Do investing cash flows help in explaining future corporate performance? *

¿Ayudan los flujos de efectivo por operaciones de inversión a explicar el desempeño futuro de la empresa?

M.ª Luz Gómez Rodríguez. Universidade da Coruña
Flora Muiño **. Universidade da Coruña
Fernando Ruiz Lamas. Universidade da Coruña

ABSTRACT Prior research in the finance area offers wide evidence of the impact of investments on corporate performance. Building on this evidence, this paper investigates whether financial statements, particularly the cash flow statement, provide users with relevant information on investment transactions. Using a sample of UK companies we document two main facts. First, cash flow statements convey valuable information on corporate investments (i.e. investing cash flows) that help users in assessing future firm cash flows. Second, information on those investments that were not financed with cash is also relevant when assessing the future prospects of the firm, though it is not reflected in the face of the financial statements. Our results suggest that, even in the UK, where most investments are financed with cash, valuable information on investments is missed from the cash flow statement.

KEYWORDS Cash flow; Investment; Corporate performance.

RESUMEN La investigación previa en el área de finanzas proporciona evidencia del impacto de las inversiones sobre el desempeño de las empresas. Partiendo de esta evidencia, este trabajo investiga si los estados financieros, en particular el estado de flujos de efectivo, proporciona a los usuarios información relevante sobre las inversiones. Utilizando una muestra de empresas británicas documentamos dos hechos importantes. Primero, los estados de flujos de efectivo proporcionan información valiosa sobre las inversiones realizadas por las empresas (flujos de efectivo por operaciones de inversión) que ayuda a los usuarios a estimar los futuros flujos de efectivo. Segundo, la información sobre inversiones no financiadas con efectivo también es relevante para estimar las perspectivas futuras de la empresa, si bien esta información no se refleja expresamente en los estados financieros. Nuestros resultados sugieren que, incluso en el Reino Unido, donde la mayor parte de las inversiones se financian con tesorería, los estados de flujos de efectivo omiten información importante sobre las inversiones.

PALABRAS CLAVE Flujo de efectivo; Inversión; Desempeño de la empresa.

1. INTRODUCTION

The International Accounting Standards Board (IASB) and the US Financial Accounting Standards Board (FASB) have undertaken a joint project on Financial Statement Presentation aimed at improving the usefulness of the financial information provided in an entity's financial statements. The tentative decisions of the boards are compiled in the Staff Draft issued in July 2010 (IASB-FASB, 2010), where they propose changes in the way financial statements are presented, as well as new requirements of supplementary information to the financial statements (e.g. relevant information on transactions that do not require the use of cash). This study focuses on investments and provides empirical evidence on the usefulness of both information that is already being provided in the cash flow statement under current accounting standards (i.e. investing cash flows) and the supplementary information on non-cash investments that is planned to be required.

Research in the finance area provides wide evidence of the effect of corporate investments and divestments on future performance. Research documents a significant association between stock returns and capital expenditures, corporate acquisitions, and divestments (e.g. John and Ofek, 1995; Lasfer *et al.*, 1996; Shleifer and Vishny, 2003; Moeller *et al.*, 2004; Antoniou *et al.*, 2007). In spite of this evidence, information on the investments carried out by the firm during the year is not always readily available in the financial statements prepared under current accounting standards. The investing section of the cash flow statement provides information on those investments financed with cash (i.e. investing cash inflows and outflows). However, investment transactions that are not financed with cash are not reflected in the face of the financial statements and users must go through the notes to obtain information on these transactions. Accordingly, investing cash flows are poor indicators of corporate investments whenever a significant proportion of these transactions is not financed with cash (e.g. acquisition of assets by assuming directly related liabilities; stock financed acquisitions).

The lack of information on non-cash financed investments can explain the limited usefulness of the investing section of the cash flow statement documented in prior research and the little attention that information on corporate investments has received in the accounting field. To the best of our knowledge, the study by Livnat and Zarowin (1990) is the only one that examines the information delivered by net investing cash flows and its components. Using a sample of US firms they find a negative and significant association between net investing cash flow and stock returns. However, when they disaggregate net investing cash flow into investment in PPE, acquisitions, retirement of PPE, investment in unconsolidated subsidiaries, and purchase of minority interest, they find that coefficients are statistically indistinguishable from each other, and all, but the one on investments on unconsolidated subsidiaries, are statistically insignificant [1]. Overall, the results of this study are indicative of a limited usefulness of investing cash flows that contrasts with the important role played by investments in explaining corporate performance documented

_____

[1] Contrary to expectations, Livnat and Zarowin find that the coefficient on investments in unconsolidated subsidiaries is negative.

in the finance area. Furthermore, differences in the findings of both streams of research suggest that there is relevant information on investments that is not included in the face of the financial statements. This lack of information is likely to be particularly acute whenever a large proportion of investments are not financed with cash.

This study seeks to shed further light on this issue by re-examining the usefulness of the information on investments provided by financial statements, but departing from prior accounting research in two main respects. First, as the setting for our analysis we select the UK, a country where investments tend to be (though not all of them are) financed with cash, as opposed to prior studies based on the US, where non-cash investments represent a large proportion of corporate investments [2]. Second, we do not restrict our analysis to the information presented in the cash flow statement. Given that, even in the UK, not all investment transactions are financed with cash and reflected in the cash flow statement, we add to our analysis a proxy for non-cash financed investments. This variable is aimed at capturing the information on non-cash investments that the IASB and the FASB plan to require as a supplement to the cash flow statement [3]. To the best of our knowledge this is the first study to examine the information conveyed by non-cash financed investments.

This study departs also from research in the finance area that focuses on the effect of investment transactions on corporate performance. Our study builds on the important evidence gathered in this area, but takes a different approach. Assuming that investing activities are key elements in explaining future corporate performance, as evidenced by prior research, we test whether investing cash flows and non-cash investments provide users with valuable inputs to assess future corporate performance. Specifically, we examine their ability to predict one-, two-, and three-years-ahead operating cash flows, as well as their value relevance.

Using a sample of UK non-financial companies for the period 1991-2004 we document the usefulness of information on both investing cash flows and non-cash financed investments. First, we observe that investing cash flows add to earnings in explaining one-, two-, and three-years ahead operating cash flow figures. Similarly, taking the model by Ohlson (1995) as a basis, we find that net investing cash flow adds to book value of equity and abnormal earnings in explaining stock prices. Furthermore, unlike Livnat and Zarowin (1990), when we disaggregate net investing cash flow into its main components, we find that coefficients are significantly different from zero and from each other. Hence, unlike prior US based studies showing that cash flow statements play a limited role in providing information on corporate investments (e.g. Livnat and Zarowin, 1990),

---

(2)   According to the results obtained by Faccio and Masulis (2005) for the period 1997-2000, 80% of bids in the UK are entirely cash-financed. The proportion of cash financed transactions is much lower for the US. For the period 1990-1997, Andrade *et al.* (2001) report that 58% of the mergers and acquisitions were entirely stock-financed, while only 27% were fully cash-financed.

(3)   As we will explain when defining this proxy in Section 3, the information provided by firms in the period of analysis does not allow us to obtain a direct measure of non-cash investments. So, we have to approximate it from the information provided in the balance sheet, the income statement, and the statement of cash flows. We acknowledge that the resulting measure is a poor proxy of non-cash financed investments, but it is the best approximation that users can get from the information reflected in the financial statements.

this study demonstrates that in a country where investments are mainly cash-financed, the investing section of the cash flow statement provides valuable information to explain future corporate performance. Second, we find evidence, though limited, that non-cash financed investments add to investing cash flows in explaining future operating cash flows and contemporaneous stock prices. Despite the use of a crude measure of non-cash investments and the testing of their usefulness in a country where most investments are financed with cash, we still find evidence that non-cash investments add to investing cash flows in explaining future corporate performance. From these results we infer that important information on investments is omitted from cash flow statements presented under prior and current accounting standards.

The rest of the paper is organised as follows. Section two reviews the literature and states the hypotheses. The data and the methodology are described in Section three. Section four reports the empirical results. Finally, Section five presents the conclusions.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

For most firms, investments are key activities to maintain or improve their position in the product market. Whenever a firm wants to expand its operations to new lines of activity or new markets, some kind of investment is necessary, whether in the form of capital expenditures or by means of acquisition of an existing business entity. These investments eventually will have an impact on corporate performance and it is this impact what explains the vast amount of research devoted to the investigation of the effect of capital expenditures, acquisitions, and divestments on corporate performance.

Regarding capital expenditures, Amir *et al.* (2007) consider them as key elements of future growth and firm value. Extant empirical research provides evidence supporting this idea by showing that capital expenditures are positively and significantly related to stock returns (e.g. McConnell and Muscarella, 1985; Kerstein and Kim, 1995; Lee and Nohel, 1997). This association is explained by the fact that capital expenditures signal good news about available positive net present value projects. Managers' decision to increase capital expenditures is assumed to reveal their private information regarding future demand and costs (Kerstein and Kim, 1995). Assuming managers act as value maximizers, an increase in capital expenditures is interpreted as a sign of an improvement in the investment opportunity set (McConnell and Muscarella, 1985).

Similarly, an extensive and fruitful line of research is devoted to the analysis of financial performance of mergers and acquisitions (e.g. Healy *et al.*, 1992; Fuller *et al.*, 2002; Moeller *et al.*, 2004; Oler, 2008; Basu *et al.*, 2009; Savor and Lu, 2009). Overall, results show that bidders' performance is affected by acquisitions, both at the announcement date and in the long-run, although the size and direction of the effect is found to vary depending on the characteristics of the bidder and the target, the size of the acquirer, or the method of payment. As an example, Fuller *et al.* (2002) provide evidence showing that bidder shareholders gain when buying a private company or a subsidiary, but lose when purchasing a public firm. Along the same line, Moeller *et al.* (2004) observe that the

announcement return for acquiring firms is significantly higher for smaller companies than for large entities.

Finally, divestments (i.e. disposals of PPE, intangibles, financial assets, subsidiaries, or other business) are also likely to have an impact on corporate performance. Extant research documents positive and significant excess return at the time of sell-off announcements (e.g. Afshar *et al.*, 1992; John and Ofek, 1995; Lasfer *et al.*, 1996; Dittmar and Shivdasani, 2008), as well as an increase in profitability after divestment (e.g. Bergh, 1995; Haynes, 2002; Gadad and Thomas, 2004). This improvement in corporate performance is attributed to the role played by divestments in eliminating the consequences of a previous agency problem (Jensen, 1993), correcting prior overinvestment (Hubbard and Palia, 1999), increasing the focus, so that the firm's remaining assets are more profitable (e.g. John and Ofek, 1995), and/or reducing distress costs (e.g. Lasfer *et al.*, 1996). Furthermore, Dittmar and Shivdasani (2008) show that divisional investment policy becomes more efficient after divestiture.

Overall, extant research documents a significant impact of capital expenditures, acquisitions, and divestments on corporate performance [4]. Accordingly, it can be expected that information on investments helps financial statement users in assessing future corporate performance. Information on cash-financed investments is readily available in the investing section of the cash flow statement. This information is expected to be useful, but it does not provide a complete picture of corporate investments. Hence, it can be expected that non-cash investments provide also valuable inputs to financial statements users. Furthermore, research shows that the impact of investments on corporate performance varies depending on the method of payment. As an example, empirical research shows that acquirer's stock returns are greater in cases where cash is used for payment (e.g. Agrawal *et al.*, 1992; Loughran and Vijh, 1997; Rau and Vermaelen, 1998). Consistent with prior empirical evidence, Shleifer and Vishny (2003) demonstrate that long-run returns to bidders are likely to be negative in stock acquisitions and positive in cash acquisitions. The model by Shleifer and Vishny (2003) predicts that stock-financed acquisitions are more likely when the bidder is overvalued. If managers are better informed about corporate prospects than the market, they will tend to pay for acquisitions with stock when the firm is overvalued, and use cash otherwise. Furthermore, payment method in acquisitions is found to be related to the investment opportunities, size, or ownership structure of acquirers and targets, or the financial condition of bidders. For example, Martin (1996) documents a positive association between growth opportunities and stock-financing. Faccio and Masulis (2005) observe that, in Europe, the acquisition financing choice is strongly dependent on corporate governance concerns and financial conditions of the bidder. They find that European bidders choose stock financing

---

(4)   As evidenced above, when reviewing prior literature, investing activities do not always enhance a firm value. There are instances where investments are value destroying. Literature offers evidence of the key role played by conservatism and accounting quality in improving investors ability to monitor managerial investment decisions and, as a consequence, in preventing over-investment (e.g. Hope and Thomas, 2008; Biddle *et al.*, 2009; García Lara *et al.*, 2010). Investigating whether investments lead to an increase or decrease in firm value is beyond the objective of this study. Nonetheless, we have to acknowledge that the existence of both value increasing and value destroying investments goes against finding an association between investments and future cash flows or stock prices.

with greater frequency when their financial condition is weak. On the contrary, bidders tend to use cash when the voting control of their dominant shareholders is threatened. Hence, based on the abovementioned evidence, we argue that non-cash investments are likely to provide financial statement users with additional information over that provided by investing cash flows.

Given the documented impact of investments on corporate performance and the role played by the method of payment, it is expected that information on both cash-financed investments (i.e. investing cash flows) and non-cash financed investments are valuable inputs to financial statements users in assessing future corporate performance. Hence, we state the following hypotheses to be tested in our study:

H1. *The investing section of the cash flow statement provides valuable inputs to financial statements users in assessing future corporate performance.*

H2. *Non-cash financed investments provide additional information over that conveyed by investing cash flows in assessing future corporate performance.*

3. RESEARCH DESIGN

We assess the usefulness of investing cash flows and non-cash financed investments by examining: *i)* their ability to predict one-, two-, and three-years-ahead operating cash flows, and *ii)* their value relevance, based on the model by Ohlson (1995). In both analyses, we start from a benchmark model where we regress the dependent variable (i.e. future operating cash flows, and contemporaneous stock prices) on its common explanatory factors (i.e. earnings, and abnormal earnings and book value of equity, respectively). Then, we add investing cash flows to the benchmark model to test whether data on cash-financed investments add to earnings and book value of equity in explaining future corporate performance. Finally, we introduce non-cash financed investments to examine whether they provide additional information over that conveyed by investing cash flows. In the following sections we describe the data and methodology and we provide the definition of the variables used in our study.

3.1. Data and methodology

The data for our analyses come from the Standard & Poor's Global Vantage database. To form our sample, we begin with those non-financial UK companies with available data on investing cash flows for the period 1991-2004 in the Global Vantage database [5] (using both the Active and Research files). We delete observations with missing values on the variables used in our analyses and to mitigate the effect of outliers, we treat as missing observations those that are in the extreme top and bottom first percentile, as well as those observations whose studentized residuals are four or greater in absolute value. This screening procedure is similar to that performed by Barth *et al.*

[5]   To make sure that all information used in our analyses is prepared under the same set of accounting standards, the period covered in our study begins with the first application in the UK of FRS-1 *Cash Flow Statements* (ASB, 1991) and finishes in the year prior to mandatory application of IFRS in Europe.

(2001) or Kim and Kross (2005), and leads to a sample of 7,997 firm-year observations spanning the period 1991-2004. Table 1 provides a detailed description of the screening process.

<div align="center">

TABLE **1**

SAMPLE SELECTION
</div>

Global Vantage database (UK, 1991-2004)	Total number of Firm-Year observations
Number of observations from non-financial firms with data on earnings, net investing cash flow, non-cash financed investments, one-, two-, and three- years-ahead operating cash flow, and market value of equity (all of them per share).	8,762
After excluding the top and bottom 1% of distributions of earnings, net investing cash flow, non-cash financed investments, one-, two-, and three-years-ahead operating cash flow and contemporaneous market value of equity (all of them per share).	8,230
After excluding observations whose absolute studentized residuals are four or greater in a cross-sectional regression of either future operating cash flow or market value of equity on earnings, net investing cash flow and non-cash financed investments (all of them per share).	7,997

Our analyses are based on the unbalanced panel data described above [6]. Before choosing the technique to be used in estimating our regression models, we tested for the existence of fixed firm and time effects using an F-statistic (Hsiao, 1986). Results, untabulated, show the presence of fixed firm effects in all our models. No time effects are observed. Accordingly, we estimate all our models using the fixed effects technique (i.e. allowing the intercept to vary across firms).

To mitigate scale effects we follow Barth and Clinch (2009) and deflate all level variables in our analyses by the number of common shares; stated in other words, all variables are per share. Barth and Clinch (2009) compare the effectiveness, at mitigating scale effects, of different specifications of regressions of equity market value on equity book value and earnings. They find that the share price specification and, to a lesser extent, the undeflated specification generally show the best performance in the presence of the scale effects they model. This is why we decided to deflate all variables by the number of shares [7].

3.2. DEFINITION OF VARIABLES

Dependent variables

As explained before, we examine the usefulness of information on investing cash flows and non-cash financed investments by investigating their ability to predict future operating cash flows and their value relevance. Accordingly, our dependent variables are one-, two-, and three-years-ahead operating cash flows in the predictive ability models, and contemporaneous stock prices in the value relevance models. A significant association

---

(6)   The number of companies in our sample varies across years. This is due to the fact that we do not require firms in our sample to survive the whole period of analysis.

(7)   We check the robustness or our results to estimating our models with undeflated data but including a measure of scale, the natural log of total assets, as an additional explanatory variable. Results, available from the authors, are consistent with those obtained for the share price specification.

of accounting information with stock prices is considered to be indicative of information being relevant to investors (Song *et al.*, 2010), while the ability of accounting measures to predict future cash flows is of interest to both investors and creditors (Al-Attar and Hussain, 2004).

The use of future operating cash flows in assessing the predictive ability of accounting measures is widely spread in the literature (e.g. Barth *et al.*, 2001; Al-Attar and Hussain, 2004; Kim and Kross, 2005). In our study, operating cash flows (*CFO*) are as reported in cash flow statements prepared under FRS-1 [(8)].

Stock prices or returns are the common dependent variables in value relevance studies (e.g. Collins *et al.*, 1997; Barth *et al.*, 1999). We use stock prices at fiscal year-end as the dependent variable, assuming that they incorporate information on all corporate investments carried out by the company during the year.

Independent variables

The main explanatory variables in our models are net investing cash flow and its components and our measure of those corporate investments that were not financed with cash. Net investing cash flow (*CFI*) reflects inflows from divestments less outflows for investments. Since it is not available from the Global Vantage database, we calculate it by adding all investing cash flow components. Specifically, *CFI* is calculated in the following way:

-   -   Outflows for capital expenditures (CAPX)
-   +   Inflows from sale of tangible fixed assets (STFIXA)
-   -   Outflows for purchase of subsidiary undertakings and associate investments (ACQ)
-   +   Inflows from disposal of subsidiary undertakings and associate investments (DISP)
-   +   Net cash flow from other investments and divestments (OTHER).

   =   *Net cash flow from investing activities (CFI)*

Then, net investing cash flow is positive when inflows from divestments outweigh outflows for investments. On the contrary, those companies making large investments financed with cash present a negative *CFI*. The components of *CFI* are also used as explanatory variables in our disaggregated models. In order to facilitate the interpretation of results, we express all cash flow variables in net terms, so that cash inflows have a positive sign and cash outflows a negative sign.

Finally, our measure of investments that were not financed with cash (*NC_INV*) is defined as the change in total gross non-current assets plus net investing cash flow (*CFI*). We use the change in total gross non-current assets (i.e. change in total assets- change in current assets + depreciation) as a proxy for all investments carried out by the company during the year. By adding net investing cash flow to this amount, we are eliminating those investments that were financed with cash, so that we get a measure of non-cash financed investments. To keep consistency with investing cash flows, we use the negative value of the

---

(8)   Results remain almost invariable if operating cash flows are adjusted for discontinued operations as in Barth *et al.* (2001).

resulting amount in our analyses [9]. By proceeding in this way, negative values are always assigned to investments, disregarding whether they are financed with cash or not.

4. RESULTS

4.1. DESCRIPTIVE STATISTICS AND CORRELATIONS

Table 2 reports the descriptive statistics of the variables included in our regression analyses.

TABLE 2

DESCRIPTIVE STATISTICS

	Mean	St. Dev.	Min.	Max.	P25	P50	P75
CFI_t	-0.193	0.482	-14.745	1.431	-0.222	-0.069	-0.008
$CAPX_t$	-0.162	0.318	-7.548	0.000	-0.177	-0.062	-0.015
$STFIXA_t$	0.031	0.121	0.000	3.467	0.000	0.005	0.020
ACQ_t	-0.085	0.344	-13.745	0.000	-0.036	0.000	0.000
$DISP_t$	0.033	0.171	0.000	6.262	0.000	0.000	0.000
$OTHER_t$	-0.009	0.168	-3.971	3.684	-0.008	0.000	0.000
NC_INV_t	-0.046	0.482	-15.792	5.636	-0.060	-0.003	0.022
CFO_{t+1}	0.318	0.519	-0.872	15.694	0.048	0.190	0.423
CFO_{t+2}	0.334	0.619	-0.893	25.936	0.048	0.194	0.434
CFO_{t+3}	0.340	0.575	-0.726	15.710	0.045	0.195	0.451
$PRICE_t$	2.158	2.288	0.040	20.250	0.615	1.400	2.870
$NIBE_t$	0.112	0.292	-2.544	5.520	0.009	0.080	0.190
BV_t	1.284	1.973	0.000	63.244	0.324	0.742	1.502
ABN_NI_t	0.030	0.259	-2.645	5.000	-0.028	0.033	0.115

The sample comprises 7,997 firm year observations for the period 1991-2004. CFI = net cash flow from investing activities; CAPX = net cash flow from capital expenditures; STFIXA =net cash flow from the sale of tangible fixed assets; ACQ = net cash flow from the acquisition of subsidiary and associated undertakings; DISP = net cash flow from the disposal of subsidiary and associate undertakings; OTHER= net cash flow from other investments and divestments; NC_INV = - non-cash financed investments= -(change in total assets + depreciation – change in total current assets +CFI); CFO = Cash flow from operating activities; PRICE is stock price at fiscal year-end; NIBE = Net income before extraordinary items; BV = book value of equity; ABN_NI = Abnormal net income. All variables are per share.

By examining Table 2 it can be observed that net cash flow from investing activities (*CFI*) is an important amount as compared to net cash flow from operating activities (*CFO*) or net income before extraordinary items (*NIBE*), thereby suggesting that investing cash flows for firms in our sample are not negligible. Furthermore, most firms in our sample (82%) report a net outflow from investing activities (i.e. negative *CFI*), indicating that outflows for investments outweigh inflows from divestments.

---

(9) We do so as net investing cash flow takes a negative value when outflows for investments outweigh inflows from divestments.

Regarding the main components of net investing cash flow, Table 2 shows that the largest one is net cash flow for capital expenditures (*CAPX*) followed by net cash flow for acquisitions (*ACQ*). When compared with values for *CFI*, we observe that capital expenditures account for a large proportion of net investing cash flows. Table 2 also shows that divestments are much less important than investments, as evidenced by the low values of net cash flow from sale of tangible fixed assets (*STFIXA*) and net cash flow from disposals of subsidiary undertakings and associate investments (*DISP*), as compared to their investment counterparts (i.e. *CAPX* and *ACQ*).

Finally, the low value of non-cash financed investments (*NC_INV*), as compared to that for CFI, indicates that most corporate investments are financed with cash. Faccio and Massulis (2005) provide evidence showing that 80% of corporate acquisitions in the UK are cash-financed. The descriptive statistics for our sample suggest that this holds for all corporate investments.

TABLE 3

CORRELATION MATRIX

	CFO_{t+1}	$PRICE_t$	BV_t	ABN_NI_t	$NIBE_t$	CFI_t	$CAPX_t$	$STFIXA_t$	ACQ_t	$DISP_t$	$OTHER_t$
$PRICE_t$	0.639										
	(0.000)										
BV_t	0.649	0.638									
	(0.000)	(0.000)									
ABN_NI_t	0.525	0.545	0.283								
	(0.000)	(0.000)	(0.000)								
$NIBE_t$	0.689	0.671	0.579	0.876							
	(0.000)	(0.000)	(0.000)	(0.000)							
CFI_t	-0.485	-0.486	-0.431	-0.333	-0.406						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
$CAPX_t$	-0.592	-0.515	-0.592	-0.340	-0.471	0.692					
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
$STFIXA_t$	0.439	0.302	0.436	0.234	0.349	-0.339	-0.623				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
ACQ_t	-0.289	-0.324	-0.201	-0.261	-0.255	0.450	0.342	-0.323			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
$DISP_t$	0.175	0.145	0.157	0.076	0.101	0.009	-0.225	0.246	-0.334		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.419)	(0.000)	(0.000)	(0.000)		
$OTHER_t$	-0.012	-0.040	0.008	-0.026	-0.015	0.228	-0.019	-0.016	-0.030	-0.002	
	(0.301)	(0.000)	(0.485)	(0.020)	(0.189)	(0.000)	(0.084)	(0.156)	(0.008)	(0.839)	
NC_INV_t	-0.040	-0.071	-0.100	-0.101	-0.108	-0.198	-0.024	0.006	-0.061	-0.074	-0.185
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.035)	(0.580)	(0.000)	(0.000)	(0.000)

Table reports Spearman correlation coefficients. P-values are shown in parentheses. The sample comprises 7,997 firm year observations for the period 1991-2004. CFO = Cash flow from operating activities; PRICE = stock price at fiscal year-end; BV = book value of equity; ABN_NI = Abnormal net income; NIBE = Net income before extraordinary items; CFI = net cash flow from investing activities; CAPX = net cash flow from capital expenditures; STFIXA = net cash flow from the sale of tangible fixed assets; ACQ = net cash flow from the acquisition of subsidiary and associated undertakings; DISP = net cash flow from the disposal of subsidiary and associate undertakings; OTHER = net cash flow from other investments and divestments; NC_INV = -non-cash financed investments = -(change in total assets + depreciation - change in total current assets + CFI). All variables are per share.

Table 3 reports Spearman correlation coefficients and shows that net investing cash flow (*CFI*) as well as its components are significantly related to stock prices and one-year-ahead operating cash flow. The highest values for correlation coefficients correspond to the largest components of net investing cash flow (i.e. capital expenditures and acquisitions). Finally, non-cash financed investments are also significantly related to stock prices and future operating cash flows, though the size of the coefficient is much lower. Correlation coefficients suggest that investing cash flows, as well as non-cash financed investments, provide valuable information to assess expected firm cash flows. In the next section we describe the analyses carried out to test whether this is so.

4.2. Regression analyses

We assess the information on investments conveyed by financial statements by examining the role played by this information: *i)* in predicting future operating cash flows, and *ii)* in a valuation model.

4.2.1. *Prediction of future cash flows*

In order to examine whether investing cash flows and non-cash financed investments add to earnings in explaining future operating cash flows, we start by estimating the following equation using one-, two-, and three-years ahead operating cash flows as the dependent variable [10]:

$$CFO_{it+a} = \alpha_i + \beta_1\, NIBE_{it} + \varepsilon_{it} \qquad\qquad \text{(1a)}$$

Where, *CFO* is net cash flow from operating activities, and the subscript α takes the value of *1*, *2*, and *3*, indicating that operating cash flow is measured one-, two-, and three-years-ahead, respectively. *NIBE* is net income before extraordinary items[11]. We estimate this and the rest of the models in our study with fixed firm effects, thereby allowing the intercept to vary across firms (α_i).

Results of the estimation of Equation (1a) are reported in Table 4 under the heading of Model 1. Panels A, B, and C report the results for one-, two-, and three-years-ahead operating cash flows, respectively.

---

(10)   This is a commonly used model when assessing the ability of information to predict future cash flows (e.g. Krishnan and Largay, 2000; Barth *et al.*, 2001).
(11)   Results remain qualitatively unchanged if we use net income instead of *NIBE*.

196 ARTÍCULOS DOCTRINALES

M.ª Luz Gómez, Flora Muiño and Fernando Ruiz Lamas
Do investing cash flows help in explaining future corporate performance?

<div align="center">

Table **4**

Regression of future operating cash flows on investing cash flows

and non-cash financed investments

</div>

Model 1: $CFO_{it+i} = \alpha_i + \beta_1\ NIBE_{it} + \varepsilon_{it}$

Model 2: $CFO_{it+i} = \alpha_i + \beta_1\ NIBE_{it} + \beta_2\ CFI_{it} + \varepsilon_{it}$

Model 3: $CFO_{it+i} = \alpha_i + \beta_1\ NIBE_{it} + \beta_3\ CAPX_{it} + \beta_4\ STFIXA_{it} + \beta_5\ ACQ_{it} + \beta_6\ DISP_{it} + \beta_7\ OTHER_{it} + \varepsilon_{it}$

Model 4: $CFO_{it+i} = \alpha_i + \beta_1\ NIBE_{it} + \beta_3\ CAPX_{it} + \beta_4\ STFIXA_{it} + \beta_5\ ACQ_{it} + \beta_6\ DISP_{it} + \beta_7\ OTHER_{it} + \beta_8 NC\_INV_{it} + \varepsilon_{it}$

Panel A: Dependent variable is one-year- ahead CFO

	Model 1		Model 2		Model 3		Model 4	
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
NIBE	0.306	21.460	0.295	21.090	0.284	20.240	0.282	20.010
CFI			-0.125	-15.870				
CAPX					-0.233	-12.820	-0.236	-12.950
STFIXA					-0.010	-0.280	-0.015	-0.420
ACQ					-0.104	-9.610	-0.103	-9.550
DISP					-0.096	-5.440	-0.105	-5.780
OTHER					-0.084	-4.420	-0.090	-4.700
NC_INV							-0.014	-2.140
R-Squared	6.6%		10.1%		11%		11%	

Tests of coefficient restrictions:

Model 3		$\beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7$	
F-statistic		16.44	
P-value		0.000	
Model 4			$\beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8$
F-statistic			40.73
P-value			0.000

Comparisons of Models:	1vs 2	2 vs 3	3 vs 4
Vuong Z stat.	-4.49	-1.77	-0.61
P-value	0.000	0.077	0.545

Panel B: Dependent variable is two-years- ahead CFO

	Model 1		Model 2		Model 3		Model 4	
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
NIBE	0.269	18.110	0.261	17.730	0.251	17.010	0.250	16.850
CFI			-0.092	-11.120				
CAPX					-0.234	-12.270	-0.236	-12.350
STFIXA					0.012	0.320	0.009	0.230
ACQ					-0.050	-4.370	-0.049	-4.330
DISP					-0.068	-3.650	-0.074	-3.880
OTHER					-0.072	-3.640	-0.077	-3.830
NC_INV							-0.010	-1.460
R-Squared	4.8%		6.6%		7.8%		7.8%	

<div align="right">

(Continue in next page)

</div>

TABLE 4 (CONT.)

REGRESSION OF FUTURE OPERATING CASH FLOWS ON INVESTING CASH FLOWS

AND NON-CASH FINANCED INVESTMENTS

Tests of coefficient restrictions:

Model 3	$\beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7$		
F-statistic	21.69		
P-value	0.000		
Model 4		$\beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8$	
F-statistic		31.90	
P-value		0.000	

Comparisons of Models:	*1vs 2*	*2 vs 3*	*3 vs 4*
Vuong Z stat.	-2.90	-1.88	-0.39
P-value	0.004	0.060	0.699

Panel C: Dependent variable is three-years- ahead CFO

	Model 1		Model 2		Model 3		Model 4	
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
NIBE	0.269	17.720	0.260	17.330	0.267	17.660	0.265	17.470
CFI			-0.097	-11.480				
CAPX					-0.105	-5.390	-0.108	-5.510
STFIXA					-0.067	-1.720	-0.072	-1.830
ACQ					-0.066	-5.640	-0.065	-5.590
DISP					-0.097	-5.100	-0.105	-5.380
OTHER					-0.195	-9.590	-0.201	-9.770
NC_INV							-0.013	-1.850
R-Squared	4.6%		6.5%		7%		7%	

Tests of coefficient restrictions:

Model 3	$\beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7$		
F-statistic	8.14		
P-value	0.000		
Model 4		$\beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8$	
F-statistic		23.27	
P-value		0.000	

Comparisons of Models:	*1vs 2*	*2 vs 3*	*3 vs 4*
Vuong Z stat.	-3.02	-1.54	-0.57
P-value	0.003	0.123	0.567

The sample comprises 7,997 firm year observations for the period 1991-2004. CFO = net operating cash flow; in Panels A, B, and C the dependent variable is one, two, and three-years-ahead CFO, respectively; NIBE = net income before extraordinary items; CFI = net cash flow from investing activities; CAPX = net cash flow from capital expenditures; STFIXA = net cash flow from the sale of tangible fixed assets; ACQ = net cash flow from the acquisition of subsidiary and associated undertakings; DISP = net cash flow from the disposal of subsidiary and associate undertakings; OTHER = net cash flow from other investments and divestments; NC_INV = - non-cash financed investments = -(change in total assets + depreciation - change in total current assets + CFI). All variables are per share and models are estimated using the fixed effects technique.

As expected, results show that current earnings are positively and significantly related to future cash flows, though the explanatory power of the model decreases as the forecasting horizon increases. We use this model as the basis against which we compare models that incorporate information on investments.

In the next step of our analysis, we re-estimate Equation (1a) after adding net investing cash flow as an explanatory factor. Specifically, we estimate the following equation:

$$CFO_{it+a} = \alpha_i + \beta_1\, NIBE_{it} + \beta_2\, CFI_{it} + \varepsilon_{it} \qquad\qquad (2a)$$

Table 4 presents the results of this estimation under the heading of Model 2. Consistent with our expectations, we find that net investing cash flow is negatively and significantly related to up to three-years-ahead operating cash flows. These findings indicate that net investing cash flow provides additional information over that conveyed by earnings in explaining future cash flows, thereby providing support for our hypothesis H1. The sign of the coefficient is negative. Hence, results indicate that current investing outflows contribute to the generation of higher levels of future operating cash flows up to three years after the investment takes place. The magnitude of the coefficient shows that the effect is economically significant. A ten-percentage point increase in net investing cash flow is associated with an increase in one-year-ahead operating cash flow by 0.0125 (about 3.9% of average *CFO* in our sample).

The value for the R-squared is substantially higher in Model 2 than in Model 1 and to formally test whether both models differ in their explanatory power for future operating cash flows, we use the Vuong's Z-statistic (Vuong, 1989). This is a directional test designed to evaluate competing non-nested models that allows us to identify which model is closer to explaining the data [12]. The negative and significant value for the Vuong's Z-statistic reveals that Model 2 has significantly more explanatory power for future operating cash flows than Model 1. These results indicate that investing cash flows are important inputs for financial statements users when predicting future cash flows.

Net cash flow from investing activities (*CFI*) aggregates outflows and inflows for all investments and divestments carried out by the firm during the year (i.e. outflows for capital expenditures, outflows for purchase of subsidiary undertakings and associate investments, inflows from sale of fixed assets, and inflows from disposals of subsidiary undertakings and associate investments). Aggregation implies that all these components are equally weighted, thereby masking the information [13] (Barth *et al.*, 2001). To assess whether aggregation of different inflows and outflows for investing activities results in

---

(12)   Vuong's Z-statistic is commonly used by accounting researchers in discriminating between competing non-nested models (e.g. Dechow, 1994; Barth *et al.*, 2001; Al-Attar and Hussain, 2004).

(13)   The information loss resulting from aggregation in financial statements is extensively documented in the literature. As for the income statement, Fairfield *et al.* (1996) find that disaggregation of earnings into its main components help in forecasting future profitability. Referring specifically to cash flow information, Barth *et al.* (2001) and Al-Attar and Hussain (2004) find that disaggregation of earnings into cash flows and accruals, increases the predictive ability of earnings. Furthermore, Clinch et al. (2002) and Krishnan and Largay (2000) find that operating cash flow components provide more information in explaining returns and future cash flows than aggregate operating cash flows.

an information loss, we re-estimate Equation (2) after disaggregating *CFI* into its main components. Specifically, we estimate the following equation:

$$CFO_{it+a} = \alpha_i + \beta_1\, NIBE_{it} + \beta_3\, CAPX_{it} + \beta_4\, STFIXA_{it} + \beta_5\, ACQ_{it} + \beta_6\, DISP_{it} + \beta_7\, OTHER_{it} + \varepsilon_{it} \qquad \text{(3a)}$$

Where *CAPX* is net cash flow for capital expenditures, *STFIXA* is net cash flow from sale of tangible fixed assets, *ACQ* is net cash flow from acquisition of subsidiary undertakings and associate investments, *DISP* is net cash flow from disposal of subsidiary undertakings and associate investments, and *OTHER* is net cash flow from other investments/divestments. The rest of the variables are as previously defined.

Results of this estimation are reported in Table 4, under the heading of Model 3, where it can be observed that, except for sales of tangible fixed assets (*STFIXA*), the rest of components of net investing cash flow are significantly related to one-, two-, and three-years-ahead operating cash flow. Coefficients are negative for all components, thereby indicating that while investments (i.e. capital expenditures and acquisitions) are associated with higher levels of future operating cash flows, corporate disposals lead a decrease in future corporate performance. Our findings for disposals apparently contradict prior research documenting a positive and significant excess return at the time of sell-off announcements (e.g. John and Ofek, 1995; Lasfer *et al.*, 1996). We conjecture that the reason for this apparent contradiction is that divesting companies are obtaining poor performance prior to the divestment transaction [14]. Hence, even though disposals improve performance, post-divestment performance is still lower than that of non-divesting companies.

Overall, results indicate that investing cash flow components add to earnings in explaining future operating cash flows. Moreover, tests of coefficient restrictions show that coefficients on investing cash flow components are significantly different from each other, thereby suggesting that investing cash flow components differ in the information they convey. Accordingly, there is likely to be an information loss when all of them are combined into a single figure. Consistent with this expectation, the Vuong Z-statistic shows that Model 3 has significantly more explanatory power for future cash flows than Model 2, though the level of significance is low and becomes statistically insignificant at conventional levels when explaining three-years-ahead operating cash flows. Hence, results provide evidence that disaggregation in the investing section of the cash flow statement proves useful for prediction purposes. Results support a common requirement in accounting standards of reporting separately cash flows derived from acquisitions and disposals of subsidiaries or other business entities (e.g. FRS-1, IAS-7).

These findings contrast with those reported by Livnat and Zarowin (1990), who find that coefficients on investing cash flow components are statistically indistinguishable from each other, and all, but the one on investments on unconsolidated subsidiaries, are statistically insignificant. Differences between both studies can be motivated by dissimilari-

---

(14)   Hillier *et al.* (2009) show that poor operating returns are one of the key factors in deciding to undertake assets disposals.

ties in the data used in the analysis. While Livnat and Zarowin estimate investing cash flows from the information contained in the balance sheet, the income statement, and the statement of changes in financial position, we use actual investing cash flows reported on the cash flow statement. Additionally, differences could be explained by dissimilarities between the US (the setting for the study by Livnat and Zarowin) and the UK (the setting for our analysis) in the financing of investments. As explained in the introduction, the proportion of investments financed with cash is much lower in the US than in the UK Hence, our results could be indicative of higher usefulness of investing cash flows in those countries where they represent a large proportion of all corporate investments.

Finally, to test our second hypothesis we re-estimate Model 3 after adding a variable reflecting those investments that were not financed with cash. The objective is to investigate whether non-cash investments add to investing cash flows in explaining future corporate performance. With this aim, we estimate the following model:

$$CFO_{it+a} = \alpha_i + \beta_1 NIBE_{it} + \beta_3 CAPX_{it} + \beta_4 STFIXA_{it} + \beta_5 ACQ_{it} + \beta_6 DISP_{it} + \beta_7 OTHER_{it} + \beta_8 NC\_INV_{it} + \varepsilon_{it} \qquad \text{(4a)}$$

Where *NC_INV* is a proxy for those investments that were not financed with cash. To compute it we first calculate the change in gross fixed assets as: change in total assets less change in current assets plus depreciation. Then, we add *CFI* to this amount to obtain those investments that were not financed with cash. Finally, we take the negative value of this amount to keep consistency with the sign criterion of investment cash flows. The rest of the variables in the model are as previously defined.

Table 4 reports the results of this estimation under the heading of Model 4. Results show that our proxy for non-cash financed investments is negatively related to future operating cash flows, though the coefficient is not statistically significant at conventional levels when explaining two-years-ahead operating cash flows [15]. The coefficient is negative, thereby indicating that those investments that are not financed with cash contribute also to enhance future corporate performance. However the size of the coefficient shows that the economic significance of this effect is much lower than that corresponding to investing cash flows [16]. The rest of the variables in Model 4 retain their level of significance.

Tests of coefficient restrictions show that the coefficient on *NC_INV* is significantly different from coefficients on investing cash flow components, thereby suggesting that non-cash financed investments add to earnings and investing cash flows in explaining future operating cash flows. However, the Vuong Z-statistic shows that Models 3 and 4 are not significantly different in their explanatory power for future cash flows. Therefore, results provide (limited) evidence on the predictive ability of non-cash investments.

---

(15)   It is likely that future corporate performance is related to some unobserved firm characteristics that explain the selection of the method of payment. The use of fixed firm-effects in estimating our models probably alleviates this concern. Nonetheless, we acknowledge that endogeneity can still be an issue in our study.

(16)   A ten-percentage point increase in net investing cash flow is associated with an increase in one-year-ahead operating cash flow by 0.0014 (about 0.4% of average CFO in our sample).

We conjecture that the usefulness of information on non-cash investments is likely to be understated in our study for two reasons. First, due to a lack of information on non-cash investments, we had to approximate them from the information provided in the balance sheet, the income statement, and the cash flow statement. The resulting measure is clearly a poor proxy of non-cash financed investments [17]. Second, our analysis is based on a country where investments tend to be financed with cash. Non-cash investments are likely to provide users with more valuable inputs in those countries where they represent a large proportion of corporate investments. Given that using a crude measure of non-cash investments and carrying out the analysis in a country where they represent a relatively small proportion of corporate investments, we still find evidence (though limited) that they convey additional information over that provided by investing cash flows, we expect that information on non-cash investments is valuable to financial statement users.

4.2.2. *Valuation model*

In this section we examine whether investing cash flows and non-cash financed investments provide valuable inputs for valuation purposes. We start from the widely used Ohlson's model (1995):

$$PRICE_{it} = BV_{it} + \alpha_1 ABN\_NI_{it} + \alpha_2 OtherInfo_{it} \qquad (0b)$$

Where *PRICE* is market price, *BV* is book value of equity, *ABN_NI* is abnormal net income, and *OtherInfo* is other information.

In the first step of our analysis we estimate equation (0b) after adding an intercept, dropping the *OtherInfo* factor and allowing the coefficient on book value of equity to vary from one. Specifically, we estimate the following common model in value relevance studies:

$$PRICE_{it} = \alpha_i + \beta_1 BV_{it} + \beta_2 ABN\_NI_{it} + \varepsilon_{it} \qquad (1b)$$

Where *PRICE* is share price at fiscal year-end, *BV* is book value of equity, *ABN_NI* is abnormal net income calculated as net income less a normal return on beginning equity book value (i.e. $NIt - r*BV_{t-1}$, where *r* is the annual average interest rate on five-year British Government Securities with a 4.6% risk premium added [18]).

Results of this estimation are reported in Table 5, under the heading of Model 1.

---

(17)   Just to illustrate the deficiencies of this measure, take, as an example, the acquisition of a business entity. Since we proxy investments by the change in gross non-current assets, we do not take into account neither current assets, nor liabilities, which are also components of this investment.
(18)   This is the risk premium used in prior UK studies (e.g. Gregory *et al.*, 2005). Nonetheless, we check the robustness of our results to the use of a 3% risk premium and results remain qualitatively unchanged. Moreover, results are qualitatively the same if we use a fixed discount factor (12%), as it is common in US studies (e.g. Barth *et al.*, 2005; Landsman *et al.*, 2007).

TABLE 5

REGRESSION OF STOCK PRICES ON INVESTING CASH FLOWS AND NON-CASH FINANCED INVESTMENTS

Model 1: $PRICE_{it} = \alpha_i + \beta_1 BV_{it} + \beta_2 ABN\_NI_{it} + \varepsilon it$

Model 2: $PRICE_{it} = \alpha_i + \beta_1 BV_{it} + \beta_2 ABN\_NI_{it} + \beta_3 CFI_{it} + \varepsilon_{it}$

Model 3: $PRICE_{it} = \alpha_i + \beta_1 BV_{it} + \beta_2 ABN\_NI_{it} + \beta_4 CAPX_{it} + \beta_5 STFIXA_{it} + \beta_6 ACQ_{it} + \beta_7 DISP_{it} + \beta_8 OTHER_{it} + \varepsilon_{it}$

Model 4: $PRICE_{it} = \alpha_i + \beta_1 BV_{it} + \beta_2 ABN\_NI_{it} + \beta_4 CAPX_{it} + \beta_5 STFIXA_{it} + \beta_6 ACQ_{it} + \beta_7 DISP_{it} + \beta_8 OTHER_{it} + \beta_9 NC\_INV_{it} + \varepsilon_{it}$

	Model 1		Model 2		Model 3		Model 4	
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
BV	0.748	32.300	0.685	29.920	0.665	28.720	0.648	27.530
ABN_NI	1.676	25.070	1.648	25.240	1.614	24.600	1.583	23.960
CFI			-0.716	-17.770				
CAPX					-1.186	-12.800	-1.223	-13.130
STFIXA					-0.922	-5.020	-0.964	-5.250
ACQ					-0.652	-11.810	-0.651	-11.810
DISP					-0.487	-5.430	-0.559	-6.100
OTHER					-0.483	-5.050	-0.540	-5.580
NC_INV							-0.125	-3.690
R-Squared	20.5%		24.2%		24.6%		24.8%	

Tests of coefficient restrictions:

Model 3			$\beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8$	
F-statistic			9.76	
P-value			0.000	
Model 4			$\beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = \beta_9$	
F-statistic			39.70	
P-value			0.000	

Comparisons of Models:	1 vs 2	2 vs 3	3 vs 4
Vuong Z stat.	-5.90	-2.00	-0.99
P-value	0.000	0.046	0.320

The sample comprises 7,997 firm year observations for the period 1991-2004. PRICE = stock price at fiscal year-end; BV = book value of equity; ABN_NI = Abnormal net income; CFI = net cash flow from investing activities; CAPX = net cash flow from capital expenditures; STFIXA = net cash flow from the sale of tangible fixed assets; ACQ = net cash flow from the acquisition of subsidiary and associated undertakings; DISP = net cash flow from the disposal of subsidiary and associate undertakings; OTHER = net cash flow from other investments and divestments; NC_INV = - non-cash financed investments = -(change in total assets + depreciation - change in total current assets + CFI). All variables are per share and models are estimated using the fixed effects technique.

As expected, book value of equity and earnings are positively and significantly related to stock prices. Taken together, they explain 20% of variability in stock prices. This is the base model against which we compare models that incorporate information on investments. Henceforth, we proceed in the same way as in prior section. Step by step, we add information on net investing cash flow, investing cash flow components, and non-cash financed investments to estimate Equations (2b), (3b), and (4b), which mirror Equations (2a), (3a), and (4a) estimated in the prior section:

$$PRICE_{it} = \alpha_i + \beta_1\, BV_{it} + \beta_2\, ABN\_NI_{it} + \beta_3\, CFI_{it} + \varepsilon_{it} \tag{2b}$$

$$PRICE_{it} = \alpha_i + \beta_1\, BV_{it} + \beta_2\, ABN\_NI_{it} + \beta_4\, CAPX_{it} + \beta_5\, STFIXA_{il} + \beta_6\, ACQ_{it} + \beta_7\, DISP_{it} + \beta_8\, OTHER_{it} + \varepsilon_{it} \tag{3b}$$

$$PRICE_{it} = \alpha_i + \beta_1\, BV_{it} + \beta_2\, ABN\_NI_{it} + \beta_4\, CAPX_{it} + \beta_5\, STFIXA_{il} + \beta_6\, ACQ_{it} + \beta_7\, DISP_{it} + \beta_2\, OTHER_{it} + \beta_9\, NC\_INV_{it} + \varepsilon_{it} \tag{4b}$$

All variables are as previously defined.

Results of the estimation of these equations are reported in Table 5 under the headings of Model 2, Model 3, and Model 4, respectively. By and large, results are consistent with those reported in the prior section. Starting with Model 2, we find a negative and statistically significant coefficient for *CFI*, which indicates that it provides additional information over that conveyed by abnormal earnings and book value of equity in explaining stock prices. Moreover, Vuong's Z-statistic shows that Model 2 has significantly more explanatory power for stock prices than Model 1. These results mirror those presented in the prior section and indicate that investing cash flows are important valuation inputs for financial statements users, thereby providing further support for our first hypothesis.

When net investing cash flow is disaggregated into its main components in Model 3, we find that all five components are significantly related to stock prices. Like when explaining future operating cash flows, tests of coefficient restrictions show that investing cash flow components differ in the information they convey.

Finally, when we add our proxy for those investments that were not financed with cash (Model 4), we find that it is significantly related to stock prices, while the rest of the variables in the model retain their significance. These results suggest that non-cash investments convey additional information over that provided by earnings, book value of equity, and investing cash flows in explaining stock prices. Nevertheless the Vuong Z-statistic shows that Models 3 and 4 are not significantly different in their explanatory power for stock prices. These findings are totally consistent with those presented in the prior section and provide evidence, though limited, on the value relevance of non-cash financed investments. Finding support for our hypothesis H2, even when the usefulness of information on non-cash financed investments is likely to be understated in this study, as explained before, leads us to conclude that non-cash investments are likely to provide valuable inputs to financial statement users.

Taking together, the results for stock prices and future cash flows provide strong evidence that the investing section of the cash flow statement delivers information on investments that is useful in assessing future corporate performance. Additionally, results suggest that non-cash investments provide additional information over that conveyed by investing cash flows. In spite of their relevance, information on non-cash financed investments is not directly reflected in the face of the financial statements. In order to get a (crude) proxy for these investments, we had to perform a number of calculations reflecting information from the balance sheet, the income statement, and the cash flow statement. The lack of visibility of this information is likely to hinder its utilization by

204 ARTÍCULOS DOCTRINALES

M.ª Luz Gómez, Flora Muiño and Fernando Ruiz Lamas
Do investing cash flows help in explaining future corporate performance?

financial statements users. Literature on limited attention demonstrates that users focus their attention on the most salient pieces of information and avoid making adjustments (e.g. Hirshleifer and Teoh, 2003). Then, the possibility exists that users ignore information on non-cash financed investments.

Our results suggest that the usefulness of financial statements is likely to improve if information on those investments that were not financed with cash becomes more visible, particularly in those countries where a large proportion of investments (e.g. acquisitions) is not financed with cash. Hence, results support the presentation of non-cash investments as a supplement to the cash flow statement, as planned to be required by the IASB-FASB (2010) [19].

4.2.3. *Sensitivity analysis*

Results presented in prior sections are based on a sample that includes both firms reporting losses and firms reporting profits. However, prior research shows that the price-earnings relation is not homogenous across profit and loss firms (e.g. Hayn, 1995; Collins *et al.*, 1999; Giner and Iñiguez, 2006). Similarly, it can be expected that the predictive ability of earnings for future cash flows is not the same for profit and loss firms. Therefore, we check the robustness of our results by re-estimating our models after excluding loss firms. Results of these estimations, untabulated, are totally consistent with those reported previously. When loss firms are excluded the explanatory power of the model increases but the tenor of the results regarding investing cash flows and non-cash investments remains unchanged.

Along the same line, the ability of investing cash flows and non-cash investments to explain future corporate performance is likely to vary across industries because of differences in the type of investments, their importance, or the way they are financed. Therefore, we re-estimate all our models for each of the 13 industries identified by Barth *et al.* (2001). As expected, there are large differences in the type of investments and the way they are financed across industries that lead differences in the size of coefficients and the explanatory power of models. In spite of all this variability results are largely consistent with those reported in previous sections.

Finally, results presented in Table 5 are based on stock prices at fiscal year-end. We assume that they reflect all public information regarding all transactions carried out by the company during the year. However, financial statements are made public after fiscal year-end. In the case they provide new information, this cannot be incorporated into stock prices till the annual report is released. This is why we re-estimate Equations (1b) - (4b) using stock prices at the end of the third month after fiscal year-end. Results, untabulated, are totally consistent with those reported in Table 5.

---

(19)   Tentative decisions of the IASB-FASB (2010) on this point are in line with the recommendation of the CFA Institute Centre for Financial Market Integrity (CFA, 2007) of requiring a supplementary schedule of significant non-cash investing activities in the cash flow statement.

5.   CONCLUSIONS

This paper investigates the role played by investing cash flows and non-cash investments in assessing the expected firm cash flows. Using a sample of UK companies we show that net investing cash flow adds to earnings in explaining one-, two-, and three-years-ahead operating cash flows. Furthermore, when net investing cash flow is disaggregated into its main components, tests of coefficient restrictions show that their coefficients are significantly different form each other, thereby suggesting that they vary in the information they convey. Similar results obtain when explaining contemporaneous stock prices. Overall, our findings suggest that, at least in countries like the UK, where most investments are financed with cash, the investing section of the cash flow statement provides financial statement users with valuable information to assess expected firm cash flows. These findings add to prior research documenting the limited role played by investing cash flows in explaining future corporate performance in countries like the US, where a large part of investments are not financed with cash (e.g., Livnat and Zarowin).

We also find that a rough measure of those investments that were not financed with cash adds to earnings and investing cash flows in explaining future operating cash flows and contemporaneous stock prices. Results suggest that important information on investments is not included in the cash flow statement, even in a country where most investing transactions, being financed with cash, are reflected in the cash flow statement. Despite their relevance, to get information on non-cash financed investments, users must go through the notes to the financial statements. The lack of visibility of this information is likely to hinder their analysis, thereby reducing the usefulness of financial statements. Accordingly, the results of this study are likely to have policy making implications, since they support the proposal in the Staff Draft on Financial Statement Presentation (IASB-FASB, 2010) of requiring the presentation of non-cash transactions as a supplement to the cash flow statement.

REFERENCES

Accounting Standards Board (ASB), 1991. *FRS 1 Cash Flow Statements*.

Afshar, K. R.; Taffler, R., and Sudarsanam, P. 1992. The effect of corporate divestments on shareholder wealth: The UK experience. *Journal of Banking and Finance* 16, 115-136.

Agrawal, A.; Jaffe, J. F., and Mandelker, G. N. 1992. The post-merger performance of acquiring firms: A re-examination of an anomaly. *The Journal of Finance* 47 (4): 1,605-1,621.

Al-Attar, A., and Hussain, S. 2004. Corporate data and future cash flows. *Journal of Business Finance and Accounting* 31: 861-903.

Amir, E.; Guan, Y., and Livne, G. 2007. The association of R&D and capital expenditures with subsequent earnings variability. *Journal of Business Finance and Accounting* 34 (1 & 2): 222-246.

Antoniou, A.; Petmezas, D., and Zhao, H. 2007. Bidder gains and losses of firms involved in many acquisitions. *Journal of Business Finance and Accounting* 34: 1,221-1,244.

Andrade, G.; Mitchell, M., and Stafford, E. 2001. New evidence and perspectives on mergers. *The Journal of Economic Perspectives* 15 (2): 103-120.

Barth, M.; Beaver, W. H.; Hand, J. R. M., and Landsman, W. R. 1999. Accruals, cash flows and equity values. *Review of Accounting Studies* 3: 205-229.

206   ARTÍCULOS DOCTRINALES

M.ª Luz Gómez, Flora Muiño and Fernando Ruiz Lamas
Do investing cash flows help in explaining future corporate performance?

Barth, M.; Beaver, W. H.; Hand, J. R. M., and Landsman, W. R. 2005. Accruals, accounting-based valuation models, and the prediction of equity values. *Journal of Accounting, Auditing, and Finance* 20: 311-345.

Barth, M.; Cram, D., and Nelson, K. 2001. Accruals and the prediction of future cash flows. *The Accounting Review* 76: 27-58.

Barth, M., and Clinch, G. 2009. Scale effects in capital markets-based accounting research. *Journal of Business Finance and Accounting* 36 (3 & 4): 253-288.

Basu, N.; Dimitrova, L., and Paeglis, I. 2009. Family control and dilution in mergers. *Journal of Banking and Finance* 33: 829-841.

Bergh, D. D. 1995. Size and relatedness of units sold: An agency theory and resource-based perspective. *Strategic Management Journal* 16: 221-239.

Biddle, G. C.; Hilary, G., and Verdi, R. S. 2009. How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics* 48: 112-131.

CFA Institute - Centre for Financial Market Integrity (CFA) 2007. *A Comprehensive Business Reporting Model: Financial Reporting for Investors*. CFA Institute.

Clinch, G.; Sidhu, B., and Sin, S. 2002. The usefulness of direct and indirect cash flow disclosures. *Review of Accounting Studies* 7: 383-404.

Collins, D.; Maydew, E., and Weiss, I. 1997. Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics* 24: 39-67.

Collins, D. W.; Pincus, M., and Xie, H. 1999. Equity valuation and negative earnings: The role of book value of equity. *The Accounting Review* 74 (1): 29-61.

Dechow, P. M. 1994. Accounting earnings and cash flows as measures of firm performance. The role of accounting accruals. *Journal of Accounting and Economics* 18: 3-42.

Dittmar, A., and Shivdasani, A. 2008. Divestitures and divisional investment policies. *The Journal of Finance* 58 (6): 2,711-2,743.

Faccio, M., and Masulis, R. 2005. The choice of payment method in European mergers and acquisitions. *The Journal of Finance* 60 (3): 1,345-1,388.

Fairfield, P. M.; Sweeney, R. J., and Yohn, T. L. 1996. Accounting classification and the predictive content of earnings. *The Accounting Review* 71 (3): 337-355.

Fuller, K.; Netter, J., and Stegemoller, M. 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *The Journal of Finance* 57 (4): 1,763-1,793.

Gadad, A.-M., and Thomas, H. M. 2004. Do asset sales lead to improvements in operating performance. *Applied Economics* 36: 865-871.

García Lara, J. M,; García Osma, B., and Penalva, F. 2010. Accounting conservatism and firm investment efficiency, Working paper available a **http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1383642** (access on 8 May 2012).

Giner, B., and Iñiguez, R. 2006. An empirical assessment of the Feltham-Ohlson models considering the sign of abnormal earnings. *Accounting and Business Research* 36 (3): 169-190.

Gregory, A.; Saleh, W., and Tucker, J. 2005. A UK test of an inflation-adjusted Ohlson model. *Journal of Business Finance and Accounting* 32 (3 & 4): 487-534.

Hayn, C. 1995. The information content of losses. *Journal of Accounting and Economics* 20: 125-153.

Haynes, M.; Thompson, S., and Wright, M. 2002. The impact of divestment on firm performance: empirical evidence from a panel of UK companies. *Journal of Industrial Economics* 50: 173-196.

Healy, P. M.; Palepu, K. G., and Ruback, S. 1992. Does corporate performance improve after mergers? *Journal of Financial Economics* 31: 135-175.

Hillier, D.; McColgan, P., and Werema, S. 2009. Asset sales and firm strategy: an analysis of divestitures by UK companies. *The European Journal of Finance* 15 (1): 71-87.

Hirshleifer, D., and Teoh, S. H. 2003. Limited attention, information disclosure, and financial reporting. *Journal of Accounting and Economics* 36: 337-386.

Hope, O. K., and Thomas, W. B. 2008. Managerial empire building and firm disclosure. *Journal of Accounting Research* 46 (3): 591-626.

Hsiao, C. 1986. *Analysis of Panel Data*. Cambridge University Press.

Hubbard, R., and Palia, D. 1999. A re-examination of the conglomerate merger wave of the 1960s: An internal capital market view. *Journal of Finance* 54: 1,131-1,152.

International Accounting Standards Board (IASB) – Financial Accounting Standards Board (FASB), 2010. Staff Draft of Exposure Draft – IFRS X Financial Statement Presentation. London: IFRS Foundation.

Jensen, M. 1993. The modern industrial revolution: Exit and failure of internal control mechanisms. *The Journal of Finance* 48: 831-880.

John, K., and Ofek, E. 1995. Asset sales and increase in focus. *Journal of Financial Economics* 37: 105-126.

Kerstein, J., and Kim, S. 1995. The incremental information content of capital expenditures. *The Accounting Review* 70 (3): 513-526.

Kim, M., and Kross, W. 2005. The ability of earnings to predict future operating cash flows has been increasing-not decreasing. *Journal of Accounting and Economics* 43: 753-780.

Krishnan, G. V,. and Largay, J. A. 2000. The predictive ability of direct method of cash flow information. *Journal of Business Finance and Accounting* 27 (1 & 2): 215-245.

Landsman, W. R.; Miller, B. L., and Yeh, S. 2007. Implications of components of income excluded from pro forma earnings for future profitability and equity valuation. *Journal of Business Finance and Accounting* 34 (3 & 4): 650-675.

Lasfer, M.; Sudarsanam, S., and Taffler, R. 1996. Financial distress, asset sales and lender monitoring. *Financial Management* 25: 57-66.

Lee, B. S., and Nohel, T. 1997. Value maximization and the information content of corporate investment with respect to earnings. *Journal of Banking and Finance* 21: 661-683.

Livnat, J., and Zarowin, P. 1990. The incremental information content of cash-flow components. *Journal of Accounting and Economics* 13: 25-46.

Loughran, T., and Vijh, A. M. 1997. Do long-term shareholders benefit from corporate acquisitions?. *The Journal of Finance* 52 (5): 1,765-1,790.

Martin, K. J. 1996. The method of payment in corporate acquisitions, investment opportunities, and management ownership. *The Journal of Finance* 51 (4): 1,227-1,246.

McConnell, J. J., and Muscarella, C. J. 1985. Corporate capital expenditure decisions and the market value of the firm. *Journal of Financial Economics* 14: 399-422.

Moeller, S. B.; Schlingemann, F. P., and Stulz, R. M. 2004. Firm size and the gains from acquisitions. *Journal of Financial Economics* 73: 201-228.

Ohlson, J. A. 1995. Earnings, book values and dividends in equity valuation. *Contemporary Accounting Research* 11 (2): 661-687.

Oler, D. K. 2008. Does acquirer cash level predict post-acquisition returns? *Review of Accounting Studies* 13: 479-511.

Rau, P. R., and Vermaelen, T. 1998. Glamour, value and the post-acquisition performance of acquiring firms. *Journal of Financial Economics* 49: 223-253.

208 ARTÍCULOS DOCTRINALES

M.ª Luz Gómez, Flora Muiño and Fernando Ruiz Lamas
Do investing cash flows help in explaining future corporate performance?

SAVOR, P., and LU, Q. 2009. Do stock mergers create value for acquirers? *The Journal of Finance* 64 (3): 1,061-1,097.

SHLEIFER, A, and VISHNY, R. W. 2003. Stock market driven acquisitions. *Journal of Financial Economics* 70: 295-311.

SONG, C. J.; THOMAS, W. B., and YI, H. 2010. Value relevance of FAS Nº 157 fair value hierarchy information and the impact of corporate governance mechanisms. *The Accounting Review* 85 (4): 1,375-1,410.

VUONG, Q. H. 1989. Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica* 57 (2): 307-333.