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Revisiting Corporate Financial Policy and the Value of Cash

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REVISITING CORPORATE FINANCIAL POLICY AND THE VALUE OF CASH

By

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ABSTRACT

REVISTING CORPORATE FINANCIAL POLICY AND

THE VALUE OF CASH

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Corporate financial policy and the value of cash by Michael Faulkender and Rong Wang (2006) examined the cross sectional variation in the marginal value of corporate cash holdings that arises from differences in the corporate financial policy. The main findings were that the marginal value of cash declines with large cash holdings,higher leverage, and better access to capital market. The goal of this paper is to replicate and extend Faulkender & Wang's (2006) work to test whether their assumptions and results are still valid.

1. Introduction

Liquidity measures a company's ability to obtain the cash and meet the cash requirements at any time. To minimize liquidity risks, the firm needs to hold a certain amount of cash. Cash is the most liquid asset, but also the least profitable. On one hand, with high liquidity of cash assets, firm need to hold a certain amount of cash to ensure the basic needs of the company's production and business activities are met and to lower the firms' financial risks. On the other hand, with the lowest profitability, there are high opportunity costs to hold the cash. Therefore, maintaining the proper level of cash holdings is becoming one of the most important goals pursued by the company.

Different levels of cash holdings affect companies' financing decisions. In a perfect market (Miller, 1958), firms can obtain the investment funds from the capital market at the same cost as internal funds and, the level of cash holdings is irrelevant to the value of the firm (Opler,1999). However, due to the existence of market frictions, such as information asymmetry and agency problems in the real capital market, the perfect capital market assumptions generally do not hold, implying that the level of cash holdings do have impact on the value of the company. This paper, we replicate and extend the work on "Corporate Financial Policy and the Value of Cash" written by Michael Faulkender and Rong Wang. By examining the annual excess return of the firm over the fiscal year, Faulkender and Wang found that "the marginal value of cash for the firms declines with larger cash holdings, higher leverage, and better access to capital markets." (Faulkender & Wang,2006) Our paper hopes

to find identical results by using the same research methods but different data time frames and a new measurement of the financial constraints.

2. Literature Review

2.1. Influencing Factors on Level of Cash Holdings

By examining the firm characteristics that affect the level of cash holdings, Kim et al. (1998) found that firm size, growth opportunities, and the volatility of earnings correlates with the level of cash holdings. Almeida et al. (2004) further researched a large sample of 1026 manufacturing firms from 1971 to 2000 to "estimate the effects of financial constraints on the corporate financial policy." They analyzed the differences in cash flow sensitivities on the level of cash holdings and the financial status of the firm. They found that financially constrained firms have a higher level of cash reserves and sensitivity of the cash flow of the money. Thus, growth opportunities, firm size, the level of leverage, and the financial constraints are all the crucial factors that affect company's cash holdings.

2.2. Cash Holdings and Firm Value

Scholars have extensively researched the theories of cash holdings and their effects on the value of the firm. For the supporters, they think that holding a certain amount of cash is an act that can increase the value of the company because the costs for the firms to raise the external funds are high. Modigliani and Miller (1958) thought that in a perfect capital market, we could consider the external funds as ideal alternatives to the internal funding. Therefore,

the amount of one dollar of cash holding is equivalent to a dollar of the company value. However, when many friction factors exist in actual capital market, the situations are different.

Myers and Majluf (1984) found that because of the information asymmetry that exists in the capital market, the costs for external financing are much higher than internal financing. Thus, for firms that use external financing for their investment will lose certain investment opportunities due to increased capital costs caused by asymmetric information, and corporate value will therefore be reduced. On the contrary, if companies have sufficient cash, they do not need external financing to meet their investment needs, and they can avoid the loss of corporate value caused by financial constraints.

However, some hold a negative opinion regarding the effects of level of cash holdings on the value of the firm. Because of agency costs, the opponents think that the primary goal for the managers is to hold a significant amount of cash within the company is to meet their private interests. Harford (1999) further argued that the cash-rich companies are also more likely to conduct some diminishing value mergers and acquisitions, mainly reflected in the decline of the stock prices and companies' operating performance. Thus, the value of the cash holdings may less than its par value.

Different from positive or negative opinions, some scholars also believe that the effects that the cash holdings have on the value of the firms cannot be generalized. It is also influenced by corporate governance, growth opportunities, and information asymmetry. Wang Donghong and Wang Haigang (2008) found the relationship between the cash holdings

and corporate values are inversed U shaped. When the amount of cash holding is small, the information asymmetry theory plays a leading role. Holding a certain amount of cash is beneficial to increasing the shareholders' price. However, when the amount of cash holdings increases to a certain level, the agency problem arises, which will cause the company's value to decline.

For this paper, we replicated the article written by Faulkender and Wang (2006). From shareholder's perspective, we analyzed the value of the marginal cash holdings and the changes in cash values with respect to the corporate capital structures. Since the liquidity of the assets can have a significant impact on company's financial decisions and the firm's value, we need to pay more attention to the problem that Faulkender and Wang studies.

3. Research Design

According to Faulkender and Wang (2006), there are three factors that affect the value shareholders placed on firm's additional cash holdings: The level of cash positions, the degree of leverage, and the financial constraints. In this paper, we borrowed the research method and research process from Faulkender and Wang (2006), but we changed our data time frame from 1971-2001 to 2001-2013 and applied a new definition of the financial constraints –the SA index (Hadlock and Pierce,2010) to test whether the results and assumptions made by Faulkender and Wang (2006) will still stand.

3.1 Theoretical Analysis and Hypothesis

According to Faulkender and Wang (2006), from the perspective of the equity shareholders, the value of one extra dollar of cash may be different depending on the ways that the firm used for this cash. They categorized these into three types: “Distributing Cash , Serving Debt or other Liabilities, and Raising Cash.

For the company that belongs to the cash distribution type, taxes and the agency problem due to “the free cash flow” (Jensen (1986)) will affect one firm’s value of the cash holdings . In general, the corporate tax rate on earned interests of cash is higher than the individual tax rate, which implies that it is better to have investors other than the company to hold the additional cash. Therefore, the marginal value of cash of the firm decreases as the level of its’ cash holdings increases. On the other hand, Jensen (1986) argued that because agency problems exist, managers for cash-rich industries are more likely to abuse their power on their own private interests, which in turns decreases the marginal value of the cash. Borrowed from Faulkender and Wang (2006), we have our first hypothesis:

Hypothesis 1: The marginal value of cash decreases with the level of firm’s cash holdings increases

For the company that has high leverage ratios, Jensen (1986) point out that the introduction of risky debt into the company will cause a proxy conflict between shareholders and creditors. For the debt holders, they care about the safety of their capitals and the fixed rate of return on their investment. For the equity shareholders, they prefer to invest risky items that could bring them the higher rate of return. However, holding the cash provides

safety but also the least profitable investment. For the firm that experiences financial difficulties but also has high leveraged ratios, the additional cash holdings are more likely go into debtholders hands. Therefore, from equity shareholders perspective, the marginal value of cash will decrease as the level of leverage increase. Borrowed from Faulkender and Wang, we have our second hypothesis:

Hypothesis 2: The marginal value of the additional dollar of cash decreases with the level of leverage increasing

For firms that have high financial constraints, Fazzari et al. (1988) showed that the investment expenditures for the firms would change with the availability of their internal funds. Because of the high transaction costs and information asymmetry faced by financial constraints firms to access the external financing, the marginal value of an additional dollar of cash is often higher than non-financial constraints firms, especially for the financial firms that have high investment opportunities. Thus, borrowed for Faulkender and Wang, we have our last assumptions:

Hypothesis 3: From the perspective of equity shareholders, the marginal value of an additional dollar of cash is higher for financially constrained firms

3.2 Research Methodology

For this replication paper, we examined the marginal value of cash of the firm and how it will be affected by corporates 'characteristics. The basis start point is: if equity shareholders

think the extra money will save the firm's high external financing costs, they will overestimate its value. However, if the equity shareholders think that the cash holdings of the firm will cause the agency problems, or the money will go into debtholders hands, they will underestimate its value. Therefore, based on Faulkender and Wang's (2006) research process, we estimate the effects of the stock returns with respected to the changes in cash positions.

3.3 Description of Model and Variables

We use the same model that Faulkender and Wang (2006) used to examine the relationship between corporate financial characteristics and the marginal value of cash. The dependent variable is stock's excess return, which equals the stock return of firm i over fiscal year t minus the annual benchmark return that the stock belongs to. The explanatory variables are the variables that can reflect corporate financial characteristics. The details are as follows: Cash and its equivalents (C), Interest expenses (I), earnings (E), Paid dividends (D), Leverage (L), Net Financing (NF), R&D expenditures (RD), and Net Assets (NA). All the variables (except for L) are deflated and lagged by the market value of equity. Thus, the coefficients of the changes in cash holdings stand for the differences in equity value. We used the OLS regression method to estimate the following regression model:

$$r_{i,t} - R^B_{i,t} = \gamma_0 + \gamma_1 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_2 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \gamma_3 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \gamma_4 \frac{\Delta RD_{i,t}}{M_{i,t-1}} + \gamma_5 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \gamma_6 \frac{\Delta D_{i,t}}{M_{i,t-1}} + \gamma_7 \frac{C_{i,t-1}}{M_{i,t-1}} + \gamma_8 L_{i,t} + \gamma_9 \frac{NF_{i,t}}{M_{i,t-1}} + \gamma_{10} \frac{C_{i,t-1}}{M_{i,t-1}} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_{11} L_{i,t} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \epsilon_{i,t},$$

3.4 Construction of the benchmark portfolio

Fama and French (1992) found that firm sizes and the BE/ME ratio can explain average variations of the stock returns. Thus, to calculate the excess return, first, we used Fama French 25 portfolios formed on size and BE/ME portfolios as our benchmark portfolios. Then in every fiscal year, we used ME breakpoints and BE/ME breakpoints from Ken French's data library to sort our samples separately and get a total of 25 standard groups. Last, since the Fama French 25 portfolio has a value-weighted monthly returns, we “calculated the benchmark return by annualizing the monthly returns from the portfolio it belongs to each month (Faulkender and Wang, 2006).

3.5 Introduction of the interaction terms

According to Faulkender and Wang (2006), we include two interaction terms to interpret the effects of the changes in cash holdings with respect to the level of cash holdings and leverages. If Faulkender and Wang’s hypothesis is correct, we should expect the coefficients on these two interaction terms are negative. The marginal value of cash

should decrease as the level of cash holdings increases. Also, the marginal value of cash should decrease as the level of firm's leverage increases.

3.6 Sample Composition

In this replication paper, the data comes from CompStat database over the 2001-2013 period.

By using the same data collection method as Faulkender and Wang, we exclude all financial and utility firms (SIC codes 6000 - 6999, and 4900-4999). To avoid the extreme data impact the results, we winsorize all the variables at 1% tails. We also delete the data that has negative net assets, market value of equity and dividend paid. Our final sample consist of 70,283 firm-years. The definition of related variables and measurement description are shown in the following table.

[Insert table 1 here]

3.7 Grouping Method for FC and NFC Firms

Following Almeida et al. (2004), We choose three main methods to group our samples and check the financial constraints of the firms.

First, payout ratio. The payout ratio equals the total dividend (total common dividends plus repurchases) over earnings (earnings before extraordinary items plus interest, deferred tax credits and investment tax credits). We sort the firms based on their annual payout ratio year by year. The firm with annual payout ratio less than 30 percentile of samples'

annual payout ratio distribution is regarded as the financially constrained firms. The firm with annual payout ratio greater than 70 percentile of samples' annual payout ratio distribution is regarded as the unconstrained firms.

Second, the total assets. Due to the issue of popularity, large companies are more likely to raise funds in the capital market than small companies. Thus, the large firms have low financial constraints compared with small firms. In Faulkender and Wang's (2006) paper, they use the sales as the measurement of the size, for the robustness check, in this paper, we use the total assets as the measurement of the firm size. We rank all the firms based on their total assets each year. The firms with total annual assets less than 30 percentile of sample's annual total assets distribution is regarded as financially constrained firm. On the other hand, the firm with total assets greater than 70 percentile of sample's total asset is unconstrained firms.

Third, the Size-Age index. Researchers created a lot of ways to measure financial constraints. However, those methods depend on endogenous financial variables rather than directly measure the financial constraints. Thus, it will cause the results of our studies biased. In 2010, followed the ideas proposed by Kaplan and Zinglas (1997), Hadlock and Pierce redesigned a new financial constrained indicators-the size-age index. The SA index is calculated as follows: SA= (-0.737)*Size+0.043*Size^2-0.040*Age^2. , where size is the natural" log inflation adjusted book assets(as of 2004) and age is the number of years the firm has on CompStat with the non-missing stock price. Greater the SA index, the higher level of financial constraints. Therefore, In this paper, we applied this new measurement of financial

constraints to check whether the company's marginal value of cash still differs under different financial constraints.

4. Empirical Research

4.1. Summary Statistics on the Whole Sample

In this paper, we used the Stata software to perform the descriptive statistical analysis over 70,283 observations of the entire sample. The results are shown in table 2. From this table, we can see that the median firm has -5.53% I year excess abnormal return. However, the average firm has a slightly positive 3.76 % 1-year abnormal return, suggesting that the stock abnormal return is right skewed. The average level of corporate cash holdings accounts for 15.9% of the market value and the average level of leverage is 19.89%, which shows that the US firms over-reliance on the debt financing. Since the mean and median of the corporate earnings are both positive, we can know that there is an upward trend of the average level of corporate earnings.

[Insert table 2 here]

4.2 Regression Results on The Whole Sample

Table 3 shows the regression results on the whole sample. From column I, we can see that the coefficient on changes in cash holdings is 1.621 and this number is significant at 1% level. This number is the marginal value of cash that the equity investors gave. When introduced two interaction terms, we can see that the coefficient on changes in cash holdings increased to 2.833 and it also significant at 1% level. Therefore, we can know that the corporate cash holdings and capital structure will affect the marginal value of cash.

Even though we extend our data time frames, the coefficient on the interaction terms $C_{t-1}*\Delta C_{i,t}$ is still significantly negative at 1% level, which verified Faulkender and Wang's (2006) first hypothesis, that is, the marginal value of cash will decrease as the level of firm's cash positions increases. Therefore, when the company does not hold or only hold a small amount of cash, they will face a high probability of external financing. Thus, the marginal value of cash is higher compared to cash-rich firms. Also, consistent with Faulkender and Wang's (2006) second hypothesis, the regression coefficient on the interaction terms $L_t*\Delta C_t$ is also significantly negative at 1% level. This fact tells us that the marginal value of cash will decrease as the level of leverage increases. Since the default risks increases in the level of leverage, from shareholders perspectives, the value of one additional dollar of cash thus will be lower.

[Inser table 3 here]

4.3 Empirical Results Under Financial Constraints

Table 4 listed different regression results under various financial constraints grouping method. After considering the effects of level of cash holdings and financial leverages, the marginal value of cash for constrained and unconstrained groups is consistent with the assumption three, that is, the marginal value of cash for the constrained group is higher than the unconstrained group. The coefficients of the interaction term Ct-1*ΔCt and Lt* ΔCt are basically the same as the results of table 3. They are both significantly negative at 1% level. Also, based on the size criterion, the marginal value of cash of a mean firm that is financially constrained equals $2.415 (= $2.855+(- $1.025*$ 0.2304663)+(-$1.246* $ 0.1631573)), while this value only equals $1.99 (= 2.601+(-0.44*0.1701952)+(-2.109*0.263523)) for unconstrained firms. For other two criterion, the marginal value of cash is $2.301 versus $1.854 under payout criterion and $2.411 versus $1.6386 under SA index criterion. As we can see, no matter we use the single indicator (size or payout ratio) or the composite indicator (Size-Age index) to measure financial constraints, the marginal value of cash of financially constrained firm is significantly higher than unconstrained ones.

[insert table 4 here]

4.4 Robustness Test

According to Faulkender and Wang, increases in the value of equity due to cash increments should only consider the portions of changes in cash that is unexpected. Thus, we need to subtract the expected changes in cash from our previous dependent variables and only use the unexpected portion to run our regression analysis. Borrowed the ideas from Faulkender and Wang (2006) and Almeida et al. (2004), we constructed three methods to measure the unexpected changes in cash.

First, we subtract average change in cash in the benchmark portfolios over fiscal year to get our unexpected changes in cash. Second, followed Almeida et al., we regressed changes in cash holding on firm size, cash flow (= (IB+DP-DVP-DVC)/AT), and Q (market value /book value of assets). We captured the residuals to get our unexpected changes in cash. In the end, the last method is similar to the second one, but only add additional four variables, that is, “capital expenditures, acquisitions, changes in non-cash net working capital, and changes in short-term debt." The following are the new sample results by using the alternative measurement of changes in unexpected cash. From table 5, we can see that the financial leverages and the corporates ’cash holdings still have negative influences on the marginal value of cash and all these numbers are significant at 1% level. Therefore, the robustness of the regression coefficient proves that Faulkender and Wang’s hypothesis and results still valid.

[insert table 5 in here]

5. Conclusion

In this paper, we analyzed the effects of the corporate capital structure have on the marginal value of cash. By replicating Faulkner and Wang's article, we found that the marginal value of cash to the shareholders in the mean firm is 2.32. Also, consistent with Faulkender and Wang's (2006) findings, we found that "the marginal value of cash decreases with large cash holdings, higher leverages , and better access to capital markets. " (Faulkender and Wang,2006)

Form all these results, we can also know that because of the expensive transaction costs and asymmetry problems exist in the external financing process, equity shareholders will give a higher value evaluation to companies with strong liquidity. However, the marginal value of cash will decreases as the cash positions increases. Therefore, the company's level of cash holdings should have a limit. Too much cash holdings will cause free cash flow agency problems. In addition, because the company's capital structure affects the distribution of the company's profits between the equity shareholders and the debt holders, from shareholders perspective, the marginal value of cash will also decrease with higher financial leverages.

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Appendix: Tables

Table1

Variables		Specifications	
Dependent Variables	ri,t -Ri,t	ri,t	Annual stock return of firm i at year t
		Ri,t	Benmark porforlio return of stock i at time t
Explained Variables	ΔCi,t/Mi,t-1	ΔCi,t	ΔCi,t=ΔCi,t-ΔCi,t-1
		Ci,t	Cash holdings of firm i at fiscal year t
		Mi,t	Market value of equity of firm i at year t(=stock closing price at fiscal year end * number of shares)
	(Ci,t-1*ΔCi,t) /Mi,t-1	Mi,t -1	Market value of equity of firm i at year t-1
	(Li,t*ΔCi,t)/Mi,t-1	Li,t	Market debt ratio of firm i at year t (= total debt / (total debt + market value of equity))
Controlled Variables	ΔEi,t/Mi,t-1	Ei,t	Earnings of firm i at year t (=earnings before extraordinary items +interests+ deferrred tax credits +investment tax credits)
	ΔNAi,t/Mi,t-1	NA i,t	Non cash assets of firm i at time t (=total assets - cash holdings)
	Δli, t/Mi,t-1	li,t	Interest expenses of firm i at year t
	ΔDi,t /Mi,t-1	Di,t	Common dividend paid for firm i at year t
	Ci,t-1 /Mi,t-1	Ci,t-1 , Mi,t-1	Company's last year level of cash holdings and market value of equity
	NFi,t/Mi,t-1	NFi,t	Net financing value of firm I at year t

Table 2
Summary Statistics for the 2001-2013 Sample

	Mean	1st Quartile	Median	3rd Quartile	SD
ri,t-Ri,t	0.0376	-0.3209	-0.0553	0.3137	0.5251
ΔCt	0.0022	-0.0367	0.0000	0.0384	0.0752
ΔEt	0.0181	-0.0373	0.0047	0.0540	0.1227
ΔNAt	0.0032	-0.0670	0.0049	0.0888	0.1767
ΔRDt	-0.0001	0.0000	0.0000	0.0001	0.0048
ΔIt	-0.0001	-0.0020	0.0000	0.0018	0.0073
ΔDt	0.0002	0.0000	0.0000	0.0000	0.0006
Ct-1	0.1590	0.0301	0.0971	0.2393	0.1611
Lt	0.1980	0.0011	0.1007	0.3049	0.2431
NFt	0.0441	-0.0182	0.0015	0.0776	0.1101

Table 3

Regression Results for the Whole Sample

Variables	I	II	III
ΔCt	1.621***	2.834***	2.833***
	(0.025)	(0.036)	(0.036)
ΔEt	0.155***	0.156***	0.156***
	(0.007)	(0.007)	(0.007)
ΔNAt	0.174***	0.194***	0.193***
	(0.008)	(0.008)	(0.008)
ΔRDt	0.228*	0.164	0.171
	(0.134)	(0.132)	(0.132)
ΔIt	-1.455***	-1.401***	-1.412***
	(0.086)	(0.084)	(0.084)
ΔDt	0.184	0.373	0.324
	(0.379)	(0.374)	(0.374)
Ct-1	0.988***	0.968***	0.966***
	(0.015)	(0.015)	(0.015)
Lt	-0.833***	-0.808***	-0.809***
	(0.020)	(0.020)	(0.020)
NFt	1.212***	1.068***	1.068***
	(0.017)	(0.017)	(0.017)
Ct-1*ΔCt		-0.685***	-0.685***
		(0.028)	(0.028)
Lt*ΔCt		-1.846***	-1.855***
		(0.067)	(0.067)
Re(t)			0.008***
			(0.003)
Re(t)*ΔCt			0.016***
			(0.004)
Constant	0.100***	0.087***	0.087***
	(0.007)	(0.007)	(0.007)
Observations	70,283	70,283	70,283
R-squared	0.255	0.277	0.277

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 4
Regression for Constrained and Unconstrained Groups

	Size		Payout Ratio		SA Index	
VARIABLES	C	U	C	U	C	U
ΔCt	2.855***	2.601***	2.861***	2.069***	2.862***	2.032***
	(0.134)	(0.230)	(0.094)	(0.258)	(0.120)	(0.165)
Ct-1	0.824***	0.996***	0.989***	0.570***	0.930***	0.846***
	(0.063)	(0.070)	(0.038)	(0.078)	(0.057)	(0.055)
Δet	-0.018	0.438***	0.134***	0.565***	0.002	0.428***
	(0.027)	(0.052)	(0.020)	(0.113)	(0.025)	(0.046)
ΔNAt	0.309***	0.153***	0.189***	0.380***	0.328***	0.096**
	(0.037)	(0.043)	(0.023)	(0.071)	(0.033)	(0.038)
ΔRDt	0.117	-1.940	0.258	-0.309	0.062	-0.572
	(0.322)	(1.364)	(0.262)	(1.435)	(0.303)	(0.966)
Δit	-0.429	-1.759***	-1.277***	-1.704*	-0.744***	-2.194***
	(0.295)	(0.676)	(0.238)	(0.991)	(0.285)	(0.555)
ΔDt	2.616**	0.947	-0.762	2.112***	1.656*	0.697
	(1.146)	(0.578)	(0.747)	(0.331)	(0.972)	(0.472)
Lt	-0.947***	-0.741***	-0.880***	-0.467***	-0.914***	-0.607***
	(0.052)	(0.046)	(0.031)	(0.033)	(0.048)	(0.037)
NFt	1.449***	0.375***	1.129***	0.164	1.415***	0.417***
	(0.068)	(0.087)	(0.048)	(0.102)	(0.063)	(0.082)
Ct-1*ΔCt	-1.025***	-0.440**	-0.701***	-0.475	-0.948***	-0.358**
	(0.125)	(0.189)	(0.086)	(0.357)	(0.113)	(0.167)
Lt*ΔCt	-1.246***	-2.109***	-1.844***	-0.876	-1.413***	-1.360***
	(0.242)	(0.446)	(0.164)	(0.533)	(0.224)	(0.349)
Constant	0.216***	0.062***	0.121***	0.002	0.152***	0.041***
	(0.019)	(0.011)	(0.011)	(0.012)	(0.016)	(0.010)
Observations	21,088	21,090	46,110	21,013	25,501	27,405
R-squared	0.278	0.336	0.282	0.226	0.311	0.275

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5

Regression with Alternative Definitions of the Expected Change in Cash Holdings

Independent Variables	Porf.Ave	ACW(1)	ACW(2)
ΔCt	2.697***	2.670***	2.578***
	(0.086)	(0.086)	(0.090)
ΔEt	0.163***	0.160***	0.171***
	(0.020)	(0.020)	(0.020)
ΔNAt	0.191***	0.188***	0.185***
	(0.021)	(0.021)	(0.021)
ΔRDt	0.204	0.181	0.078
	(0.256)	(0.255)	(0.257)
ΔIt	-1.427***	-1.419***	-1.515***
	(0.232)	(0.232)	(0.232)
ΔDt	0.184	0.186	-0.056
	(0.343)	(0.342)	(0.353)
Ct-1	0.927***	0.948***	0.931***
	(0.034)	(0.034)	(0.034)
Lt	-0.851***	-0.852***	-0.871***
	(0.025)	(0.025)	(0.025)
NFt	1.111***	1.122***	1.237***
	(0.043)	(0.043)	(0.042)
Ct-1*ΔCt	-0.661***	-0.635***	-0.649***
	(0.084)	(0.083)	(0.085)
Lt*ΔCt	-1.776***	-1.765***	-1.615***
	(0.154)	(0.154)	(0.159)
Constant	0.128***	0.122***	0.120***
	(0.008)	(0.008)	(0.008)
Observations			
R-squared	70,283	70,283	70,283
	0.270	0.269	0.257

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1