



Why Are Corporations Holding So Much Cash?

By Juan M. Sánchez and Emircan Yurdagul

U.S. corporations are holding record-high amounts of cash. Understanding this phenomenon, many argue, may help us tease out the reasons for the slow recovery from the Great Recession.

A close look at the balance sheets of publicly traded U.S. firms shows that their cash holdings have increased dramatically since the mid-1990s except for a slow-down around the financial crisis. The two explanations most frequently given for the growth in cash pertain to fiscal policy and structural factors.

Fiscal policy affects cash holdings in two ways, both of which involve taxes. First, public firms are seeing their profits rise elsewhere in the world; if these firms were to bring these profits from overseas operations back to the U.S., the profits would be relatively heavily taxed. Second, uncertainty about future taxes is on the rise.

Other explanations point to gradual changes in the nature of the operations of a firm. The leading hypothesis in this group relates the rise in cash holdings of U.S. corporations to the increasing predominance of research and development (R&D). Since R&D is an activity intrinsically connected with uncertainty, the association of R&D and cash holdings is a natural one. The rising importance of R&D in the overall

economy is a long-term phenomenon that is due to the rapid growth of information technology firms.

Aggregate Trends

All the results on cash holdings presented here are obtained using Compustat, a data set that contains balance-sheet information on publicly traded firms. The variable of interest for the purposes of this article is “cash and short-term investments,” which include all securities transferable to cash. Figure 1 displays the sum of cash holdings of all firms. In 2011, cash holdings amounted to nearly \$5 trillion, more than for any other year in the series, which starts in 1980. The increases in cash holdings grew steeper from 1995 to 2010, with an annual rate of growth of 10 percent (from \$1.22 trillion to \$4.97 trillion) compared with the corresponding growth of 7 percent from 1980 to 1995 (from \$453 billion to \$1.22 trillion). This suggests that at least some of the reasons for the record-high cash holdings must have started some 20 years ago—before the upturn in 1995.

Recent studies of this trend have found it useful to split firms into financial and non-financial corporations because these two types of firms likely hold cash for different reasons. Thus, to keep the analysis comparable with the studies discussed below, in the rest of this article the focus will be on publicly traded non-financial non-utility corporations.¹ This segment of the market held about \$1.6 trillion at the end of 2011, as shown in Figure 2. The overall trend is quite similar to that in Figure 1. However, the dynamics during the last 10 years were different. First, cash holdings increased very fast between 2002 and 2004, growing at an annual rate of 19 percent (from \$822 billion to \$1.17 trillion), then plateaued until the end of 2008. At that point, they rose significantly fast again, growing at an annual rate of 11 percent until 2011 (from \$1.18 trillion to \$1.62 trillion). This suggests that there may be two subperiods, one up to 2004 and one after 2008, for which the rise in cash holdings may be explained by different factors.

The trend in cash holdings described above is measured in dollars and could be

FIGURE 1

Aggregate Cash and Equivalents of U.S. Firms

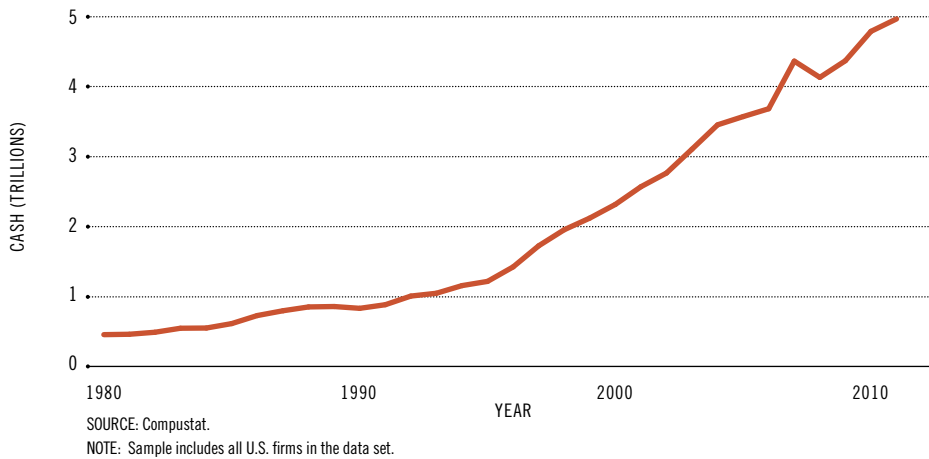


FIGURE 2

Aggregate Cash and Equivalents of Non-Financial Non-Utility U.S. Firms

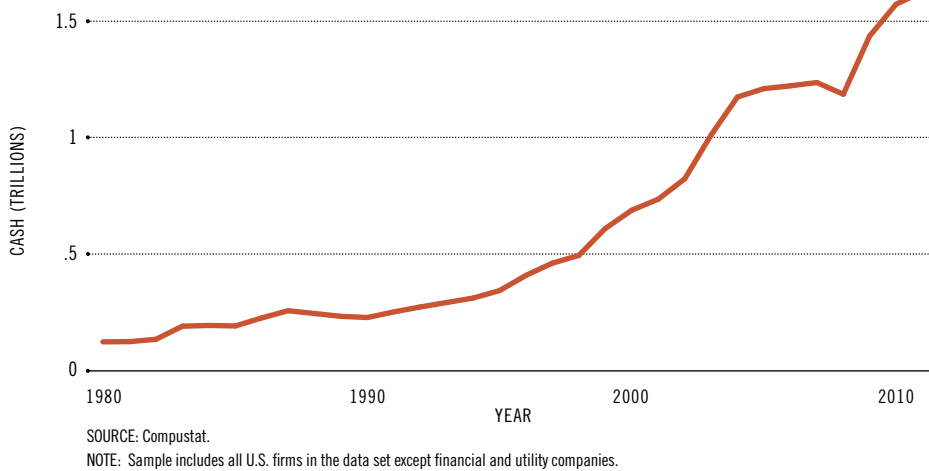
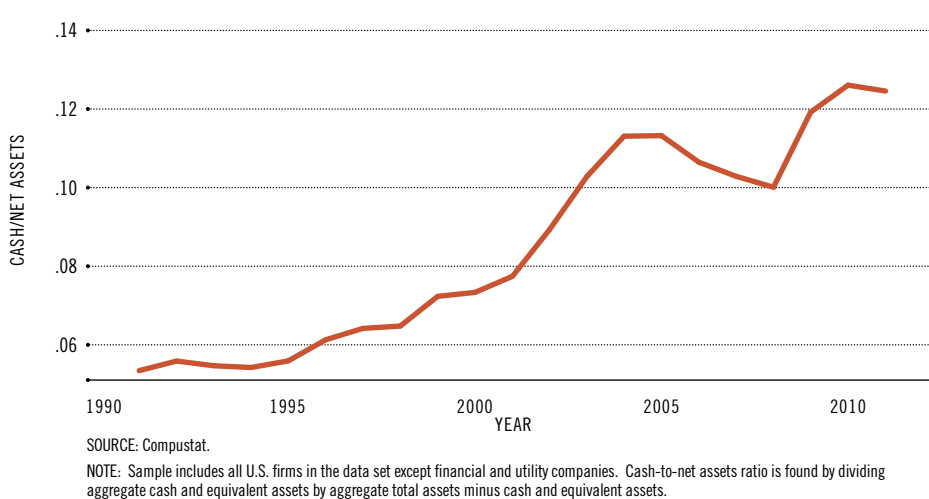


FIGURE 3

Ratio of Cash to Net Assets



explained by factors as simple as firms' growth, an increasing number of firms in the sample or inflation. To control for those factors, this analysis focuses on the ratio of cash holdings to total assets of these corporations. The point is to see if U.S. corporations are also holding a larger share of their assets in cash, in addition to piling up higher dollar amounts of cash. Figure 3 presents the evolution of the ratio. This ratio was consistently below 6 percent between 1990 and 1995; for the last couple of years on the figure, the ratio was about 12 percent. Here again, the rise can be divided into two clear periods. Between 1995 and 2004, the ratio increased by five percentage points; then, it stopped and the trend actually reverted until the end of 2008. The second period of the increase starts after the financial crisis and continues until the most recent data.

The data presented above suggest that to understand cash holdings of corporations today, one must consider two different questions. The first one is why firms were increasing their cash ratios from the early 1990s until 2004-2005. The second one is whether the rising trend that started (again) in 2008-2009 is connected to the aftermath of the financial crisis.

Proposed Explanations

There are two main reasons why firms find it beneficial to hold cash: precautionary motive and repatriation taxes.² The first motive is very simple: Firms hold cash and equivalent liquid assets because they provide the flexibility that firms need in their transactions. Two factors interact directly with this proposed explanation: uncertainty and credit constraints. Firms facing uncertainty about future transactions, either due to firm-specific or aggregate factors, may find it beneficial to pile up significant amounts of cash as a cushion. For example, a firm may want to hold cash to be able to act fast when an acquisition is possible. A firm may also hold cash and postpone investment until uncertainty about fiscal policies is resolved.

The need to hold cash for these situations would be alleviated if firms could obtain credit when funds become necessary. If firms could simply borrow at the

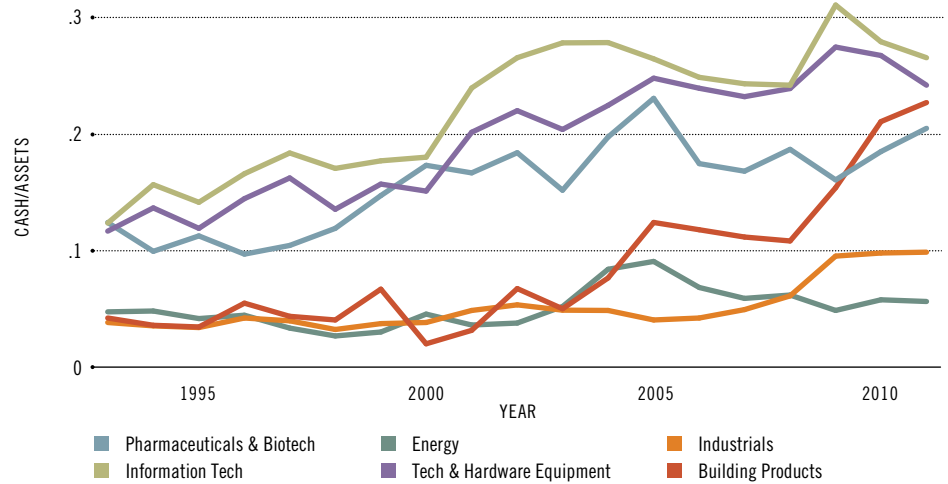
time they face the possibility of an acquisition, for example, they would not need to hold cash for that purpose. This implies that the precautionary motive is more important for firms that find obtaining credit problematic and face higher uncertainty. Therefore, this reason for holding cash is likely to be more important for small firms, which find access to credit harder, and for firms in sectors that spend significant resources in innovation (which naturally involves higher uncertainty).

Economists Thomas Bates, Kathleen Kahle and René Stulz showed in a 2009 article that the increase in the cash-to-assets ratio of firms was related tightly to precautionary motives. They constructed a measure of cash-flow uncertainty and showed that firms with higher uncertainty in their cash flows had higher cash-to-assets ratios. Then, they connected the precautionary motive with the recent rise in cash holdings by showing how uncertainty in the cash flows of firms has recently increased.

The second motive is present for multinational firms and is due to repatriation taxes. Many countries, including the U.S., tax their citizens based on their worldwide income. In particular, taxes due to the U.S. government from corporations operating abroad are determined by the difference between the taxes already paid abroad and the taxes that U.S. tax rates would imply. Importantly, such taxation only takes place when earnings are repatriated. Therefore, firms may have incentives to keep foreign earnings abroad. As a consequence, in times of limited foreign investment opportunities and high profitability, these funds are likely to be held abroad in the form of cash.

In a 2007 article, economists Fritz Foley, Jay Hartzell, Sheridan Titman and Garry Twite analyzed the role of foreign income and repatriation taxes. Through cross-firm comparisons, they found that firms that are subject to higher repatriation taxes hold significantly more cash. In addition, the economists studied how the affiliates of the same firm in different countries facing different repatriation costs followed distinct cash-holding patterns. In particular, they found that affiliates in countries with lower tax rates, which would face higher repatriation taxes, are more reluctant to bring back their foreign profits. For example, if a

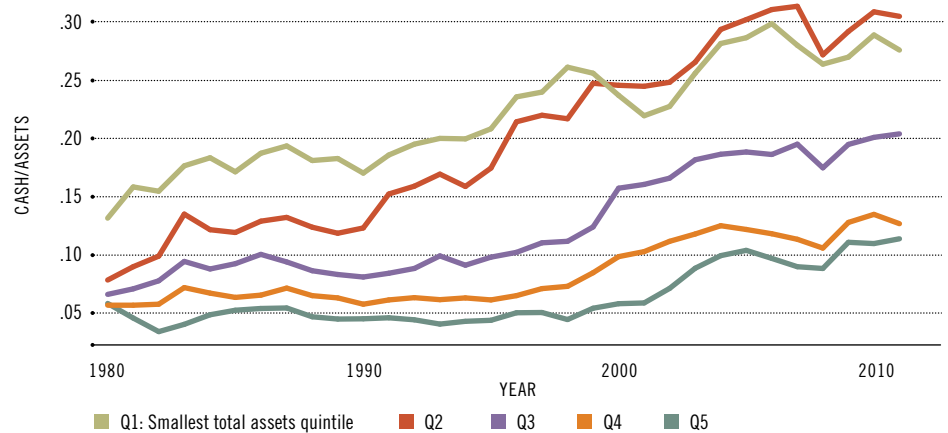
FIGURE 4
Cash Ratio by R&D Industries



SOURCE: Compustat.

NOTE: Each line corresponds to the subindex within the S&P 500 with the identifier given in the legend. Cash/assets ratio is found by dividing aggregate cash and equivalents by the aggregate total assets of the firms in a subindex.

FIGURE 5
Average Cash Ratio by Total Assets



SOURCE: Compustat.

NOTE: Sample includes all U.S. firms in the data set with positive total assets except financial and utility companies. Quintiles are found by sorting the firms into five equally populated groups according to the size of their total assets, and each line corresponds to the average cash/assets ratio within a quintile.

company has affiliates in both Sweden and Switzerland, and Switzerland has a lower tax rate than Sweden, then the affiliate in Switzerland would bring less cash back to the U.S. than would the affiliate of the same U.S.-based company in Sweden. Importantly, the estimations that these authors performed implied that a modest increase in repatriation taxes would lead to large increases in holdings of cash and equivalent assets.

However, this role of taxes is challenged in a recent working paper by economists Lee Pinkowitz, René Stulz and Rohan Williamson. They compared firms with

headquarters in different countries. After controlling for characteristics of the firms (sector, size, etc.), they showed that U.S. firms were holding more assets in the form of cash than were foreign firms. Then, they focused on the characteristics of other countries that may potentially lead to such differences. They concluded that differences in the way that countries tax foreign income do not alter the cash-holding behavior of the firms. In order to address the discussion on recently changing cash-holding patterns of the U.S. firms, they also assessed the systematic differences that firms exhibit in

their recent cash-holding behavior relative to earlier periods. They defined “abnormal cash holdings” as the difference between the cash holdings of firms predicted using their patterns in the late 1990s and their actual cash holdings in subsequent periods. They showed that abnormal cash holdings of U.S. firms are significantly larger than those of foreign firms. In parallel with the earlier discussion, their results also show that high R&D multinational firms in the sample hold the highest abnormal cash ratio.

Decomposition

The explanations reviewed above suggest that the behavior of firms in sectors more intensive in R&D is crucial to understanding cash holdings. In fact, in two sub-indexes within the S&P 500 corresponding to two R&D-intensive sectors, cash holdings increased at a high yearly rate between 1995 and 2011: by 15 percent for the pharmaceutical sector and by 11 percent for the information technology sector. In the former sector, some firms had an annual increase as high as 26 percent. Within the latter sector, the top firms had increases between 16 and 22 percent in cash holdings in the same interval.

Figure 4 shows the cash ratio for six sectors that are R&D-intensive. For most of these sectors, the increase in cash holdings can be noted even by looking at the ratio of cash to total assets. For instance, this ratio in the information technology sector rose from 0.14 in 1995 to 0.27 at the end of the sample.


Considering that small firms may find it harder to access credit markets, one would expect smaller firms to have higher cash-to-assets ratios. The results of decomposing the rise in cash holdings by groups of firms of different sizes, measured as their total assets, reconfirm the relevance of uncertainty in cash-holding decisions. This is displayed in Figure 5, where firms are split into size quintiles, five equally populated groups formed and sorted according to the size of assets.³ Notice that the smallest firms in terms of assets, those in the bottom quintiles of total assets (Q1 and Q2), have higher cash-to-assets ratios. To evaluate whether an increase in uncertainty may have caused the rise in cash holdings after the financial crisis, one should compare the rise in the cash ratios of firms of different size. The evidence in Figure 5 is less conclusive about

this since all the quintiles show a similarly increasing pattern since 2008.

Structural Factors and Fiscal Policy

The firm-level data and the analysis of the academic literature presented above suggest that U.S. corporations are holding record-high amounts of cash for several reasons. The trend that started in the early 1990s is largely attributed to structural factors and is likely to be independent of the financial crisis. In particular, the rising predominance of R&D and increasing competition in sectors such as information technology seem to have contributed to the rise of cash holdings of U.S. corporations. The role of these factors is likely to be present in the next several years.

There is a structural factor, the increasing importance of multinational corporations, that seems to be important because of the current taxation of the income generated abroad that domestic corporations bring back to the U.S. Here, fiscal policy may be playing an undesirable role, and its modification in the coming years could boost domestic investment and help overcome the slow recovery from the Great Recession.

There is also another role for fiscal policymakers in the near future. Although the magnitude of the effect is not clear, it seems that designing and communicating a long-run plan to deal with the increasing fiscal deficit would reduce uncertainty about future taxes, reduce abnormal cash holdings and potentially favor private investment. 

Juan M. Sánchez is an economist and Emircan Yurdagul is a technical research analyst, both at the Federal Reserve Bank of St. Louis. For more on Sánchez's work, see <http://research.stlouisfed.org/econ/sanchez/>

ENDNOTES

- ¹ For an analysis of financial firms, see the work of Chang, Contessi and Francis, and of Ennis and Wolman, which focuses on cross-sectional data to study the increase in bank reserves since the end of 2008.
- ² Another explanation given for holding cash is referred to as the principal-agent motive. Briefly, this reasoning connects the phenomenon with different incentives of the shareholders and the managers.
- ³ A very similar figure can be found in Bates, Kahle and Stulz.

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