Firms' financial surpluses in advanced economies: the role of net foreign direct investments

Tatiana Cesaroni*, Riccardo De Bonis* and Luigi Infante*

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Abstract

According to macroeconomic predictions 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 since the mid-1990s the non–financial sector has been on average net lender in countries such as Japan, the UK, Germany and the Netherlands. On the contrary firms remained on average net borrowers in countries such as France, Italy and the US. Using financial accounts, we investigate the sources of corporate sector surpluses and deficits applying panel data techniques. Our statistics include 18 industrial countries over the period 1995-2014. We find that firms' surpluses are structurally linked to net FDIs. The econometric results are robust to the use of variables that control for output gap, ratio of corporate investment to GDP, firms' profit and leverage, and taxation.

Keywords: Net lending/net borrowing, corporate sector, global saving glut, panel data.

JEL classification: E2, G3, F6.

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1. Introduction and motivation

According to macroeconomic predictions, non-financial corporations should usually act as net borrowers – their net acquisition of financial assets is smaller than the net incurrence of financial liabilities – in order to satisfy their financial needs and to realize investments[1].

Contrary to these expectations, from 1995 to 2014 corporate net lending prevailed in countries like the UK, Switzerland, the Netherlands, Finland, Germany, Denmark, Ireland and Japan. Corporate net lending is part of a trend started at the end of the 1990s in Japan and later on extended to other countries. The Economist published a note on "The corporate saving glut" in 2005. On the other hand there are countries, such as France and Italy, where firms have remained on average net borrowers in the last twenty years.

Why is the corporate sector of some countries experimenting such surpluses and why does net borrowing remain the norm in other nations?

In literature different explanations have been proposed. André et al. (2007) studied corporate net lending in 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 profits, possibly related to wage moderation and low interest rates. The authors considered the increase of net lending as temporary (at least partially) and thus re-absorbable due to adjustments in the financial and housing sectors: this forecast appeared to be wrong. IMF (2006) addressed the issue looking at corporate high savings in G7 countries. The excess debt and the accumulation of capital during the previous 1990s were considered two relevant causes of net lending but later other factors played a role, such as firm's high profits, a lower relative price of capital goods, the choice of companies to purchase assets abroad and to increase their cash holdings.

Recently Gruber and Kamin (2015) analyzed corporate surplus 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 domestic investment. The weakness in investment spending was particularly intense after the global financial crisis but investment was disappointing also in the years preceding the collapse of Lehman Brothers. Gruber and Kamin emphasized the role of increasing corporate payouts to investors in the form of dividends and equity buybacks: this finding is inconsistent with the idea that prudent firms were cutting investments to strengthen their balance sheets.

[1] We will use net lending as a synonymous for financial surplus, a situation where the flow of financial assets is greater than the flow of financial liabilities. When the opposite occurs we will speak of a net borrowing, i.e. of a financial deficit. We will also use the expressions net lending (+) and net borrowing (-).

Other scholars claim that firms reduced their investments because of financial issues. Armenter and Hnatkovska (2014) developed a theoretical model to explain the occurrence of firms' net lending focusing the attention on the precautionary motive: firms accumulate financial assets in order to avoid being financially constrained in the future. This intuition has been also exploited to explain the correlation between foreign liquid assets and corporate savings in emerging economies. 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, abound.

Bacchetta and Benhima (2016) introduced credit constraints in a theoretical model to generate a complementarity between domestic investment and foreign bond holdings. This would explain why in Asian countries investment grew more than corporate saving. Incomplete financial markets and uninsurable idiosyncratic investment risk are also used by Sandri (2013) to explain the mismatch between the increase in saving rates and investment rates which determines an improvement in current account of growing developing countries. Against this background entrepreneurs would rely on self-financing in order to finance investments.

As already mentioned, another explanation of firms' net saving is their internationalization. Globalization caused deindustrialization in rich countries. Production patterns changed as firms organized their activities in the most cost-effective way (UNECE, 2011): we may refer to global value chains and the increase of foreign direct investments (Cappariello and Felettigh 2015 and Federico 2016). Firms invested abroad, where expected returns are higher, cutting external finance inside the domestic borders and collecting resources abroad.[2]

Globalization of production may influence net lending/borrowing. Eggelte et al. (2014) support the view that the rise in corporate financial savings, since the late 1990s, mirrors a reduced domestic investment spending. In the Netherlands, and other countries with a high presence of multinational enterprises and large investments abroad, corporate savings are high. The argument hints at a substitution between domestic and foreign investments, which is a long debated issue in advanced economies where internationalization was important. Previous evidence turns out to be

[2] If a company decided to move its production to 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 cash holdings and increasing shares and other equities in the asset side (with a symmetric impact on the rest of the world sector). Investment made by the subsidiary leaves the capital account of the parent company unaffected, while the investment is recorded in the host country. Earnings generated by the subsidiary are assigned to the headquarters, thus improving the distribution of income account and in turn net lending. In case of reinvested earnings, e.g. to fund new 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.

mixed. Feldstein (1995), using aggregate variables on OECD countries, reported a negative relationship between domestic and outward foreign direct investments. Using firm level data, Stevens and Lipsey (1992) also were in favor of a substitution between these two kinds of investments due to an increasing cost of external financing, since firms must choose the location of their plants. More recently, Desai et al. (2005) confirmed Feldstein's macroeconomic results working with a broader sample of countries in the 1980 and 1990s. However the authors, focusing on a sample of multinational enterprises, found a different picture: there is a complementary relationship between foreign direct investments and domestic capital accumulation. The main intuition is that multinational firm's total production is not necessarily constrained by resources but is responsive to profit opportunities, which may have feedback effects on domestic activities. Investing abroad would allow firms to gain efficiency through economies of scale or reduced costs.

Taking into account the previous literature, the novelty of our paper is to analyze corporate net lending/net borrowing in a sample of 18 industrial countries over the years 1995-2014 focusing on the role of firms' net foreign direct investments, and controlling for cyclical conditions such as the output gap, investment, profits, leverage and other independent variables. Our goal is to investigate if corporate surpluses reflect firms strategies, in particular the goal to make investments abroad, rather than only cyclical indicators.

The paper is structured as follows. Section 2 describes the dataset and focuses on the evidence on firms' net lending/borrowing in the last 20 years; Section 3 reports the econometric estimates along with a discussion of the empirical results. Conclusions follow.

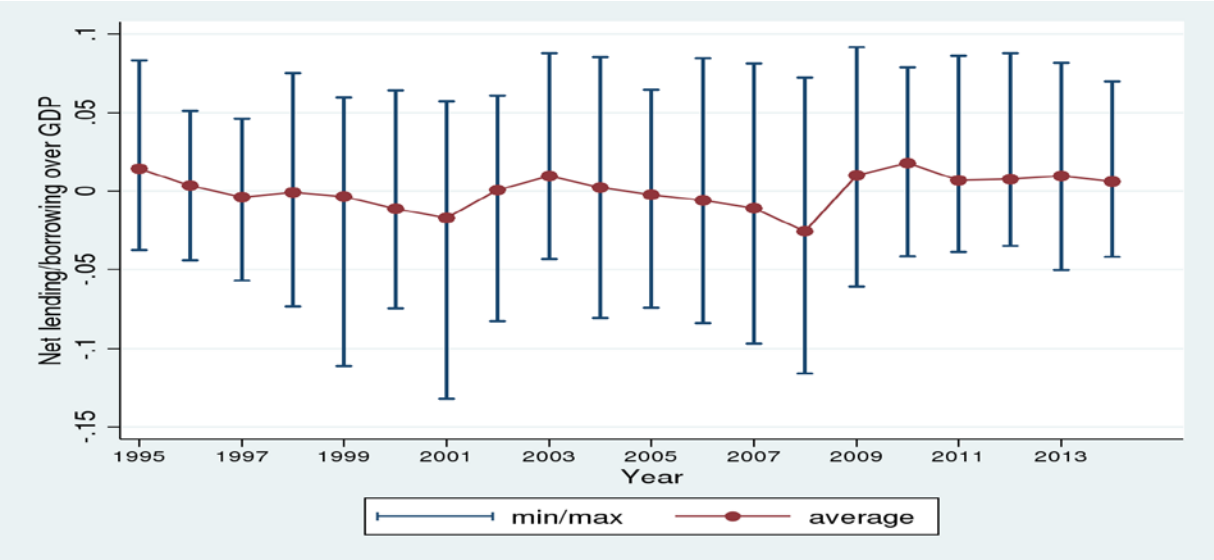
2. Data and descriptive statistics

The data used in our analysis include 18 countries – 16 European economies plus the US and Japan – and range from 1995 to 2014. Data on the dependent variable, net lending(+)/net borrowing(-) of non-financial corporations, is drawn from the national financial accounts and follow the ESA2010 and SNA2008 standards.[3] Figure 1 reports the minimum , maximum and average across the 18 countries of the ratio of net lending (+)/net borrowing(-) to GDP over the last 20 years.

[3] Our panel data set is unbalanced since figures for Austria, France, Norway start from 1996, for Germany from 1999, for Switzerland from 2000, for Ireland from 2002, and for the UK from 1997.

Figure 1

Non-financial corporate sector net lending (+)/net borrowing (-)
(maximum, minimum, averages as a ratio of GDP; 1995-2014)



The pattern of non-financial corporation net lending/borrowing (red line) may be split into four phases. First, net borrowing prevailed during the bubble of 1997-2001, when firms raised new capital exploiting the positive phase of the Stock Exchange. Second, from 2002 to 2003 the burst of the bubble led to the prevalence of net lending, as underlined by the IMF (2006). Later on the world economy came back to a positive growth and net borrowing reappeared, reaching its local maximum in 2008. Finally, the global financial crisis caused the "Great Recession" while the euro area debt sovereign crisis was accompanied by recessions or low growth in many European countries: therefore from 2009 to 2014 firms came back to net lending positions.[4]

In the figure the blue bar reports a measure of dispersion of net lending(+)/net borrowing (-) in each year. The average behavior of the non-financial corporate sector hides a strong heterogeneity across countries. When net borrowing prevailed – e.g. in 1999, 2001 or 2008 – the

[4] This may be interpreted as a sort of rebalancing analogous to that of current account balances after the financial crisis (see Cesaroni and De Santis, 2015).

dispersion of countries was greater than that observed when net lending predominated, e.g. in 1995 or 2014. This heterogeneity makes crucial to distinguish between countries where non-financial corporations are net lenders and nations where firms are net borrowers.

In our sample, there are eight countries where firms were net lenders in most of the years. This was the case of the UK, Switzerland, the Netherlands, Finland, Germany, Denmark, Ireland and Japan (Figure 2).

Figure 2

Countries where the non-financial sector was on average net lender, 1995-2014*

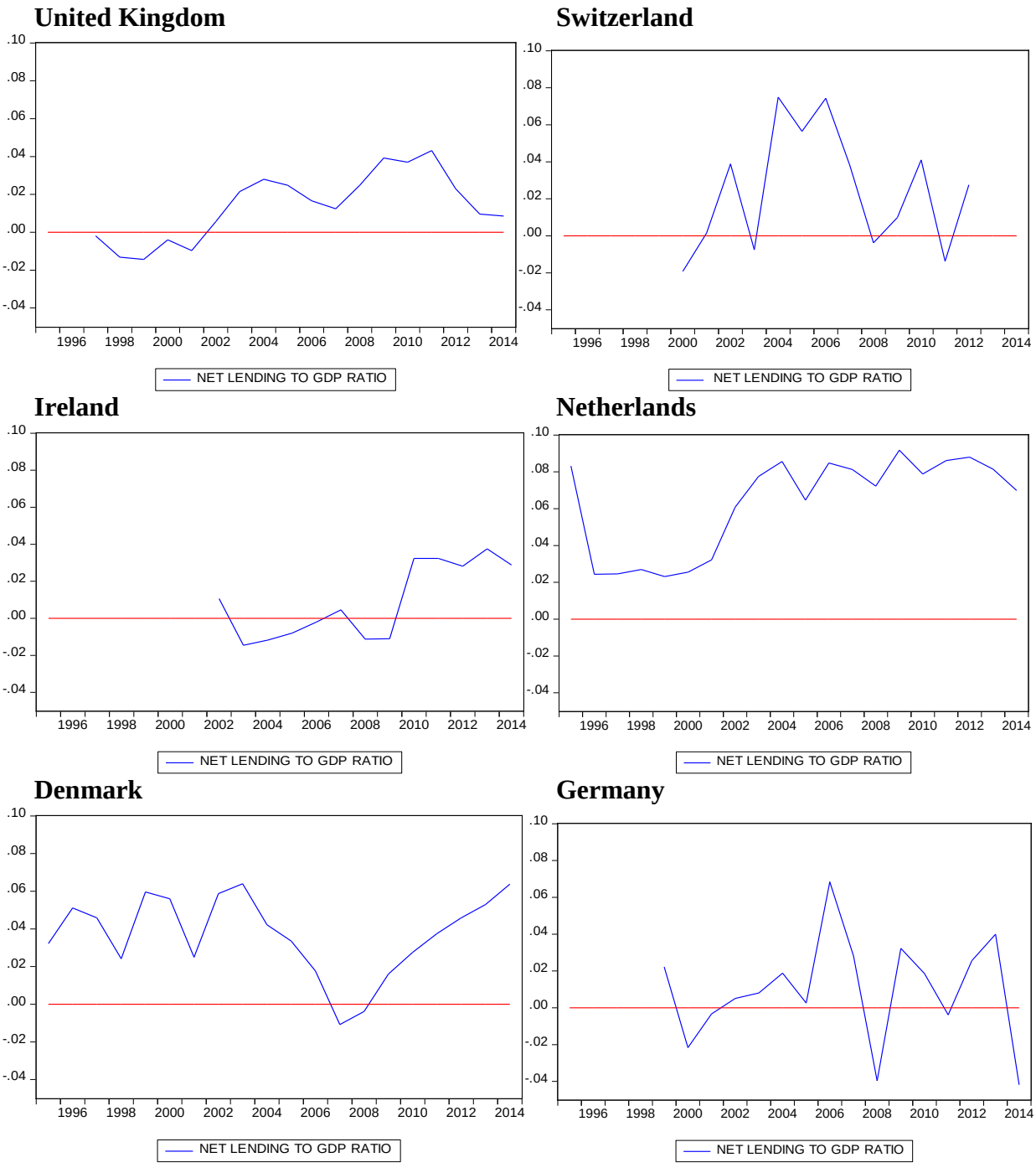
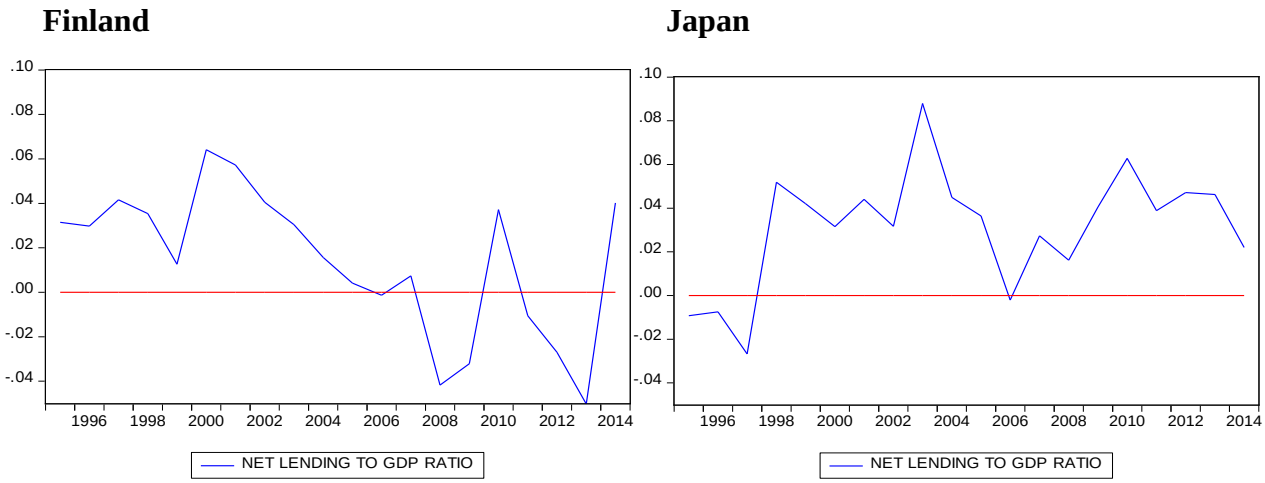


Figure 2 *(follows)*



* The blue line is firms' net lending (+) / net borrowing (-) as a percentage of GDP.

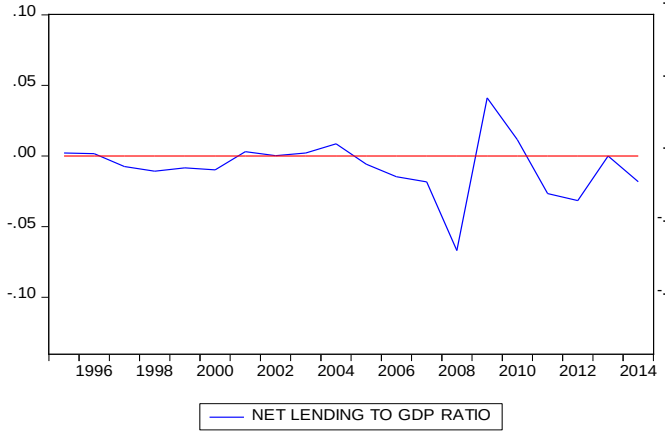
Taking into account the average of 1995-2014, net lending was 6 per cent of GDP in the Netherlands, 3 per cent in Japan and Denmark, 2 per cent in Switzerland and 1 per cent or less in the remaining countries. The Netherlands showed a surplus in all the period, while in the UK firms turned to net lending from 2002 onwards. German firms registered a surplus for most of the years, but not in 2000, 2008, 2011 and 2014, confirming the importance to control for cyclical factors in the econometric exercises. In Japan corporate surpluses appeared at the end of the 1990s (Andrè et al. 2007). In other countries net lending often increased around 2008, suggesting that following the crisis the corporate sector reduced investment and used savings to repay its debts. For example in Ireland the surplus took place from 2009, as a consequence of the downturn following the financial crisis: the corporate surplus was mainly linked to firms' difficulties in finding credit support; the recent economic recovery has been accompanied by an increase in internal funding by larger firms (Klein, 2016).

In ten countries, according to our sample, firms were on average net borrowers over the period 1995-2014. This was the case of the US, Italy, Spain, Belgium, Greece, France, Portugal, Norway, Austria and Sweden (Figure 3).

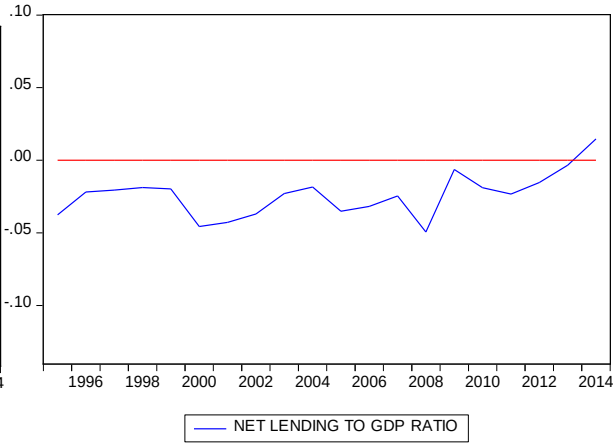
Figure 3

Countries where the non-financial sector was on average net borrower, 1995-2014*

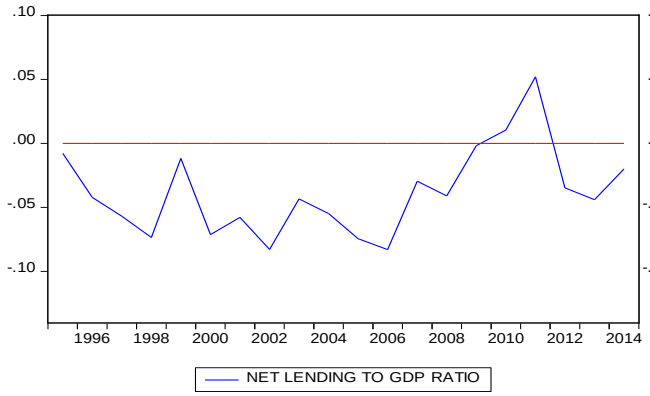
United States



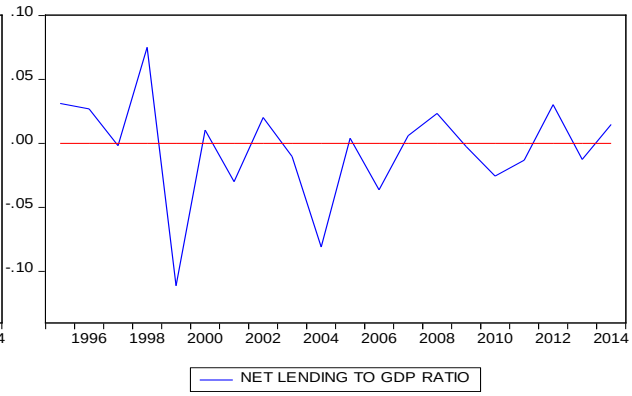
Italy



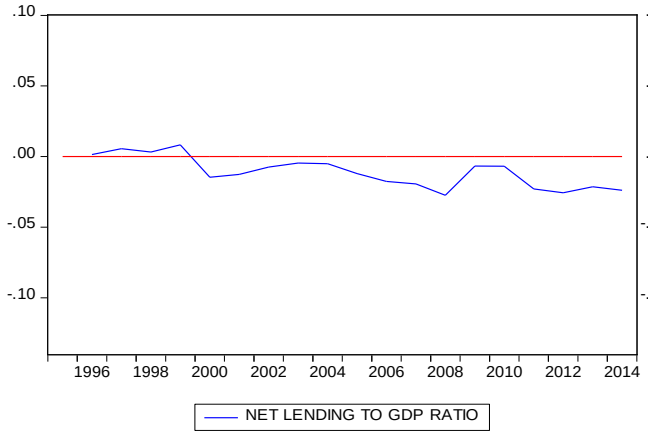
Greece



Belgium



France



Spain

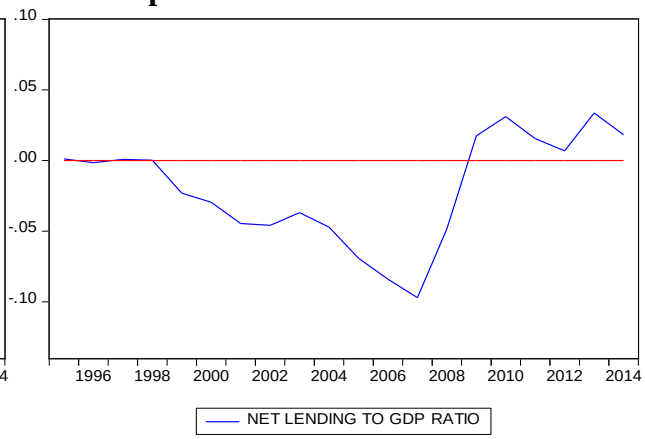
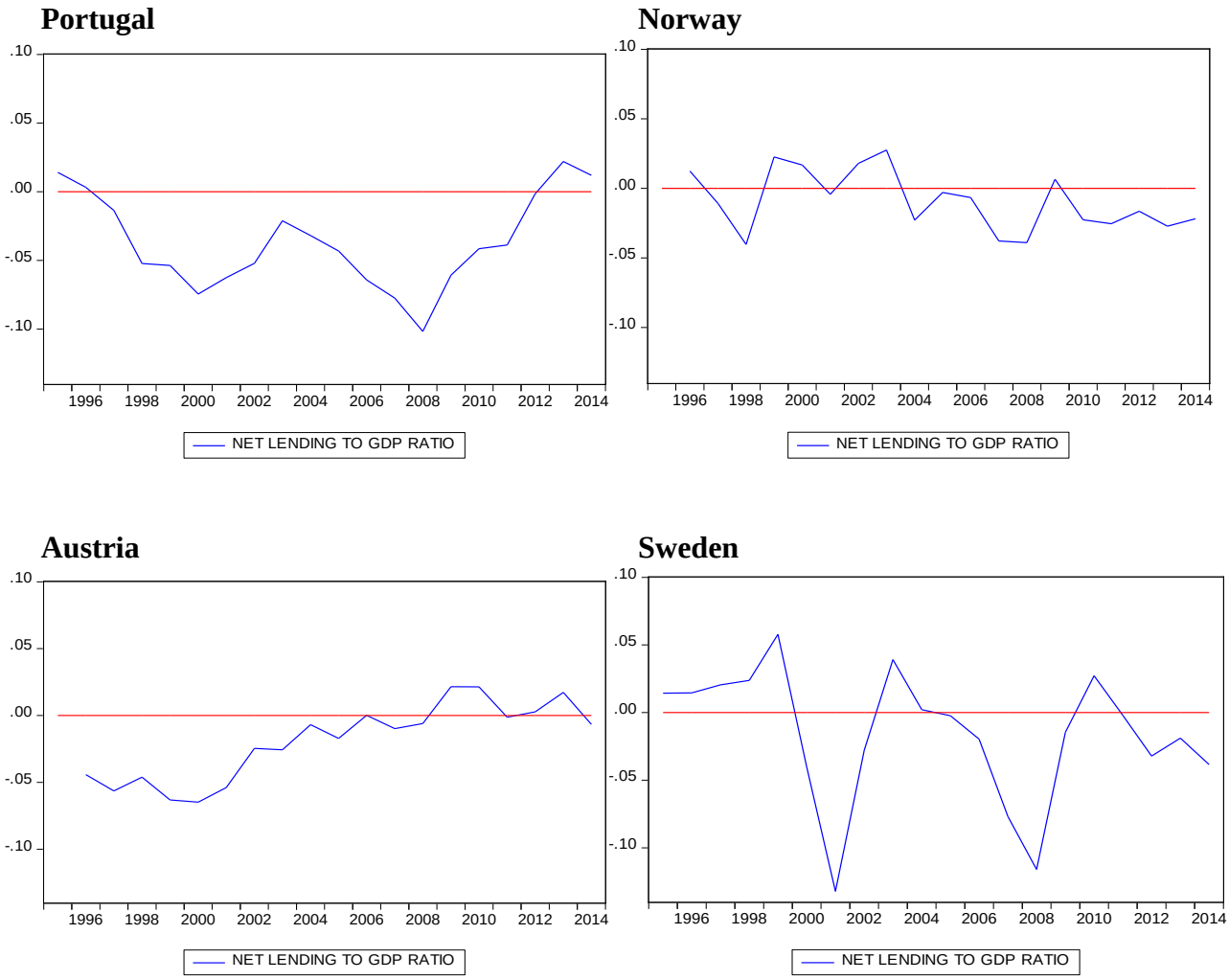


Figure 3 (*follows*)



* The blue line is firms' net lending(+)/net borrowing(-) as a percentage of GDP.

Taking into account the average of the period 1995-2014, net borrowing was 3 per cent of GDP in Portugal and Greece, 2 per cent in Spain and Italy, 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. For instance in Italy the non-financial sector was predominantly net borrower at the beginning of the period but became net lender in recent years, confirming the necessity to consider cyclical conditions. France is a specific case, as non-financial corporations have been constantly net borrowers since 2000. After 2008 firms in Greece, Portugal and Spain reduced their net borrowing. These experiences, common to the countries hit by the debt sovereign crisis, show the necessity to consider firms' leverage and other credit constraints among the factors that influence net lending/net borrowing.

To explain firms' net lending and net borrowing, we consider a set of indicators based on the OECD database and from Lane and Milesi-Ferretti (2015). Table 1 reports a description of the variables together with their expected sign in the regressions.

Table 1

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**
Net FDI/GDP	Net foreign direct investment (stocks) as a ratio to GDP.	Positive
Output gap	(Effective GDP – Potential GDP)/Potential GDP*100	Negative
Investment/GDP	Gross investment rate of corporate sector as a ratio of GDP	Negative
Profits/GDP	Profits after net interest and taxes as a ratio to GDP: profits are defined as the sum of gross operating surplus and property income minus the sum of interest rate paid and taxes (IMF 2006).	Positive
Oil price	Price of Brent in US dollars.	Negative
Interest rates spread	Long term – short term interest rates on deposits.	Positive
Leverage	Ratio of financial debt (loans plus bonds issued) to equity and financial debt.	?
Financial openness	Ratio f foreign financial assets and liabilities to GDP.	Positive

Now we discuss how the explanatory variables may be associated to firms' surpluses and borrowing.

Net FDI to GDP ratio. For each country this variable measures the difference between stocks of outward foreign direct investments and stocks of inward foreign direct investments. As discussed in the introduction, a positive value of net FDIs should be associated to a greater net lending or to a smaller net borrowing.

Output gap. The output gap is a summary indicator of the cyclical stance. An expansionary phase of the business cycle, measured by a positive output gap, corresponds to a high effective demand. The increase in demand will induce firms to invest thus lowering their surpluses or increasing their net borrowing. The opposite occurs in case of a contractionary phase.[5]

[5] Output gap estimates are subject to a degree of uncertainty and can vary according to the method adopted. We use the OECD database where the production function approach is followed to estimate potential output.

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

Profits to GDP ratio. Profits should be positively linked to net lending, as higher profits decrease the need for firms to raise new financial liabilities. This choice may be rationalized in the framework of the pecking order theory (Myers and Majluf 1984).

Oil price. This control variable is a proxy for supply shocks, as a rise of oil price should increase firms' costs, thus leading to smaller net lending or greater net borrowing.

Interest rate spread. We use this indicator as a proxy of uncertainty. According to Campbell and Shiller (1991), the spread between long and short interest rates forecasts futures changes in the short term interest rate, due for instance to expectations of a tighter monetary policy. When the spread is high, the shorter-term interest rate is apt to rise. A higher spread can be interpreted as a proxy of uncertainty over future economic conditions, which might imply a liquidity hoarding by firms as a response.

Leverage. Financial constraints influence firms' net borrowing/lending choices but the sign of leverage is not easy to determine *a priori*. Firms wanting to raise investment might fund their decisions increasing their debt level and therefore the leverage ratio: in this case we would expect a negative relationship between the leverage ratio and net lending/borrowing. On the other hand, high-leverage positions imply risks and may force a balance-sheet adjustment for highly indebted firms, inducing a positive impact on net lending (see IMF 2006). Furthermore, high-leverage positions may affect investments through the financial accelerator mechanism (Bernanke and Gertler 1989), by reducing firms' net worth and collateral.

Financial openness. As said, our main variable to explain firms' net lending/borrowing is net FDI. An alternative to FDI is financial openness of a country. As FDI, the sum of foreign financial assets and foreign financial liabilities as a ratio to GDP should be positively linked to firms' surpluses.

We also included country dummies in the regressions accounting for crisis and different subsets of countries. Most of the independent variables are lagged one period to manage issues of endogeneity.

Table 2 reports descriptive statistics on the dependent and independent variables used in the econometric section. In line with Figure 1, net lending (NLBGDP) is slightly positive over the period when all countries are considered. The indicator spans from a minimum value of -13 per cent – a very high net borrowing reached by Sweden in 2001 – and a maximum value of a net lending of 9 per cent reached by the Netherlands in 2009. The ratio of corporate investment to GDP is around 12 per cent. Net FDIs are on average positive as our sample includes advanced economies. The

profit share of the corporate sector is on average 20 per cent while the leverage is around 65 per cent.

Table 2

Descriptive statistics

	Observations	Mean	Std. Dev.	Min	Max	Unit of measure
Net lending/net borrowing (NBLGDP)	336	0.00015	0.0391	-0.13	0.092	Ratio
Output gap	361	-0.247	3.088	-15.81	9.206	Percentage
Oil Price	360	55.96	33.76	14.19	113.04	US dollars
FDI_net_GDP	360	0.081	0.253	-0.996	1.075	Ratio
Investment/GDP	335	0.119	0.022	0.042	0.169	Ratio
Leverage	346	0.647	0.212	0.342	1.423	Ratio
Consumption/GDP	335	0.549	0.0723	0.384	0.708	Ratio
Financial openness	340	5.68	5.59	0.84	36.62	Ratio
Profits/GDP	335	0.21	0.076	0.0059	0.373	Ratio
Spread	317	1.611	2.109	-5.44	21.93	Percentage

Table 3 reports the correlations between our dependent variable and the indicators of Table 1.

Table 3

Correlation between net lending/borrowing and main independent variables (1995-2014)

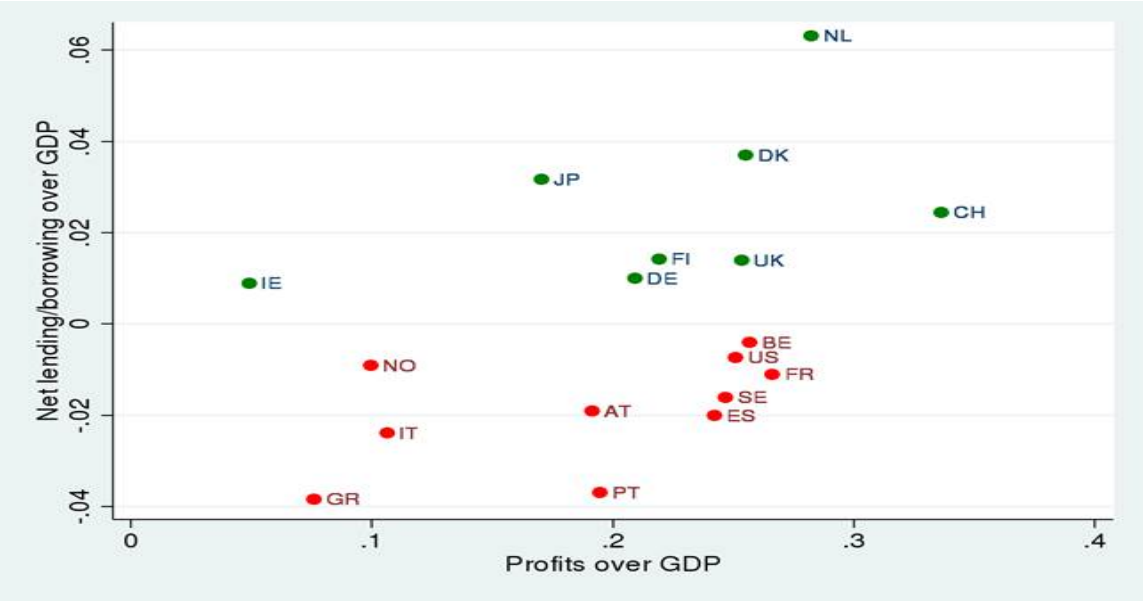
	NLB/GDP	Net FDI/ GDP	Outgap(l1)	Inv/GDP (l1)	Finacial openess (l1)	Oil Price	Spread	Leverage	Profits/ GDP
NLB/GDP	1.00								
Net FDI/GDP	0.48	1.00							
Outgap_l1	-0.23	-0.17	1.00						
Inv/GDP (l1)	-0.15	0.01	0.25	1.00					
Finopen (l1)	0.28	0.31	0.00	-0.05	1.00				
Oil Price	0.05	0.16	-0.10	-0.15	0.54	1.00			
Spread	0.11	-0.03	-0.43	-0.35	0.07	0.23	1.00		
Leverage	-0.04	0.02	-0.03	-0.25	-0.09	-0.09	0.29	1.00	
Profits/ GDP	0.26	0.43	-0.05	0.24	-0.07	-0.06	-0.19	-0.23	1.00

As expected the correlation between the ratio of investments to GDP and the output gap, on one side, and net lending (NLBGDP), on the other side, is negative. The correlation between profits/GDP and NLBGDP also goes in the predicted positive direction: higher profits are associated with higher firms surpluses, a result depicted in Figure 4.

Figure 4

Net lending(+)/net borrowing(-) and profits

(as a ratio of GDP, averages 1995-2014)

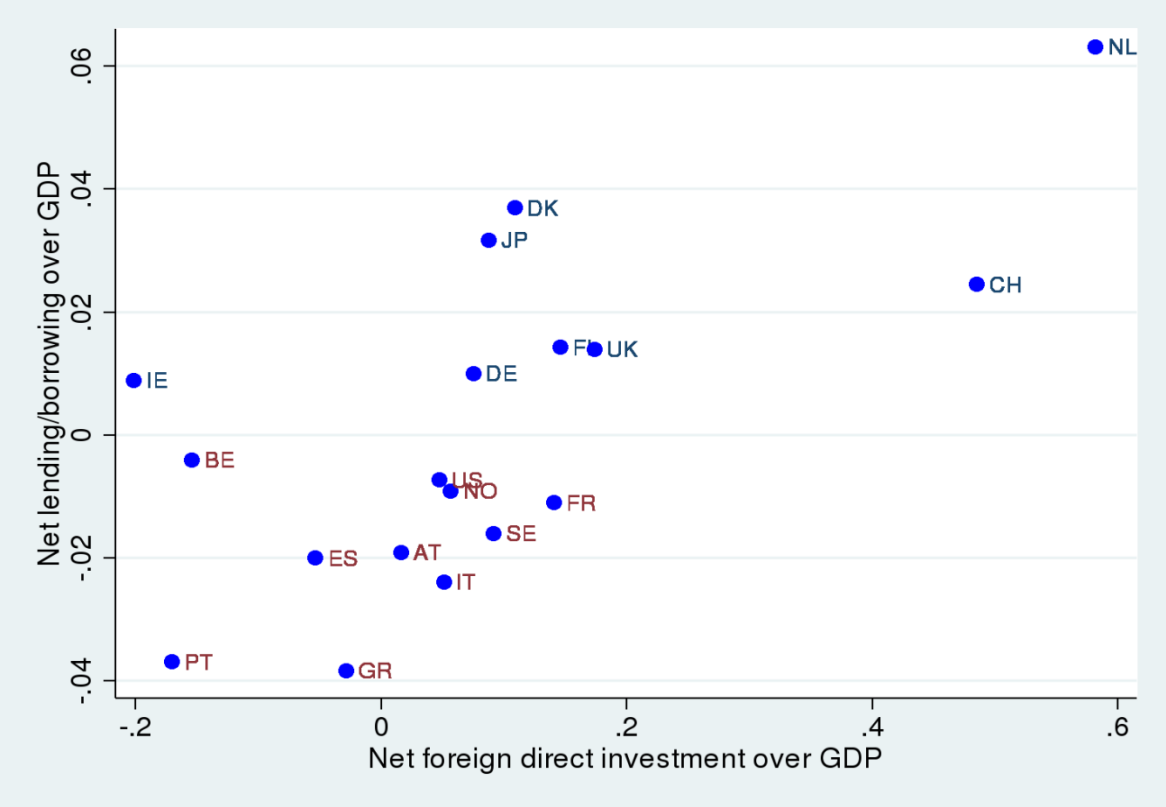


The correlation between leverage and the dependent variable on the contrary is negative: an higher leverage is associated with higher debt and therefore reduces firms' net lending.

Figure 5 shows a scatter plot of net lending/borrowing, on the vertical axis, and net FDI on the horizontal axis, taking for each country the average values over the periods 1995-2014. Countries with high net direct investments abroad tend to be associated with thrifty firms: the larger the net investment abroad the higher the surplus of the corporate sector. The picture is consistent with previous evidence (Eggelte et al., 2014): countries where important multinational enterprises are active, like the Netherlands, the UK and Switzerland, have more likely a net lender non-financial sector. However there are also countries that have over the period similar amount of FDI but different net lending. For example Italy has more or less the same net FDI levels over the period of Germany and Japan, but firms' net lending positions are different in the three countries. This confirms the importance to take into account both structural and short-term indicators to explain firms' net lending/net borrowing. Our aim is to check if corporate surpluses reflect firms strategies rather than only short term business cycle dynamics.

Figure 5

Net lending/net borrowing and net FDIs
(averages 1995-2014)



3. Empirical results

To analyze the determinants of firms' surpluses and deficits, we estimate a panel fixed effects model. Our baseline equation takes the form:

$$Y_{it} = \beta_i + \beta_1 * FDI_{it} + \beta_2 * Igdp_{it} + \beta_3 * profitsgdp + \beta_4 * outputgap_{it} + \beta_5 * control_{it} + e_{it}$$

where the dependent variable *y* is firms' net lending/borrowing as a ratio of GDP. FDI is the ratio of net foreign direct investment to GDP; *Outputgap* is the output gap; *Igdp* is the ratio of corporate investment to GDP and *profitsgdp* is the share of firms' profits. *Control* is a group of control variables such as oil price, interest rate spread, leverage and others.

Table 4 reports the results of our baseline regressions. We used four different models.

The first model includes four variables: FDI, output gap, investment and oil price. Net foreign direct investment is positively associated to net lending/borrowing. If outward FDI is larger than inward FDI, firms will tend to register a greater net lending (see Palenzuela and Dees, 2016 for a similar approach). The output gap has a negative sign, as expected. The greater the output gap – i.e.

the difference between real and potential GDP – the smaller the firms' net lending and the greater their net borrowing. The ratio of investment to GDP has a negative influence on net lending/borrowing as in Gruber and Kamin (2015). Oil price has a negative effect as well: a higher cost of oil increases firms' costs, thus leading to a smaller net lending or to a greater net borrowing.

Table 4

Baseline regressions
(fixed effects estimator, 1995-2014)

Dependent variable Net Lending/Borrowing	[1]	[2]	[3]	[4]
FDI / GDP	0.041*** (0.01)	0.038*** (0.01)	0.042*** (0.01)	0.033** (0.01)
Investment/GDP _l1	-0.917*** (0.18)	-0.953*** (0.18)	-0.94*** (0.18)	-0.91*** (0.18)
Output gap_l1	-0.001* (0.00)	-0.002** (0.00)	-0.001 (0.00)	-0.0003 (0.00)
Oil price	-0.0001* (0.00)	-0.0001** (0.00)	-0.0001** (0.00)	-0.0001*** (0.00)
Profits / GDP_l1		0.168*** (0.07)	0.251*** (0.07)	0.14*** (0.07)
Spread rate			0.002** (0.001)	0.003*** (0.001)
Leverage				-0.043** (0.016)
Constant	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes
R2	0.14	0.30	0.34	0.32
Observations	307	307	299	299
Groups	18	18	18	18

(***), (**) and (*) denote significance at the 1%, 5% and 10% respectively. Standard errors in parenthesis.

The second model adds the share of corporate profits to GDP as regressor, following the intuition of the pecking order theory. This variable enters the regression with a positive sign: greater profits contribute to increase firms surpluses, both through a larger accumulation of financial assets and a smaller need of raising financial liabilities. As far as the previous independent variables are concerned, we got the same results of the model in the first column.

The third model adds the interest rate spread to the previous regressors with the aim to control for uncertainty. The interest rate spread enters with a positive and statistically significant coefficient: an increase of uncertainty pushes firms towards accumulating financial assets or

reducing their liabilities. The coefficients of net foreign direct investments, profits and corporate investments confirm the signs and statistical significance found in model 2, while the output gap is not significant.

Taking into account the recent debate on deleveraging and the need to consider the existence of financial constraints, the fourth column adds firms' leverage as a new independent variable. 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. The other variables confirm the results of model 3.

3.1 Robustness checks

In this section we present some checks to assess the robustness of our previous findings. In Table 5, the first column considers an indicator of financial openness as an alternative to foreign direct investments, following the choice of Caballero et al (2015). This variable is statistically significant and enters with a positive sign, confirming the role of internationalization: a greater financial integration contributes to increase firms' surpluses. The other coefficients are in line with those of the previous models.

The second model includes a dummy for the crisis years 2008-2011 and an interaction term between leverage and the crisis dummy. We try to capture a different effect of leverage (i.e. financial constraints) on net lending/borrowing during the global financial crisis and the euro area debt sovereign crisis. Coherently with our comments to Table 4, leverage has a negative association with net lending/borrowing of firms since an increase in debt implies greater flows of liabilities to fund investment. But the global financial crisis and the debt sovereign crisis in European countries required a rebalancing phase for the most leveraged firms. This is suggested by our interaction term: during the crisis leverage is positively associated with net lending, signaling a hoarding of liquidity to cope with high debt level (Table 5, column 2). Since the outbreak of the financial crisis, non-financial corporations reduced the ratio of their debt to total assets (see ECB 2012). The decline reflected both demand and supply-side factors which affected credit to corporate sector. For the demand side, lower levels of economic activity, in particular lower capital formation, contributed to a reduction in external financial needs. Deleveraging is furthermore consistent with the idea of a balance sheet recession (Koo 2001 and 2012).

One may think that different levels of firms' taxation across countries may influence financial flows of assets and liabilities. We find that higher taxation reduces net lending as it reduces profits

and therefore the accumulation of financial saving (third column of Table 5). Following the introduction of taxation, profits lose their statistical significance.

Table 5

Testing for financial openness, crisis, taxation and banking intermediation
(fixed effects estimator, 1995-2014)

Dependent variable Net Lending/Borrowing	[1]	[2]	[3]	[4]
FDI / GDP		0.029**	0.030***	0.026**
		(0.01)	(0.01)	(0.01)
Investment/GDP _l1	-0.893***	-0.827***	-0.915***	-0.973***
	(0.18)	(0.18)	(0.18)	(0.17)
Output gap_l1	-0.001	-0.001	-0.000	-0.000
	(0.00)	(0.00)	(0.00)	(0.00)
Oil price	-0.0001***	-0.0001*	-0.0001**	-0.0002***
	(0.00)	(0.00)	(0.00)	(0.00)
Profits / GDP_l1	0.161***	0.120*	0.068	0.144**
	(0.07)	(0.07)	(0.08)	(0.07)
Spread rate	0.003**	0.003***	0.003**	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Financial Openness_l1 (over GDP)	0.002*** (0.00)			
Leverage	-0.042**	-0.046***	-0.044***	-0.042**
	(0.02)	(0.02)	(0.02)	(0.02)
Crisis dummy		-0.041***		
		(0.01)		
Leverage*Crisis		0.062***		
		(0.02)		
Taxprod/GDP			-0.473**	
			(0.23)	
Bank funding flow				-0.139***
				(0.039)
Constant	yes	yes	yes	yes
Country fixed effects	yes	yes	yes	yes
R2	0.24	0.27	0.26	0.003
Observations	299	299	299	299
Groups	18	18	18	18

(***), (**) and (*) denote significance at the 1%, 5% and 10% respectively. Standard errors in parenthesis.

Credit constraints may be relevant not only in emerging nations but also in industrial economies where banks could not be able to reach all the segments of firms. In the previous regressions, leverage has been used as a proxy of financial constraints. Now we complement the previous findings using a banking indicator, i.e. the ratio of deposit flows to bank total liabilities. As our dependent variable is net lending/borrowing, deposits are more exogenous than the ratio of

loans to GDP: deposit flows may be interpreted as an instrumental variable for credit flows. We found that deposit flows are negatively associated to firms' net lending (fourth column of Table 5): the higher the flow of deposits the lower is net lending. The intuition is that a greater availability of funding affects positively bank credit, thus reducing firms' surplus (i.e. increasing their net borrowing). Net FDI maintains its positive association with net lending/net borrowing.

In the previous regressions we took into account the role of demand using the output gap and investment. Consumption is another alternative to control for cyclical conditions. While there is a 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. Consumption enters our regressions with a negative sign while the other variables remain unaffected (results are available upon request to the authors).

One may also envisage that surpluses and deficits may be influenced by different variables in surplus and deficit countries. The impact of foreign direct investments should be stronger in net lending countries. In Table 6 we distinguish our main variables for net lenders and net borrowing countries. The first result is that foreign direct investments are statistically significant only in net lenders countries (column 1). The second result is that in net borrowing countries domestic investments matters more than in net lending countries (column 2).

We obtain similar results running separate regressions for net lending and net borrowing countries (results are available upon request).

Table 6

Splitting the countries between net lenders and net borrowers

(fixed effects estimator, 1995-2014)

Dependent variable: firms' net lending/net borrowing	[1]	[2]
FDI / GDP net lenders	0.032***	0.032***
	(0.01)	(0.04)
FDI / GDP net borrowers	0.046	0.044
	(0.04)	(0.04)
Investment/GDP _l1	-0.904***	
	(0.18)	
Investment/GDP _l1 net lenders		-0.764***
		(0.26)
Investment/GDP _l1 net borrowers		-0.997***
		(0.22)
Output gap_l1	-0.000	-0.000
	(0.00)	(0.00)
Oil price	-0.0001**	0.0001**
	(0.00)	(0.00)
Profits / GDP_l1	0.136*	0.145**
	(0.14)	(0.07)
Spread rate	0.003**	0.003**
	(0.00)	(0.00)
Leverage	-0.043**	-0.043*
	(0.02)	(0.02)
Constant	yes	Yes
Country fixed effects	yes	yes
R2	0.24	0.25
Observations	299	299
Groups	18	18

(***), (**) and (*) denote significance at the 1%, 5% and 10% respectively. Standard errors in parenthesis.

4. Conclusions

Since mid–1990s in many industrial countries non-financial corporations registered financial surpluses while in other countries companies remained net borrowers. The goal of this paper is to analyze structural and short term factors behind the non-financial corporate sector saving. Among structural factors we focus on net foreign direct investments. We study 18 industrial countries from 1995 to 2014. In the econometric exercises based on panel model, the dependent variable is the difference between the annual flow of firms' financial assets and the annual flow of financial liabilities.

Our main result is that firms' net lending is positively linked to net FDIs. Firms that strongly invest abroad tend to reduce their net borrowing. In the Netherlands, Japan, the UK, Germany, Switzerland and Denmark large multinationals have a strong influence on the aggregate financial position of the corporate sector.

The influence of FDIs on net lending is robust to the inclusion in the regression of cyclical indicators such as the output gap, investment and consumption, profits, leverage, a measure of uncertainty, firms' taxation and an indicator of banking development. Among these variables the output gap and domestic investment are negatively correlated to net lending/net borrowing. The association is negative also for leverage, as an higher leverage implies greater flows of financial liabilities. However, the interaction between our leverage variable and a dummy for the crisis period of 2008-2011 obtains a positive coefficient: in these years firms tried to deleverage after the excesses of the years preceding the global financial crisis. As an alternative to FDIs, the degree of financial openness of a country is also positively associated with net lending/borrowing.

Finally, FDI does not play a significant role in those countries where firms are net borrowers. In these nations, domestic investments are the main determinants of net borrowing.

We plan to better scrutinize the causal links between the different variables and the substitution effect between domestic investments and foreign investments. We leave these issues to future research.

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