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The financialisation–offshoring nexus and the capital accumulation of US non-financial firms

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The financialisation of non-financial corporations has drawn the attention of many scholars who have identified two main channels through which financialisation occurs: a higher proportion of financial assets compared to non-financial ones and a higher amount of resources diverted to financial markets. A consequence of this process is a decrease in investment. Parallel to financialisation, many non-financial corporations have also engaged in an internationalisation of their productive activities, organising them under global value chains. Though offshoring may also explain the decrease in the level of investment of non-financial firms, the intersections between the literature on financialisation and the literature on global value chain remain surprisingly underdeveloped. This paper contributes to fill this gap using panel regressions for US non-financial corporations between 1995 and 2011. We find evidence that both offshoring and financialisation are determinants to the decrease in investment and that financialisation occurs mainly among firms belonging to sectors prone to offshoring.

Key words: Financialisation of the non-financial corporation, Global value chain, Offshoring, Investment
JEL classifications: F61, G32

1. Introduction

A decrease in the level of aggregate investment coupled with high profits has been a systematic trend among developed countries since the 80s. This phenomenon presented a puzzle for heterodox economics, whether Marxists or post-Keynesians, given expectations for a positive relationship between investment and profits

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(Stockhammer, 2005). In its post-Keynesian version, the solution to the puzzle lies in other sources of effective demand that allow profits to be realised at the macroeconomic level, such as the increase in capitalists' consumption (Cordonnier, 2006), government deficits and external surpluses (Van Treeck, 2009). At the microeconomic level, the 'investment–profit puzzle' is usually described as a consequence of shareholder value orientation, either by shifting firms' goals to profits instead of growth (Stockhammer, 2005) or to higher preferences for free cash flows and payouts (Dallery, 2009). These assertions have inspired a large number of empirical studies (Stockhammer, 2004; Orhangazi, 2008; Clévenot *et al.*, 2010; Hecht, 2014; Barradas, 2017; Tori and Onaran, 2018) which showed the negative correlation between increased payouts and real investment for different countries. Ultimately, part of the sources for increased distribution of profits came at the expense of investment. Figure 1 illustrates this negative correlation for the USA by showing the ratio between gross fixed investment and net financial payouts for the whole economy, and listed firms. In both cases, the trend is similar: it abruptly decreases since the beginnings of the 80s, remains relatively constant until the end of the 90s when it increases and then declines sharply again. The figure also indicates that the trend for listed companies started from a higher point than the whole economy. All in all, this suggests that the decrease in investment has been more dramatic for listed firms. Even though the explanations at the microlevel that rest on the consequences of shareholder value orientation are consistent with stylised facts, they provide no clue to answer another question: that of the sustainability of low investment and

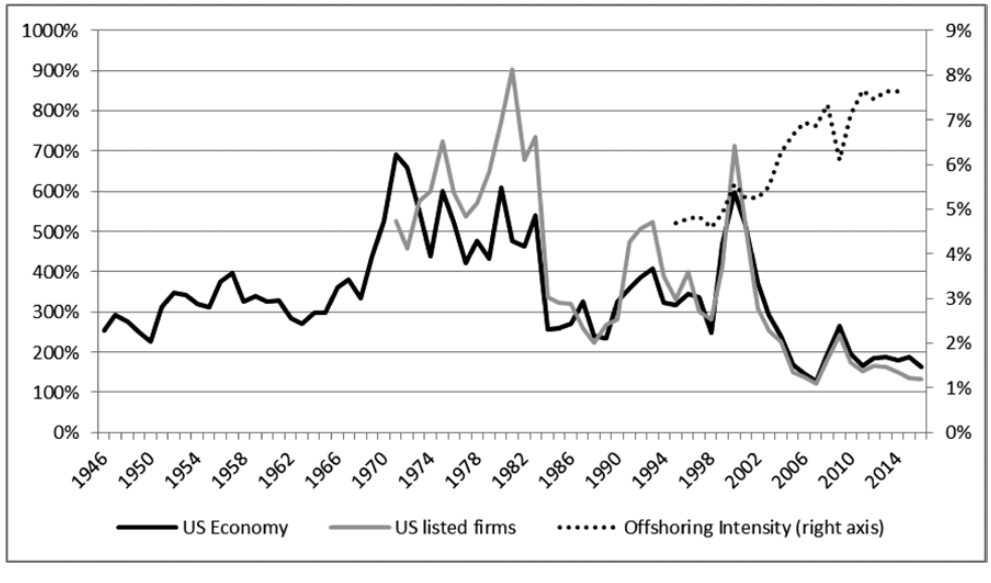

Fig. 1. *Investment as a ratio of net financial payouts for the US economy and US-listed firms, and offshoring intensity, 1946–2016.*

Note: Offshoring intensity is the industries' average of all intermediate imported inputs over output.

Source: Table Z1, Financial Accounts of the USA, Compustat and WIOD. Authors' calculations.

high payouts considering that today's firm capital accumulation is a prerequisite for tomorrow's profitability (Dallery, 2009; Lavoie, 2014).

The aim of this paper is to show, empirically, one of the conditions that has made such strategy sustainable over the past years: the offshoring of production.[1] This proposition is motivated by previous works by Milberg (2008) and Milberg and Winkler (2009, 2013) who indicated that most of the gains associated with offshoring were used to sustain financialisation rather than investing in productive assets. Following this line of reasoning, Figure 1 also shows, along with the negative relation between payments and investment, the increased offshoring activity verified since mid-90s.

In order to fulfil the objective of this paper, we estimate investment functions using world-consolidated firm-level data for US-listed companies from Compustat merged with industry-level information on offshoring from the World Input–Output Database (WIOD). The main issue when dealing with offshoring is that comprehensive information is not available for individual firms. Rather than studying the offshoring of corporations, we propose to consider the offshoring of their industry for which we have reliable information over the 1995–2011 period. The scope of this study focuses, therefore, on individual capital accumulation behaviour, conditional on the fact that firms belong to industries with various degrees of offshoring.

Thanks to this empirical strategy, the main contribution of this paper is to show that the negative correlation between payouts and investment in capital expenditures underlined by the literature is valid mainly for firms belonging to industries with high offshoring in non-core non-energy activities. Moreover, investment of firms in low-offshoring sectors is not significantly correlated to their financial payouts. These results suggest that financialisation and offshoring are related phenomena. By providing the empirical evidence of this interaction, we contribute to the critical debate dealing with the context of the shareholder value creation and its consequences on fixed capital formation. Financialisation is not a uniform process and, in particular, it occurs differently depending on the variety of business models (Lazonick, 2009; Montalban and Sakinç, 2013). In this respect, our results imply that the so-called downsize and distribute strategy, in its capital accumulation component at least, has been mainly followed by firms belonging to industries well integrated in global value chains (GVCs).

Our econometric estimations are robust to various specifications, and results cohere with previous works. First, we know that financialisation is more pronounced for the largest firms (Orhangazi, 2008). In our sample, both financialisation and its interaction with offshoring manifest mainly for large firms. Second, as we explain below, offshoring may have opposite effects on the investment of corporations, depending on its organisational setup (in-house or outsourcing, offshoring in core or non-core activities). Basically, we can expect a positive (negative) relationship between investment and offshoring in core (non-core) activities since outsourcing may probably occur for non-core activities while in-house transfer of production may probably occur for core activities (Gereffi *et al.*, 2005). Though the evidence for such effects is not clear-cut, our results are in line with these expectations.

[1] Offshoring is part of a broader process of productive reconfiguration carried mainly through the so-called global value chains (Gereffi and Korzeniewicz, 1994), which implies both spatial relocation—home nation/offshoring—and organisational restructuring—in-house/outsourcing (Kinkel *et al.*, 2008, p. 247; Contractor *et al.*, 2011, p. 7). As we explain below, this article focuses on offshoring, keeping in mind its differential effects in case it is carried in-house or outsourced.

The reminder of the paper is organised as follows. Section 2 deals with the literature on the financialisation of non-financial corporations (NFCs), offshoring and their interaction with profits and investment. Section 3 introduces the regression specification and our main hypothesis, while Section 4 presents the data and estimation methodology. Section 5 shows and discusses the results. Section 6 presents robustness checks, while Section 7 finishes with some concluding remarks.

2. Financialisation, offshoring and investment

2.1 The financialisation of NFCs and its consequences for investment

The financialisation of NFCs is usually associated with the change in corporate governance, a topic treated by Lazonick and O'Sullivan (2000). During the 1980s and especially in the 1990s, the principle of *retain* (profits) and *reinvest* (in physical capital and human resources) shifted towards *downsize* and *distribute*. As a consequence of this, an increased proportion of funds started to be transferred to shareholders through dividends and, especially for the USA, share buybacks. Figure 2 displays the trend of these financial payouts combined for the US economy and our sample of listed firms from Compustat. The trajectory is similar in both cases: a stable pattern during the 70s is followed by a discrete increase during the 80s, a small decrease during the 90s, finishing with a clear upward trend in the 00s.

The financialisation literature highlights another change regarding NFCs which is the increased acquisition of financial assets from which NFCs started deriving a growing proportion of financial income. Crotty (2005), Orhangazi (2008), Krippner (2012) and Davis (2016) claim that, due to different problems faced by US NFCs

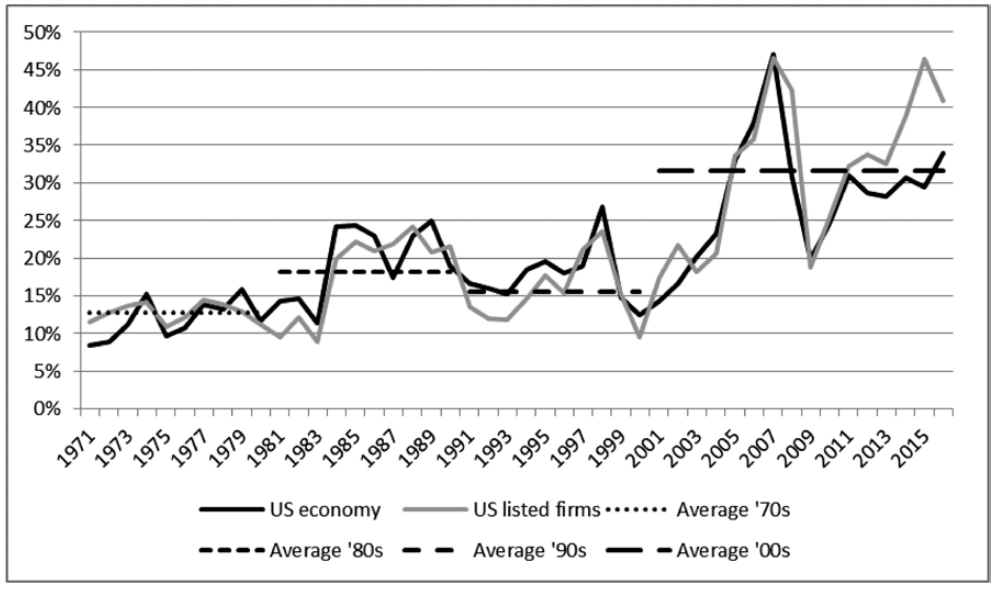

Fig. 2. *Net financial payouts as percentage of operating surplus for the US economy and US-listed firms, 1971–2016.*
Source: Table Z1, Financial Accounts of the USA and Compustat. Authors' calculations.

at the end of the 70s and beginning of the 80s (high labour militancy at home and increased international competition abroad, slower global aggregate demand growth and increased exchange rate volatility), firms started to withdraw capital from production and divert it to financial markets buying financial assets and financial subsidiaries, or starting new financial arms themselves. In Stockhammer (2004) and Tomaskovic-Devey *et al.* (2015), the emphasis is put on a shift in management preferences caused by the hostile take-over movement and changes in pay structure which aligned their interests with those of shareholders'. Due to these transformations, non-financial business became more rentier-like abandoning growth-oriented priorities and investing in financial markets.

A number of scholars has tried to assess, econometrically, the effect of those channels by adding financialisation-related variables to an investment function based on the seminal work done by Fazzari *et al.* (1988) (Table 1). The idea is that both of these channels have a negative impact since financial payouts, including interest expenses, represent a drain of resources that could be used for investment purposes while financial income derives from financial investment which crowds out real investment. Another financialisation-related variable that is usually included is a measure of debt, usually long-term debts, to indicate the extent of financial fragility of the firm.

In terms of variables considered, Table 1 shows that their number has evolved over time and with the use of firm-level information. The latter has allowed to consider a fundamental variable in the financialisation story, at least for the USA: share buybacks. In terms of results, regardless of the country and whether it is a macro- or micro-analysis, all studies find at least one channel that negatively affects investment, although the negative effect of financial payments is more persistent. Regarding the effect of debt on investment, results are ambiguous because debt may be a source of capital funding. Kliman and Williams (2015) claim also that funds distributed to shareholders have come mainly from debt rather than investment. That is why it is important to control for long-term debt and new debt issue when estimating investment functions.

The crowding out thesis has recently been reconsidered in some papers. Fiebiger (2016) claims that, for the USA, even though foreign direct investment (FDI) is classified as a financial asset in the national accounts, its increase would support the thesis of an internationalisation of the NFC rather than its financialisation. Davis' (2017) econometric results show a positive relation of financial assets and the financial profit rate with investment. She interprets them, respectively, as due to the greater flexibility provided by liquid financial assets in order to support real investment, and the possible complementarities between the financial and non-financial components of their business (e.g. store-issued credit cards supporting the sales of non-financial products). Taking into account that the measure of financial assets used by Davis (2017) contains 'cash and short-term investments', the result is not surprising and rather standard since Fazzari *et al.* (1988) show, empirically, the importance of internal cash to smooth investment when firms are financially constrained. This result also goes in line with post-Keynesian models of accumulation which stress the importance of internal finance for investment (Galbraith, 1968; Eichner, 1976). In the same line, even if Hecht (2014) explains that internal cash balances may be used for capital expenditures or payments of interests and dividends, he finds that they are positively correlated with investment.

Specifically for the USA, Orhangazi (2008) finds significant negative elasticities, especially for large firms. For them, financial payouts and financial income present

Table 1. *Financialisation variables in investment functions*

Paper	Period	Data	Financialisation variables	Effect on investment
Firm-level studies				
Orhangazi (2008)	1973–2003	Panel of US non-financial firms	$(INT\ INC + DIV\ INC)/K$	Positive but non-significant for all and small NFC. Negative and significant for large NFC
			$(INT + DIV + STK\ REP)/K$	Negative and significant for all, large and small NFC
			$LT\ DEBT/K$	Negative and significant for all, large and small NFC
Demir (2009)	1991–2003	Panel of Argentinian, Mexican and Turkish non-financial firms	$(INT\ INC + DIV\ INC)/FA$	Negative and significant
Hecht (2014)	1998–2008	Panel of Chinese, French, German, British, Indian, Japanese and US non-financial firms (results for the financialisation specification, for the whole sample and the US subsample, varied results for the other countries)	$(STK\ ISSUE - STK\ REP)/K$	Positive but non-significant for the USA. Positive and significant for the whole sample.
			$LT\ DEBT/K$	Positive but non-significant for the USA. Positive and significant for the whole sample.
			$(INT\ INC + DIV\ INC)/K$	Negative but non-significant for the USA and the whole sample.
			INT/K	Negative and significant for the USA and the whole sample.
			$DIV/SALES$	Negative and significant for the USA. Positive but non-significant for the whole sample.
Schoder (2014)	1970–2007	Panel of US non-financial firms	$DEBT/A$	Varied results
			DIV/π	Negative and significant for 1971–85, positive and non-significant for 1986–2007
			$DIV/MARKET\ VALUE$	Positive and significant for 1971–85, negative and non-significant for 1986–2007
			$(DIV + STK\ REP)/K$	Positive and significant for 1971–85 and 1986–2007
			$NON\ OPERATING\ INC/\pi$	Positive and significant for 1971–85, positive and non-significant for 1986–2007
Seo *et al.* (2016)	1990–2010	Panel of Korean firms	$DEBT/K$	Negative and significant
			$(DIV\ INC + INT\ INC)/K$	Positive and non-significant
			$(DIV + INT)/K$	Negative and non-significant

Table 1. (Continued)

Paper	Period	Data	Financialisation variables	Effect on investment
Davis (2017)	1971–2013	Panel of US non-financial firms	*NON OPERATING INC*/*FA*	Negative and non-significant for all firms. Positive and significant for large firms
			INT/*DEBT*	Positive and non-significant for all firms. Negative and significant for large firms
			FA/*A*	Positive and significant for all firms and quartiles
			DEBT/*A*	Negative and significant for all firms and quartiles
			STK REP/*EQUITY*	Negative and significant for all and large firms
Tori and Onaran (2018)	1983– 2013	Panel of UK non-financial firms	*DIV*/*K*	Negative and significant
			INT/*K*	Negative and significant
			(*INT INC* + *DIV INC*)/*K*	Negative and significant. Positive and significant for lower 25th percentile
			FA/*K*	Negative and significant
Industry- and aggregate-level studies				
Stockhammer (2004)	1963–97	Individual estimations for Germany, France, UK and USA	(*INT INC* + *DIV INC*)/*VA*	Negative but non-significant for France and the USA. Positive but non-significant for Germany and UK
			(*INT* + *DIV*)/*VA*	Negative but non-significant for Germany, France and UK. Positive for the USA
Van Treeck (2008)	1965–2004	Estimation for the USA	(*INT* − *INT INC*)/*K*	Negative and significant
			(*DIV* − *DIV INC*)/*K*	Negative and significant
Clévenot *et al.* (2010)	1978–2003	Estimations for France	(*DIV* + *CAPITAL GAIN*)/*FA*	Negative and significant
			Δ*FA*/*FA*	Negative and significant
Onaran *et al.* (2011)	1962–2007	USA	(*INT* + *DIV* − *INT INC* − *DIV INC*)/*VA*	Negative and non-significant
Tomaskovic-Devey *et al.* (2015)	1970–2008	Panel of US non-financial industries	FA/A	Negative and significant
Barradas (2017)	1995–2013	Panel of European countries	(INT INC + DIV INC)/GDP	Positive and significant
			(INT + DIV)/VA	Negative and significant
			DEBT/VA	Positive and non-significant

Note: *A* = assets; *DIV* = dividend; *FA* = financial assets; *INC* = income; *INT* = interest; *K* = stock of capital (net property plant and equipment); *LT* = long term; *REP* = repurchase; *STK* = stock; *VA* = gross value added; π = profit.

a negative and significant effect of 0.06 and 0.08, respectively, while for small firms, it is 0.04 and 0.06. Davis (2017) also finds a negative and significant effect of financial payouts for larger firms, with stock repurchases defined at the industry level. Similarly, Hecht (2014) finds negative and significant elasticities of interest expenses and cash dividends of 0.04 and 0.02 while financial income is non-significant. The negative correlation between financial payouts and investment seems to be a robust result while the negative effect of financial income or financial assets is a fragile conclusion. Only in the case of Schoder (2014), do results go in an opposite direction than the rest of the literature finding positive and significant effects for both types of channels, although for some measures of financial payouts, results are negative. Given these contrasting results, the investment function we introduce in Section 3.1 presents an opportunity to test the robustness of the financialisation thesis, at least since the mid-90s, which is close to the period taken by Hecht (2014). We will check this robustness by introducing other variables to capture an important determinant of capital expenditures that has been overlooked in these investment functions: the offshoring of production.

2.2 Benefits from offshoring and its effect on investment

As we mentioned in Section 1, global production is organised mainly through GVCs today (OECD, 2010), resulting in a fundamental restructuring through offshoring and outsourcing (Lee and Gereffi, 2015). We will be following OECD's (2010, p. 220) definition: 'offshoring is generally defined as companies' purchases of intermediate goods and services from foreign providers at arm's length or the transfer of particular tasks within the firm to a foreign location, i.e. to foreign affiliates. Outsourcing refers to the purchasing of intermediate goods and services from outside specialist providers at arm's length either nationally or internationally'. The combination of offshoring and outsourcing gives four possibilities described in Table 2.

Multinational corporations play a key role in this process as the leaders of the whole network whereas the dominant consideration in order to engage in such strategy is still to reduce wages and costs[2] (Contractor *et al.*, 2011). In fact, while stagnation of wages in advanced countries and gains of productivity related to the introduction of new information technology were, traditionally, the most studied ways to maintain a mark-up despite price competition, Milberg (2008, p. 428) puts forward a third source: the effective management of GVCs more related to cost management rather than price setting.

The rise in cost mark-ups and profitability was achieved by focusing in some activities considered core or strategic (development and design, trans-divisional research, technology and business intelligence) while dropping the non-core activities, usually with low value creation (Gereffi *et al.*, 2005; Serfati, 2008; Schwörer, 2013; Lee and Gereffi, 2015).[3] According to Milberg and Winkler (2013), thanks to the availability of

[2] Although greater flexibility and diversification of location are also important.

[3] This distinction between core and non-core activities is based on the competencies of a firm, rather than its products (Prahalad and Hamel, 1990). However, we will follow a different perspective related to the industry-level data we will use: core (non-core) offshoring of a given industry is defined by the import of inputs that belongs to the same (a different) two-digit Standard Industrial Classification industry (e.g. Feenstra and Hanson, 1999). The underlying assumption is that core tangible and intangible assets of a corporation are probably related to its primary industry. We rely on this definition in this article (for more details see Section 3.2).

Table 2. *Definition of offshoring and outsourcing*

	Home nation	Offshore
In-house	Value of entirely in-house activities in home nation	Value of entirely in-house activities within owned foreign affiliates
Outsourcing	Value outsourced domestically in home nation	Value outsourced contractually from foreign providers

Source: Contractor *et al.* (2011).

various suppliers all over the world, offshore production took the form of arm's length relationships between the leading firm and supplier establishing an asymmetric market structure which consists of a monopsonic buyer relation between those various suppliers and the lead firms, who also exercise oligopoly power as sellers.

The benefits associated with offshoring are well documented for different countries and industries. Jabbour (2010) uses information on offshoring activity by French manufacturing firms for the year 1999 and finds positive effects on profitability and productivity. Milberg and Winkler (2009) show that services and materials' offshoring significantly increased profit shares between 1998 and 2006 in the USA. For Irish electronics firms, Görg and Hanley (2004) find that international outsourcing improves the profitability of large companies. Dunn *et al.* (2009) report that, for the US technology sector case between 2001 and 2005, firms offshoring technology-oriented jobs have greater earnings and operating cash flows. D'Attoma and Pacei (2014) also find positive effects for the Italian manufacturing industry. In a survey carried by the McKinsey Global Institute (Farrell and Agrawal [2003]) cited in Milberg and Winkler (2013), it is mentioned that the cost saving of offshoring is between 45% and 55%.

As Baud and Durand (2012) pointed out, suppliers are not only forced to compete among each other but also must face leader firm's terms of payments, and its standards of just-in-time production, as well as carry the risks associated with sales volatility, which imposes additional financial costs and increases their capital needs. This lack of accountability for standards in the supplying firm, be they working standards or capital commitments, is one of the most important differences between arm's length relations and in-house offshoring through vertical FDI according to Milberg and Winkler (2013). In fact, they argue that the asymmetry between leading firms and suppliers created conditions for greater returns from externalisation than internalisation. Internalisation through FDI is preferred in those cases where a strategic protection of an asset, such as a knowledge asset, is involved or when the objective is to replicate productive capacity in a foreign location, also known as 'market-seeking' or horizontal FDI. The authors show the relative increase of horizontal FDI compared to vertical going from 25.4% in 1985 to 63.8% in 2010 (Milberg and Winkler, 2013, p. 133, table 4.8). Figure 3 indicates the growing importance of US FDI outward flows relative to US investment, and the increase in the stock of FDI measured as percentage of GDP. Nevertheless, it confirms the fact that most of that FDI is related to horizontal rather than vertical FDI considering that approximately 70% is maintained in developed countries.

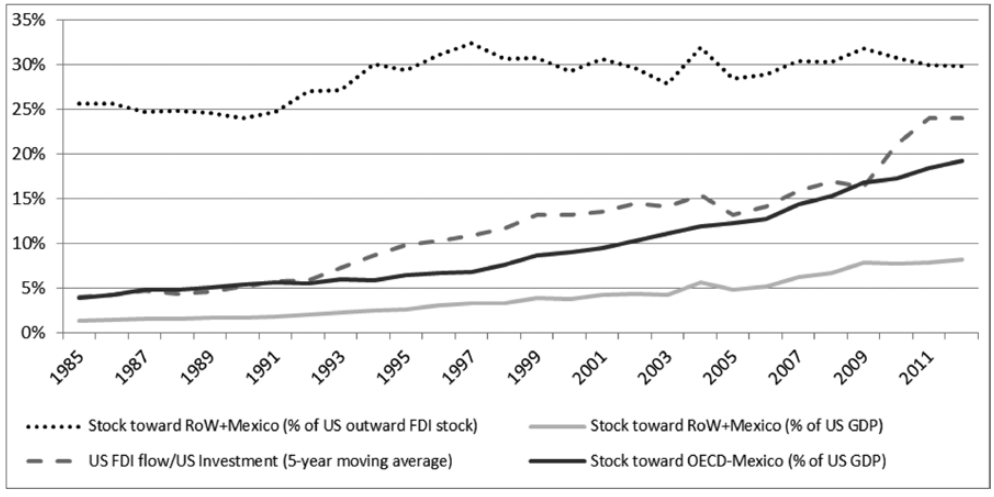

Fig. 3. *Stock and flow of US outward FDI, 1985–2012.*
Source: Table Z1, Financial Accounts of the USA; OECD, FDI statistics according to Benchmark Definition 3rd Edition (BMD3), FDI positions by partner country. Authors' calculations.

Besides the effects on profits, we are interested in studying how these recent changes affected investment. Milberg and Winkler (2013, p. 224) identify three channels by which offshoring affects investment. Domestic capital stock can be diminished due to its replacement by foreign capital, the 'substitution effect', or due to a reduced demand for capital for each unit of output produced, the 'capital productivity' effect. However, it can also increase due to the growth in the scale of production, the 'scale effect'.[4] Their results show that between 1996 and 2006, offshoring significantly reduced capital accumulation.

2.3 The codependence between the financialisation of NFC and offshoring

In the previous sections, we have shown, separately, the decrease in investment and the increase in financial payouts and offshoring in the USA. Milberg's (2008) pioneering work first indicated the relation among these different phenomena: since firms own less productive facilities due to offshoring, profits are not reinvested in inputs, plants and equipment, but redirected to the purchase of financial assets and dividend payments which raises shareholder value. Milberg and Winkler (2013, p. 230) later showed that, for different US sectors between 1998 and 2006, services offshoring increases financialisation in the USA. For different countries and industries, Durand and Miroudot (2015) introduce financialisation, in addition to offshoring, as a possible explanation of the level of employment. Their results suggest that these two variables are significantly correlated with employment, though their effects are unrelated in their macro dataset.

Other studies have been carried out for specific sectors and results go in the same direction. Soener (2015) analyses the apparel and footwear industry, differentiating

[4] Moser *et al.* (2015) identifies similar channels by which offshoring affects another outcome variable as employment.

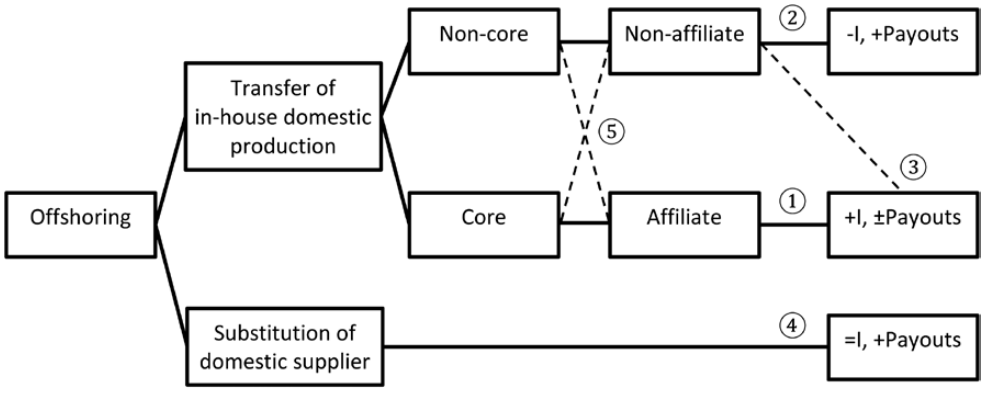

Fig. 4. *Offshoring, investment and payouts from the firm's perspective.*
Note: Dotted lines indicate relationships that should be less frequent than the one designated by solid lines. Numbers correspond to the five situations detailed in the text.

among branded manufactures (firms that own some productive facilities as well as their own brand), branded marketers (firms that contract all production and sell their brands in retailers), general retailers (which sell their own products and others as well), special retailers (which sell their own products) and textile assemblers and producers (firms that do not fit previously mentioned categories). His empirical results support the hypothesis that the more a firm divests from production, the more likely it will be financialised: branded marketers have around 700% the level of financial assets, 300% the level of payouts and 430% the level of interest income compared with general retailers. Branded marketers have 222% the level of assets and 194% the level of payouts compared with general retailers. Baud and Durand (2012) show, for the retail sector, that the development of international and financial operations contributed to its ability to provide high returns to shareholders.

Relying on the literature previously reviewed, we propose a framework in Figure 4 based on the channels by which offshoring affects employment (Moser *et al.*, 2015) and investment (Milberg and Winkler, 2013). Nevertheless, since we focus on the microeconomic level of the firm, and because we work with world-consolidated firm-level data, this framework focuses on the firms' perspective rather than on the home nation's viewpoint. Basically, we assume that offshoring is profitable to the firm but the use of profits will depend on the organisational setup of offshoring. Five relationships between offshoring, investment and payout can be drawn.

1) If we acknowledge that core offshoring of production tends to be internalised in order to protect strategic assets, and even if it may reduce domestic investment by a substitution or a productivity effect, it would increase firm's investment through FDI and also thanks to a growth in the scale of production.[5] Here the payout policy may go in two directions: either the firm may reduce payout to focus on foreign

[5] There is abundant literature on the effects of FDI over investment. While market-seeking FDI generally has a positive effect on domestic investment, which is in line with the scale effect hypothesis, cost-seeking FDI tends to be negative. See, for example, Chuan and Lin (2007), Hering *et al.* (2010), Hejazi and Pauly (2003) and Onaran *et al.* (2013).

investment, or the new source of profit is enough to increase both investment and payout.

2) Conversely, non-core offshoring should result in the development of arm's length relationships between the firm and international suppliers with one major consequence being a reduction of investment at the world firm level. In this case, the new source of profits can be used for distribution to shareholders, and a non-ambiguous negative relationship should exist between offshoring and investment on the one hand, and between investment and payout on the other hand.
3) However, even outsourcing in non-core activities may result in an increase of investment if the firm reinvests its profits in capital related to its core competences, especially when the firm enjoys a scale effect. This case ends as in case number 1; it is uncertain that profits will be distributed to shareholders if they are oriented towards core investment. Given that one of the main business models adopted by US firms combines financialisation and offshoring (Milberg, 2008; Lazonick, 2009), we hypothesise that case number 2 should be more frequent than case number 3.
4) Finally, if offshoring consists of replacing a supplier in the home nation by a supplier abroad, then the consequences should be neutral for the firm's investment since it already relies on outsourced production. Because the demand for capital is low for these firms, their profits can be used for distribution to shareholders.
5) Of course, we cannot exclude that some firms outsource core activities while other keep non-core ones, which results in various outcomes in investment and payouts. Nevertheless, given the already cited literature, these cases should not be dominant.

Our main proposition is that non-core offshoring may explain the prevalence of firms with low investment and high financial payouts. To illustrate this statement, Figure 5 portrays trends in both offshoring and payout-to-investment ratios for firms belonging to different industries.[6] Those related to the production of machinery, non-durables and durables goods present the highest rates of offshoring along with the highest payout-to-investment ratios. Here, two caveats must be noted. First, most industries have increased their financial payouts relative to investment during the 2000s. A closer look to the data shows that most of the increase occurs after 2007. When profits and stock prices decline, paying dividends and stocks buybacks are a good way to retain shareholders. We are therefore attentive to the persistence of the relationship we presume between offshoring and financialisation over time. Second, two industries with low offshoring also present high payout-to-investment ratios (utilities, ISIC E, and wholesale and retail trade, ISIC 51 and 52). We also consider the possible non-linearity between offshoring and financialisation that can be perceived in Figure 5 and Table 3. However, two remarks can be made here in order to sustain our statement.

First, it should be noted that utilities are usually excluded in corporate finance studies that focus either on dividend policy (Fama and French, 2001) or accumulation slowdown (Asker *et al.*, 2014). The rationale is that dividend or investment in those firms may be a by-product of federal or state regulation. Utilities are still regulated, and even after the sector's deregulation initiated by the Energy Policy Act of 1992, they

[6] Figure 5 provides the median and the 75th percentile of the payout-to-investment ratio by industry because the mean is distorted by extreme values in some industries. Table 3 provides detailed descriptive statistics of the mean, the median and the 75th percentile of the payout-to-investment ratio for the 31 industries we study.

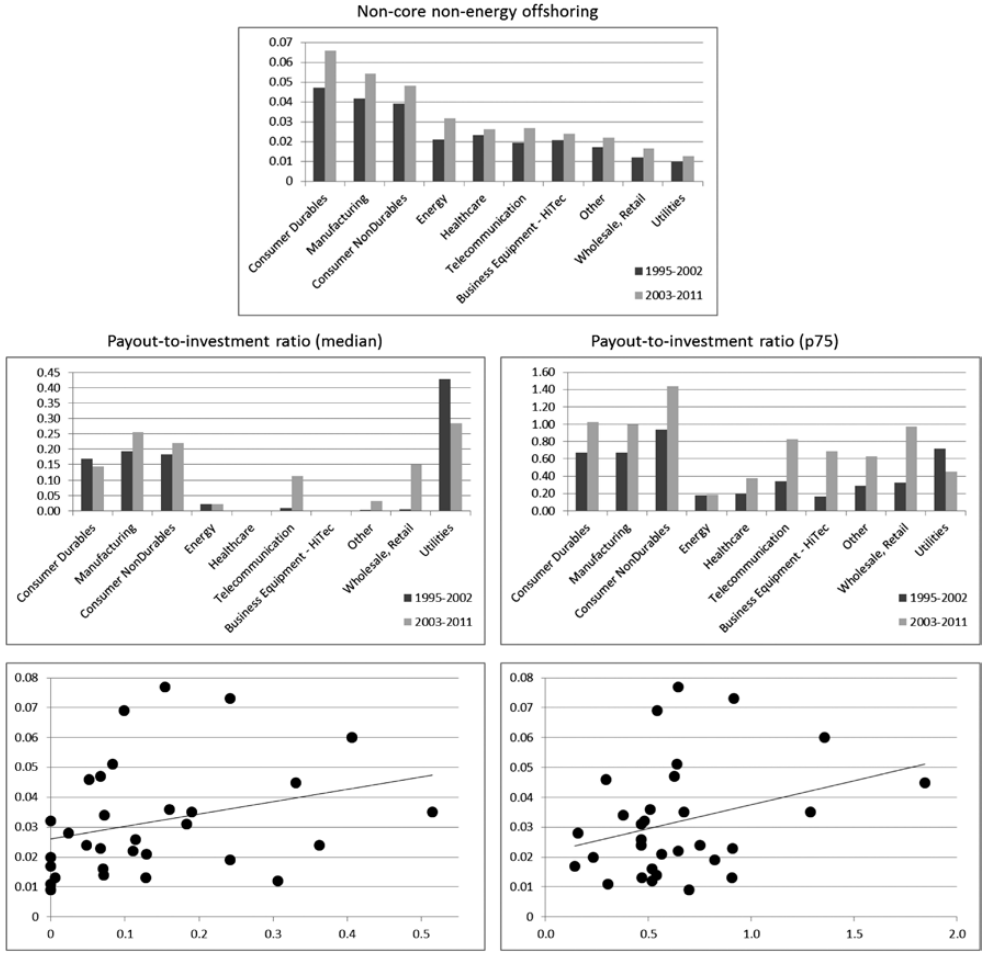

Fig. 5. *Non-core offshoring and payout-to-investment ratio.*
Note: This figure shows, over the period 1995–2011, the relationship between the mean non-core non-energy offshoring, i.e. the share of foreign input in total output, and either the median or the 75th percentile of the payout-to-investment ratio, i.e. dividends and share repurchases over capital expenditures. Sectors are grouped in 10 industries and are ranked according to the level of offshoring in bar charts. Scatter plots present the payout-to-investment ratio in the horizontal axis and offshoring in the vertical axis for the 31 sectors of our study.
Source: WIOD and Compustat. Authors' calculations.

continue to pay high dividends (D'Souza *et al.*, 2015). Second, the wholesale and retail trade industries reach the same median or 75th percentile in the payout-to-investment ratio than the industries with high offshoring, especially in the second half of the 2000s. We have to underline that our measure of offshoring, that is, the share of foreign input in total output, does not capture the offshoring of firms belonging to these industries because they import final products rather than intermediary products. Actually, these firms rely heavily on offshoring (Gereffi, 1994; Baud and Durand, 2012; Milberg and

Table 3. *Industries' non-core non-energy offshoring and financial payout-to-investment ratios*

ISIC	Industry	Offshoring		Total number of observations	%	Offshoring (mean)	Payout-to-investment ratio		
		High	Low				Mean	p50	p75
25	Rubber and Plastics	458	0	458	1	0.077	0.593	0.154	0.644
29	Machinery, Nec	1,532	0	1,532	5	0.073	0.940	0.242	0.915
34t35	Transport Equipment	827	0	827	3	0.069	0.557	0.099	0.541
36t37	Manufacturing, Nec; Recycling	586	0	586	2	0.060	1.181	0.406	1.357
17t18	Textiles and Textile Products	575	0	575	2	0.051	0.766	0.083	0.640
F	Construction	458	0	458	1	0.047	1.148	0.067	0.626
50	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of Fuel	192	0	192	1	0.046	0.776	0.051	0.295
15t16	Food, Beverages and Tobacco	1,012	0	1,012	3	0.045	1.358	0.330	1.845
19	Leather, Leather and Footwear	94	0	94	0	0.036	0.529	0.160	0.508
27t28	Basic Metals and Fabricated Metal	1,074	0	1,074	4	0.035	0.571	0.190	0.674
21t22	Pulp, Paper, Paper, Printing and Publishing	838	0	838	3	0.035	1.073	0.515	1.289
20	Wood and Products of Wood and Cork	195	0	195	1	0.034	0.381	0.072	0.379
Sub-total		*7,841*	*0*	*7,841*	*26*	*0.054*	*0.892*	*0.203*	*0.912*
30t33	Electrical and Optical Equipment	4,541	0	4,541	15	0.032	0.940	0,000	0.480
26	Other Non-Metallic Mineral	224	0	224	1	0.031	0.775	0.183	0.466
C	Mining and Quarrying	1,348	335	1,683	6	0.028	0.326	0.024	0.156
61	Water Transport	55	66	121	0	0.026	0.378	0.114	0.466
64	Post and Telecommunications	878	640	1,518	5	0.024	0.791	0.048	0.465
Sub-total		*7,046*	*1,041*	*8,087*	*26*	*0.030*	*0.771*	*0.005*	*0.376*
23	Coke, Refined Petroleum and Nuclear Fuel	111	128	239	1	0.024	0.502	0.362	0.749
24	Chemicals and Chemical Products	1,262	1,412	2,674	9	0.023	0.922	0.067	0.909
H	Hotels and Restaurants	30	132	162	1	0.022	1.498	0.111	0.644
AtB	Agriculture, Hunting, Forestry and Fishing	9	111	120	0	0.021	0.588	0.129	0.565
N	Health and Social Work	0	819	819	3	0.020	0.702	0,000	0.232
60	Inland Transport	0	177	177	1	0.019	0.592	0.242	0.822
62	Air Transport	0	287	287	1	0.017	0.260	0,000	0.142
O	Other Community, Social and Personal Services	0	756	756	2	0.016	1.244	0.070	0.519

Table 3. (Continued)

ISIC	Industry	Offshoring		Total number of observations	%	Offshoring (mean)	Payout-to-investment ratio		
		High	Low				Mean	p50	p75
52	Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of Household Goods	0	2,774	2,774	9	0.014	0.612	0.071	0.540
Sub-total		*1,412*	*6,596*	*8,008*	*26*	*0.019*	*0.786*	*0.061*	*0.626*
51	Wholesale Trade and Commission Trade, Except of Motor Vehicles and Motorcycles	0	1,334	1,334	4	0.013	1.234	0.128	0.905
M	Education	0	132	132	0	0.013	0.820	0.006	0.467
E	Electricity, Gas and Water Supply	0	1,965	1,965	6	0.012	0.461	0.306	0.518
63	Other Supporting and Auxiliary Transport Activities; Activities of Travel Agencies	0	49	49	0	0.011	0.547	0,000	0.303
71t74	Renting of M&Eq and Other Business Activities	0	3,146	3,146	10	0.009	1.215	0,000	0.697
Sub-total		*0*	*6,626*	*6,626*	*22*	*0.011*	*0.983*	*0.161*	*0.611*
Total		*16,299*	*14,263*	*30,562*	*100*	*0.029*	*0.852*	*0.082*	*0.629*

Note: This table displays the number of observations in high- and low-non-core non-energy offshoring sectors over the 1995–2011 period. It also reports the mean value of non-core non-energy offshoring by sectors, i.e. the share of foreign input in total output, and the mean, the median and the 75th percentile of the payout-to-investment ratio by sectors. Industries are ranked by the level of offshoring. The four groups are built to be close to 25% of the sample for descriptive purpose.

Source: WIOD and Compustat. Authors' calculations.

Winkler, 2013; Chesnais, 2016) and are mainly those that fall in the case number 4 in the Figure 4. Nevertheless, our general results are not affected by the presence of utilities and wholesale and retail trade industries.

3. The regression specification

3.1 The baseline model: financialisation of NFCs

Because we want to assess to what extent financialisation and offshoring are related phenomena in the accumulation slowdown, we rely on the investment function discussed in Section 2.1, primarily based on Fazzari *et al.* (1988) who criticise the Modigliani–Miller principle of capital structure irrelevance. For this principle, investment decisions are independent of financial factors, being just relative factor prices that drive investment. On the contrary, Fazzari *et al.* (1988) show the importance of financing constraints and, particularly, the internal cash flow for investment decisions. The significance of internal funds is also supported by Hubbard (1998) and Brown *et al.* (2009).

Acknowledging the changes in contemporary economies brought about by financialisation, a group of scholars has tried to re-estimate those investment functions, explicitly considering different financial determinants (Orhangazi, 2008; Hecht, 2014). Our baseline model basically follows their work and is defined in the following way:

$$\frac{I}{K} = f\left(\frac{I_{t-1}}{K}, \frac{\pi}{K}, \frac{S}{K}, Q, \frac{LONGDEBT}{K}, \frac{INTEXP}{K}, \frac{INTINC}{K}, \frac{DIV}{K}, \frac{STKISSUE}{K}, \frac{STKREP}{K}, \frac{NETDEBTISSUE}{K}, \frac{INTERNF}{K}\right)$$

I is capital expenditure; K is net property, plant and equipment; π is operating income; S is sales; Q is Tobin's q, defined as the ratio of firms' market capitalisation and book liabilities over total assets; *LONGDEBT* is long debt; *INTEXP* is interest expense; *INTINC* is interest and investment income; *DIV* are the common and preferred stock dividends paid; *STKISSUE* and *STKREP* are the issuance and repurchase of common and preferred stock, respectively; *NETDEBTISSUE* is the difference between the sale and purchase of short-term and long-term debt; *INTERNF* is firm's balance sheet value of cash and short-term securities, and it is used as a proxy of internal cash flow, following Hecht (2014). Compustat data items corresponding to each of these variables can be found in the Supplementary Table A1, along with description of variables used in figures and other tables.

As it is standard in this literature, we take lags of explanatory variables. In post-Keynesian theories of the firm, investment decisions are indeed modelled as a function of expected profits (Dallery, 2009; Lavoie, 2014). In a context of fundamental uncertainty as meant by Keynes (1937), where it is not possible to know future values of demand and profits, it is reasonable to think that previous experience serves as a basis for expectations. According to Davis (2017), this experience may be captured by past values of independent variables because all flow variables in year t are not necessarily realised when the decision of investment is taken, while

the flows occurring during the year *t−1* are well known and may explain the decision to invest.

Besides the importance of internal funds $\left(\frac{INTERNF}{K}\right)$ and profits $\left(\frac{\pi}{K}\right)$ as a source of capital spending, which should be positively correlated with investment (Fazzari *et al.*, 1988), our model also captures the dynamic nature of investment and its path dependency (Kalecki, 1954): positive signs for past investment $\left(\frac{I_{t-1}}{K}\right)$ reflect the dynamic process it involves. Sales $\left(\frac{S}{K}\right)$, along with profits $\left(\frac{\pi}{K}\right)$, are frequent variables in investment functions (Chirinko, 1993) and reflect the firm's growth opportunities. In a Keynesian perspective, sales represent the microeconomic demand for the firm's products. Sales may be also a proxy for the growth in the scale of production (Milberg and Winkler, 2013, p. 224) described in Section 2.2. For all these reasons, sales should be positively correlated with investment. Tobin's *q* (*Q*) is also a standard variable (Chirinko, 1993) and is a proxy for profit and investment expectations and as such should be positively correlated with investment.

As explained in Section 2.1, interest income $\left(\frac{INTINC}{K}\right)$ measures the extent by which real investment is displaced by financial investment and should be negatively correlated with investment, even though previous results in the literature are mitigated because, as Orhangazi (2008) explained, financial income can also be used to fund investment. Interest expenditures $\left(\frac{INTEXP}{K}\right)$, dividends $\left(\frac{DIV}{K}\right)$ and stock repurchases $\left(\frac{STKREP}{K}\right)$ align with the story of real investment being displaced by financial payments; we expect negative sign for all of them, as the literature usually finds. We expect a negative sign for long-term debt $\left(\frac{LONGDEBT}{K}\right)$ as a consequence of the financial fragility of the firm, but we acknowledge that debt may have a positive effect as a source of funds for investment.[7] For net debt issue $\left(\frac{NETDEBTISSUE}{K}\right)$, we expect a positive sign based on its role in financing real investment, highlighted by Kliman and Williams (2015). The same applies for stock issue $\left(\frac{STKISSUE}{K}\right)$ as stressed by Hecht (2014).

To sum up, expected signs are:

$$\left(\frac{I}{K}\right)_{\frac{I_{t-1}}{K}} > 0,\ \left(\frac{I}{K}\right)_{\frac{\pi}{K}} > 0,\ \left(\frac{I}{K}\right)_{\frac{S}{K}} > 0,\ \left(\frac{I}{K}\right)_{Q} > 0,$$

$$\left(\frac{I}{K}\right)_{\frac{LONGDEBT}{K}} \gtrless 0, \left(\frac{I}{K}\right)_{\frac{INTEXP}{K}} < 0, \left(\frac{I}{K}\right)_{\frac{INTINC}{K}} \gtrless 0,$$

$$\left(\frac{I}{K}\right)_{\frac{DIV}{K}} < 0,\ \left(\frac{I}{K}\right)_{\frac{STKISSUE}{K}} > 0,\ \left(\frac{I}{K}\right)_{\frac{STKREP}{K}} < 0,$$

$$\left(\frac{I}{K}\right)_{\frac{NETDEBTISSUE}{K}} > 0,\ \left(\frac{I}{K}\right)_{\frac{INTERNF}{K}} > 0$$

[7] We use the contemporaneous value as it is done by Hecht (2014) and Schoder (2014) to take into account the current financial fragility of the firm.

The statistical specification will be the following:

$$\begin{aligned}\ln\left(\tfrac{I}{K}\right)_{it} = {} & \alpha_0 + \alpha_1 \ln\left(\frac{I}{K}\right)_{i,t-1} + \alpha_2 \ln\left(\frac{\pi}{K}\right)_{i,t-1} + \alpha_3 \ln\left(\frac{S}{K}\right)_{i,t-1} + \alpha_4 \ln(Q)_{i,t-1} \\ & + \alpha_5 \ln\left(\frac{LONGDEBT}{K}\right)_{i,t} + \alpha_6 \ln\left(\frac{INTEXP}{K}\right)_{i,t-1} + \alpha_7 \ln\left(\frac{INTINC}{K}\right)_{i,t-1} \\ & + \alpha_8 \ln\left(\frac{DIV}{K}\right)_{i,t-1} + \alpha_9 \ln\left(\frac{STKISSUE}{K}\right)_{i,t-1} + \alpha_{10} \ln\left(\frac{STKREP}{K}\right)_{i,t-1} \\ & + \alpha_{11} \ln\left(\frac{NETDEBTISSUE}{K}\right)_{i,t-1} + \alpha_{12} \ln\left(\frac{INTERNF}{K}\right)_{i,t-1} + \gamma_{it} + \sum_{t=1996}^{t=2011} \beta_t + \varepsilon_{it} \end{aligned} \quad (1)$$

where ln is a logarithmic function used to account for potential non-linearities between explained and explanatory variables,[8] $\alpha_0 \ldots \alpha_{12}$ are parameters, the i subscript denotes the firm and the t subscript denotes the time period. γ_{it} is the coefficient of the age of the corporation. β_t are coefficients of a set of time dummies, while ε_{it} represents non-observable shocks. The regression variables are divided by capital stock to correct for heteroscedasticity and control for firm size. It is important to control for the age and the size of the corporation because small and recently listed firms usually do not pay dividends (Fama and French, 2001) and do investment thanks to the cash they raise on the stock exchange (Lazonick, 2009). We will estimate equation (1) for the complete sample and for the subsamples of large and small firms, taking into account the findings of Orhangazi (2008), Davis (2017) and Tori and Onaran (2018) who found larger effects of financialisation-related variables for the former.

3.2 The main hypothesis: the financialisation–offshoring nexus

Once we estimate this baseline model, we will concentrate on the specific novelty we are dealing with: an analysis of the simultaneous effects of financialisation and offshoring in investment functions using industry-level information from WIOD. In accordance with our framework (Section 2.3, Figure 4), we include two measures for offshoring: one for the narrow or core activities of the enterprise considered are those inputs from the same sector (*COREOFF*) and another for the non-core and non-energy activities calculated as those inputs from the other sectors excluding energy (*NONCORENONENERGYOFF*), as proposed by Feenstra and Hanson (1999). To limit the effects of domestic outsourcing as much as possible, we take the total output of each sector as the denominator (Geishecker, 2007).[9] The measures are the following:

$$COREOFF_j = \frac{II_j^F}{Y_j},$$

[8] Our log transformation avoids censorship of firms with variables equal or inferior to zero (those with negative earnings or without stock issues or financial payouts for example): for any variable *var*, we compute $\ln(var) = -\ln(var + 1)$ if $var \leq 0$, and $\ln(var) = \ln(var + 1)$ if $var > 0$.

[9] The denominator could be alternatively industry's total inputs (Amiti and Wei, 2005) or industry value added (Hijzen *et al.*, 2005). However, as Geishecker (2007) notes, those two measures are less accurate than the one with total output in the denominator since they are both affected by domestic outsourcing. We will focus on this last measure in the next sections.

$$NONCORENONENERGYOFF_j = \frac{\sum_{k \neq j} II_k^F}{Y_j},$$

where II^F is foreign intermediary inputs, Y total output, and subscripts j and k denote two-digit ISIC (International Standard Industrial Classification) industry. Including offshoring gives the following equation:

$$\ln\left(\frac{I}{K}\right)_{ijt} = \alpha_0 + \ldots + \alpha_{13} \ln\left(COREOFF\right)_{j,t-1} + \alpha_{14} \ln\left(NONCORENONENERGYOFF\right)_{j,t-1} + \gamma_{it} + \sum_{t=1996}^{t=2011} \beta_t + \varepsilon_{it} \quad (2)$$

Here, one point is worth mentioning on the significance and the sign of coefficients α_{13} and α_{14}. Our measures are not able to distinguish between the production offshored to affiliates and that to other enterprises like we did in Figure 4. A negative sign would be related to the substitution of the firm's own production through downsizing, while a positive sign would be linked to the potential increase in their domestic and foreign market share due to the increase in the scale of production. However, considering that a large proportion of the downsize movement has been concentrated in non-core activities and the benefits associated to arm-length subcontracting (Milberg and Winkler, 2013), we should expect that *NONCORENONENERGYOFF* is negatively correlated with investment ($\alpha_{14} < 0$, see case number 2 in Section 2.3 and Figure 4). Conversely, in the case of offshoring core activities, we acknowledge that firms may prefer to keep and refocus on their core competences (Lee and Gereffi, 2015). Therefore, if they offshore them, we make the assumption that it would be to a subsidiary (although our scheme recognises with a dotted line, as it happens in reality, that it could be to a non-affiliated). Hence, *COREOFF* should be positively correlated with investment ($\alpha_{13} > 0$). In case of a positive sign, however, we would not be able to determine whether it is related to the transfer of production to a subsidiary or to a scale effect (see case number 1 in Section 2.3 and Figure 4).

We now turn to our main proposition regarding the codependence of financialisation and offshoring. We know that the distribution of cash to the financial sector, and especially to shareholders through dividends and share buybacks, is partly at the expense of capital accumulation of US NFCs (see Section 2.1).[10] This means that they distribute an increasing share of their earnings rather than retaining and investing them. Nevertheless, pursuing an intensive payout policy requires not only to reduce the share of investment but also to maintain profits. As we mentioned in Section 1, one way to do so has been the involvement in GVCs.

Consequently, we hypothesise that the negative correlation between payouts and investment has been possible for firms belonging to industries highly involved in GVCs which decreased their need for own productive facilities through arm's length relations. This hypothesis will be true if financial payouts are significantly negatively correlated with investment in capital expenditures for the subsample of firms belonging to industry consuming the highest level of foreign non-core intermediary inputs, and if the correlation is

[10] We will test again this assertion thanks to equations (1) and (2).

non-significant for the subsample of firms belonging to industry with low offshoring. To implement the test related to this hypothesis, we split the sample according to the upper and lower year-median in *NONCORENONENERGYOFF* since offshoring in non-core activities is assumed to be the main source of decreasing investment and therefore the background of the downsize and distribute strategy (see Figure 5). Table 3 presents the distribution of offshoring according to the various industries in our sample.

4. Data and estimation methodology

We took our data from the Standard and Poors' Compustat Annual Industrial Database and the updated WIOD for the USA. The latter is organised following the ISIC third revision, which is not available in Standard and Poors, so we use the SIC codes of each firm. The correspondence between the two classifications was based on the concordance tables provided by the US census bureau.

We use information from all active and inactive, publicly listed non-financial US corporations,[11] excluding financial firms identified by the primary SIC codes from 6000 to 6799, firms without sectoral information and firms whose exchange ticker is over the counter. We use annual data from 1995 to 2011, the period during which WIOD information is available.

Although Standard and Poors provides standardised information, we found that many firms have no information on several variables used in this paper. Thus, apart from removing the enterprises mentioned in the previous paragraph, we also removed firms with no information for all years of capital expenditure, sales, net property plant and equipment, long-term debt, interest expenses, cash and short-term securities, total assets, total liabilities and equities. We also removed observations with no information on market capitalisation at the end of the year, with duplicate observations, negative values for interest income and positive values for interest expenses and dividends. Finally, to account for outliers, we winsorize observations at the upper and lower 0.5%.[12] The final sample includes on average 2,049 companies by year, representing 68% of the total US market capitalisation.[13] Tables 4 and 5 display the descriptive statistics and the correlation matrix for all the variables we are using. Descriptive statistics on offshoring and financial payout-to-investment ratios are also provided for each of the 31 sectors of our sample in Table 3.

By considering a panel data with the lagged value of investment as an explanatory variable, we introduce two different sources of persistence over time: autocorrelation due to the lagged dependent variable among regressors and individual persistent effects (Baltagi, 2008, p. 135). A fixed-effects estimator, although wiping out the individual effects, is unable to eliminate the correlation between the lagged variable and the error term. Anderson and Hsiao (1981) proposed first differencing the model in order to remove the individual effects and then using the second lag of the dependent variable as an instrument for the first lag which would not be correlated with the error as long as it is not serially correlated.

[11] These companies are incorporated and have their headquarters in the USA and their primary listing in a US stock market.

[12] Values of each variable are set either at the 0.5th or 99.5th percentile value when they are, respectively, lower or higher than these thresholds.

[13] This ratio compares the market capitalisation of the US non-financial corporations of our sample to the total market capitalisation disclosed in the World Bank statistics, which also include financial corporations and foreign corporations with primary listing in the USA.

Table 4. *Descriptive statistics*

Variable name and variable label		Mean	SD	Observations
Capital expenditures	Overall	0.242	0.229	N = 30,562
I/K	Between		0.223	n = 4,674
	Within		0.137	T-bar = 6.539
Profits	Overall	−0.052	4.400	N = 30,562
π/K	Between		6.460	n = 4,674
	Within		2.355	T-bar = 6.539
Sales	Overall	9.112	18.502	N = 30,562
S/K	Between		19.519	n = 4,674
	Within		8.125	T-bar = 6.539
Long-term debt	Overall	2.110	6.002	N = 30,562
LONGDEBT/K	Between		7.047	n = 4,674
	Within		3.138	T-bar = 6.539
Interest expenditure	Overall	0.253	1.191	N = 30,562
INTEXP/K	Between		1.594	n = 4,674
	Within		0.690	T-bar = 6.539
Interest and investment income	Overall	0.041	0.167	N = 30,562
INTINC/K	Between		0.190	n = 4,674
	Within		0.098	T-bar = 6.539
Dividends	Overall	0.036	0.101	N = 30,562
DIV/K	Between		0.087	n = 4,674
	Within		0.055	T-bar = 6.539
Stock issue	Overall	0.484	2.921	N = 30,562
STKISSUE/K	Between		3.499	n = 4,674
	Within		2.026	T-bar = 6.539
Stock repurchase	Overall	0.109	0.422	N = 30,562
STKREP/K	Between		0.330	n = 4,674
	Within		0.311	T-bar = 6.539
Net debt issue	Overall	0.255	2.399	N = 30,562
NETDEBTISSUE/K	Between		2.743	n = 4,674
	Within		1.859	T-bar = 6.539
Internal finance	Overall	1.302	4.887	N = 30,562
INTERNF/K	Between		5.698	n = 4,674
	Within		2.645	T-bar = 6.539
Tobin's q	Overall	1.927	2.572	N = 30,562
Q	Between		3.317	n = 4,674
	Within		1.424	T-bar = 6.539
Narrow or core offshoring	Overall	0.024	0.028	N = 30,562
COREOFF	Between		0.028	n = 4,674
	Within		0.005	T-bar = 6.539
Non-core non-energy offshoring	Overall	0.028	0.018	N = 30,562
NONCORENONENERGYOFF	Between		0.017	n = 4,674
	Within		0.005	T-bar = 6.539

Arellano and Bond (1991) proposed a generalised method of moment (GMM) procedure that is more efficient than the Anderson and Hsiao (1981) estimator. The procedure (also called difference GMM) uses additional instruments based on the orthogonality condition that exists between lagged values of the dependent variable and the error term and also other possible strictly exogenous regressors.[14] The estimator

[14] Apart from the difference version, there is also the system GMM, developed by Blundell and Bond (1998), that is useful for situations in which the coefficient on the lagged dependent variable is close to unity, which is not our case.

Table 5. *Correlation matrix*

Variable name	Variable label	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Capital expenditures	$\ln(I/K)_{i,t-1}$	1.000												
2. Profits	$\ln(\pi/K)_{i,t-1}$	0.016	1.000											
3. Sales	$\ln(S/K)_{i,t-1}$	0.313	0.274	1.000										
4. Long-term debt	$\ln(LONGDEBT/K)_{i,t}$	0.234	0.039	0.457	1.000									
5. Interest expenditure	$\ln(INTEXP/K)_{i,t-1}$	0.217	−0.215	0.410	0.671	1.000								
6. Interest and investment income	$\ln(INTINC/K)_{i,t-1}$	0.238	−0.258	0.166	0.272	0.281	1.000							
7. Dividends	$\ln(DIV/K)_{i,t-1}$	−0.006	0.227	0.135	0.105	0.037	0.023	1.000						
8. Stock issue	$\ln(STKISSUE/K)_{i,t-1}$	0.252	−0.374	0.167	0.212	0.354	0.379	−0.025	1.000					
9. Stock repurchase	$\ln(STKREP/K)_{i,t-1}$	0.126	0.261	0.228	0.164	0.052	0.127	0.223	0.062	1.000				
10. Net debt issue	$\ln(NETDEBTISSUE/K)_{i,t-1}$	0.162	−0.144	0.011	0.240	0.156	0.071	0.004	0.086	0.093	1.000			
11. Internal finance	$\ln(INTERNF/K)_{i,t-1}$	0.330	−0.164	0.387	0.376	0.345	0.673	0.060	0.502	0.197	0.081	1.000		
12. Tobin's q	$\ln(Q)_{i,t-1}$	0.132	−0.202	0.019	0.073	0.204	0.117	0.031	0.286	0.062	0.102	0.182	1.000	
13. Narrow or core offshoring	$\ln(COREOFF)_{j,t-1}$	0.038	−0.077	−0.005	−0.003	0.021	0.127	0.030	0.107	0.024	0.010	0.198	0.089	1.000
14. Non-core non-energy offshoring	$\ln(NONCORENONENERGYOFF)_{j,t-1}$	−0.085	0.051	−0.004	−0.017	−0.042	−0.049	0.071	−0.064	−0.016	−0.039	−0.024	−0.040	0.483

has one-step and two-step variants, the finite-sample correction derived by Windmeijer (2005) can make the two-step more efficient than one-step. Based on this, we will use the Arellano–Bond two-step difference GMM estimator, which is also the mostly used in the literature we summarised in Section 2.1. Roodman (2009b) points out that this estimator is especially useful for situations with 'small T, large N' panels, linear functional relationships, one left-hand variable that is dynamic, independent variables that are not strictly exogenous, fixed individual effects, and, finally, heteroscedasticity and autocorrelation within individuals but not across them.

Different tests are implemented. The Arellano–Bond test for autocorrelation is applied to the first-difference equation residuals in order to detect unobserved and perfectly autocorrelated instrumental variables. While an AR(1) is expected in first differences (ar1p in the tables), a higher-order autocorrelation (in our case, only second order: ar2p in the tables) shows that some lags of the dependent variables used as instruments are endogenous. We will also report a test for overidentifying restrictions: Hansen J statistic. This statistic is the minimised value of the two-step GMM criterion function and it is robust to heteroscedasticity or autocorrelation.

Finally, difference GMM can generate quite a great number of instruments, something that, although does not compromise consistency, can move it away from the asymptotic ideal. In fact, according to Roodman (2009a, p. 7), '[t]he absence of formal tests and accepted rules of thumb makes it important for researchers to test GMM results for robustness to reductions in the instrument set'. Therefore, as robustness test, we both collapse the number of instruments and drop non-significant variables.

5. Estimation results

Table 6 presents the results of the estimation of equations (1) and (2) for all, as well as large and small firms defined as the upper and lower year-median in total assets, respectively. It also shows results of equation (2) for enterprises with high and low levels of offshoring (defined by the year-median of the sample).

Results from equation (1) are presented under the heading 'Financialisation model' in Table 6. Regarding the financial payout channel, dividends have a negative and statistically significant elasticity of 0.05. Stock repurchases also present a negative elasticity but it is lower, 0.009, and non-significant. Considering that financial payouts (the sum of interest expense, dividends and stock repurchases) have a negative elasticity of 0.036 in Orhangazi (2008) and that, in the case of Hecht (2014), dividends present a negative and significant elasticity of 0.02 and net stock issuance presents a positive but non-significant value of 0.012, our results are in line with the literature. As in the case of Orhangazi (2008), large firms also present a stronger correlation in our estimations: stock repurchases become statistically significant only for them with an elasticity of −0.016.

Regarding the financial income channel, we find positive but non-significant effects in all cases. Orhangazi and Hecht also found positive and non-significant effects for this variable. As we indicated in Section 2.1, results for financial income tend to be less robust in the literature compared to financial payouts. Moreover, we find a positive and statistically significant effect of *INTERNALF* at the 1% level. This result not only proves the importance of internal funds for investment decisions but may also explain why Davis (2017) obtains positive and statistically significant results for her measures

Table 6. *Estimation results based on equations (1) and (2): period: 1995–2011*

Dependent variable: $\ln(I/K)_{i,t}$	Financialisation model			Financialisation and offshoring model			High-non-core non-energy offshoring sectors			Low-non-core non-energy offshoring sectors		
	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small
$\ln(I/K)_{i,t-1}$	0.239***	0.318***	0.185***	0.240***	0.322***	0.180***	0.205***	0.165***	0.155***	0.242***	0.378***	0.157***
	(0.017)	(0.032)	(0.018)	(0.016)	(0.031)	(0.018)	(0.020)	(0.049)	(0.023)	(0.022)	(0.039)	(0.027)
$\ln(\pi/K)_{i,t-1}$	0.015**	0.036***	0.011	0.015**	0.036***	0.013*	0.019**	0.019	0.016	0.006	0.042***	0.000
	(0.007)	(0.012)	(0.007)	(0.007)	(0.011)	(0.007)	(0.009)	(0.013)	(0.010)	(0.009)	(0.013)	(0.008)
$\ln(S/K)_{i,t-1}$	0.031***	0.034*	0.033**	0.028**	0.036*	0.032**	0.039***	0.092***	0.024	0.034**	−0.011	0.057***
	(0.012)	(0.021)	(0.013)	(0.011)	(0.019)	(0.013)	(0.014)	(0.023)	(0.016)	(0.014)	(0.020)	(0.017)
$\ln(LONGDEBT/K)_{i,t}$	−0.010	−0.000	−0.007	−0.009	0.001	−0.006	0.009	0.034**	0.002	−0.010	−0.014	−0.013
	(0.008)	(0.014)	(0.010)	(0.008)	(0.013)	(0.010)	(0.010)	(0.017)	(0.012)	(0.011)	(0.013)	(0.012)
$\ln(Q)_{i,t-1}$	0.070***	0.065***	0.071***	0.070***	0.069***	0.070***	0.073***	0.066***	0.074***	0.056***	0.052***	0.046***
	(0.007)	(0.008)	(0.009)	(0.007)	(0.008)	(0.009)	(0.009)	(0.013)	(0.012)	(0.010)	(0.010)	(0.013)
$\ln(INTEXP/K)_{i,t-1}$	0.003	−0.033	0.011	0.005	−0.035	0.008	−0.005	−0.084*	0.005	0.003	0.007	−0.013
	(0.017)	(0.034)	(0.019)	(0.016)	(0.032)	(0.018)	(0.022)	(0.046)	(0.025)	(0.020)	(0.035)	(0.023)
$\ln(INTINC/K)_{i,t-1}$	0.006	0.040	0.030	0.008	0.020	0.035	0.090**	0.056	0.087	−0.075*	−0.027	−0.062
	(0.025)	(0.038)	(0.028)	(0.025)	(0.037)	(0.028)	(0.043)	(0.050)	(0.065)	(0.040)	(0.057)	(0.056)
$\ln(DIV/K)_{i,t-1}$	−0.050*	−0.056	−0.034	−0.045	−0.056	−0.034	−0.081**	−0.098**	−0.080*	0.004	−0.024	0.014
	(0.029)	(0.043)	(0.036)	(0.029)	(0.044)	(0.037)	(0.032)	(0.045)	(0.047)	(0.037)	(0.059)	(0.035)
$\ln(STKISSUE/K)_{i,t-1}$	0.020***	0.012**	0.020***	0.020***	0.012**	0.020***	0.027***	0.008	0.025***	0.009*	0.009	0.011*
	(0.004)	(0.006)	(0.004)	(0.004)	(0.006)	(0.004)	(0.005)	(0.010)	(0.006)	(0.005)	(0.005)	(0.006)
$\ln(STKREP/K)_{i,t-1}$	−0.009	−0.016**	−0.013	−0.009	−0.016**	−0.014	−0.015*	−0.010	−0.014	−0.002	−0.015	0.005
	(0.007)	(0.008)	(0.011)	(0.007)	(0.007)	(0.011)	(0.008)	(0.011)	(0.012)	(0.010)	(0.010)	(0.014)
$\ln(NETDEBTISSUE/K)_{i,t-1}$	0.007***	0.006**	0.006**	0.007***	0.007***	0.006**	0.003	0.008**	−0.001	0.009***	0.007*	0.008***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.004)	(0.002)	(0.004)	(0.003)
$\ln(INTERNF/K)_{i,t-1}$	0.043***	0.031***	0.051***	0.046***	0.034***	0.053***	0.033***	0.027*	0.049***	0.054***	0.036***	0.057***
	(0.007)	(0.009)	(0.009)	(0.007)	(0.009)	(0.009)	(0.010)	(0.016)	(0.013)	(0.009)	(0.012)	(0.012)
$\ln(COREOFF)_{i,t-1}$				0.026**	0.012	0.009	0.023	0.026	0.033	0.010	0.004	0.011
				(0.013)	(0.010)	(0.022)	(0.014)	(0.017)	(0.023)	(0.011)	(0.008)	(0.022)
$\ln(NONCORENONENERGYOFF)_{i,t-1}$				−0.039**	−0.013	−0.019	−0.029	−0.026	−0.050	0.030**	0.016	0.055
				(0.018)	(0.015)	(0.029)	(0.018)	(0.019)	(0.031)	(0.015)	(0.010)	(0.038)
Number of observations	30,562	15,282	15,280	30,562	15,282	15,280	16,299	7,874	8,425	14,263	7,408	6,855
Number of firms	4,674	2,119	3,211	4,674	2,119	3,211	2,659	1,204	1,832	2,687	1,252	1,743
Instruments	375	375	375	433	433	433	433	433	433	433	433	433

Table 6. (Continued)

Dependent variable: $\ln(I/K)_{i,t}$	Financialisation model			Financialisation and offshoring model			High-non-core non-energy offshoring sectors			Low-non-core non-energy offshoring sectors		
	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small
ar1p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ar2p	0.060	0.872	0.106	0.058	0.840	0.124	0.081	0.977	0.255	0.285	0.145	0.317
hansen*p*	0.001	0.010	0.027	0.000	0.000	0.040	0.000	0.002	0.009	0.013	0.024	0.300
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Large and small are those firms in the upper and lower median of total asset. High- and low-offshoring sectors are those belonging upper and lower median of non-core non-energy offshoring. Estimations are all obtained by the Arellano–Bond two-step difference GMM. Robust corrected standard errors are in parentheses. All instruments include up to two-year lags. ar1p and ar2p are Arellano–Bond test of first-order and second-order autocorrelation in the errors. hansen*p* is the Hansen–Sargan test of overidentifying restrictions. *p* values are reported for all tests.

*Significance at 10%, **significance at 5% and ***significance at 1%.

of financial assets. Our variable *INTERNALF* is analogous to Davis' measure of 'cash and short-term investments'. Therefore, contrary to the crowding out thesis, some financial assets are in fact positively correlated with real accumulation.

In the case of control variables, all other variables but *LONGDEBT* and *INTEXP* are significant with the expected sign. Net debt issue, stock issue, Tobin's q, sales, profits and past investment are all positive and significant for the whole sample and for large and small firms.

Table 6 also shows results when *COREOFF* and *NONCORENONENERGYOFF* are introduced. In the case of the new variables, *NONCORENONENERGYOFF* has a negative and significant elasticity of 0.039 for all non-financial firms. For all non-financial firms, *COREOFF* has a positive sign as expected, with a significant elasticity of 0.026. We have to stress that we are only able to say that firms that belong to industries with high (low) non-core offshoring are firms that invest less (more) than the other ones. We are not able to disentangle if the positive effect of *COREOFF* is due to a tendency to offshore in foreign affiliates or to a scale effect that stimulates domestic investment. Similarly, we are not be able to determine whether the negative sign of *NONCORENONENERGYOFF* is related to a substitution effect or to a capital productivity effect, that is, a reduced demand for capital for each unit of output produced. Nevertheless, our results are in line with the framework of Section 2.3 and support the idea that firms in industry with a high level of offshoring in non-core activities can have a lower demand for capital since part of their production is probably outsourced. In all the cases, control variables from equation (1) maintain sign, significance and similar values. Nevertheless dividends are no longer significant while stock repurchases are still negative and significant for the largest firms.

Finally, if we turn to the comparison between high- and low-non-core non-energy offshoring sectors, we find supporting evidence for our main hypothesis. Regarding the financial payout channel of financialisation, we find that dividends are significant for firms in high-non-core non-energy offshoring sectors, both for the full sample and the subsamples of large and small firms in high-non-core non-energy offshoring industries. Moreover, the negative elasticities of dividends, between −0.1 and −0.08, are higher than in the financialisation model: firms belonging to high-non-core non-energy offshoring sectors have an elasticity for dividends which is 60% higher than when we make no distinction in terms of sectors in the financialisation model. Stock repurchases are also negative and significant for the full sample of firms in high-non-core non-energy offshoring sectors, also with an elasticity that is around 60% higher than when we make no distinction in terms of sectors in the financialisation model (although it is not significant for the latter). The rate of accumulation would have been 8% higher without the rise in dividends for firms belonging to high-offshoring sectors. All in all, this shows the relevant economic effect played by offshoring for the financialisation of NFCs. Combining a weak demand for capital and a strong supply of financial payouts has been possible for firms belonging to industries in which the offshoring of the non-core production provides opportunities to outsource productive facilities. On the other hand, for low-non-core non-energy offshoring sectors neither dividends nor stock repurchases present a negative and statistically significant relation with investment.

As far as the financial income channel of financialisation is concerned, it is worth noting that interest income becomes statistically significant and positive for the whole

sample of firms with a high level of offshoring in non-core non-energy sectors. Contrary to the thesis of the crowding out of real investment by financial investment, financial income is probably a source of funding for this subsample. Both in the empirical literature and in our results, it seems that neither financial assets nor financial income can support the financial crowding out thesis.

6. Robustness check

Next, we address potential shortcomings of the above estimates, especially the persistence over time and the potential non-linearity between offshoring and financialisation. In the previous estimates, we had controlled for year fixed effects, and our log transformation of each variable may already account for potential non-linearities between explained and explanatory variables. Nevertheless, as suggested by the descriptive statistics in Section 2.3, we delve deeper into these issues. We also conduct other traditional robustness tests, as mentioned in Section 4.

We first split the sample into two sub-periods, 1995–2002 and 2003–11, the last period corresponding to the phase with an increase in offshoring as shown in Figure 1. Results in Table 7 hold for both sub-periods although they seem to be stronger in the first period with negative and significant effects of dividends and stock repurchases, while only dividends are significant in 2003–11. Our conclusion remains valid even if results weaken in the second period, probably because all industries have increased their financial payouts in the mid-2000s, and especially in the aftermath of the financial crisis as explained in Section 2.3.

We now address the issue of the non-linearity between offshoring and financialisation that can be perceived in Figure 5 and Table 3 (Section 2.3). Our main proposition relies on a test that splits the sample between firms belonging to high- or low-non-core non-energy offshoring industries. We examine the validity of our proposition when we split the sample in four quartiles. Table 8 shows that both the top 25% and the top 75–50% in non-core non-energy offshoring sectors present a significant negative correlation between investment and either dividends or stock repurchases. For the bottom 50–25%, dividends and stock repurchases are no longer significant. Nevertheless, the bottom 25% presents a negative and significant correlation between stock repurchases and investment for the subsample of large firms. As we explained in Section 2.3, this result is probably due to the utilities industry and to the wholesale and retail trade sectors. Table 8 also shows the results for the bottom 25% in non-core non-energy offshoring sectors when utilities, wholesale and retail trade sectors are removed from the sample: neither stock repurchases nor dividends are significant.[15] Utilities have indeed a dividend and investment policy very specific, due to the regulation in this industry, and that is why standard studies in corporate finance usually exclude this sector, for example, Fama and French (2001) for the dividend policy and Asker *et al.* (2014) for the accumulation slowdown. Regarding the wholesale and retail trade sectors, it is important to stress again that they import mainly final products while our indicator *NONCORENONENERGYOFF* is a measure of the share of foreign input in total output, which therefore minimises the involvement of wholesale and retail trade in offshoring. If results in Table 8 lead to moderate the scope of our statement, they do not undermine our main conclusion because large firms in wholesale and retail trade

[15] Stock repurchases remain significant if we remove only one of these sectors.

Table 7. *Estimation results based on equation (2): periods: 1995–2002 and 2003–11*

Dependent variable: $\ln(I/K)_{i,t}$	1995–2002						2003–2011					
	High-non-core non-energy offshoring sectors			Low-non-core non-energy offshoring sectors			High-non-core non-energy offshoring sectors			Low-non-core non-energy offshoring sectors		
	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small
$\ln(I/K)_{i,t-1}$	0.218***	0.143**	0.213***	0.223***	0.339***	0.101**	0.140***	0.151***	0.070*	0.244***	0.347***	0.158***
	(0.028)	(0.060)	(0.030)	(0.039)	(0.055)	(0.047)	(0.036)	(0.057)	(0.039)	(0.031)	(0.061)	(0.035)
$\ln(\pi/K)_{i,t-1}$	0.030**	0.031	0.018	0.003	0.072***	−0.014	0.001	0.022	0.003	0.002	0.002	0.001
	(0.012)	(0.022)	(0.014)	(0.018)	(0.018)	(0.016)	(0.014)	(0.017)	(0.016)	(0.012)	(0.016)	(0.011)
$\ln(S/K)_{i,t-1}$	−0.011	0.081*	−0.012	0.059**	−0.026	0.104***	0.087***	0.070***	0.056*	0.039*	0.044*	0.047*
	(0.019)	(0.042)	(0.023)	(0.029)	(0.035)	(0.033)	(0.026)	(0.025)	(0.034)	(0.021)	(0.027)	(0.024)
$\ln(LONGDEBT/K)_{i,t}$	−0.010	0.028	−0.010	−0.023	−0.041**	−0.022	0.030*	0.023	0.022	−0.004	0.003	−0.012
	(0.017)	(0.031)	(0.024)	(0.019)	(0.020)	(0.021)	(0.016)	(0.016)	(0.017)	(0.013)	(0.015)	(0.015)
$\ln(Q)_{i,t-1}$	0.110***	0.073***	0.126***	0.059***	0.047***	0.060***	0.047***	0.105***	0.034**	0.059***	0.051***	0.041**
	(0.014)	(0.019)	(0.019)	(0.013)	(0.015)	(0.018)	(0.013)	(0.020)	(0.016)	(0.017)	(0.016)	(0.021)
$\ln(INTEXP/K)_{i,t-1}$	0.012	−0.108	0.008	−0.045	0.021	−0.053	−0.019	0.007	0.007	0.021	0.016	0.016
	(0.028)	(0.091)	(0.034)	(0.049)	(0.066)	(0.050)	(0.032)	(0.042)	(0.038)	(0.025)	(0.040)	(0.028)
$\ln(INTINC/K)_{i,t-1}$	0.123*	0.102	0.098	−0.075	−0.115	0.052	0.116*	−0.075	0.153**	−0.081*	0.036	−0.104*
	(0.069)	(0.080)	(0.091)	(0.100)	(0.146)	(0.102)	(0.063)	(0.070)	(0.077)	(0.044)	(0.062)	(0.060)
$\ln(DIV/K)_{i,t-1}$	−0.081**	−0.068	−0.072	−0.002	−0.048	0.020	−0.091*	−0.081	−0.091	0.015	−0.013	0.014
	(0.041)	(0.059)	(0.061)	(0.059)	(0.129)	(0.056)	(0.053)	(0.055)	(0.086)	(0.052)	(0.061)	(0.050)
$\ln(STKISSUE/K)_{i,t-1}$	0.022***	−0.001	0.023***	0.009	−0.002	0.013	0.028***	0.006	0.024**	0.010*	0.013*	0.009
	(0.007)	(0.013)	(0.008)	(0.010)	(0.013)	(0.011)	(0.008)	(0.010)	(0.010)	(0.006)	(0.007)	(0.007)
$\ln(STKREP/K)_{i,t-1}$	−0.026*	−0.022	−0.035*	−0.013	−0.024	−0.013	−0.004	−0.003	0.002	−0.001	−0.014	0.009
	(0.015)	(0.018)	(0.019)	(0.021)	(0.018)	(0.030)	(0.010)	(0.009)	(0.017)	(0.012)	(0.012)	(0.017)
$\ln(NETDEBTISSUE/K)_{i,t-1}$	0.006	0.007	0.000	0.011**	0.007	0.008	−0.001	0.010***	−0.006	0.009***	0.006*	0.010***
	(0.004)	(0.006)	(0.005)	(0.005)	(0.007)	(0.006)	(0.003)	(0.003)	(0.005)	(0.003)	(0.003)	(0.004)
$\ln(INTERNF/K)_{i,t-1}$	0.067***	0.064**	0.073***	0.053***	0.046**	0.045***	0.022	−0.011	0.049***	0.043***	0.019	0.050***
	(0.015)	(0.028)	(0.019)	(0.015)	(0.022)	(0.017)	(0.014)	(0.013)	(0.019)	(0.013)	(0.015)	(0.017)
$\ln(COREOFF)_{i,t-1}$	0.113***	0.095*	0.106	−0.000	0.006	0.023	0.005	0.019	0.003	0.008	0.013	−0.052
	(0.044)	(0.052)	(0.074)	(0.022)	(0.024)	(0.036)	(0.015)	(0.015)	(0.025)	(0.016)	(0.009)	(0.040)
$\ln(NONCORENON ENERGYOFF)_{i,t-1}$	−0.202**	−0.257***	−0.272*	−0.017	0.032*	−0.082	−0.013	−0.018	−0.026	0.047**	0.017	0.138**

Table 7. (Continued)

Dependent variable: $\ln(I/K)_{i,t}$	1995–2002						2003–2011					
	High-non-core non-energy offshoring sectors			Low-non-core non-energy offshoring sectors			High-non-core non-energy offshoring sectors			Low-non-core non-energy offshoring sectors		
	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small
	(0.082)	(0.080)	(0.154)	(0.030)	(0.019)	(0.076)	(0.018)	(0.018)	(0.030)	(0.023)	(0.013)	(0.057)
Number of observations	7,404	3,525	3,879	6,133	3,244	2,889	8,895	4,349	4,546	8,130	4,164	3,966
Number of firms	2,033	945	1,247	1,914	976	1,095	1,941	904	1,253	1,924	874	1,202
Instruments	172	172	172	172	172	172	261	261	261	261	261	261
ar1p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ar2p	0.218	0.485	0.466	0.693	0.186	0.516	0.117	0.933	0.223	0.242	0.295	0.449
hansen*p*	0.063	0.037	0.113	0.003	0.030	0.127	0.002	0.017	0.045	0.021	0.001	0.095
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Large and small are those firms in the upper and lower median of total asset. High- and low-offshoring sectors are those belonging upper and lower median of non-core non-energy offshoring. Estimations are all obtained by the Arellano–Bond two-step difference GMM. Robust corrected standard errors are in parentheses. All instruments include up to two-year lags. ar1p and ar2p are Arellano–Bond test of first-order and second-order autocorrelation in the errors. hansen*p* is the Hansen–Sargan test of overidentifying restrictions. *p* values are reported for all tests.

*Significance at 10%, **significance at 5% and ***significance at 1%.

Table 8. *Estimation results based on equation (2), different quartiles of non-core non-energy offshoring: period: 1995–2011*

	Top 25% non-core non-energy offshoring sectors			75–50% non-core non-energy offshoring sectors			50–25% non-core non-energy offshoring sectors			Low 25% non-core non-energy offshoring sectors			Low 25% non-core non-energy offshoring sectors without retail, wholesale trade and utilities		
Dependent variable: $\ln(I/K)_{i,t}$	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small
$\ln(I/K)_{i,t-1}$	0.172***	0.112	0.115***	0.148***	0.104**	0.093***	0.219***	0.258***	0.123***	0.161***	0.352***	0.049	0.143***	0.362***	0.024
	(0.030)	(0.072)	(0.031)	(0.026)	(0.050)	(0.033)	(0.031)	(0.037)	(0.040)	(0.035)	(0.076)	(0.037)	(0.044)	(0.101)	(0.043)
$\ln(\pi/K)_{i,t-1}$	0.026**	0.034***	0.025**	0.014	0.043***	0.003	−0.012	0.028*	−0.013	0.005	0.047***	0.003	0.008	0.041***	0.005
	(0.012)	(0.013)	(0.012)	(0.014)	(0.016)	(0.012)	(0.016)	(0.016)	(0.013)	(0.010)	(0.014)	(0.008)	(0.010)	(0.015)	(0.009)
$\ln(S/K)_{i,t-1}$	0.041**	0.070***	0.037*	0.028**	0.022	0.025*	0.049***	−0.009	0.058***	0.040*	−0.008	0.057**	0.033	−0.025	0.045*
	(0.018)	(0.026)	(0.020)	(0.013)	(0.024)	(0.015)	(0.016)	(0.019)	(0.017)	(0.023)	(0.030)	(0.026)	(0.023)	(0.034)	(0.024)
$\ln(LONGDEBT/K)_{i,t}$	0.009	0.049**	−0.003	0.010	−0.008	0.005	−0.002	−0.014	−0.002	0.011	−0.001	0.012	0.014	0.013	0.017
	(0.013)	(0.024)	(0.016)	(0.012)	(0.018)	(0.013)	(0.014)	(0.014)	(0.015)	(0.012)	(0.016)	(0.014)	(0.013)	(0.021)	(0.014)
$\ln(Q)_{i,t-1}$	0.069***	0.082***	0.049**	0.075***	0.060***	0.073***	0.061***	0.070***	0.043**	0.045***	0.040***	0.036**	0.044***	0.032**	0.037*
	(0.015)	(0.017)	(0.023)	(0.013)	(0.019)	(0.016)	(0.013)	(0.015)	(0.017)	(0.012)	(0.013)	(0.017)	(0.014)	(0.014)	(0.019)
$\ln(INTEXP/K)_{i,t-1}$	−0.029	−0.065	−0.019	0.023	−0.108**	0.015	−0.020	−0.045	−0.016	0.038	0.061	0.019	0.040	0.097**	0.013
	(0.024)	(0.054)	(0.027)	(0.029)	(0.051)	(0.030)	(0.027)	(0.043)	(0.029)	(0.024)	(0.045)	(0.025)	(0.027)	(0.044)	(0.025)
$\ln(INTINC/K)_{i,t-1}$	0.034	−0.042	0.137*	0.026	0.172***	−0.019	−0.087	−0.043	−0.049	−0.020	0.069	−0.040	−0.034	0.110	−0.084
	(0.050)	(0.077)	(0.073)	(0.036)	(0.065)	(0.062)	(0.072)	(0.042)	(0.078)	(0.057)	(0.085)	(0.071)	(0.070)	(0.106)	(0.081)
$\ln(DIV/K)_{i,t-1}$	−0.060	−0.087	0.016	−0.117**	0.023	−0.131**	0.008	0.012	0.023	0.005	−0.000	0.013	0.059	0.139	0.047
	(0.045)	(0.057)	(0.053)	(0.054)	(0.046)	(0.063)	(0.049)	(0.092)	(0.066)	(0.048)	(0.120)	(0.051)	(0.058)	(0.124)	(0.055)
$\ln(STKISSUE/K)_{i,t-1}$	0.032***	0.002	0.027***	0.023***	0.008	0.026***	0.015**	0.009	0.019***	0.009	0.018**	0.001	0.005	0.029**	−0.007
	(0.008)	(0.018)	(0.008)	(0.006)	(0.012)	(0.007)	(0.007)	(0.010)	(0.007)	(0.006)	(0.009)	(0.008)	(0.007)	(0.012)	(0.009)
$\ln(STKREP/K)_{i,t-1}$	−0.021*	−0.009	−0.013	−0.018	−0.011	−0.020	0.022	0.014	0.032	−0.000	−0.028**	0.002	−0.009	−0.025	0.000
	(0.012)	(0.017)	(0.017)	(0.014)	(0.016)	(0.023)	(0.014)	(0.013)	(0.023)	(0.012)	(0.012)	(0.019)	(0.015)	(0.015)	(0.021)
$\ln(NETDEBTISSUE/K)_{i,t-1}$	0.004	0.008	−0.000	0.002	0.009*	−0.003	0.003	−0.001	0.004	0.015***	0.016***	0.013***	0.013***	0.016**	0.011**
	(0.003)	(0.006)	(0.004)	(0.004)	(0.005)	(0.006)	(0.003)	(0.005)	(0.004)	(0.003)	(0.006)	(0.004)	(0.004)	(0.007)	(0.005)
$\ln(INTERNF/K)_{i,t-1}$	0.025**	0.025	0.036**	0.057***	0.035**	0.061***	0.050***	0.056***	0.055***	0.049***	0.008	0.073***	0.059***	0.017	0.090***
	(0.011)	(0.019)	(0.015)	(0.015)	(0.017)	(0.016)	(0.013)	(0.019)	(0.016)	(0.012)	(0.015)	(0.016)	(0.015)	(0.016)	(0.018)
$\ln(COREOFF)_{i,t-1}$	−0.019	0.003	−0.011	0.002	0.007	−0.007	0.000	0.010	−0.029	−0.007	0.004	−0.024	−0.007	0.016	−0.044
	(0.015)	(0.021)	(0.024)	(0.011)	(0.013)	(0.023)	(0.011)	(0.008)	(0.022)	(0.010)	(0.010)	(0.018)	(0.018)	(0.018)	(0.031)
$\ln(NONCORENON ENERGYOFF)_{i,t-1}$	−0.007	−0.023	−0.008	−0.022	−0.038*	−0.022	0.028**	0.015	0.098***	0.025*	0.017	0.059**	0.017	−0.009	0.046
	(0.022)	(0.023)	(0.034)	(0.022)	(0.020)	(0.037)	(0.013)	(0.014)	(0.035)	(0.015)	(0.020)	(0.030)	(0.032)	(0.039)	(0.058)
Number of observations	9,781	4,813	4,968	6,518	3,061	3,457	8,140	4,293	3,847	6,123	3,115	3,008	3,585	1,370	2,215
Number of firms	1,731	797	1,149	1,683	753	1,130	1,845	931	1,099	1,377	627	891	785	264	614

Table 8. (Continued)

Dependent variable: $\ln(I/K)_{i,t}$	Top 25% non-core non-energy offshoring sectors			75–50% non-core non-energy offshoring sectors			50–25% non-core non-energy offshoring sectors			Low 25% non-core non-energy offshoring sectors			Low 25% non-core non-energy offshoring sectors without retail, wholesale trade and utilities		
	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small	All	Large	Small
Instruments	433	433	433	432	431	432	433	433	433	432	432	432	429	428	429
ar1p	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
ar2p	0.475	0.807	0.824	0.234	0.440	0.288	0.616	0.006	0.549	0.443	0.988	0.735	0.689	0.967	0.921
hansen*p*	0.008	0.020	0.180	0.002	0.047	0.054	0.002	0.024	0.077	0.122	0.062	0.173	0.252	1.000	0.312
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes	yes	yes	yes
Age	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes	yes	yes	yes

Notes: Large and small are those firms in the upper and lower median of total asset. High- and low-offshoring sectors are those belonging upper and lower median of non-core non-energy offshoring. Estimations are all obtained by the Arellano–Bond two-step difference GMM. Robust corrected standard errors are in parentheses. All instruments include up to two-year lags. ar1p and ar2p are Arellano–Bond test of first-order and second-order autocorrelation in the errors. hansen*p* is the Hansen–Sargan test of overidentifying restrictions. *p* values are reported for all tests.

*Significance at 10%, **significance at 5% and ***significance at 1%.

sectors have organised the so-called 'buyer-driven global commodity chains' in which they have both monopsony and monopoly power (Gereffi, 1994; Baud and Durand, 2012; Milberg and Winkler, 2013; Chesnais, 2016, chapters 4 and 6). They are therefore also highly involved in the offshoring of production but not the offshoring we are capturing with our indicator. As a result, these firms can have a lower demand for capital and a higher payout policy.

In the Supplementary Appendix, we present additional robustness checks. In Supplementary Table A2, we reduce the number of instruments, in Supplementary Table A3, we drop non-significant variables (*LONGDEBT*, *INTEXP* and *INTINC*), and we consider the upper and lower 25% in terms of size in Supplementary Table A4, rather than the median. Through all estimations, the financialisation model (equation 1) and the financialisation and offshoring model (equation 2) provide six specifications to assess the robustness of our results for the whole sample (Table 6; Supplementary Tables A2 and A3), and they provide eight specifications for the sample of large firms when adding Table 4. The negative effect of stock repurchases for large firms is a robust result because it is significant in eight cases out of eight. Nevertheless, the negative correlation of dividends for the whole sample is significant in four cases out of six and cannot be considered as robust. Regarding the offshoring-related variables in equation (2) for the whole sample (Tables 6; Supplementary Tables A2 and A3), *NONCORENONENERGYOFF* is significant in two cases out of three and *COREOFF* is significant in one case out of three. As we mentioned in Section 1, the positive and negative elasticities of *COREOFF* and *NONCORENONENERGYOFF* in Table 6 are in line with the literature but those effects are not clear-cut through all specifications. However, results for the financialisation–offshoring nexus are robust.

Concerning the interaction between financialisation and offshoring, equation (2) is estimated five times in Tables 6 and 7 (for two periods), Supplementary Tables A2 and A3 for the whole sample of firms in high-offshoring sectors and, with Supplementary Table A4, six times for the sample of large firms in high-offshoring sectors: for the whole sample, the negative elasticities of dividends are significant in five cases out of five, and stock repurchases are significant in four cases out of five (non-significant for the 2003–11 period only). If we consider also the top two quartiles of offshoring in Table 8, elasticities of dividends are negative and significant in six cases out of seven, and elasticities of stock repurchases are negative and significant in five cases out of seven. But in each of the seven cases, either dividends or stock repurchases are significant. For large firms, however, results are less robust: stock repurchases and dividends are each significant in two cases out of six only (or two out of eight with Table 8). Overall, our results give evidence that financialisation on average does not occur for firms belonging to industries with low-non-core non-energy offshoring while it compromises capital accumulation of firms belonging to the industries most involved in GVCs.

7. Conclusion

As two of the major forces shaping world economic dynamics over the last several decades, financialisation and globalisation have deservedly received a good deal of academic scrutiny. Among the various ways in which the term financialisation is used, we concentrated on the financialisation of NFCs. One of the ways in which financialisation

affects them is by displacing investment with different financial payments such as interest expenditures, dividends and share buybacks. However, the literature on financialisation has not profoundly analysed how such a situation could be sustained over 30 years. In this paper, we explored the financialisation–offshoring nexus as a possible answer and found promising results.

Starting from a baseline model derived from Orhangazi (2008) and Hecht (2014), we conducted an econometric regression to show the consequences of both financialisation and offshoring on US NFCs' investment between 1995 and 2011. We built two offshoring variables, one for core and other for non-core non-energy activities, based on industry-level information that show the effect of transferring production outside the USA. We estimated equations for the entire sample and for subsamples of large and small firms belonging to high- and low-non-core non-energy offshoring sectors. In line with previous literature, financialisation is especially apparent among the largest firms. Offshoring in non-core non-energy activities tends to have a negative effect on investment for all firms. This result supports the idea that enterprises are likely to subcontract to other foreign firms' non-core activities.

The interaction between the financialisation of NFCs and offshoring was studied by splitting the sample between high- and low-non-core non-energy offshoring sectors considering that arm's length relations tend to be focused in these types of activities. Our results confirm the nexus as the financial payouts variables were significant for firms belonging to industries with the highest level of offshoring only. For corporations that distribute financial payouts at the expense of their capital accumulation, the real source of the cash distributed to shareholders should be found in GVCs.

Although our econometric analysis ends in 2011, the patterns described in this paper in terms of payouts, investment and offshoring have remained until these days. Even intangible intensive firms, like Apple, have engaged in important stock buybacks.[16] This seems to run counter to those who claim that the platform economy is characterised by patient capital. In order to explain this paradox, future research should address the role played by intangibles, and the different features associated to these assets which complement the offshoring dynamic.

Data availability

Data have been gathered from Standard and Poors' Capital IQ Platform, access to which has been granted by an institutional subscription at the University Paris 13. The open sharing of data gathered from this source is not permitted under the terms and conditions of the subscription. In order to gather information about the variables used in the analysis, the interested reader should refer to Supplementary Table A1, and to Section 4 of the paper, in which the various data selection processes are described. The analysis has been carried out with the software Stata13, and the main command used for estimations of the various specifications is xtabond2.

Supplementary data

Supplementary data are available at *Cambridge Journal of Economics* online.

[16] See Lazonick (2015), and *Financial Times*, 1 May 2018. https://www.ft.com/content/c0555be2-4d79-11e8-8a8e-22951a2d8493.

Bibliography

Amiti, M. and Wei, S.-J. 2005. Fear of service outsourcing: is it justified?, *Economic Policy*, vol. 20, no. 42, 308–47

Anderson, T. W. and Hsiao, C. 1981. Estimation of dynamic models with error components, *Journal of the American Statistical Association*, vol. 76, no. 375, 598–606

Arellano, M. and Bond, S. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations, *The Review of Economic Studies*, vol. 58, no. 2, 277–97

Asker, J., Farre-Mensa, J. and Ljungqvist, A. 2014. Corporate investment and stock market listing: a puzzle?, *The Review of Financial Studies*, vol. 28, no. 2, 342–90

Baltagi, B. 2008. *Econometric Analysis of Panel Data*, Chichester, John Wiley & Sons

Barradas, R. 2017. Financialisation and real investment in the European Union: beneficial or prejudicial effects?, *Review of Political Economy*, vol. 29, no. 3, 376–413

Baud, C. and Durand, C. 2012. Financialization, globalization and the making of profits by leading retailers, *Socio-Economic Review*, vol. 10, no. 2, 241–66

Blundell, R. and Bond, S. 1998. Initial conditions and moment restrictions in dynamic panel data models, *Journal of Econometrics*, vol. 87, no. 1, 115–43

Brown, J. R., Fazzari, S. M. and Petersen, B. C. 2009. Financing innovation and growth: cash flow, external equity, and the 1990s R&D boom, *The Journal of Finance*, vol. 64, no. 1, 151–85

Chesnais, F. 2016. *Finance Capital Today: Corporations and Banks in the Lasting Global Slump*, Leiden, Brill

Chirinko, R. S. 1993. Business fixed investment spending: modeling strategies, empirical results, and policy implications, *Journal of Economic Literature*, vol. 31, no. 4, 1875–911

Chuan, W.-B. and Lin, H. 2007. FDI and domestic investment in Taiwan: an endogenous switching model, *The Developing Economies*, vol. 45, no. 4, 465–90

Clévenot, M., Guy, Y. and Mazier, J. 2010. Investment and the rate of profit in a financial context: the French case, *International Review of Applied Economics*, vol. 24, no. 6, 693–714

Contractor, F. J., Kumar, V., Kundu, S. and Pedersen, T. 2011. Global outsourcing and offshoring: in search of the optimal configuration for a company, pp. 3–47 in Contractor, F. J., Kumar, V., Kundu, S. and Pedersen, T. (ed.) *Global Outsourcing and Offshoring: An Integrated Approach to Theory and Corporate Strategy*, Cambridge, UK, Cambridge University Press

Cordonnier, L. 2006. Le profit sans l'accumulation: la recette du capitalisme gouverné par la finance, *Innovations*, no. 23, 79–108

Crotty, J. 2005. The neoliberal paradox: the impact of destructive product market competition and 'modern' financial markets on nonfinancial corporation performance in the neoliberal era, pp. 77–110 in Epstein, G. (ed.), *Financialization and the World Economy*, Cheltenham, Edward Elgar

Dallery, T. 2009. Post-Keynesian theories of the firm under financialization, *Review of Radical Political Economics*, vol. 41, no. 4, 492–515

D'Attoma, I. and Pacei, S. 2014. Offshoring and firm performance: evidence from the Italian manufacturing industry, *Review of Development Economics*, vol. 18, no. 1, 29–44

Davis, L. E. 2016. Identifying the "financialization" of the nonfinancial corporation in the US economy: a decomposition of firm-level balance sheets, *Journal of Post Keynesian Economics*, vol. 39, no. 1, 115–41

Davis, L. E. 2017. Financialization and the non-financial corporation: an investigation of firm-level investment behavior in the United States, *Metroeconomica*, vol. 69, no. 1, 270–307

Demir, F. 2009. Financial liberalization, private investment and portfolio choice: financialization of real sectors in emerging markets, *Journal of Development Economics*, vol. 88, no. 2, 314–24

D'Souza, J., Jacob, J. and Willis, V. F. 2015. Dividend policy responses to deregulation in the electric utility industry, *International Journal of Business Administration*, vol. 6, no. 2, 1

Dunn, K., Kohlbeck, M. and Magilke, M. 2009. Future profitability, operating cash flows, and market valuations associated with offshoring arrangements of technology jobs. *Journal of Information Systems*, vol. 23, no. 2, 25–47

Durand, C. and Miroudot, S. 2015. Is labour the fall guy of a financial-led globalisation? A cross-country inquiry on globalisation, financialisation and employment at the industry level, *Review of World Economics*, vol. 151, no. 3, 409–32

Eichner, A. 1976. *The Megacorp and Oligopoly*, Cambridge, MA, Cambridge University Press
Fama, E. F. and French, K. R. 2001. Disappearing dividends: changing firm characteristics or lower propensity to pay?, *Journal of Financial Economics*, vol. 60, no. 1, 3–43
Farrell, D. and Agrawal, V. 2003. Offshoring: is it a win-win game, *McKinsey Global Institute*, 7–9, San Francisco, August
Fazzari, S. M., Hubbard, R. G., Petersen, B. C., Blinder, A. S. and Poterba, J. M. 1988. Financing constraints and corporate investment, *Brookings Papers on Economic Activity*, no. 1, 141–206
Feenstra, R. C. and Hanson, G. H. 1999. The impact of outsourcing and high-technology capital on wages: estimates for the United States, 1979–1990, *Quarterly Journal of Economics*, vol. 114, no. 3, 907–40
Fiebiger, B. 2016. Rethinking the financialisation of non-financial corporations: a reappraisal of US empirical data, *Review of Political Economy*, vol. 28, no. 3, 354–379
Galbraith, J. K. 1968. *The New Industrial State*, Princeton, Princeton University Press
Geishecker, I. 2007. 'Assessing the Extent and Development of International Outsourcing in the Euro Area', Document Reprographié, Université de Göttingen
Gereffi, G. 1994. The organization of buyer-driven global commodity chains: how US retailers shape overseas production networks, pp. 95–112 in Gereffi, G. and Korzeniewicz, M. (eds), *Commodity Chains and Global Capitalism*, Westport, Greenwood Press
Gereffi, G., Humphrey, J. and Sturgeon, T. 2005. The governance of global value chains, *Review of International Political Economy*, vol. 12, no. 1, 78–104
Gereffi, G. and Korzeniewicz, M. 1994. *Commodity Chains and Global Capitalism*, Westport, Greenwood Press
Görg, H. and Hanley, A. 2004. Does outsourcing increase profitability, *The Economic and Social Review*, vol. 35, no. 3, 267–88
Hecht, J. 2014. Is net stock issuance relevant to capital formation? Comparing heterodox models of firm-level capital expenditures across the advanced and largest developing economies, *Cambridge Journal of Economics*, vol. 38, no. 5, 1171–206
Hejazi, W. and Pauly, P. 2003. Motivations for FDI and domestic capital formation, *Journal of International Business Studies*, vol. 34, no. 3, 282–89
Hering, L., Inui, T., Poncet, S. 2010. *The Elusive Impact of Investing Abroad for Japanese Parent Firms: Can Disaggregation According to FDI Motives Help?*, *CEPII Working Paper no. 2010-01*, Paris, Centre d'études prospectives et d'informations internationals
Hijzen, A., Görg, H. and Hine, R. C. 2005. International outsourcing and the skill structure of labour demand in the United Kingdom, *The Economic Journal*, vol. 115, no. 506, 860–78
Hubbard, R. G. 1998. Capital-Market Imperfections and Investment, *Journal of Economic Literature*, vol. 36, 193–225
Jabbour, L. 2010. Offshoring and firm performance: evidence from French manufacturing industry, *The World Economy*, vol. 33, no. 3, 507–24
Kalecki, M. 1954. *Theory of Economic Dynamics: An Essay on Cyclical and Long-run Changes in Capitalist Economy: (2. Impr.)*, Crows Nest, George Allen & Unwin
Keynes, J. M. 1937. The general theory of employment, *The Quarterly Journal of Economics*, vol. 51, no. 2, 209–23
Kinkel, S., Lay, G. and Maloca, S. 2008. Patterns of internationalization of German SMEs: surveying manufacturing offshoring, pp. 246–262 in Dana, L., Welpe I., Han M., Ratten V. (eds.) *Handbook of Research on European Business and Entrepreneurship: Towards a Theory of Internationalization*, Cheltenham, Edward Elgar
Kliman, A. and Williams, S. D. 2015. Why 'financialisation' hasn't depressed US productive investment, *Cambridge Journal of Economics*, vol. 39, no. 1, 67–92
Krippner, G. R. 2012. *Capitalizing on Crisis*, Harvard, Harvard University Press
Lavoie, M. 2014. *Post-Keynesian Economics: New Foundations*, Cheltenham, Edward Elgar
Lazonick, W. 2009. *Sustainable Prosperity in the New Economy?*, Michigan, WE Upjohn Institute for Employment Research Kalamazoo
Lazonick, W. 2015. *Stock Buybacks: From Retain-and-Reinvest to Downsize-and-Distribute*, Washington, Center for Effective Public Management at Brookings
Lazonick, W. and O'sullivan, M. 2000. Maximizing shareholder value: a new ideology for corporate governance, *Economy and Society*, vol. 29, no. 1, 13–35

Lee, J. and Gereffi, G. 2015. Global value chains, rising power firms and economic and social upgrading, *Critical Perspectives on International Business*, vol. 11, no. 3/4, 319–39
Milberg, W. 2008. Shifting sources and uses of profits: sustaining US financialization with global value chains, *Economy and Society*, vol. 37, no. 3, 420–51
Milberg, W. and Winkler, D. 2009. Financialisation and the dynamics of offshoring in the USA, *Cambridge Journal of Economics*, vol. 34, no. 2, 275–93
Milberg, W. and Winkler, D. 2013. *Outsourcing Economics: Global Value Chains in Capitalist Development*, Cambridge, MA, Cambridge University Press
Montalban, M. and Sakinç, M. E. 2013. Financialization and productive models in the pharmaceutical industry, *Industrial and Corporate Change*, vol. 22, no. 4, 981–1030
Moser, C., Urban, D. and Weder Di Mauro, B. 2015. On the heterogeneous employment effects of offshoring: identifying productivity and downsizing channels, *Economic Inquiry*, vol. 53, no. 1, 220–39
OECD. 2010. *Measuring Globalisation*, Paris, OECD Economic Globalisation Indicators
Onaran, Ö., Stockhammer, E. and Grafl, L. 2011. Financialisation, income distribution and aggregate demand in the USA, *Cambridge Journal of Economics*, vol. 35, no. 4, 637–61
Onaran, Ö., Stockhammer, E. and Zwickl, K. 2013. FDI and domestic investment in Germany: crowding in or out?, *International Review of Applied Economics*, vol. 27, no. 4, 429–48
Orhangazi, Ö. 2008. Financialisation and capital accumulation in the non-financial corporate sector: a theoretical and empirical investigation on the US economy: 1973–2003, *Cambridge Journal of Economics*, vol. 32, no. 6, 863–86
Prahalad, C. K. and Hamel, G. 1990. The core competence of the corporation, *Harvard Business Review*, vol. 68, no. 3, 79–91
Roodman, D. 2009a. A note on the theme of too many instruments, *Oxford Bulletin of Economics and Statistics*, vol. 71, no. 1, 135–58
Roodman, D. 2009b. How to do xtabond2: an introduction to difference and system GMM in Stata, *Stata Journal*, vol. 9, no. 1, 86–136
Schoder, C. 2014. Demand, q, financial constraints and shareholder value revisited: an econometric micro-analysis of US fixed investment, *International Journal of Economics and Business Research*, vol. 7, no. 1, 28–54
Schwörer, T. 2013. Offshoring, domestic outsourcing and productivity: evidence for a number of European countries, *Review of World Economics*, vol. 149, no. 1, 131–49
Seo, H.-J., Kim, H. S. and Kim, J. 2016. Does shareholder value orientation or financial market liberalization slow down Korean real investment?, *Review of Radical Political Economics*, vol. 48, no. 4, 633–60
Serfati, C. 2008. Financial dimensions of transnational corporations, global value chain and technological innovation, *Journal of Innovation Economics & Management*, no. 2, 35–61
Soener, M. 2015. Why do firms financialize? Meso-level evidence from the US apparel and footwear industry, 1991–2005, *Socio-Economic Review*, vol. 13, no. 3, 549–73
Stockhammer, E. 2004. Financialisation and the slowdown of accumulation, *Cambridge Journal of Economics*, vol. 28, no. 5, 719–41
Stockhammer, E. 2005. Shareholder value orientation and the investment-profit puzzle, *Journal of Post Keynesian Economics*, vol. 28, no. 2, 193–215
Tomaskovic-Devey, D., Lin, K.-H. and Meyers, N. 2015. Did financialization reduce economic growth?, *Socio-Economic Review*, vol. 13, no. 3, 525–48
Tori, D. and Onaran, O. 2018. The effects of financialization on investment: evidence from firm-level data for the UK, *Cambridge Journal of Economics*, vol. 42, no. 5, 1393–1416
Van Treeck, T. 2008. Reconsidering the investment-profit nexus in financed-led economies: an ARDL-based approach, *Metroeconomica*, vol. 59, no. 3, 371–404
Van Treeck, T. 2009. The political economy debate on 'financialization'—a macroeconomic perspective, *Review of International Political Economy*, vol. 16, no. 5, 907–44
Windmeijer, F. 2005. A finite sample correction for the variance of linear efficient two-step GMM estimators, *Journal of Econometrics*, vol. 126, no. 1, 25–51