed effects and endogeneity. Thus, their results suggest that wage cost and productivity differentials are *ceteris paribus* relatively well aligned across regions.

Conventional signs

%	per cent
e.g.	*exempli gratia* (for example)
etc.	*et cætera*
i.e.	*id* est (that is)
p.m.	*pro memoria*

List of abbreviations

Countries or regions

BE	Belgium
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
AT	Austria
PT	Portugal
SI	Slovenia
SK	Slovakia
FI	Finland
EA	Euro area
DK	Denmark
SE	Sweden
UK	United Kingdom
EU	European Union
EU15	European Union of 15 countries, before the 2004 enlargement
JP	Japan
US	United States
BR	Brussels
VL	Flanders
WL	Wallonia

Other

ABSPP	Asset-backed securities purchase programme
APP	Asset purchase programme
AWM	Area Wide Model
BLS	Bank Lending Survey
BPM6	6th edition of the balance of payments manual
BRIC	Brazil, Russia, India and China
CBPP3	Third covered bond purchase programme
CIS	Commonwealth of Independent States
CMU	Capital Markets Union
CSPP	Corporate sector purchase programme
DSTI	Debt-service-to-income ratio
DTA	Detb-to-asset ratio
DTI	Debt-to income ratio
EAGLE	Euro Area and Global Economy
EC	European Commission
ECB	European Central Bank
EFSI	European Fund for Strategic Investments
EIAH	European Investment Advisory Hub
EIB	European Investment Bank
EIF	European Investment Fund
EIPP	European Investment Project Portal
ELTF	European Long Term Investment Fund
EMU	Economic and Monetary Union
ESA	European System of Accounts
ESCB	European System of Central Banks
ESM	European Stability Mechanism
FDI	Foreign direct investment
FPS Economy	Federal Public Service Economy, SMEs, Self-Employed and Energy
FPS ELSD	Federal Public Service Employment, Labour and Social Dialogue
GDP	Gross domestic product
GEM	Global Entrepreneurschip Monitor
GNI	Gross national income
GNP	Gross national product
G20	Group of Twenty
HFCN	Household Finance and Consumption Network
HFCS	Household Finance and Consumption Survey
HICP	Harmonised index of consumer prices
ICT	Information and communications technology
IIP	International investment position
IMD	Institute for Management Development
IMF	International Monetary Fund
LFS	Labour force survey

MTO	Medium-term objective
NAI	National Accounts Institute
NBB	National Bank of Belgium
NIIP	Net international investment position
NISSE	National Institute for the Social Security of the Self-Employed
OECD	Organisation for Economic Cooperation and Development
OMT	Outright monetary transactions
PMV	Participatiemaatschappij Vlaanderen
PSPP	Public sector purchase programme
R&D	Research and development
SAFE	Survey on the access to finance of SMEs in the euro area
SGP	Stability and Growth Pact
SME	Small and medium-sized enterprise
SNCB	Société nationale des chemins de fer belges
SPF	Survey of professional forecasters
STRI	Services Trade Restrictiveness Index
STS	Simple, transparent and standardised
TEA	Total early-stage Entrepreneurial Activity
TLTRO	Targeted longer-term refinancing operations
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
VAT	Value added tax
WEF	World Economic Forum

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