1.2 Literature review

As mentioned in the introduction, there is no specific research on the subject; however we have found some excellent papers on related questions. These are published in highly renowned journals, featuring on Financial Times top 45 list.

1.2.1 Determinants of corporate cash policy: Insights from private firms

An empirical paper published in 2013 in the Journal of Financial Economics by Gao, Harford and Li discusses a large comparison done in the US market regarding cash holdings of private and public firms. The paper is published in a highly renowned paper, and cited 8 times. However two of the authors Harford and Li, are cited over 6000 and 16000 times, respectively. These facts indicate a very insightful paper, which is yet to be discovered by the researching world.

The authors found that public firms on average holds double the amount of cash as private firms, even though public firms are generally more diversified. They argue that the high number of cash held is due to the occurring agency costs. Cash holdings in public firms have been increasing in recent years, and amounted to 20.45% in 2011. It was also found evidence of higher cash holdings when investor protection protocols and laws where weak. This is an interesting linkage we are planning to check thoroughly and use in our research. Financing costs, agency costs and level of investor protection are identified as the main determinants of public and private firms.

1.2.2 Why do firms hold so much cash? A tax-based explanation

A report published by Foley, Hartzell, Titman and Twite about why firms hold so much cash shows that US corporations tend to hold significant amounts of cash in their balance sheets. In the empirical paper they have developed and tested several hypotheses to examine the magnitude of US multinational cash holdings. Further, how that responds to tax costs associated with foreign income, and how firms facing higher repatriation taxes hold higher levels of cash.

The paper emphasizes transactions costs and how firms facing the difficulties associated with obtaining external finance. The paper also indicates that taxes have significant effects on the cash balances of US firms, where multinational firms would trigger for larger tax expenses by repatriating earnings tend to have higher consolidated cash holdings. Studies shows that firms that have domestic and foreign operations with repatriation tax burdens increase cash held abroad. It also indicate that affiliates in countries with low tax rates, and imply high tax costs of repatriating earnings are more likely to hold more cash than other affiliates of the same firm.

This paper was published in the Journal of Financial Economics in 2007, and has been cited 434 times. The authors are well known and cited over 1000 times, in particular Fritz Foley being cited over 5000 times.

1.2.3 The strategic use of corporate cash holdings in collective bargaining with labor unions

An article by Klasa, Maxwell and Ortiz-Molina published in the Journal of Finance in 2009 discusses the use of corporate cash holdings in collective bargaining with labor unions. The article provides evidence that firms in industries with strong labor unions tend to hold smaller amounts of cash to increase their bargaining power. The idea is to hold low reserves of cash to make a more credible case that a risk of low liquidity threatens the firm's competitiveness and hence it cannot meet the union's demands.

Prior work by Mikkelson and Partch (2003) shows that firms with high level of cash holdings enjoys the benefit of being able to fully invest in growth opportunities. Hence, a direct consequence of the cash holding vs. bargaining power trade-off strategy is that the firm has less cash available to fully invest in new projects with high growth opportunities. The article also shows a positive correlation between increased cash holdings and higher probability of strikes for unionized firms.

The paper was published in 2009 in the Journal of Financial Economics, and has been cited 133 times. The authors are affiliated with respected business schools in the US, but are not as well known as the authors of our previous papers.

1.3 Theory

When labor laws become strict (i.e. when firms cannot hire temporary workers or fire them easily), firms have to keep more cash to reduce the probability of bankruptcy in case of facing a downturn or a reduction in revenue. Therefore, we expect that more flexible labor laws (in favor of employees) should increase corporate cash holding. Bates, Kahle and Stulz (JF2009) lists up four main motives behind a firm's decision for cash holdings.

1.3.1 The transaction motive

In line with classical finance models an optimal amount of cash must be held as firms incur transaction costs and have to make payments. Economies of scale indicate that bigger firms need to hold less cash.

1.3.2 The precautionary motive

Quite obviously, reasonable firms hold cash as a precautionary measure to cope with recessions. Among others, a paper by Opler, Pinkowitz, Williamson and Stulz (1999) show that the amount of precautionary cash holdings increase with costlier access to capital markets and risky cash flows. This motive also indicates that firms with better investment opportunities tend to hold more cash as adverse shocks and financial distress is more costly for them. Riddick and Whited's (2009) research shows a positive relationship between a firms exposure towards risk and its cash holdings.

1.3.3 The tax motive

Firms must hold an amount of cash to be able to pay any outstanding tax within the due dates. Foley, Hartzell, Titman and Twite (2007) shows that US firms repatriating foreign earnings holds higher levels of cash as it is taxable. Hence, multinational firms have higher level of cash holdings.

1.3.4 The agency motive

Jensen (1986) argues that entrenched managers would rather hold excess cash than to increase payouts to shareholder incase of poor investment opportunities. Dittmar, Mahrt-Smith and Servaes (2003) doing cross-country research found evidence of higher cash holdings in countries with higher agency problems. Hence, agency problems are positively correlated with corporate cash holdings. Research by Harford, Mansi and Maxwell (2008) suggest that entrenched managers tend to build up excess cash balances and also spend them relatively quick. Hence, the excess cash does not provide much security.

The interesting part valid for our research question is the precautionary motive, as we discuss the affect of an exogenous factor, labor laws, on corporate cash holdings. Reading up on relevant articles and using the acquired knowledge from being students at BI for half a decade, we are able to conclude that any reasonable entity (company) will try to manage it's exposure towards risk factors. Labor protection laws are not a risk factor in particular; on the contrary the strength of these laws will give employees a feeling of insurance and safety. However, in time of distress and financial crisis the strength of these contracts could potentially mean business going belly-up.

Based on equilibrium macro economic models, a company hires and fires staff according to productivity and demand. But when labor laws and contracts are involved in the process, a company cannot simply lay off employees at all or without a form for compensation. The strength of the labor laws determines the level of power between a firm and the staff. A reasonable owner/manager would take into account wage and fixed expenses that must be paid in all states of the economy. Hence, the firm must keep a certain level of liquid assets (cash or short term government bonds) to be able to meet the required payments in time of distress. Bearing these facts and theories in mind, we have arrived at the following hypotheses.

1.3.5 Hypothesis 1

When labor laws strengthen, the corporation will increase its cash holding.

This is to have a buffer in case of lower demand for firm's products or financial distress. The cash would be used to compensate laid off staff and pay wages to retained staff in the wait for the economy to recover.

1.3.6 Hypothesis 2

As the cash holdings increase due to labor laws, the firm's investments will decrease.

This is quite obvious as a part of the assets that was intended to use in production/investments now have to be converted to cash and held liquid. This hypothesis have been tested and confirmed in articles we have used in our research.

1.3.7 Modigliani-Miller theorem

The Modigliani-Miller theorem developed by Franco Modigliani and Merton Miller is a cornerstone for modern corporate finance. According to their theorem developed in a world without taxes, they state that conditions under a firm's financial decisions do not affect its value. Hence, in the modern thinking on capital structure the theorem states that under certain market price process of taxes, bankruptcy costs, agency costs, asymmetric information and efficient market is not affected by how the firm is financed.

1.3.8 Labor Law

The International Labor Organization (ILO) was created in 1919, and was developed to provide a system of international labor standards to protect a particular issue, for instance providing working women with maternity protection, or ensuring safe working conditions for agricultural workers. Aiming to give women and men opportunities to obtain decent and productive works, which are regulated according to freedom, equity, security and dignity. By creating international standard require representatives from several parties such as, governments, workers, and employers from around the world.

The International Labor Office is therefore responsible for preparing a report that analysis the laws and practices. In order to adapt a standard it needs to have two-third majority of votes by conference participants. Furthermore, ILO member states are required to submit any convention adopted at the International Labor Conference their national competent for relevant legislation or other action. Since we are in a globalized economy, international labor standards has huge impact and are an essential component in the international framework for ensuring that the growth of the global economy provides benefits to all parts.

1.3.9 Labor Union Laws

Since 1935 the Congress have passed the National Labor Relations (NLRA), the intention was to encourage a more stable and healthy relationship between workers and their employers in the private-sector. Intuitively, employers were not obligated to recognize a union, but by establishing a union gives employees´ basic rights to join and opportunity to engage in collective bargaining. Furthermore, Congress also hoped that the union could help to reduce the work stoppages, strikes and other conflicts that may arise between labor and management that had often occurred in violence.

The National Labor Relations Board (NLRB) was also created by the act in order to enforce the NLRA. Most importantly, the NLRA allowed unions to represent employees according to the law. They were also enforcing to accomplished three significant tasks. First, allowing workers to vote and decide if they if they wanted to be represented. Second, establishing laws protecting employees from discrimination, which is based on union or group-related activities. Third, NLRB was created as an administration organization to enforce the law.

1.3.10 Bargaining power against labor unions

In studies by Klasa, Maxwell and Ortiz-Molina they used a firm´s industry unionization rate as a primary proxy to examine whether the firm is likely to bargain with a powerful union that represents a large number of the firm´s employees. They were aiming to examine how important for firms are likely to gain bargaining power advantage over unions, and also to test the negative relation between unionization and corporate cash holdings. In general, where firms that have labor costs that represent a significant percentage of the total costs, and how important it is to gain a bargaining advantage against unions, in order to control and minimize labor costs for the firm.

1.4 Methodology

1.4.1 Panel data analysis

We aim to use panel data analysis for the thesis, as we are going to examine changes in firms' behavior regarding corporate cash holdings given the strength of labor protection laws. The method is used when researcher have access to observations of same individuals/firms over a given time period, and can than run a regression on two dimensions. This analysis seems to fit for our purpose as we have access to observations for firms between 1990s and 2013. We will mainly use Stata to run regressions and perform hypothesis test, but may also take advantage of other programs such as Excel, E-views or Matlab. Hausman's test will be used to determine whether we should run fixed-effect (FE) or random-effect regression, although the theory and past research suggests a fixed-effect regression for this type of problems.

$$Y_{i,t} = \alpha + \beta X_{i,t} + \varepsilon_{i,t}$$

Y is the endogenous variable and X is the exogenous (independent) variable. Beta measures the effect of X on the output Y, and alpha is a constant term. The subscripts define the given firm and time period. Since we are dealing with fixed effect regressions, the error term is assumed to vary non-stochastically over time or firms (implying a non-random walk). FE regression is used as we are only interested in analyzing the impact of predictor (labor laws) on outcome (variations in cash holdings) as they vary over time, within an entity (company).

The regression also allows for certain characteristics within the entity that could, in addition to the predictor, have an impact on the outcome. These characteristics are individual for entities such as which industry the firm belongs to, certain policies and type of management. This is the rationale behind the assumption of checking for the correlation between the firm's error term and the predicting variable. The regression removes the effects of time-invariant factors on the outcome, and the researcher is able to analyze the net effect of predicting variable on the outcome. FE assumes non-correlation between the time-invariant characteristics of firms, and correlation suggests we should use another model (Hausman's test).

A possible model we can use to examine FE is the Least squares dummy variable model (LSDV). The model uses a dummy for each firm, and allows estimating the pure effect of predictor variable, controlling for the unobserved heterogeneity.

FE regression controls for all time-invariant differences, hence the estimated coefficients cannot be biased because of omitted (time-invariant) variables. FE cannot be used to investigate the time-invariant variables affect on the dependent variable, but this does not seem to be a problem for us at this stage. The FE models are designed to study the causes of changes within a firm, and that is our aim.

1.4.2 Tobin´s q model

Another method that we may use in our study is Tobin´s q model, which has become common practice in several finance literatures. The purpose is to calculate the ratio by comparing the market value of a firm equity and liabilities with its corresponding book values and to test how that are related to firms' cash holdings. We are also aiming to test the relation between risk, labor costs and cash holdings. By constructing a direct measure factor of volatility and cross-divisional correlation in labor cost and cash flow.

1.5 Data

We have access to several academic articles related to our thesis, which we have already used in the preliminary report. For the explicit data gathering, to be able to do an empirical study, we will access the databases given below.

We will be using the CCGR (Center for Corporate Governance Research) database, which holds the accounting data for the universe of firms in Norway from 1990s and up till date. The CCGR is quality controlled by BI's Department of Finance with devices such as a commitment to publish in reputable academic journals, close interaction with Norwegian businesses and regulators and a policy of publishing the findings to the general public through media. Hence, we can be confident that the available data is accurate and legitimate.

Data regarding labor protections laws will be obtained from the OECD database (Organization for Economic Co-operation and Development).The OECD is an organization for economically developed countries such as Norway, and promotes economic and social welfare. The database houses very thorough data on member countries regarding almost every economic aspect, and OECD is a frontrunner for transparency and integrity. Hence, it is a secure data mining source for our thesis.

There have been a lot of changes in labor protection laws from 1990s and onwards, and we are planning to exploit them to study changes in corporate cash holdings. We may therefore have to use databases regarding labor and corporate law to get a deeper insight into the topic.

The Norwegian Working Environment Act (Arbeidstilsynet) and the SSB (Central bureau of statistics) databases could also be of interest for the thesis. These are professionally governed departments and offer a deep insight into the Norwegian economy and labor market. We believe that exploring the above listed databases should offer us the data we need do our study to the full extent. We may also take use of certain books and articles published in reputable academic journals recommended by our supervisor.

1.6 Reference

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