Preliminary draft

**On the determinants of firms’ financial surpluses and deficits**

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**Abstract**

According to macroeconomic manuals firms are expected to be net borrowers: the net change of their financial assets should be smaller than the net change of their financial liabilities. However in last years, firms were often net lenders. For instance since the first 2000s in the UK, Germany and the Netherlands firms have been experimenting persistent surpluses. On the contrary firms remained net borrowers in countries such as France and Italy. In this paper we investigate the sources of corporate sector surpluses and deficits using panel data techniques. Our data set includes 17 industrial countries over the period 1995-2014. Our main results are that firms’ surpluses and deficits are linked to national output gaps, the ratios of investment to GDP and net foreign direct investments. This econometric evidence is robust to the inclusion in the regressions of variables such as oil price, firms’ leverage, countries’ financial and commercial openness.

**Keywords:** net lending/borrowing, corporate sector, global saving glut, European Union, panel data.

**JEL classification:**

\* Bank of Italy, Economics, Statistics and Research. The views expressed in this paper do not necessarily represent those of the Bank of Italy.

1. **Introduction and motivation**

According to macroeconomic manuals households should have a positive net lending with the rest of the economy, while firms should act as net borrowers. For firms the net acquisition of financial assets should be usually smaller than the net acquisition of financial liabilities.

On the contrary in last years there has been a trend of net lending by the corporate sector in several countries. In 2014 UK firms reported a financial surplus of 0.8 percent of GDP. In 2013 the surplus was 2.8 per cent for Irish firms, 6.9 per cent of GDP for the Dutch corporate sector and achieved 4 per cent of GDP for German firms. *The Economist* wrote a note on “The Corporate Saving Glut” in 2005. This evidence is tricky to interpret and there are still few contributions on the subject.

The goal of this paper is to shed light on determinants of corporate surpluses and deficits in the main industrial economies. In the literature different explanations have been proposed to analyze the puzzle of firms with persistent surpluses.

André et al (2007) studied corporate net lending in the period 2001-2005 in the main OECD countries and found among the explanatory factors the fall of corporate investment, the growth of net foreign investment abroad, and increasing profit shares, possibly related to wage moderation and low interest rates. More recently Gruber and Kamin (2015) analyzed the increase in net lending in G6 economies conducting panel regressions over long time horizons (1961-2001; 1961-2006; 1961-2013). Their main result is that the increase of the corporate saving glut is related to lower investment. The weakness in investment spending was particularly strong after the global financial crisis but corporate investment was disappointing also in the years preceding the collapse of Lehman Brothers. Gruber and Kamin emphasize that corporate payouts to investors in the form of dividends and equity buybacks have also increased in last years: this is inconsistent with the idea that prudent firms were cutting investments to strengthen their balance sheets.

However the opinion that non-financial corporations reduce their investments because of financial issues is widespread in the literature. Armenter and Hnatkovska (2014) develop a theoretical model to explain the occurrence of firms’ net lending putting the attention on the precautionary motive: firms accumulate financial assets in order to avoid being financially constrained in the future.

In emerging countries firm surpluses have been sometime explained by credit constraints[[1]](#footnote-1), but also in industrial economies banks could not be able to reach all the segments of firms. Brufman et al. (2013) focus on the role of financial constraints to analyze the excess of savings (ES), using micro data on firms for France, Germany, Italy, UK and Japan over the period 1997-2011. These authors show that ES is related to a decline of investments. Moreover firms reduced leverage and the share of operating assets in total assets. These trends were stronger among the more credit constrained and the less dynamic firms.

While there is a broad consensus on the effect of investments on net lending/net borrowing, the evidence is more uncertain for consumption. A slowdown of consumption might induce firms to reduce their investments diverting resources towards the accumulation of financial assets. As already mentioned another possible explanation of firms’ net saving is their internationalization. Globalization caused deindustrialization in rich countries. Firms invested abroad, where expected returns are higher, because of lower wages and looser regulation.

Taking into account the previous literature, we analyze the causes of corporate sector net lending and net borrowing. After this introduction, Section 2 introduces the main issues on financial accounts and accounting identities, and summarizes how globalization of production may influence net lending/borrowing. Section 3 describes the dataset and reports the aggregate evidence on firms’ net lending and net borrowing from 1995 to 2014. Section 4 reports the empirical results. Conclusions follow.

**2. A glance at national accounts definitions**

In this paragraph we summarize some definitions of the variables used in the paper. Our indicators are mainly based on the System of National Accounts framework.

The national accounts aim at describing the economic process, from the production and generation of income, through its distribution and redistribution along with its use for final consumption. The last part of the process involves the use of saving and the accumulation of non-financial and financial assets. In the compilation of national accounts the economy is divided into institutional sectors, which are characterized by homogeneity in functions, choices, and decisions. Among the sectors, non-financial corporations collect all the units involved in production of goods and non-financial services. These units produce outputs that can be supplied to other institutional units. Non-financial corporations buy capital goods in order to realize their production function.

Non-financial corporations produce an output, which net of intermediate consumption and taxes less subsidies on products, defines the gross value added (the net definition requires the subtraction of consumption of fixed capital).

The sequence of accounts showed in the Table 1 describes the formation of non-financial corporations net saving and the relationship it has with net lending/net borrowing. In particular:

*Net lending/net borrowing balance = Saving – Investment (1)*

The sequence of accounts is completed by the financial account, that shows how firms invest net lending in the different financial instruments or, viceversa, how firms collect liabilities – loans, shares and other equity, bonds – to fund the net borrowing needs. This implies that net lending/net borrowing from capital account is equivalent to net lending/net borrowing from financial account:

*Net lending/net borrowing = Saving–Investment = Financial Assets flows - Financial Liabilities flows (2)*

**Table 1 A Simplified scheme of non-financial corporation accounts**

|  |  |
| --- | --- |
| **Production Account** | Output  - Intermediate Consumption  -/+ Taxes less subsidies on products  **Gross Value Added** |
| **Income Account** | - Compensation of Employees  - Other taxes/subsidies on production  **Gross Operating Surplus**  **-** Consumption of Fixed Capital  **Net Operating Surplus** |
| **Distribution of Income**  **Account** | + Total property income, receivable  + Social Contributions  + Other current transfers  - Property Income paid  - Current taxes on income, wealth  - Social benefits  - Other current transfers  **Net saving** |
| **Capital Account** | + Consumption of Fixed Capital  Gross saving  - Gross fixed capital formation  - Change in Inventories  - Acquisition less disposals of non-produced non-financial assets  Net Lending/Net Borrowing |

In national accounts transactions are based on the notion of residence. The residence identifies the territory where business activities take place. Globalization increased interactions across national economies and made more ambiguous the definition of residence. Production patterns changed as firms organised their activities in the most cost-effective way (Unece, 2011): we may refer to phenomena such as global value chains and the increase of foreign direct investments (Cappariello and Felettigh 2015 and Federico 2016. Similar features invested financial markets and increased interconnections between financial systems (Infante, Pozzolo, Tedeschi 2012; Bartiloro and di Iasio, 2012). As a consequence, in the organization of economic activity the importance of national borders weakened and challenged in turn the ability to measure economic phenomena. The activity of multinational enterprises (MNEs) is difficult to capture both for national statisticians and for policy considerations (UNECE, 2011). For instance prices for goods and services exchanged between group entities differ from market prices, introducing distortions in the value of trade (Eggelte et al., 2014).

The high presence of MNEs may play an important role in explaining net lending of non-financial corporations in some economies. If a company decided to move its production in another country through a subsidiary, to exploit lower production costs, any investment run by the MNE through its subsidiary would be recorded in the foreign country. In the national account system, the acquisition of the subsidiary (the foreign direct investment abroad) would affect only the financial account of the parent company country, reducing the cash holdings and increasing shares and other equities in the asset side of firms’ financial accounts (with a symmetric impact on the rest of the world sector). Since the investment is made by the subsidiary, the capital account of the parent company country remains unaffected, while the investment is recorded in the host country. The earnings generated by the subsidiary are assigned to the headquarters, thus improving the distribution of income account and in turn net lending (Eggelte et al., 2014). In case of reinvested earnings, i.e. to fund an expansion of investments of the subsidiary, they are still recorded in the distribution of income account of the parent company (improving the net lending position) and correspondingly increase the shares and other equity item in the financial accounts. This statistical rule implies in turn an improvement of the net lending position of the parent company country and a corresponding worsening of the net borrowing /lending of the corporate sector of the subsidiary country, reducing in turn the current account balance.

**3. Data description**

Our data set includes 17 countries, 16 European countries plus the US. We collected data from 1995 to 2014 following the ESA95 standards.

There are seven countries where firms are net lenders in most of the years. This is the case of Germany, Denmark, Ireland, Switzerland, the Netherlands, Finland and the UK (Figure 1). Taking into account the average of the period 1995-2014, net lending was around 6 per cent of GDP in the Netherlands, around 3 per cent in Denmark, around 2 per cent in Switzerland and around 1 per cent or less in the remaining countries. While the Netherlands, the UK and Denmark show a net surplus in all the years (except for 2008 and in some cases around the 2012 sovereign debt crisis), firms in Switzerland and Germany display a positive saving starting from 2003; the surplus takes place from 2007 in Ireland. During the global financial crisis and the European debt sovereign crisis in some countries firms’ reduced their net lending or increased their net borrowing. This may be interpreted as a sort of rebalancing, analogous, even if with the opposite sign, to that of current account balances during the financial crisis (see Cesaroni and De Santis, 2015).

**Figure 1. Net lenders countries, 1995-2014. The blue line is firms’ net lending as a percentage of GDP (right hand scale). The red line is the net change of firms’ financial assets as a ratio of GDP (left hand scale). The green line shows the net change of firms’ financial liabilities as a ratio of GDP (left hand scale).**

**Netherlands Ireland**



**United Kingdom Switzerland**



**Denmark Germany**



**Finland**



**Figure 2. Net borrower countries, 1995-2014). The blue line is firms’ net lending as a percentage of GDP (right hand scale). The red line is the net change of firms’ financial assets as a ratio of GDP (left hand scale). The green line shows the net change of firms’ financial liabilities as a ratio of GDP (left hand scale).**

**United States Italy**



**Greece Belgium**



**France Spain**



**Portugal Norway**



**Austria Sweden**

 

On the contrary in the rest of our sample firms are mostly net borrowers (see Figure 2). Taking into account the average of the period 1995-2014, net borrowing was around 3 per cent of GDP in Portugal and Greece, around 2 per cent in Spain and Italy, around 1 per cent in Austria; France and Sweden. Net borrowing was on average smaller than 1 per cent in Belgium, Norway, and the US. The yearly evolution of net borrowings shows differences across countries linked to the different impacts of the global financial crisis and the European sovereign debt crisis.

Our data set includes indicators coming from different sources. Net lending and net borrowing are taken from the national financial accounts available in the OECD statistical database. Balance of payments statistics come from the Milesi Ferretti (2015) archive.

To explain firms’ net lending and borrowing we selected a group of regressors. Table 1 reports a description of the variables together with their expected sign.

**Table 2. Data description and variables definition**

|  |  |  |
| --- | --- | --- |
| ***Variable*** | ***Description*** | ***Expected sign*** |
| Net lending/net borrowing (NBLGDP) | Net lending/net borrowing as a percentage of GDP | Dependent variable |
| Output gap | (Effective GDP – Potential GDP)/Potential GDP\*100. | Negative |
| Net FDI/GDP | Net foreign direct investment as a ratio to GDP | Positive |
| I/GDP | Gross investment rate of corporate sector as a ratio of GDP | Negative |
| C/GDP | Share of private consumption to GDP | Negative |
| Oil price | Price of Brent in US dollars. | Negative |
| Interest rates spread | Long term –short term interest rates | ? |
| Leverage | Loans and bonds issued by firms as a ratio of total financial liabilities | ? |
| Financial Openness | (Financial assets plus financial liabilities)/GDP | ? |
| Trade Openness | (Exports plus Imports)/GDP | ? |

Here we discuss how our explanatory variables may be associated to non-financial corporations net lending/borrowing.

**Output gap.** An expansionary phase of the business cycle, measured by a positive output gap, corresponds to a higher effective demand. The increase in demand will induce firms to invest thus lowering their surpluses or increasing their net borrowing. The output gap should also catch the impact of financial crises.

**Net FDI to GDP ratio**. This variable measures for each country the difference between outward foreign direct investments minus inward foreign direct investments. As discussed in the introduction and in paragraph 2, a positive value of net FDIs should be associated to greater net lending by firms.

**Investment to GDP ratio**. As in the case of the output gap, a greater investment/GDP ratio should lower net lending and increase net borrowing by firms.

**Consumption to GDP ratio**. Similarly to investment, a greater consumption/GDP ratio should lower net lending and increase net borrowing by firms.

**Real oil price in US dollars**. This control variable accounts for the influence of oil prices on corporate net lending and surplus. The indicator is a proxy for supply shocks.

**Interest rate spread**. This indicator is given by the difference between long term and short term interest rates on deposits. It accounts for a possible role of financial markets returns on firms’ financing choices.

**Leverage**. This variable might influence non-financial corporations’ net borrowing/lending but its sign is not easy to determine *a prior*i.

**Financial openness** The index is the sum of foreign financial assets plus foreign financial liabilities as a ratio of GDP. We do not have a strong *a priori* on the sign of this variable. It is difficult to select the effects of a greater financial openness on net flows of financial assets and financial liabilities.

**Trade openness.** This indicator is the sum of exports plus import as a ratio of GDP. We do not have an *a priori* on the effect of this indicator.

All our variables are expressed in US dollars. We also included country dummies in the regressions. Most of the independent variables are lagged one period to manage issues of endogeneity.

**4. Empirical results**

To analyze the determinants of firms’ surpluses and deficits, we estimate a panel fixed effects model for the 17 countries considered over the period 1995-2014. Our baseline equation takes the form:

where the dependent variable *y* is firms’ net lending/borrowing as a ratio of GDP. Outgap is the output gap; FDI is the ratio of net foreign direct investment to GDP; consgdp is the ratio of private consumption to GDP; Igdp is the ratio of corporate investment to GDP. *Control* is a group of control variables such as oil price, interest rate spread, leverage, financial openness, and trade openess. Table 3 reports the results of our regressions. We used six different models.

**Table 3 Fixed effects estimator, 1995-2014. The dependent variable is firm net surplus or net deficit.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *Model 1 Baseline* | *Model 2\** | *Model 3* | *Model 4* | *Model 5* | *Model 6* |
| Const | 0.19\*\*\* | 0.19\*\*\* | 0.204\*\*\* | 0.17\*\* | 0.19\*\*\* |  |
| Outgap\_1 | -0.0014\*\*\* |  | -0.0016\*\* | -0.0014\*\* | -0.0022\*\*\* | -0.003\*\*\* |
| Net\_FDI/Gdp | 0.038\*\*\* | 0.045\*\*\* | 0.0453\*\*\* | 0.027\*\* |  | 0.017 |
| Corporate Inv/GDP\_1 | -0.9\*\*\* | -0.98\*\*\* | -0.74\*\*\* | -0.91\*\*\* |  |  |
| Consumption/GDP\_1 | -0.15 | -0.15 | -0.17\*\*\* | -0.12 | -0.22\*\* | -0.00018\*\* |
|  |  |  |  |  |  | -0.15 |
| Brent | -0.00012\*\*\* | -0.00015\*\*\* | -0.00015\*\*\* |  | -0.0017\*\* |  |
| Spreads |  | 0.0035\*\*\* |  |  |  |  |
| Leverage |  |  | -0.027\*\* |  |  | -0.06\*\*\* |
| Crisis |  |  |  |  |  | -0.05\*\*\* |
| Leverage \*crisis |  |  |  |  |  | 0.09\*\*\* |
| Fin \_openess\_l1 |  |  |  | 0.0012 |  |  |
| Trade openness\_l1 |  |  |  |  | 0.0005\*\* |  |
| R2 | 0.31 | 0.31 | 0.37 | 0.30 | 0.20 | 0.24 |
| Observations | 288 | 269 | 288 | 288 | 288 | 288 |
| Groups | 17 | 16 | 17 | 17 | 17 | 17 |

**P value significance \*\*\* 1% \*\*5%\*10%**

The first column reports our baseline regression including the four main variables and controlling for oil price. The output gap has a negative sign, as expected. The greater the output gap, the smaller firms’ net lending and the greater their net borrowing. The net foreign direct investments are positively associated to net lending/borrowing. If outward FDIs investments are larger that inward FDIs, firms will tend to register a greater net lending (see Palenzuela and Dees 2016 for a similar approach). The ratio of investment to GDP has a negative influence on net lending/borrowing as in Gruber and Kamin (2015). Consumption also has a negative coefficient, although not statistically significant. Oil price has a negative effect: a higher cost of oil increases firms’ costs, thus leading to a small net lending or to a greater net borrowing.

The second model adds the interest rate spread to the previous regressors. The coefficients of the output gap, of foreign direct investment, of corporate investment and of private consumption confirm the signs and statistical significance found in column 1. The interest rate spread enters with a positive and statistically significant coefficient: an increase of the spread provides incentives to firms for allocating resources towards financial markets.

The third column adds as independent variable firms’ leverage. The effect of this variable on net lending/borrowing is negative. A higher leverage implies greater flows of financial liabilities, thus reducing firms’ surpluses or increasing their net borrowing. In this model the coefficient of private consumption is negative and statistically significant. The other variables confirm the previous results.

The fourth column considers as additional independent variable an indicator of financial openness, following the choice of Caballero et al (2015). This variable is not statistically significant. The other coefficients are in line with those of the previous models.

The fifth model reports the same regression substituting financial openness with trade openness. Trade openness has a positive and statistically significant coefficient, suggesting that a greater national exposure to trade is linked to greater net surpluses of firms.

The sixth model takes into account the same variables of model 3 including a dummy for the years 2008-2011 and an interaction term between leverage and the crisis dummy, accounting for a different effect of leverage during the global financial crisis. According to our result firms with a high leverage ratio, in the crisis period, experience a higher net lending presumably in order to reduce their indebtedness level.

**5. Conclusions**

Traditional corporate sector theories predict that firms run deficits to finance investment projects. However since the late 1990s in many industrial countries firms often registered financial surpluses. In other countries firms remained net borrowers.

In this paper we tried to interpret the causes of firms’ surpluses and deficits, focusing on the role of aggregate demand components and net foreign direct investments abroad. In the econometric exercises the dependent variable is the difference between the annual change of firms’ financial assets and the annual change of financial liabilities.

The paper reached four main conclusions.

First, there is a negative association between the output gaps and firms’ surpluses and deficits. A higher output-gap is linked to smaller firms’ surpluses and greater deficits.

Second, firms’ greater investments, as a ratio of GDP, are associated to greater deficits and smaller surpluses. This evidence coincides with that found in previous studies.

Third, private consumption does not have a robust statistically significant link with firms’ net lending/borrowing.

Fourth, net foreign direct investments abroad show a positive association with non-financial corporations’ net lending: firms that strongly invest abroad tend to reduce their net borrowing.

These results are preliminary. We plan to run different regressions for the years preceding the Lehman Brothers collapse (1994-2007) and those characterized by the global financial and the European debt sovereign crises (2008-2014). We would also like to enlarge the set of countries analyzed and to consider other possible explanations of non-financial corporations net lending/borrowing. We leave these subjects to future research.

**References**

Armenter R. (2012), *The Rise of Corporate Savings*, available at [www.philadelphiafed.org/research-and-data/publications](http://www.philadelphiafed.org/research-and-data/publications).

Armenter R. and V. Hnatkovska (2014) *Taxes and Capital Structure: Understanding Firms' Savings*, mimeo.

Bartiloro L. and G. di Iasio G. (2012) *Financial Sector Dynamics and Firms’ Capital Structure*, in Pozzolo A. F. and R. De Bonis (eds) “The financial systems of industrial countries”, Springer.

Brufman L., L. Martinez and R. P. Artica (2013), *What are the causes of the growing trend of excess savings of the corporate sector in developed countries? An empirical analysis of three hypotheses*, The World Bank, Policy Research Working Paper, n. 6571.

Caballero J., U. Panizza U. and A. Powell (2015), *The second wave of global liquidity: why are firms acting like financial intermediaries?*, The Graduate Institute of Geneva, Working Paper, n. 21, October.

Cappariello R. and A. Felettigh (2015), *How Does Foreign Demand Activate Domestic Value Added? A Comparison Among the Largest Euro-area Economies*, Bank of Italy, Working papers, n. 1001, January.

Cesaroni T. and R. De Santis (2015), *Current account “Core-periphery dualism” in the EMU*, Bank of Italy, Working Paper n. 966.

Eggelte J., R. Hillebrand, T. Kooiman and G. Schotten (2014), *Getting to the bottom of the Dutch saving surplus*, DeNederlandscheBank, Occasional Studies Vol. 12 – 6.

Federico S. (2016), *How does multinational production affect the measurement of competitiveness?*, Bank of Italy, Occasional papers, n. 301, January.

Gruber J. W. and S. B. Kamin (2015), *The Corporate Saving Glut in the Aftermath of the Global Financial Crisis,* Board of Governors of the Federal Reserve System, mimeo, June.

Infante L., A. F. Pozzolo and R. Tedeschi (2012), *Imbalances in Household, Firm, Public and Foreign Sector Balance Sheets in the 2000s: a Case of “I Told You So”?*, in Pozzolo A. F. and R. De Bonis (eds) “The financial systems of industrial countries”, Springer

Palenzuela D. R. and S. Dees (eds., 2016), *Savings and investment behavior in the euro area*, ECB occasional paper n. 167, January.

United Nations Economic Commission for Europe (UNECE) (2011), *The Impact of Globalization on National Accounts*, United Nations, New York and Geneva.

1. Looking at 18 emerging countries, Caballero et al. (2015) claim that firms often act like financial intermediaries to gain from carry trade type activities where capital controls, particularly controls on inflows, are diffuse. [↑](#footnote-ref-1)