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Why do multinational firms hold so much cash? Further evidence on the precautionary motive

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ABSTRACT

This study investigates effects of firm structure and risk exposure on cash holdings of multinational firms. We show that multinational firms that hold high levels of cash are stand-alone firms that operate businesses in one segment, but not diversified firms that operate businesses in multiple segments; the high levels of cash in multinational stand-alone firms are associated with their risk exposure to market uncertainty, policy uncertainty, and economic uncertainty. These risk exposures also have significant impact on future cash holdings, as well as current and future R&D expenditures. Our findings suggest that the precautionary motive still plays a key role in explaining the high cash holdings of multinational firms. In addition, we provide evidence that the tax motive is not sufficient to explain the high level of cash holdings in multinational stand-alone firms.

1. Introduction

U.S. multinational firms hold a tremendous amount of cash. Pinkowitz et al. (2012) document that "firms that become multinational after 1998 have high cash holdings", and call for more research investigating high cash holdings puzzle in multinational firms. While Foley et al. (2007) find that the U.S. multinational firms hold a high level of cash in their foreign subsidiaries because of repatriation tax costs, and Faulkender et al. (2016) argue that "in the presence of repatriation taxes, foreign and domestic cash are imperfect substitutes"; Pinkowitz et al. (2012) point out that increase in cash holdings of multinational firms cannot be well explained by the tax treatment of profit repatriations.

The main objective of this study is to investigate what factors, other than tax, might affect multinational firms to hold so much cash. First, motived by Duchin (2010), we look into the firm diversification effect. He finds that diversified firms hold less cash due to a coinsurance effect across investment opportunities and cash flows between different business segments. Multinational diversified firms can benefit more from this coinsurance effect than multinational stand-alone firms. Thus, we expect that multinational diversified firms should hold less cash than multinational stand-alone firms. Second, we consider the effect of firm-level risk exposure to three major sources: market uncertainty, macroeconomic uncertainty, and policy uncertainty. Firms' exposure to systematic risk increases the demand for cash (e.g., Acharya et al., 2007,2013; Harford et al., 2014). Therefore, we suspect that the firm-level risk drives firms to hold more cash.

Using a sample of 4286 U.S firms with 20,448 firm-years from 1998 to 2013, we first confirm a stylized fact: relative to domestic firms, multinational firms hold more cash[2]. In our sample, multinational firms hold on average 20.3 (median:

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20.4) percent of cash to assets, while domestic firms hold on average 20.0 (median: 9.0) percent of cash to assets. But the main driver of high cash holdings in multinational firms is from multinational stand-alone firms. Of multinational firms, stand-alone firms hold about 28.3 (median: 23.1) percent of cash to assets on average, while diversified firms hold 13.4 (median: 9.0) percent of cash to assets on average.

Regarding the firm-level risk exposure, we use a set of variables to capture firms' exposure to risk and uncertainty, including cash flow volatility, idiosyncratic volatility, market volatility, firms' sensitivity to U.S. economy uncertainty, and their sensitivity to U.S. economic policy uncertainty. First, such risks as cash flow volatility, idiosyncratic volatility, and market volatility are highly correlated. Because of redundancy in measuring firms' exposure to market uncertainty, we apply principal component analysis (hereafter, PCA) based on the three uncertainty measures to extract the first component as market uncertainty. The first component from PCA accounts for a maximal amount of total variance in the three variables capturing different uncertainty related to market, and is also called market uncertainty. Second, we estimate firms' sensitivity to U.S. macroeconomic uncertainty from regressions of excess monthly stock returns on a series of monthly macroeconomic uncertainty index from Jurado et al. (2015) over 3-year rolling window period. Third, we also estimate firms' sensitivity to U.S. policy uncertainty from regressions of excess daily stock returns on daily news-based policy uncertainty index from Bloom's website over 3-year rolling window period. Alternative measure of firms' sensitivity to U.S. policy uncertainty is estimated from regressions of excess monthly stock returns on monthly policy uncertainty index from Baker et al. (2013) over 3-year rolling window period. Similarly, we apply PCA on the two proxies to extract the first component as policy uncertainty. We assume that firm managers are risk-averse and therefore have precautionary motive to save cash depending on the magnitude of firms' exposure to time-varying risk and uncertainty.

We find that cash holdings are associated with all the three risk exposure measures. Of all the uncertainty measures, market uncertainty has the greatest positive effect on cash holdings. The level of cash holdings in multinational firms significantly increases with market uncertainty. Policy uncertainty has negative impact on cash holdings. Economic uncertainty is more likely to positively affect cash holdings in diversified firms than in stand-alone firms.

We are also interested in the cautionary effect of uncertainty on current and future R&D expenditure. Extant studies find that uncertainty depresses capital investment but encourage R&D expenditure (e.g., Leahy and Whited, 1996; Panousi and Papanikolaou, 2013; Stein and Stone, 2013). We find that both market uncertainty and economic uncertainty encourage R&D expenditure. But multinational firms with a higher level of market uncertainty and economic uncertainty will spend less on R&D. A higher level of change in cash leads to more future R&D spending, and the relation between uncertainty, cash holdings, and R&D spending is substantially stronger for stand-alone firms than it is for diversified firms.

To re-examine the tax effect on firm cash holdings, we use the effective tax rate (hereafter, *ETR*) and the cash effective tax rate (hereafter, *CASHETR*) from financial statements to roughly estimate firms' tax obligation[3]. We find that the average *ETR* is 27.8 (median: 31.0) percent in stand-alone multinational firms, vs. 29.9 (median: 31.5) percent in diversified counterparts (see Table 1). Compared with diversified multinational firms, stand-alone multinational firms with lower *ETR* (and *CASHETR*) actually hold much more cash. For robustness check, we show that firms that go through the transition from domestic to multinational at year t, keep a relatively stable level of their cash holdings consistently between year (t - 3) and year (t + 6), so do their *ETR*s and *CASHETR*s.

Put all together, we provide evidence that precautionary motive rather than tax motive plays a key role in explaining why and which multinational firms hold higher level of cash.

Our paper contributes to several lines of literatures. First, we provide further evidence that high levels of cash holdings in multinational firms are still mainly due to the precautionary motive, rather than the documented tax effect. Second, our findings also shed new light on the impact of Homeland Invest Act of 2004. Dharmapala et al. (2011) and Faulkender and Petersen (2012) find that repatriated funds from multinational companies that responded to this act do not increase domestic investment. Our findings suggest that, if the repatriated funds are from multinational stand-alone firms, those firms are more likely to fail to deliver the promised economic benefits for lack of the motivation to invest across multi-division; and those firms are also more likely to have long commitment on innovation project. Third, we extend a line of literature that studies the effect of uncertainty on firm decisions (e.g., Leahy and Whited, 1996; Panousi and Papanikolaou, 2013; Gulen and Ion, 2016). Our results show that firms with more risk exposures tend to hold more cash and spend more on R&D, consistent with Stein and Stone (2013). Moreover, our results also indicate that multinational firms with more risk exposures tend to spend less on R&D.

The reminder of the paper proceeds as follows. Section 2 reviews the related research and presents testable hypotheses. Section 3 describes our sample and research design. Section 4 reports summary statistics and empirical results. Section 5 provides additional analyses and robustness testing results. A brief conclusion follows.

2. Related Literature and hypothesis development

Theory and evidence support four main motives summarized in Bates et al. (2009) for firms to hold cash: transaction motive, precautionary motive, tax motive, and agency motive. With secular trend of cash holdings in multinational U.S. firms, policy makers and regulators have been, for years, debating repatriation measures that try to encourage multinational firms to bring foreign earnings back home at reduced tax rates. Foley et al. (2007) show that multinational firms hold so much cash in their foreign subsidiaries because of the tax costs associated with repatriating foreign income. On the other hand, Pinkowitz et al. (2012) find that tax repatriations, poor investment opportunities, regulation, and poor governance fail to explain the