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EARNINGS OVERSEAS AND CASH HOLDINGS

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Abstract

I investigate the impact of foreign pre-tax income on the total amount of cash held by companies and on the amount of cash that is held in companies' foreign subsidiaries. I also investigate the impact of the existence and amount of cash held on companies' foreign subsidiaries in the composition of cash holdings in terms of risk and liquidity. Using a sample of 100 largest U.S. non-financial and non-utilities companies I find that companies with higher earnings overseas present higher cash reserves and invest a higher fraction of their cash in risky assets. My evidence suggests that companies have a different optimization strategy for cash overseas, in which precautionary motives are not the main driver for holding cash.

Keywords: Cash, Taxation, Liquidity, Risk

1. Introduction

The amount of cash holdings held by U.S. publicly traded companies has been increasing during the last decades and currently accounts for more than 20% of their assets (Foley et al. (2007) and Bates et al. (2009)). Academic research work has shown that the decision of a company's amount of cash holdings is based on the tradeoff between the costs and benefits that holding this cash brings. For instances, the choice of cash holdings amount are normally assumed to be related to precautionary savings motive (Keynes (1936), Baumol (1956), Miller and Orr (1968), Kim et al. (1998) and Almeida et al. (2013)) since cash holdings enable companies to secure financing in case the company does not have enough funds to comply with its obligations and/or invest in profitable projects as a result of external finance frictions. Empirically, academics have had significant achievement explaining cash holdings through studying the variation in company attributes linked to precautionary demand. Some examples are growth opportunities, information asymmetry, and cash flow volatility (e.g., Opler et al. (1999) and Harford (1999)).

On the other hand, large amounts of cash reserves can bring costs, for example, large amount of holdings, mainly in poorly governed companies, can drive managers to invest in self-interesting and value destroying projects (e.g., Jensen (1986), Harford (1999), Harford, et al. (2008), and Cunha (2013)).

Most of the studies mentioned above had as an assumption that cash holdings are kept in cash, or close to risk-free, highly liquid near-cash securities, since those cash holdings were considered to be hold for precautionary motives. With the implementation of the 2009 new accounting rule SEFAS nº157 it was possible to see that the type of securities hold by U.S. companies are much broader and are not

necessarily liquid and/or close to risk-free (e.g., Brown (2014), and Duchin et al. (2014)). With SEFAS nº 157, which oblige companies to report the fair value and composition of their financial assets, is now possible to study the variation in the types of securities that comprise cash holdings and the factors that explain this variation. This is important, because different types of financial instruments carry different levels of risk and liquidity. Having financial instruments that are risky and illiquid shows that there may be other reasons to explain the variation in the amount of cash holdings between companies.

One possible explanation for firms to be holding their cash in risky assets is that this cash might be "trapped" overseas. The United States has one of the highest corporate income tax rate with a 35% statutory federal tax rate. Previous evidence has shown that one significant reason for the increase in corporate liquidity in U.S companies in the past years is the differential between the tax jurisdictions of U.S. foreign subsidiaries and the U.S. (Foley, et al. (2007)). The fact that the tax liability just arises when foreign earnings are repatriated instead of arising in the year in which they were reported creates an incentive to postpone the repatriation of those earnings in order to postpone the tax payments. By not repatriating those earnings, the amounts of cash held by these foreign subsidiaries increase (in case they were not needed to fund investments and/or operations in the foreign subsidiaries), and consequentially, the amount of cash held by the company as a whole also increases.

To demonstrate this lets see a simplified example. Assume Apple had 1.000.000 US$ profit before income taxes in Portugal in 2014. The corporate income tax faced by Apple in Portugal is currently 23% and in the United States is 35%. If those earnings were repatriated in the current year – 2014 – Apple would deliver to the Portuguese tax

jurisdictions 230.000 US$, and to the U.S. tax jurisdictions 120.000 US$ (35% - 23% multiplied by the Portuguese profit before income taxes). If those earnings were not repatriated to the U.S, the company could postpone the payment of 120.000 US$ and invest them in financial instruments (e.g. U.S. Treasuries, Corporate Bonds, Equities, etc...) that provide return. This return can be seen as "free money" that a company receives by postponing the repatriation. For this reason it is expected a positive relation between profit before income taxes from foreign operations and cash held at foreign subsidiaries, and a positive relation between profit before income taxes from foreign operation and the total amount of cash holdings.

Since the cash that is held by foreign subsidiaries when repatriated needs to pay taxes, the foreign cash reserves are available for general corporate purposes only at a discount to its face value. This leads to two potential reasons for companies to invest in illiquid and/or risky securities (Duchin et al. (2014). The first argument is that if these holdings are currently illiquid (cannot be used without a discount), then the opportunity cost (potential damages when the company needs the cash and do not have it) of investing cash holdings in illiquid or risky securities is small. The second possible argument is that if the company cannot (at no cost) distribute foreign cash holdings to stockholders, the company should invest reserves as they would wish to invest it. By investing in different type of securities higher yields can be achieved with lower risk (through diversification). Therefore, cash trapped overseas is not subject to the same optimization problem as cash held in the U.S. Accordingly, I expect a positive relation between cash held at foreign subsidiaries and the riskiness present on cash holdings, and also a positive relation between profit before income taxes from foreign operation and the riskiness present on cash holdings.

In my sample, I found a significant positive relation between profit before income taxes from foreign operation and the total amount of cash holdings. I also found a significant positive relation between cash held at foreign subsidiaries and the riskiness present on cash holdings, and a significant positive relation between profit before income taxes from foreign operation and the riskiness present on cash holdings. My results are consistent with the theory that companies with higher earnings overseas present higher cash reserves and invest a higher fraction of their cash in risky assets suggesting that companies have a different optimization strategy for cash overseas, in which precautionary motives are not the main driver for holding cash.

The remainder of this paper is organized as follows. Section 2 provides a literature review. Section 3 describes the collection, classification and summary statistics of the data that was used. Section 4 discusses my findings. Finally, Section 6 provides a conclusion.

2. Literature Review

Precautionary savings motive to hold cash means that companies hold cash with the aim of safeguarding financing when the company may not have enough funds to invest and/or comply with its obligations as a result of external finance frictions. Preceding academic research has been using this reasoning to properly understand corporate cash policy (Keynes (1936), Baumol (1952), Miller and Orr (1966), Kim et al. (1998) and Almeida et al. (2013)). Actually, this justification is used, not just by academics, but also by practitioners. Precautionary savings motive is the most common justification for holding cash given by managers (Lins et al. (2010) and Campello et al. (2011)). Empirically, company characteristics related to precautionary demand, such as growth opportunities, cash flow volatility, and information asymmetry, have been

having significant success explaining cash holdings (e.g., Opler et al. (1999) and Harford (1999)). Recently, precautionary savings motive has been proven to be important to explain the rise in average cash holdings (e.g., Bates et al. (2009) and Duchin (2010)), and the precautionary savings were proven to be important to mitigate the impact of the 2008 financial crisis (e.g., Campello et al. (2010) and Duchin et al. (2010)).

An important supposition used by researchers in these studies was that cash holdings were invested in cash or highly liquid, risk-free near-cash securities. Otherwise they would not properly form precautionary savings. Recent studies however, discovered that this is not exactly what is happening. Duchin et al. (2014) found that the types of securities that constitute companies' cash holdings vary widely and contain foreign government debt, foreign and domestic corporate debt, mortgage and asset backed securities, equity investments, and several other assets. These financial assets are undoubtedly exposed to liquidity and covariance risk and are, for that reason, not risk-free, cash or near-cash securities. They discovered that a substantial part of cash holdings is held in these types of risky and potentially illiquid securities. The average company in their sample held 26.8% of corporate cash holdings in risky securities. On a value-weighted basis, this average was equal to 48.7%. Generally, relative to its total book (market) value, the average company held 5.6% (4.7%) of its value in potentially illiquid and risky securities.

If the only reason to hold cash holdings was for precaution, it could be said that managers and CFOs were doing a poor job. It would not make sense to invest in securities that positively co-vary with the company's cash flows and become illiquid in

crises if those securities were holding in the first place for precaution. Hence, other reasons may exist in choosing the cash holdings' amount and riskiness.

One possible hypothesis is that this could be merely an indication of the straightforward agency problem between stockholders and managers. This hypothesis is consistent with Jensen's (1986) argument that large free cash flows (more cash than profitable investment opportunities) lead managers to an inefficient behavior such as wasting resources in bad projects if managers have private benefits of control. Harford (1999), Harford, et al. (2008) Cunha (2013) provide empirical support for this claim.

In this hypothesis, the agency problem may appear because treasury employees choose to invest in a more broad type of securities, to make their work more exciting and/or to develop human capital that can be valuable somewhere else in the asset management sector (Holmstrom (1999)).

Other hypothesis, the one that is being studied, is related with U.S. taxation system. Prior studies have shown that a significant part of the increase in U.S companies' cash holdings in the last couple decades are caused by the tax differential between the tax jurisdictions of U.S. foreign affiliates and the U.S. (Foley, et al. (2007)). As Faulkender and Petersen (2012) explain, taxes are the same whether they are kept in foreign subsidiaries or repatriated immediately to U.S. Nevertheless, since the US tax liability emerges not when earnings are earned but after they are repatriated, companies obtain a significant benefit by leaving the earnings in the foreign subsidiary. Foley, et al. (2007) found that companies that face higher repatriation tax burdens hold higher amounts of cash and hold this cash in non-U.S subsidiaries.

The fact that foreign reserves in order to be repatriated, and thus be used for the general corporate purposes, need to pay taxes creates a liquidity friction that promotes

the investment in non-risky and illiquid securities. Firstly, if holdings are already illiquid (can be converted to available cash only at discount to its value), then the opportunity cost - potential losses when the company needs the funds - of investing them in illiquid or risky financial assets is small (Duchin et al. (2014)). Additionally, from the company's viewpoint, it would be ideal to invest in illiquid securities and grab an illiquidity premium since the holdings are previously illiquid. A second possible argument is that if cash holdings cannot, at no cost, be given to stockholders, the company should invest them as investors would wish to invest them (Duchin et al. (2014)). By investing in different type of securities higher yields can be achieved with lower risk (through diversification) benefiting investors.

3. Data

3.1. The composition of cash holdings

The majority of previous studies on corporate cash holdings define a company's total cash holdings as the sum of its cash, and cash equivalents (Compustat variable "CH") and its short-term investments/marketable securities (Compustat variable "IVST"), which represent the Compustat variable "CHE". The problem with using only this variable to define the total amount of cash holdings is that companies may report additional security holdings elsewhere in the balance sheet, for example in long-term investments/marketable securities. One illustration of this problem appears in Apple. For example, in 2013, the company stated that had Cash and Equivalents totaling 14,259 million US$, Short-term Marketable Securities totaling 26,287 million US$, and long-term marketable securities totaling 106.215 million US$. In the long-term marketable securities were present risky securities such as Mortgage- and Asset-backed securities. By assuming the Compustat variable "CHE" as the total amount of cash

holdings, I was undervaluing the true value of the total amount of cash holding, and would also being underestimating the risk present on it.

The Compustat variable "IVAO" (Investments and Advances – Other) includes these long-term investments/marketable securities, but it can also include other items that are not cash holdings such as long-term receivables (is the case of for example Automatic Data Processing), investments in non-publicly traded companies held for strategic reasons (is the case of for example Salesforce.Com Inc), between others. Since my goal is to measure the company's amount of cash holdings invested in risky and non-risky securities I cannot rely on Compustat data and must hand collect this information from the footnotes that provide a detailed breakdown on the company's investment securities. For that reason, the total amount of cash holdings is equal to the sum of the Compustat variable "CHE" and my own Investments and Advances variable. This variable represents the Compustat variable "IVAO" less all the items that are not considered cash holdings: Equity/Cost method Investments (in which the company has significant influence and/or has for strategic reasons), long-term receivables, long-term financial leases, etc..

3.2. Data collection and asset classification methodology

In order to accomplish this work I hand collected data related to which types of financial instruments and amounts that constitutes cash holdings for each company for each year. Primarily driven by the implementation of SFAS 157, most companies report in their annual report a foot note labeled "fair value measurements/investments/estimates". This footnote typically includes the value of the company's financial holdings broken by asset class which enabled me to collect some of

the data that I needed. In some cases this information was present in footnotes such as Investments, Marketable securities, etc. Finally, some missing information was found in the middle of several parts of the report such as Liquidity and Capital Resources, Accounting policies, etc..

The cash holdings were broke down between: Money Market Mutual Funds, Mutual Funds, US Treasury, US Agency, Non-US Agency, Non-US Treasury, Certificate/Time deposits, Commercial Paper, Corporate Debt Securities, Corporate Equity Securities, Municipal Securities, Auction Rate securities, Mortgage- and asset-backed securities, Other non-specified, Other Risky, Other Non-Risky, Cash, Cash and equivalents not allocated. The amounts allocated to "Other non-specified" were the amounts that were not Cash and equivalents, and the company did not specified in which type of securities the amount was invested (e.g. "other investments"). The amounts allocated to "Other risky" were amounts that in the report was stated in which types of securities were invested, and all the type of securities were considered risky but it was not provided the amount for each type of security. Also, other security types different than the mentioned above that were risky were allocated to this variable (e.g. REITS). The same reasoning was applied to "Other Non-Risky". Cash and equivalents not allocated were the amount of the Cash and equivalents ("CH") that were not broken down into security types.

To define the total amount of Risky and Non-Risky cash holdings I follow Duchin et al. (2014). "Money Market Mutual Funds", "US Treasury", "Certificate/Time Deposits", "Commercial Paper", "Other Non-Risky", "Cash", "Cash and equivalents not allocated" were considered non-risky. The other types of securities were considered risky.

The amount of cash held by foreign subsidiaries was also hand collected. Normally this information was present in the annual report footnote "Liquidity and Capital Resources" or "Financial Condition". Sometimes it appeared in the "Income Taxes" footnote. It's important to say that sometimes the companies do not provide this information, but they state if they have or not cash held at foreign subsidiaries. For that reason, it was created a dummy variable that in case the company holds foreign cash it is equal to 1, otherwise it is equal to 0.

I also needed the pre-tax income from foreign operations that was taken from the Compustat database. Similarly, other control variables were taken from the Compustat database.

3.3. Sample Selection and Descriptive Statistics

My sample includes the 100 largest U.S. companies in 2013 that are not financial or utility companies. The sample period is between 2008 and 2013. 2008 is the year before SFAS 157 became effective and is the year that the required data to perform the analysis starts to be reported. 2013 is the most recent year for which complete annual reports data exists. Since some companies just had their IPO after 2008, the sample period of these companies can be different. In total there were 582 company-year observations.

In the studied sample, 78% of the companies have risky and potential illiquid securities constituting their cash holdings and 72% have cash held at foreign subsidiaries. Table 1 reports summary statistics of the composition of cash holdings during the sample period.

Panel A of Table 1 shows that on average cash holdings account for 17.52% of an average company's assets. It also shows that, on average, 16.93% of cash holdings are invested in risky and potential illiquid securities. The amount invested in these securities account 5.24% of an average company's assets.

When considering just companies that have cash held at foreign subsidiaries, these percentages are appear to be higher than when considering full sample. Looking to Panel C of Table 1 it is possible to see that, on average, cash holdings account for 21.43% of these companies' assets. Furthermore, on average 23.52% of these holdings are invested in risky and potential illiquid securities. The amount invested in these securities account, on average, 7.27% of company's assets.

These results are consistent with what was expected. It's possible to see that, on average, companies that held cash at foreign subsidiaries held higher amounts of cash holdings (controlled for total Assets). Additionally, on average the riskiness present on their cash holdings is also higher (controlled for total assets and for total cash holdings).

4. Tests Results

In this section I investigate if the sample shows a significant positive relation between profit before income taxes from foreign operations (normalized by assets) and cash held at foreign subsidiaries (normalized both by assets and total cash), and a significant positive relation between profit before income taxes from foreign operations (normalized by assets) and the total amount of cash holdings (normalized by assets).

In addition, it is also tested if it is present a significant positive relation between cash held at foreign subsidiaries (normalized both by assets and total cash holdings) and the amount of cash holdings that is invested in risky and potential illiquid securities (normalized both by assets and total cash holdings), and also a significant positive

relation between profit before income taxes from foreign operations (normalized by assets) and the riskiness present on it (normalized both by assets and total cash).

To accomplish these investigations I have employed OLS regressions using robust standard errors and include also as independent variables control variables widely used in precautionary savings models. These variables are: Size, Leverage, Market-to-book Ratio, Sales Growth, Capex, Price-to-Earnings Rato, Cash Flow, Return on Assets and Cash growth. In Table 2 is described how these variables were constructed. Additionally, all models were regressed with and without controlling for fixed year effects.

4.1. Effect of Foreign Profit in Cash Held at Foreign Subsidiaries and in Total Cash

In Table 3 columns 1 to 4, I regress cash held at foreign subsidiaries (normalized by total assets - columns 1 and 2 - and normalized by total cash – columns 3 and 4) on pre-tax foreign profit (normalized by total assets). Both regressions show a significant positive relation between the dependent variable and the independent variable controlling and not controlling for fixed year effects. The same results appear when regressing total cash (normalized by total assets) on foreign profit (normalized by total assets) as columns 5 and 6 show. These results are economically meaningful. Specifically, when controlling for fixed year effects, the increase in one percentage point in Foreign Profit/Assets will lead to an increase of 0.65 percentage points in Foreign Cash/Assets, to an increase of 1.885 percentage points in Foreign Cash/Total Cash, and to an increase of 0.373 percentage points in Total Cash/Assets.

These results suggest that when foreign pre-tax profit increases, cash held at foreign subsidiaries increase - due to the non-repatriation of earnings - and, as consequence, company's total amount of cash holdings also increase.

4.2. Effect of Foreign Cash in Cash Holdings Risk

In Table 4 Panel A, I regress the amount of cash held in risky securities (normalized by total assets - columns 1 and 2 - and normalized by total cash – columns 3 and 4) on a dummy variable that is equal to 0 when the company does not held cash at foreign subsidiaries, and equals to 1 otherwise. Both regressions show a significant positive relation between the dependent variable and the independent variable controlling and not controlling for fixed year effects. The same results appear when using the amount of cash held at foreign subsidiaries (normalized by total assets – Table 3 Panel B) as the independent variable. Similarly, when regressing the amount of Cash held in risky securities (normalized by total cash – Panel C columns 3 and 4) on the amount of cash held at foreign subsidiaries (normalized by total cash) the relation also appears to be positive and significant controlling and not controlling for fixed year effects. These results are economically meaningful. Specifically, when controlling for fixed year effects, a company that has cash "trapped" abroad has 3.4 percentages points more Risky Cash/Assets and 8.4 percentages points more Risky Cash/Cash. Additionally, the increase in one percentage point in Foreign Cash/Assets will lead to an increase of 0.606 percentage points in Risky Cash/Assets, and to an increase of 1.128 percentage points in Risky Cash/Total Cash. Finally, the increase in one percentage point in Foreign Cash/Total Cash will lead to an increase of 0.034 percentage points in Risky Cash/Assets, and to an increase of 0.172 percentage points in Risky Cash/Total Cash.

These results suggest that when cash holdings held in foreign subsidiaries increase, the company tends to invest more in securities that comprise more risk and are potentially more illiquid. Those results are consistent with the theory that the company

has incentives to invest in these types of securities due to a liquidity friction that came from the fact that foreign reserves in order to be repatriated, and thus be used for the general corporate purposes, need to pay taxes.

4.3. Effect of Foreign Profit in Cash Holdings Risk

In Table 5, I regress the amount of cash held in risky securities (normalized by total assets - columns 1 and 2 - and normalized by total cash – columns 3 and 4) on pre-tax foreign profit (normalized by total assets). Both regressions show a significant positive relation between the dependent variable and the independent variable when not controlling for fixed year effects. The same results appear if controlling for fixed year effects only when the dependent variable is normalized by total assets. These results are economically meaningful. Specifically, when controlling for fixed year effects, the increase in one percentage point in Foreign Profit/Assets will lead to an increase of 0.215 percentage points in Risky Cash/Assets, and to an increase of 0.365 percentage points in Risky Cash/Cash.

These results, putting together with the results of Table 3 and 4, suggest that when a company obtain profits in its foreign operations, by leaving part of these earnings in foreign subsidiary' cash holding, it will increase cash held at foreign subsidiaries. As consequence the company tends to invest more in securities that comprise more risk and are potentially more illiquid.

5. Conclusions

Although the most common assumed reason for holding cash is for precaution, the reality is that companies are investing their cash in risky and potentially illiquid securities. This is demonstrated by my estimates: 16.93% of an average company's cash holdings are invested in risky and potential illiquid securities. Accordingly, other reasons may exits to hold cash.

One possible reason, the one that was studied, is the fact that the tax liability just arises when foreign earnings are repatriated instead of arising in the year in which they were reported. This difference in tax treatment creates an incentive to postpone the repatriation of those earnings in order to postpone the tax payments. By not repatriating those earnings, the amounts of cash held by these foreign subsidiaries and by the company as a whole increase. My results support this reasoning since I found that both cash held at foreign subsidiaries and total cash increase with pre-tax foreign income.

I also found that the amount of cash held in risky securities increases with both cash held at foreign subsidiaries and pre-tax foreign income. Those results are consistent with the theory that it might be optimal for the company to invest in these types of securities since the cash that is held by foreign subsidiaries is only available for general corporate purposes at a discount. It might be optimal because the opportunity cost of investing reserves in illiquid or risky securities is smaller since foreign cash is already illiquid. Additionally if the company cannot distribute foreign cash holdings to stockholders, it should invest reserves as they would wish to invest it. By investing in different types of securities, higher yields can be achieved with lower risk (through diversification), benefiting investors. Therefore, cash trapped overseas is not subject to the same optimization problem as cash held in the U.S.

In summary I found that companies with higher earnings overseas present higher cash reserves and invest a higher fraction of their cash in risky assets suggesting that companies have a different optimization strategy for cash overseas, in which precautionary motives are not the main driver for holding cash.

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Table 1 – Descriptive Statistics

Panel A: Full Sample

	Total Cash Holdings (M$)	Total Risky Assets (M$)	Total Non-Risky Assets (M$)	Cash Holdings over Total Assets	Risky Assets over Cash Holdings	Risky Assets over Total Assets
Mean	8480	2796	5683	17,52%	16,93%	5,24%
St Dev	13693	8232	7368	17,37%	21,39%	9,93%
Max	146761	103302	68461	79,00%	86,20%	52,41%
Min	20	0	20	0,06%	0,00%	0,00%
Median	3676	241	3193	10,64%	4,99%	0,45%
1st Quartile	1878	0	1621	5,35%	0,00%	0,00%
3rd Quartile	8972	1469	7018	24,41%	30,30%	5,19%

Panel B: Companies with Risky Assets

	Total Cash Holdings (M$)	Total Risky Assets (M$)	Total Non-Risky Assets (M$)	% Cash Holdings (over Total Assets)	% Risky Assets (over Cash Holdings)	% Risky Assets (over Total Assets)
Mean	10912	3883	7028	21,43%	23,52%	7,27%
St Dev	15433	9485	8231	18,56%	21,92%	11,06%
Max	146761	103302	68461	79,00%	86,20%	52,41%
Min	226	3	216	0,65%	0,23%	0,01%
Median	5245	642	4209	15,47%	16,41%	1,67%
1st Quartile	2801	163	2131	7,18%	3,88%	0,35%
3rd Quartile	12013	2439	8953	30,50%	39,01%	10,62%

Panel C: Companies with Foreign Cash

	Total Cash Holdings (M$)	Total Risky Assets (M$)	Total Non-Risky Assets (M$)	% Cash Holdings (over Total Assets)	% Risky Assets (over Cash Holdings	% Risky Assets (over Total Assets)
Mean	9539	3348	6204	19,69%	18,97%	6,14%
St Dev	15014	9157	7932	17,24%	21,58%	10,31%
Max	146761	103302	68461	79,00%	86,20%	52,41%
Min	32	0	32	0,25%	0,00%	0,00%
Median	4008	359	3452	13,60%	10,50%	0,89%
1st Quartile	2088	22	1840	6,86%	0,91%	0,09%
3rd Quartile	9974	1604	7448	28,36%	32,12%	8,34%

Table 2 – Variables Construction Details

Variable	Contruction using Compustat Variables
Capex	capx / ppent
Cash Flow	(ib + dp) / at
Cash growth	(Total $Cash_t$ – Total $Cash_{t-1}$) / Total $Cash_{t-1}$
Foreign Profit	pifo / at
Leverage	(dlc – dltt) / (prcc f * csho)
Market-to-book Ratio	(prcc f * csho) / (at – lt - mib
Price-to-Earnings Ratio	prcc f / epspi
Return on Assets	ib / at
Sales Growth	($sale_t$ – $sale_{t-1}$) / $sale_{t-1}$
Size	log (at)

Table 3 – Effect of Foreign Pre-tax income in Cash Held at Foreign Subsidiaries and in Total Cash

Table 3 presents the results from OLS regressions where the dependent variables are cash held at foreign subsidiaries divided by total assets (columns 1-2), cash held at foreign subsidiaries divided by total cash (columns 3-4), and total cash divided by total assets is (columns 5-6), and the independent variables are profit before income taxes from their foreign operations divided by total assets and control variables. The sample comprises the 100 largest U.S. companies in 2013 that are not financial or utility companies from 2008-2013 with available information in their annual reports (10-K) on the fair value of their financial assets holdings, as well as available data on Compustat dataset for profit before income taxes from their foreign operations and for control variables. All control variable construction details are given in Table 2. Some regressions include year fixed effects which are not shown. The standard errors (in brackets) are heteroskedasticity consistent. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

Dependent Variables	Foreign Cash/Assets		Foreign Cash/Total Cash		Cash/Assets	
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Profit	0.673***	0.650**	2.040***	1.885***	0.353**	0.373**
	(0.243)	(0.258)	(0.677)	(0.687)	(0.160)	(0.164)
Size	0.124***	0.126***	0.180***	0.191***	-0.0227	-0.0218
	(0.024)	(0.026)	(0.051)	(0.054)	(0.020)	(0.019)
Leverage	-0.097	-0.088	0.234	0.254	-0.001	-0.001
	(0.102)	(0.102)	(0.347)	(0.351)	(0.002)	(0.002)
Market-to-book Ratio	0.000	0.000	-0.001	-0.001	-0.001*	-0.001*
	(0.004)	(0.004)	(0.007)	(0.007)	(0.001)	(0.001)
Sales Growth	-0.031	-0.031	-0.048	-0.009	0.043	0.081*
	(0.063)	(0.074)	(0.143)	(0.158)	(0.039)	(0.048)
Capex	0.442***	0.448***	0.013	0.016	0.766***	0.747***
	(0.084)	(0.085)	(0.206)	(0.206)	(0.087)	(0.087)
Price-to-Earnings Ratio	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash Flow	-2.089***	-2.069***	0.604	0.532	-2.165***	-2.112***
	(0.531)	(0.551)	(1.197)	(1.233)	(0.332)	(0.327)
Return on Assets	2.331***	2.319***	-1.075	-0.833	2.382***	2.314***
	(0.610)	(0.630)	(1.320)	(1.353)	(0.348)	(0.348)
Cash growth	-0.003	-0.008	-0.044	-0.055	0.007	0.006
	(0.009)	(0.011)	(0.043)	(0.046)	(0.005)	(0.005)
Constant	-0.486***	-0.482***	-0.383	-0.386	0.183*	0.200**
	(0.123)	(0.130)	(0.267)	(0.283)	(0.101)	(0.098)
Control for Year Fixed Effects?	No	Yes	No	Yes	No	Yes
Observations	124	124	124	124	349	349
R-squared	0.559	0.562	0.266	0.277	0.414	0.422

Table 4 – Effect of Foreign Cash in Cash Holdings Risk

Panel A: Dependent variable – Dummy variable (1- Cash held in foreign subsidiaries, 0 – No cash held in foreign subsidiaries

Table 4 Panel A presents the results from OLS regressions where the dependent variables are the amount of cash invested in risky and potentially illiquid securities divided by total assets (columns 1-2), and the amount of cash invested in risky and potentially illiquid securities divided by total cash (columns 3-4), and the independent variables are a dummy variable that is equal to 0 when the company do not held cash at foreign subsidiaries and equal to 1 otherwise, and control variables. The sample comprises the 100 largest U.S. companies in 2013 that are not financial or utility companies from 2008-2013 with available information in their annual reports (10-K) on the fair value of their financial assets holdings, as well as available data on Compustat dataset for control variables. All control variable construction details are given in Table 2. Some regressions include year fixed effects which are not shown. The standard errors (in brackets) are heteroskedasticity consistent. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

	Risky Cash/Assets		Risky Cash/Cash	
	(1)	(2)	(3)	(4)
Foreign Cash (Dummy)	0.033***	0.034***	0.084***	0.084***
	(0.007)	(0.007)	(0.024)	(0.024)
Size	0.021*	0.024*	0.087***	0.097***
	(0.013)	(0.012)	(0.029)	(0.029)
Leverage	-0.003***	-0.003***	-0.005***	-0.006***
	(0.001)	(0.001)	(0.002)	(0.002)
Market-to-book Ratio	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Sales Growth	0.043*	0.076***	0.069	0.119*
	(0.023)	(0.028)	(0.055)	(0.064)
Capex	0.420***	0.408***	0.572***	0.571***
	(0.049)	(0.046)	(0.090)	(0.089)
Price-to-Earnings Ratio	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Flow	-1.011***	-0.982***	-1.309***	-1.344***
	(0.177)	(0.172)	(0.309)	(0.304)
Return on Assets	1.228***	1.202***	1.550***	1.605***
	(0.191)	(0.187)	(0.328)	(0.323)
Cash growth	-0.002	-0.003	-0.010**	-0.012***
	(0.003)	(0.002)	(0.005)	(0.004)
Constant	-0.130**	-0.128**	-0.382***	-0.393***
	(0.066)	(0.064)	(0.141)	(0.141)
Year Fixed Effects?	No	Yes	No	Yes
Observations	390	390	390	390
R-squared	0.365	0.379	0.198	0.209

Table 4 – Effect of Foreign Cash in Cash Holdings Risk – continued

Panel B: Dependent variable – Cash held at foreign subsidiaries controlled by total Assets

Table 4 Panel B presents the results from OLS regressions where the dependent variables are the amount of cash invested in risky and potentially illiquid securities divided by total assets (columns 1-2), and the amount of cash invested in risky and potentially illiquid securities divided by total cash (columns 3-4), and the independent variables are cash held at foreign subsidiaries divided by total assets, and control variables. The sample comprises the 100 largest U.S. companies in 2013 that are not financial or utility companies from 2008-2013 with available information in their annual reports (10-K) on the fair value of their financial assets holdings, as well as available data on Compustat dataset for for control variables. All control variable construction details are given in Table 2. Some regressions include year fixed effects which are not shown. The standard errors (in brackets) are heteroskedasticity consistent. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

	Risky Cash/Assets		Risky Cash/Cash	
	(1)	(2)	(3)	(4)
Foreign Cash	0.615***	0.606***	1.161***	1.128***
	(0.095)	(0.095)	(0.162)	(0.171)
Size	0.042*	0.043**	0.045	0.061
	(0.023)	(0.022)	(0.054)	(0.052)
Leverage	-0.165*	-0.150	-0.018	-0.017
	(0.093)	(0.092)	(0.146)	(0.149)
Market-to-book Ratio	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Sales Growth	0.099*	0.123**	0.111	0.112
	(0.054)	(0.061)	(0.123)	(0.141)
Capex	0.100	0.101	-0.053	-0.013
	(0.076)	(0.075)	(0.147)	(0.145)
Price-to-Earnings Rato	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Flow	-1.228**	-1.186*	-1.746*	-1.879*
	(0.610)	(0.602)	(0.887)	(0.965)
Return on Assets	1.102*	1.082*	1.373	1.580*
	(0.579)	(0.568)	(0.870)	(0.930)
Cash growth	0.002	-0.005	-0.016	-0.031*
	(0.006)	(0.007)	(0.012)	(0.016)
Constant	-0.143	-0.120	-0.030	-0.037
	(0.113)	(0.110)	(0.252)	(0.241)
Year Fixed Effects?	No	Yes	No	Yes
Observations	125	125	125	125
R-squared	0.682	0.690	0.507	0.529

Table 4 – Effect of Foreign Cash in Cash Holdings Risk – continued

Panel C: Dependent variable – Cash held at foreign subsidiaries controlled by total Cash

Table 4 Panel B presents the results from OLS regressions where the dependent variables are the amount of cash invested in risky and potentially illiquid securities divided by total assets (columns 1-2), and the amount of cash invested in risky and potentially illiquid securities divided by total cash (columns 3-4), and the independent variables are cash held at foreign subsidiaries divided by total cash, and control variables. The sample comprises the 100 largest U.S. companies in 2013 that are not financial or utility companies from 2008-2013 with available information in their annual reports (10-K) on the fair value of their financial assets holdings, as well as available data on Compustat dataset for for control variables. All control variable construction details are given in Table 2. Some regressions include year fixed effects which are not shown. The standard errors (in brackets) are heteroskedasticity consistent. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

	Risky Cash/Assets		Risky Cash/Cash	
	(1)	(2)	(3)	(4)
% Foreign Cash	0.042	0.034	0.201***	0.172**
	(0.036)	(0.036)	(0.070)	(0.070)
Size	0.114***	0.116***	0.157***	0.174***
	(0.025)	(0.023)	(0.056)	(0.055)
Leverage	-0.216*	-0.196*	-0.158	-0.141
	(0.111)	(0.109)	(0.190)	(0.190)
Market-to-book Ratio	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Sales Growth	0.084	0.104	0.086	0.079
	(0.067)	(0.078)	(0.139)	(0.165)
Capex	0.381***	0.386***	0.469***	0.508***
	(0.085)	(0.085)	(0.151)	(0.152)
Price-to-Earnings Ratio	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Flow	-2.514***	-2.442***	-4.265***	-4.282***
	(0.634)	(0.638)	(1.057)	(1.107)
Return on Assets	2.849***	2.796***	4.598***	4.684***
	(0.610)	(0.604)	(0.965)	(0.991)
Cash growth	0.003	-0.008	-0.010	-0.030
	(0.010)	(0.012)	(0.018)	(0.023)
Constant	-0.454***	-0.422***	-0.548**	-0.539**
	(0.123)	(0.121)	(0.267)	(0.264)
Year Fixed Effects?	No	Yes	No	Yes
Observations	125	125	125	125
R-squared	0.503	0.516	0.326	0.353

Table 5– Effect of Foreign Profit in Cash Holdings Risk

Table 5 presents the results from OLS regressions where the dependent variables are the amount of cash invested in risky and potentially illiquid securities divided by total assets (columns 1-2), and the amount of cash invested in risky and potentially illiquid securities divided by total cash (columns 3-4), and the independent variables are profit before income taxes from their foreign operations divided by total assets and control variables.. The sample comprises the 100 largest U.S. companies in 2013 that are not financial or utility companies from 2008-2013 with available information in their annual reports (10-K) on the fair value of their financial assets holdings, as well as available data on Compustat dataset for for control variables. All control variable construction details are given in Table 2. Some regressions include year fixed effects which are not shown. The standard errors (in brackets) are heteroskedasticity consistent. Significance levels are indicated as follows: * = 10%, ** = 5%, *** = 1%.

	Risky Cash/Assets		Risky Cash/Cash	
	(1)	(2)	(3)	(4)
Foreign Profit	0.213**	0.215**	0.403*	0.365
	(0.093)	(0.093)	(0.229)	(0.230)
Size	0.016	0.019	0.050*	0.059**
	(0.013)	(0.011)	(0.029)	(0.030)
Leverage	-0.002*	-0.002**	-0.004	-0.005*
	(0.001)	(0.001)	(0.003)	(0.003)
Market-to-book Ratio	-0.001**	-0.001**	-0.002*	-0.002*
	(0.000)	(0.000)	(0.001)	(0.001)
Sales Growth	0.040	0.073**	0.044	0.091
	(0.025)	(0.031)	(0.056)	(0.067)
Capex	0.428***	0.416***	0.600***	0.594***
	(0.052)	(0.049)	(0.091)	(0.092)
Price-to-Earnings Ratio	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cash Flow	-1.280***	-1.256***	-2.219***	-2.244***
	(0.193)	(0.186)	(0.335)	(0.328)
Return on Assets	1.425***	1.404***	2.431***	2.503***
	(0.218)	(0.214)	(0.366)	(0.362)
Cash growth	-0.003	-0.004	-0.015***	-0.016***
	(0.003)	(0.003)	(0.005)	(0.005)
Constant	-0.074	-0.068	-0.129	-0.140
	(0.069)	(0.067)	(0.141)	(0.143)
Year Fixed Effects?	No	Yes	No	Yes
Observations	349	349	349	349
R-squared	0.364	0.378	0.231	0.240