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1. Introduction

Mergers between and acquisitions of firms listed on the stock exchange tend to come in waves. There are periods with a higher concentration of mergers and acquisitions surrounded by periods with a lower concentration of mergers and acquisitions. We have seen several waves since the late 19th century across the entire world (O’Brien, 1988), (Stigler, 1950), (Schleifer and Vishny, 1991), (Martynova and Renneboog, 2005). All these waves have been examined, with the purpose to come up with a logical explanation of why these events occur in waves. There are two major explanations for these waves on which a lot of research on this topic is built. The first explanation is based on the disturbance theory (Gort, 1969), (Harford, 2005) and the second explanation is built on the valuation theory, or better the misvaluation theory (Rhodes-Kropf and Viswanathan, 2004). They both explain some of the waves from the late 19th century to 2000. Nevertheless, all waves are only examined by country. What we see in the current state of the world economy is that the waves no longer cluster by country over a specific period, but instead arise all over the world in the same period. Therefore it is interesting to see whether there are other reasons which explain the current waves, beginning with the last wave between 2004 and 2007. Especially the disturbance explanation can be questioned, since it is not very likely that all over the world certain political, economic, social or technical shocks take place that influence merger and acquisition activity all over the world.

Another interesting fact comes up when we examine the waves. We see different macro-economic states at the beginning and end of a wave. As O’Brien (1988), Sudarsanam (2010), Moeller, Schlingemann and Stulz (2005) show several waves ended with a collapse of the equity market or a depression. Furthermore several investigations also show that a wave starts after a depression. This makes us wonder whether the economic state of a country or the world might influence the environment of a merger wave.

For these reasons I want to investigate whether merger and acquisition waves are a global phenomenon. By examining the last wave which lasted from 2004 to 2007 and whether there are other explanations for this wave to occur than the major explanations for the other waves. To be more precise, I want to investigate whether there are macro-economic explanations for the wave from 2004 until 2007.
2. Introduction in Mergers and Acquisitions
Mergers and acquisitions refer in general to the combination of two businesses melting into one business. Although the terms mergers and acquisitions are often used interchangeably, they have a slightly different meaning. Mergers consist of two corporations who want to combine their resources to achieve a common goal. The shareholders of both former companies become the shareholder of the present new company, according the value of the firm they had stocks in. In an acquisition one company (the acquirer) takes over another company for the acquirers benefit. The shares of the company which has been acquired no longer exist and the shareholders get paid in stock or equity. Different forms of mergers and acquisitions can be: divesture, leverage buyout (LBO), management buyout (MBO), management buy-in. A divesture occurs when only certain departments of the company get sold, so they split up the company. We speak of a leverage buyout when an investor acquires the company through a finance by debt. The assets of the acquired company are commonly used as collateral for this debt. During a management buyout the current management buys the company and in a management buy-in the future management buys the company. A merger or acquisition between two companies of the same industry is called a horizontal merger or acquisition, if the two companies are from different, but related, industries it is called a vertical merger or acquisition. When a merger or acquisition occurs between two companies in unrelated industries it will create a conglomerate.

2.1 Motives for mergers and acquisitions
From a finance perspective mergers and acquisitions should have as goal to maximize shareholders value. Therefore the future value of the two firms together needs to be higher than the sum of future value of the two firms separate. To achieve this goal the acquired firm must create value by merging with the other firm. This creation in value is called synergies. According to Trautwein (1990) this is only one of several theories why mergers occur.

Efficiency theory
The first theory gives an explanation on how mergers and acquisitions can create shareholders value. This efficiency theory mentions three types of synergies that lead to an increase of the bidders’ shareholders wealth; Operational synergies, financial synergies and managerial synergies. Operational synergies can be segregated into three states: scale economy, learning economy or scope economy. Through scale economy a cost reduction is achieved by a firm producing one product on a larger scale during a period in time. According to Lambrecht (2004) when demand in the product market is high, more mergers are motivated by this kind of synergy. Learning economy achieves cost reduction by
learning about the production process during several periods in time. A company which produces more than one product can reduce cost by a scope economy if its total production and selling costs of the several products is smaller than the total of producing and selling costs if every individual product was produced by another company (Sudarsanam 2010). Tax benefits by deducting the past losses of the acquired company of the profits of the acquiring company could also be seen as an operational synergy, although it would never be the major reason for an acquisition. Financial synergies create value by lowering the cost of capital of a firm which makes borrowing money cheaper (Chatterjee, 1986). Financial synergies can be created by lowering the systematic risk, increasing the size of the firm or by creating internal capital markets (Trautwein, 1990). Lowering the systematic risk can be done by investing in an unrelated industry which diversifies the company. Managerial synergy is value created by the managers of the bidders’ firm who have the ability to increase the efficiency of the targets performance.

Monopoly theory
The second theory according to Trautwein (1990) that provides evidence that mergers or acquisitions contribute to an increase in shareholders wealth is the monopoly theory. This theory argues that mergers and acquisitions may lead to a kind of synergy, collusive synergy (Chatterjee, 1986). This kind of synergy does not relate to the efficiency theory since it does not benefit from efficiency, but it transfers the wealth from the customers to shareholders. This wealth transfer can be achieved by assessing profits from one market to another to compete in that other market. An increase in shareholders wealth can also be achieved, according to the monopoly theory, by an increase in market power and a decrease in competition in a specific market. This increase in market power can also be achieved by brand name, or geographical location of the target company.

Valuation theory
A final theory for a merger or acquisition to create value for the shareholders according to Trautwein (1990) is the valuation theory. This theory states that the managers of the bidder firm have more knowledge of the target firm than is priced in the market, this is called asymmetric information (Ravenscraft and Scherer, 1987). When the target firm is acquired shareholders, of the acquiring firm, would have an immediate wealth effect. This knowledge can include an undervaluation of the target firm, or an advantage if the two firms are combined.
Apart from these three theories which explain that merger and acquisitions can lead to value creation for shareholders, there are also three theories explaining why mergers and acquisitions occur even if they do not necessarily increase shareholders wealth.

**Empire building theory**
This theory states that managers want to maximize their own, not shareholders’, wealth when they enter into a merger or make an acquisition. They do this by creating a very large firm which only increase the size of its assets and does not increase the profit of the firm. This way growth is not necessarily good for the firm. Nevertheless, the managers profit from this growth since they are often paid according to the size of the firm or the turnover of the firm. They benefit from a large firm without creating any shareholder value. Another reason why managers are only interested in the size of the firm rather than its profit is their desire for power (Trautwein, 1990). The phenomenon that firms constantly grow, due to the self-interest of managers, is industry wide and even on governmental level (Tullock, 1987).

**Process theory**
According to this theory, mergers and acquisitions could be the outcome of poor decision making. This could be due to poor or incomplete information or routines that were successful in the past. Poor and incomplete information that leads to a merger or acquisition could be due to individuals that have limited power in interpreting information (Simon, 1957). Management can also be overconfident due to mergers and acquisitions in the past, which lead to a merger or acquisition which cannot be supported by rational reasons. This might also be the fact if there is much cash in the company as Jensen (1986) explains, that when there is a large amount of free cash flow in the company, managers will be more likely to perform value destroying mergers and acquisitions. Hence managers are less likely to perform best if they can finance with free cash flow than with debt.

**Disturbance theory**
A final theory why mergers and acquisitions occur is developed by Gort (1969) who states that mergers occur due to economic disturbances. These economic disturbances would lead to discrepancies, due to asymmetric information, in valuations (valuation theory). There are several economic shocks that lead to a change in expectations, but the most common according to Gort (1969) is a rapid change in technology.
Mergers and acquisitions as a defensive strategy
A merger or acquisition can also be seen as a defensive strategy. This defensive strategy can be seen in two views.

Anti-takeover defenses
The first view by Gorton, Kahl and Rosen (2005) explains this defensive strategy as a way to avoid being acquired by another company. Once a company grows by a merger or acquisition, it is less likely this company will be acquired by a hostile takeover. This view can be explained as an anti-takeover defense.

There are two kind of anti-takeover defenses, preventive and active (Sudarsanam, 2010). Preventive anti-takeover defenses are: (1) Poison pills, deep out of the money options that can be exercisable by a certain event. (2) Corporate charter amendments, majority of the votes are needed to accept takeover decisions. (3) Golden parachutes, a compensation for the management if they lose their job after takeover. (4) State legislation, lobbying with that politicians for anti-takeover legislation.

The active anti-takeover defenses are: (1) Greenmail, the target purchases the acquirers stock with a high premium, (2) White Squire, the target company finds another company to buy a large amount of their stock. (3) Litigation, try to stop the takeover in court. (4) Counter attack, the target offers a bid on the acquirer. (5) Corporate Restructuring, making the company less attractive by restructuring or create a MBO or LBO.

Competitive defense
The second view can be seen as a competitive defense strategy to acquire another firm. This firm would not be acquired due to their advantages, but primarily that it cannot be acquired by a competitor (Sudarsanam, 2010). Another competitive defense strategy is to make an acquisition if a competitor does, in case the competitor gains a competitive advantage by this acquisition.

2.2 Financing methods
With the decision to acquire a firm, another important decision has to be made, namely the financing of this acquisition. There are different methods of financing mergers and acquisitions with different reasons to use. The most commonly used are paying with equity or paying with cash. When a merger or acquisition is paid in cash it can be cash or debt financed.

Moeller, Schlingemann and Stultz (2005), Martynova and Renneboog (2006) and Bouwmann, Fuller and Nain (2003) show that a payment in cash earns a higher cumulative abnormal return than a payment in equity around the announcement day. A payment mixed with cash and equity performs even better. A
reason for this difference lies in an information asymmetry. There is a general definition what the value of cash is, but outsiders do not know what the value of a company is. Therefore investors, in the target firm, are not that optimistic when a company wants to pay in equity since they do not know what value they can expect. Companies usually pay in equity when they know they are overvalued. Schleifer and Vishny (2003) expect that if the bidder knows that his stock is overvaluated, he will make the acquisition by paying in equity. Basu, Jiang and Kamath (2008) notice that during the high-tech bubble bidders were more likely to pay with equity than before the bubble, and therefore admit that their stock is overvaluated. At a mixed payment the shareholders are often given the choice whether they want cash or equity for their shares (Boone, Lie and Liu, 2011). For this reason, the mixed payment gives a higher return for the acquired company; shareholders can benefit from equity and cash.

Martynova and Renneboog (2009) also show that a payment with cash which is financed by debt gives a higher cumulative abnormal return than all other payment methods. This difference can be explained by Jensen (1986) as they explain that free cash flow hurts the firm, because it can be wasted (agency costs). On the other hand there is a disciplinary effect of debt, which reduces agency cost (Sudarsanam, 2010).

### 2.3 Impact on rivals

A merger or acquisition can have a positive or negative short term effect on the industry rivals. A positive effect as measured by cumulative abnormal return by Eckbo (1983) can be explained by the fact that the merger market is “hot” (Rosen, 2006). Other companies are now more likely to be acquired by other firms, so the whole industry will show a higher return on a small-term base.

Also Kohers and Kohers (2004) came to the conclusion, after examining data from 1984 to 1997, that high tech take-over announcements had a significant positive effect on the abnormal returns of industry rivals. Furthermore they came to the conclusion that this positive effect was not supported by the probability of takeover, since undervalued firms did not have a higher abnormal return than the average. That the probability of takeover was not supported could be viewed in another research of Kohers and Kohers (2001) where they examine data of the years 1984 to 1995. In this research they find that high tech acquirers perform poorly after the mergers compared to their industry.

A reason for a negative effect on rivals is that the acquiring company might increase their market share and therefore there market power which gives the acquiring company a competitive advantage compare to the rivals which did not acquire a company.
3. Merger and acquisition waves
Discussed above we notice that there are several reasons why and how a merger or acquisition can occur, and how it affects the industry. The fact that it influences the industry could also occur due to a cluster of mergers within a small time period. This is called a merger wave. There is some evidence that mergers tend to come in waves; there are periods with a high number of mergers and acquisitions followed by a period with low activity in mergers and acquisitions (Town, 1992). Town found that the number of mergers and acquisitions can differ from one state to another. With the first state characterized by a high mean and high variation and the other state a low mean and a low variation. I define a wave similar to Harford (2005). A certain time period will be defined as a wave, if that period has a larger number of deals than the highest 99% of a random distribution of the total amount of deals. More of this will be explained later in this paper. Another way to identify a wave is used by Goel and Thakor (2009). They let a merger wave depend on the price-earnings (P/E) ratio of the S&P 500 and the market-to-book ratio of the overall stock. If this would be a correct way to identify a wave, one should make several assumptions. The de-trended P/E ratio could only rise due to an increase in merger and acquisition activity; since the price of the target increases far more than the price of the acquirer (Sudarsanam, 2010) private targets would not be involved in this measurement. This measure is also hard to use during a bubble period, because the prices already increase without involvement of a merger and acquisition wave. One could also identify a wave on the value of the transactions. I believe that this is inappropriate, since a major deal could be singly responsible for a wave, which could not be the case.

The most recent waves occurred in the 1980’s, the 1990’s and the 2000’s. The wave in the 1990’s was in value the biggest wave ever, 1.6 trillion dollar (Sudarsanam, 2010). It is important to look at the merger and acquisition activity in the United States separate from that of the United Kingdom, Europe and the emerging markets, since these have different characteristics and a different history. The US and the UK have the highest merger activity which could be due to their legal system as La Porta et al. (1997) and Bris and Cabolis (2008) show in their research. Furthermore, the US had 6 merger and acquisition waves from 1890 to 2012, where the UK only had 5 since 1967 and the European Union had 4 since 1985. A common characteristic between these nations is that all waves show a clustering in industries, but a single wave can never be characterized by one industry, there is always a clustering among many industries (Harford, 2005). Although the United Kingdom is part of the European Union, due to the differences in merger and acquisition characteristics they will be viewed separately.
3.1 Theories explaining waves

**Disturbance theory**
There are several explanations of why mergers and acquisitions come in waves. One is supported by Gort’s (1969) disturbance theory. He developed a theory that merger waves occur when there is a difference in valuation between several firms. This disturbance occurred when economic shocks arise. These shocks can be due to technological, political or social changes (Sudarsanam, 2010), which creates a change in expectation and therefore a change in valuation. According to Gort (1969) the “disturbance” is only a trigger for the waves, the rest of the time the waves are mostly fed by momentum, all the leading firms in an industry want to profit from these shocks and do not want to fall behind on their competitors who do make mergers and acquisitions. Melicher, Ledolter and D’Antonio (1983) find evidence of an anticipation from mergers on rising stock prices and declining interest rates. These are also economic shocks that influence merger waves.

Harford (2005) finds evidence that shocks in the industry’s environment leads to waves as long as there is enough liquidity and a cheap cost of capital in the market. This is in line with Harford (1999) who finds merger and acquisitions occur if companies have a large amount of cash.

**Misvaluation**
Another explanation of why mergers and acquisitions occur in waves is due to misvaluation of the market; this is also called market timing. Dong, Hirschleifer, Richardson and Teoh (2006) tested that a market misvaluation of the bidder compared to the target has an effect on the number of deals. The misvaluation is here valued as the price-to-book ratio. A high price-to-book ratio indicates an overvaluation of the market. A high price-to-book ratio does not necessarily need to indicate a misvaluation, but since the stock prices did not make it on the long run, we assume these to be misvaluations. They noticed that overvalued bidders would pay more for the target and they would use more often equity rather than cash to make the payment. A reason why overvalued firms pay rather with stocks than in cash is due to the fear of managers that their stocks will decline unless the overvalued stocks will be converted to assets of the target company (Sudarsanam, 2010). According to Rhodes-Kropf and Viswanathan (2004) target companies should not accept these overvalued stocks of the bidder unless their company is also overvalued by the market. Nevertheless, they state that when a company is overvalued, it is likely that the entire industry is overvalued. Therefore the target will be likely to accept the offer, since it is similarly valued as the rest of the industry (Rhodes-Kropf and Viswanathan, 2004). Therefore, a merger is more likely to occur when the bidder is highly overvaluated and thus a wave is more likely to occur if the whole market is highly overvaluated. That the
misvaluation of the stocks influences the merger and acquisition wave is also supported by Ang and Cheng (2006) who state that overvaluation of a firm gives management a high motive to make an acquisition. This is also represented in the model of Schleifer and Vishny (2003) about these “stock-market-driven” acquisitions. Schleifer and Vishny (2003) even mention the ability of management to get their stock overvalued so they can make acquisitions.

**Tobin’s Q**

Another effect of a high price-to-book ratio is that it could create a high Tobin’s Q. The Tobin’s Q of a company is the market value divided by the replacement value and is used to see when a company should invest (Hennessy, 2004). A high Q ratio means that the market anticipates on a high value creation with the current assets, so by investing in these assets the company could create more value. In other words it is, relative to the returns on assets, cheap to invest if a company has a high Q ratio. This would also imply that an industry with a high Q shows little merger and acquisition activity and more investments in assets. Unfortunately there is no research on the effect of Tobin’s Q on the amount of mergers and acquisitions. Nevertheless, Jovanovic and Rousseau (2002) state that a high Q implies that a company should invest in any way, so this could be done by mergers and acquisitions. In line with this statement they show that firms with a high Q ratio buy firms with a low Q ratio.

**Wave Pattern**

There are patterns within a merger and acquisition wave which is investigated by Goel and Thakor (2009). They noticed that targets at the beginning of a wave were much smaller than targets near the end of the wave. Also the synergies of mergers and acquisitions at the beginning of a wave tend to be higher than those at the end of a wave. We can see this in the perspective of the process theory, where managers become overconfident and make poor decisions. From previous waves we also notice a start of the wave in an economic healthy market and they end most of the time with a collapse of the equity market or with a recession. Sudarsanam (2010) also notice that competitors often follow each other, also with mergers and acquisitions, since they are afraid to fall behind. This could explain the clustering of an industry in a wave.

We can conclude that there are two major theories about why waves occur, but there is not yet a solid theory for the time span of a wave, although it most of the time ends due to a collapsing stock market. In financial markets a herding behavior, investors invest in the same asset as other investors even if private information tells differently (Bikhchandani and Sharma, 2000), sometimes arise. This makes
markets unstable. The herding phenomenon could also be a reason why merger and acquisition waves occur, nevertheless there is no evidence found in current literature that this is a reason for a wave.

3.2 US waves

First merger and acquisition wave: 1893-1903
The first merger wave from 1893-1904 can be characterized by horizontal mergers. O’brien (1988) noticed that, although the mergers lead to undiversified big companies, the reason for these mergers and acquisitions was not economies of scale, but was more likely to create an increase in market power. This led to a decrease in price competition in markets that were controlled by a few large producing companies. A factor that might have triggered this wave is the upcoming industrialization and an economic depression (O’Brien, 1988). The end of the wave can be characterized by a steep decline in the equity market.

Second merger and acquisition wave 1919-1929
The second wave was, according to Sudarsanam (2010), triggered by antitrust laws against the monopolization of the first wave. This wave could be characterized by the vertical integration of the firms and led to an oligopoly structure (Stigler, 1950). Where the first wave was trying to increase market power, this wave was more eager to create economies of scale. As the first wave, also this wave ended with a collapse of the equity market in 1929.

Third merger and acquisition wave 1955-1973
Due to the recession of the 1930’s and the second world war in the 1940’s the third wave did not start until 1955. This period can be characterized by mergers and acquisitions between companies in unrelated industries, which increased the number of conglomerates (Schleifer and Vishny, 1991). Due to the mergers and acquisitions between companies in different industries they get more diversified in their activities, this diversification was according to Schleifer and Vishny (1991) the result of some strict anti-trust laws which prohibited a merger between two companies from the same industry. But the fact that there was a wave in this period was more a result of the high valuation of stocks and large cash flows (Schleifer and Vishny, 1991). That the antitrust laws resulted in diversification is questioned by Matsusaka (1996) who observed that also in Nations with no antitrust laws this diversification occurs and that the diversification between small and large companies was equally divided. Sudarsanam (2010) has another view on the diversification of companies during this wave. Sudarsanam claims that the companies want to reduce the volatility of their income. Hubbard and Palia (1999) add to that the creation of internal capital markets by diversification, which improves the allocation of capital. The third
merger and acquisition wave stopped in 1973 when the oil crisis raised and the economy came in another recession.

**Fourth merger and acquisition wave 1981-1989**
The fourth wave started in 1981 and was a consequence of several regulatory, technological and financial changes (Martynova and Renneboog, 2005). This wave was characterized by divestures, hostile takeovers, and LBO’s and MBO’s. Schleifer and Vishny (1991) notice that the mergers and acquisitions during this wave were most of the time being done by firms in similar industries. So unlike the third wave, this wave focuses less on diversification and can even be viewed as an opposite process than in which the third wave took place. Martynova and Renneboog (2005) also conclude that due to the fact that external capital markets became more efficient, the internal capital markets became less needed and more costly. This is also a reason why this reversed process took place. Holmstrom and Kaplan (2001) find that the need for more efficient corporate governance system led to the divestures and going private deals. The inefficient corporate governance systems were created in the third wave which created conglomerates.

**Fifth merger and acquisition wave 1993-2000**
The fifth wave that started in 1993 and was the biggest wave in value and in number of deals since that time. The fifth wave has some characteristics that did not occur in previous waves. First of all we see an increasing amount of cross border deals during this wave (Martynova and Renneboog, 2005). These factors give this wave a very international character which corresponds with the globalization of this period. Besides globalization, another factor that triggered the cross-border deals was the high costs for research and development and its long time before payoff in the high-tech and life-science sector. Also deregulation and privatization led to more cross-border merger and acquisition activities (Martynova and Renneboog, 2005). This wave occurred in a bull market and for a part in an overvalued market, which is in line with the view of Schleifer and Vishny (2003). Their model states that deals are more likely to be paid in equity if the bidders stock or the market as a whole is overvalued. Another unique characteristic of this wave is that most of the deals were friendly takeovers. This could be assigned to the overvaluation of the market, or the anti-takeover regulation. The great amount of cash in the market and the ease in borrowing money made the environment for a wave complete (Hickson and Thompson, 2006). The Fifth wave ended with the collapse of the high-tech bubble and equity market in 2000. Later research found that many deals from this wave performed very badly, probably due to the overvaluation of the market (Moeller, Schlingemann and Stulz, 2005)
Sixth merger and acquisition wave 2003-2007
After the equity market crash of 2000 a new merger and acquisition wave started in 2003. The sixth wave was much smaller than the fifth wave, but still larger than all other waves. A new factor in this wave is the participation of emerging markets (Sudarsanam, 2010). A quick growth in this wave can be assigned to a delay in transactions after the 9/11 terrorist attacks which created uncertainty about the world economies (Martynova and Renneboog, 2005). This wave consisted mostly of cash financed deals and ended in 2007 when investors and managers showed concern about the credit market (Alexandridis, Mavrovitis and Travlos, 2011). These cash financed deals were attractive due to the low interest rates. This in combine with the rising market made it attractive for private equity firms to make a quick profit out of an acquisition (Gaughan, 2011).

3.3 UK Waves
The first two waves in the UK were very small in value. The first wave was from 1967 to 1969 and was characterized by horizontal mergers, which was strange since there was a new Monopolies and Mergers act. An explanation for this contradiction is that the government wanted to strengthen the UK companies so they could compete on the world market. The second wave was from 1971 to 1973 and was characterized as the third US wave by diversification, which led to conglomerates (Sudarsanam, 2010).

Third merger and acquisition wave 1985-1990
The third UK merger and acquisition wave took place after a recession of the 1970s in a bull market during the 1980s and although the stock market crashed in 1987 the wave peaked in 1989. That the wave continued after the stock market crash could be due to the momentum of the wave (Sudarsanam, 2010). This wave can be characterized by many hostile takeovers in the financial sector due to the deregulation of the financial services sector and led to many takeovers by American and continental European financial companies.

Fourth and fifth merger and acquisition wave
As the fifth US wave, the fourth UK wave was the largest wave since that time and characterized by deregulation and privatization. The European wave, which includes the UK, was even as big as the American wave. Another common characteristic between these two waves is that they both have many cross-border deals and they both operate in a bull market. Due to the globalization of both waves, they can be viewed as one.
The fifth UK merger and acquisition wave can be viewed as a wave similar to the sixth US wave at the same time as the sixth US wave.

### 3.4 European Union waves

The first two waves in the European Union were relative small waves and were the consequence of major political changes (Sudarsanam, 2010). The first wave was in 1988 until 1991, which was caused by Schengen agreement and the fall of the Berlin Wall. The second wave was from 1992 until 1994 and started around the time that the Single European act led to a Single Market. Due to these effects, cross-border deals, within the European Union, became easier (Sudarsanam, 2010).

**Third and fourth wave**

The third and fourth merger and acquisition waves in the European Union are almost the same as the fifth and sixth US and the fourth and fifth UK waves. The only difference is that the introduction of the euro in 1999 played an extra role in the third European Union wave. This introduction led to a friendlier environment of mergers and acquisitions within the European Union.

### 3.5 Emerging markets wave

During the last decades the BRIC countries; Brazil, Russia, India and China, showed a strong economic growth. This growth is part of a more openness to foreign investors and privatization of many industries. Due to the economic growth in these countries and the more open markets the mergers and acquisitions also increased. The wave in these markets was from 2005 to 2007 and consisted of many cross-border deals which give this wave a global characteristic (Sudarsanam, 2010).

The history of the merger and acquisition waves shows that there has been a shift from nation specific waves to a more global wave due to the globalization and the more open markets. Also noticeable is that a wave generally begins after a depression and ends with a stock market crash. This could be of influence on the time and time-span of the wave, or it could be an effect of the wave, but there is not a sufficient research about this. Table 1 gives an overview of the waves and their characteristics.
Table 1. Overview of waves and their characteristics

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</table>

4. Hypotheses

We have just discussed how the current literature looks at the merger and acquisition waves and what is assumed to be the reason for this phenomenon. There is only little literature about the last wave, 2003 to 2007, and it is interesting to see which theory about the occurrence of waves, disturbance theory, misvaluation or Tobin’s Q, is in line with this wave, or that there is another explanation for this wave. If the disturbance theory triggered this wave political, economic, social or technological shocks affected this wave for a large amount. These are country specific or industry specific shocks that only affect the beginning of a wave and have less to do with the rest of the period. The misvaluation theory explains a wave if the average market-to-book ratio is high, since the complete industry, or market should be overvaluated. In a same way Tobin’s Q would be tested. Another interesting point from the literature is that most waves start after depressions and the waves mostly end when the economic good times come to
an end. This in combination with the international character of the last waves and the economic growth that was supposed to contribute to the last wave makes it interesting to reconsider the current theories and question whether there are more fundamental and macro-economic factors that create the environment in which a wave could occur. These macro-economic factors would be economic growth and market liquidity. Market liquidity is needed to finance merger and acquisition activity. Furthermore I would like to investigate whether there are firm specific factors that have more influence on the last wave. To summarize this, my first hypothesis will be: Merger and acquisition activity are affected by macro-economic factors more than industry or nation specific factors. And my second Hypothesis will be: The last merger and acquisition wave can be explained by more than just the commonly accepted wave theories. I will first discuss the data needed for these hypotheses after which I will implement the data to test the hypotheses.

5. Data

The data I need for the hypotheses will be partially extracted from the Securities Data Company (SDC) Merger and Acquisition database. I collected all completed merger and acquisitions where the acquirer had a minority interest, or none, and obtained a 100% interest from January 1st 2000 until the 28th of June 2012. This time period is chosen, because I need all the deals after the sixth wave over an as large as possible period. To assure I get only the more important mergers and acquisitions I let the deals have a transaction value bigger than one million. Furthermore, both the target and acquirer needed to be from the United States, the European Union, or any BRIC country. I used these nations because primary research already showed that the most merger and acquisitions during the last two waves came from these countries. I do not include Romania and Bulgaria in the European Union, since they only entered the European Union after the wave that took place from 2003-2007. Since I also need company specific data I had to drop all deals in which no company code was available. The data of the deals consist of the date announced, the nations and industries involved, and the transaction value. The industries are divided by the Global Industry Classification Standard which is developed by MSCI and Standard & Poor’s.

The company specific data was extracted from the Wharton research Data Services Compustat database. From this database I collected the market and book value from the acquirers. The last data I need for this research are economic data being extracted from the Thomas Reuters DataStream. This data includes the GDP, swap rate and yield on government bonds.
5.1 Wave identification

To work with this data we need to mark out the period in which the wave occurred, or at least when the wave started. This will be done similar to Harford (2005). Where Harford used a 24 month wave period I let a wave be at least 12 months. I use this 12 month period instead of the 24 month period of Harford to get a different length of a wave. Although I shorten the length of a wave to 12 months this is still a large time period. Furthermore it is possible that a 24 period wave of Harford is not necessarily two 12 month period waves. Therefore we might get stricter boundaries. Harford takes this 24 month period from Mitchell and Mulherin (1996) their study where they asses a wave to a 2 year period. In my wave identification I let a wave be a sum of several 12 month periods, where I chose 12 months since it is not as broad as the two year period, but large enough to have a good approximation of a wave. To do this first there need to be a 12 month deal concentration which is higher than a randomly distributed 12 month deal concentration. I simulate 1000 times a distribution of the total number of deals on the 150 months, between January first 2000 and the thirty-first of 2012. From these 1000 distributions, the twelve month deal concentration needs to be calculated. The 99\textsuperscript{th} percentile of the maximum twelve month deal concentration of all these 1000 distributions will be compared to the twelve month deal concentration of the original data. The 99\textsuperscript{th} percentile is taken to get only the extremes, so that the wave has a better outline. If the original data shows a twelve month deal concentration that is higher than the 99\textsuperscript{th} percentile of the distribution, a wave has occurred. By doing this, we see that the wave starts in 2004 and ends in 2007. Obviously the results also show a wave in 2000, but this wave is the end of the 1990’s wave and therefore will not be taken into account for identifying the last wave.

We can also do this for the industries, grouped by the Global Industry Classification standard. This classification standard divides the industries in 24 groups. In table 2 we notice that only 14 industry groups show signs of a wave. All of these are within the years 2004 to 2007. Since the industries that show a wave are all different from each other, it is very unlikely that a shock within the industry caused these waves to occur.

Due to the fact that the deals of US acquirers give a very high contribution to the total number of deals I also check the wave occurrence of acquiring companies from the United States, United Kingdom, The European Union and the BRIC Nations separately. We notice that the waves of the European Union, the United Kingdom and the United States are all around the time the world wide wave was identified. Only the wave of the BRIC countries is very different from the world wide wave. For this reason I will not just examine the world wide wave, but also the wave for the specific regions.
Table 2 wave within the industries

<table>
<thead>
<tr>
<th>Industry group</th>
<th>Wave Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>2004 - 2005</td>
</tr>
<tr>
<td>Commercial &amp; Professional services</td>
<td>2005</td>
</tr>
<tr>
<td>Consumer services</td>
<td>2005</td>
</tr>
<tr>
<td>Food, Beverage &amp; Tobacco</td>
<td>2005</td>
</tr>
<tr>
<td>Diversified Financials</td>
<td>2005</td>
</tr>
<tr>
<td>Capital goods</td>
<td>2005 - 2007</td>
</tr>
<tr>
<td>Real Estate</td>
<td>2005-2007</td>
</tr>
<tr>
<td>Software &amp; services</td>
<td>2005-2007</td>
</tr>
<tr>
<td>Technology hardware &amp; equipment</td>
<td>2005-2007</td>
</tr>
<tr>
<td>Materials</td>
<td>2006</td>
</tr>
<tr>
<td>Media</td>
<td>2006</td>
</tr>
<tr>
<td>Healthcare equipment &amp; Services</td>
<td>2006-2007</td>
</tr>
<tr>
<td>Consumer Discretionary Retailing</td>
<td>2006 - 2007</td>
</tr>
<tr>
<td>Household &amp; personal Products</td>
<td>2007</td>
</tr>
</tbody>
</table>

5.2 Variables used
According to the theories for waves the variables that should trigger a merger and acquisition wave are: political, economic, social or technological shocks; misvaluation and high Tobin’s Q. Besides these variables, it is important whether there is a high level of liquidity in the market (Harford, 2005). Harford concludes that on its own credit market liquidity has no effect, but it is necessarily to let the other variables have a large effect.

It is hard and time consuming to check for 29 countries and 24 industries which political, economic, social or technological shocks took place. Because these shocks are all industry or country related I use industry and region dummies to check for these effects. The region dummies can give an indication, whether there are region specific variables that influence a merger (wave), industry dummies do the same for the specific industry. The regions can be specified in United States, United Kingdom, European Union less United Kingdom, China, India, Brazil and Russia. This way there will be 7 region dummies and 24 industry dummies. Of course these dummies will also hold other variables or effects. If the dummies show any effect, this could be due to a shock, but it is also possible that there are other industry, or region effects that cause this to happen.

The variable Tobin’s Q will reflect the average market-to-book ratio per industry per period. When calculating the average market-to-book ratio of the acquiring industries per quarter. I dropped the
highest and lowest one percent to have a more accurate value of the market to book ratio, since I drop the outliers in this way. I use the average market-to-book ratio of an industry since we already saw that a market gets overpriced as a whole.

Liquidity will be explained in this research by the US commercial and industrial loan spread. Harford (2005) states that this is a good measure of liquidity. The US commercial and industrial loan spread is the average bank loan rate of commercial and industrial US companies minus the federal fund rate. Harford (2005) uses this measurement of liquidity since he only uses United States data. Because I use worldwide data it might be illogical to use this variable as measure for worldwide liquidity. I use this variable as a measurement for worldwide liquidity due to the globalization in the financial capital market as Smith and Walter (2003) explain. Smith and Walter (2003) mention that international bank lending is very important in case of short term merger and acquisition finance if there is no good alternative. This International lending might be done with syndicated credit facilities, a financing activity involving multiple international banks. Another way of financing could be with corporate bonds. All my acquiring companies are on a stock exchange and therefore they can easily issue bonds which can be bought worldwide. As already explained, liquidity is seen as a factor which contributes to a merger and acquisition wave. Of course, if liquidity in the market is high, it is easier to finance a merger or acquisition.

The variable misvaluation will be measured by the MSCI world index, as explained by Schleifer and Vishny (2003). This does not necessarily mean that a high value of the MSCI world index indicates a misevaluation. Therefore the MSCI world index will be used to check whether a wave gets influenced by a high market value.

Two other variables I use are not discussed in the theory. The first one is the growth in GDP of the target nation. This is done, because a company is attractive if it is active in a growing market. This will be for cross-border and domestic deals where for domestic deals the target nation equals the acquirer nation. A second variable are the firm dummies, they give an indication on whether there are firm specific variables that influence if the acquiring firm performs a merger or acquisition.

All variables except for the dummy variables will be measured at t-1, since I use quarter this means that this is measured for a quarter earlier. This measurement is taken because the decision of the board to enter in a merger or acquisition will not be at the same time of announcement. Nevertheless it might also not be a quartile earlier. As there is no literature about the time between decision and
announcement I took t-1 as measurement. Furthermore, the MSCI world index should always be t-1 since the announcement might affect stock prices. We then might measure a high contribution of the MSCI world index where it in real life is an effect of a wave and not the reason for the wave.

5.3 Summary statistics
The data consists of 22246 deals and table 3 shows some relevant data categorized by year. Interesting in this table is that the number of deals increases from 2003 until 2007, where the total value of the deals increases from 2003 to 2006. This means that in the year 2007 there were more deals than in the years before but the average value per deal was less than in the years 2003 to 2006. In the period 2003 to 2007 we also see the C&I spread drop which we can be seen as a rise in market liquidity. The difference in number of deals and transaction value per year is graphically shown in Graph 1. This gives a good view on where the wave started and when the wave ended.

5.4 Tests
I will conduct several tests to find an answer for my hypotheses. First of all I start with a logit test, to see whether the macro-economic factors can explain a merger wave, and if industry specific or region specific factors have a higher contribution to this. Since our independent variable is strictly 0 or 1 we use the logit test for a better estimation.

$$\text{Logit}(p) = \beta_0 + \beta_1 X_{GDP} + \beta_2 X_{MSCI} + \beta_3 X_{C&I \text{ spread}} + \beta_4 X_{M-to-B} + \beta_5 D_{Industry} + \beta_6 D_{region}$$

$$\text{Logit}(p) = \log \left( \frac{p}{1-p} \right) \text{ with } p = \text{ probability of presence of a wave}$$

Secondly I will regress the number of deals per quarter on the macro-economic factors and the industry and region dummies, and after this I will do an ANOVA test to calculate the effect of each of the factors on the number of deals.

$$N = \beta_0 + \beta_1 X_{GDP} + \beta_2 X_{MSCI} + \beta_3 X_{C&I \text{ spread}} + \beta_4 X_{M-to-B} + \beta_5 D_{Industry} + \beta_6 D_{region}$$

With N = number of deals per quarter

Results

Logit-model
If we first look at the results of the logit test in table 4 column 1 we notice that although the pseudo-R² shows low value all macro-economic factors seem to predict a merger wave, with a significance level of
1%. Also the correlation of the predicted variables on the actual wave, which is 0.481, indicates the predicted value of these factors. The MSCI index and the growth in GDP of the target nation have positive significant effects on a merger and acquisition wave. This positive number in GDP can be explained that a growth in the GDP of a target nation can be seen as a growth in the target market which makes companies in that nation attractive. The positive number on the MSCI index is already explained as misvaluation. The negative effect of the C&I loan spread on a merger and acquisition wave can be explained as an increase in chance on a merger and acquisition wave if loans for commercial and industrial companies are low relative to the federal fund rate (risk-free). In column two we see different numbers. The variables market-to-book, industry specific factors and region specific factors show a very small pseudo-R². Nevertheless, the variable industry market-to-book ratio gives a significant coefficient, but since this coefficient is negative it explains the model opposite as what we would expect. A high market-to-book ratio would imply a high Tobin’s Q which should lead to a higher chance that a wave occurs, but the model shows opposite. When all variables are tested together we notice that the pseudo-R² is much higher than the 0.203 of the macro-economic factors and all variable are significant. Further, the coefficients keep the same sides as they had when they were tested separately. The full logit model shows a pseudo-R² of 0.212 with a correlation of 0.496 on the actual wave. We can conclude that the macro-economic factors have a larger effect on a predicted merger and acquisition wave than the other variables in the model do. Since the correlation between the prediction of the wave and the actual wave increases with 0.015 the variables, market-to-book, industry specific factors and region specific factors seem to have a very low contribution to this last wave.

As discussed earlier we also take a look at the individual acquirer regions. Column 4 of table 4 shows the results of the United States. Remarkable is that although all variables are significant again, the variable MSCI World Index now shows a negative coefficient. We also see that the pseudo R² and the correlation are much higher than that of the complete sample. The pseudo R² and correlation is even higher if we test it for the European Union Acquirers. For the United Kingdom and the BRIC countries the pseudo R² correlation is lower than that of the complete sample. Looking closer to the BRIC sample noticeable is insignificant coefficient of the market-to-book variable and that other than the other samples, the coefficient of the C&I loan spread gives a significant positive value for the BRIC sample.

**Regression on deals**

Looking closer at factors influencing a merger and acquisition deal rather than a merger and acquisition wave, I try to regress the number of deals in a given quarter on the factors influencing the deals in this
research. Table 5 shows the results from this regression. Again we see that the macro-economic factors show a reasonable high adjusted $R^2$ where all factors are significant at the 1% level. Furthermore, the MSCI index and the growth in GDP of the target nation provide a positive effect on the number of deals and again the C&I loan spread gives a negative effect. There is only a very small adjusted $R^2$ in the regression with the industry M-to-B ratio and the dummy variables of 0.058, nevertheless, the variable industry M-to-B is significant at the 1% level. Where we saw a negative coefficient in the logit test for market-to-book ratio we now have a positive coefficient. This is strange since the wave is measured by number of deals. When we regress with all the variables, there is a very small increase in $R^2$, from the regression with only the macro-economic variables, of 0.015. With this regression we also use separate samples for all the regions. The adjusted $R^2$ of all the individual samples are around the number of the adjusted $R^2$ of the total sample with a maximum of 0.659 for the European Union and a minimum of 0.572 of the BRIC sample. We also notice that as in the logit test, the coefficient for the MSCI world index of the United States sample is negative and the coefficient of the C&I loan spread of the BRIC sample is negative. Where we saw that the market-to-book coefficient for the complete sample is positive, it is for most individual samples negative.

The ANOVA tests in table 6 also show that the number of deals in a quarter is mainly explained by the macro-economic factors and especially the C&I loan spread for the complete sample. Looking at the individual samples the C&I loan spread stays the most important variable for the United States and the United Kingdom sample were the most important variable for the European Union and the BRIC sample is the MSCI world index.

6. Conclusion

Mergers and acquisitions tend to come in waves. Various theories about this subject try to come up with explanations for this phenomenon. In this paper I investigated whether the last merger and acquisition wave, from 2004 until 2007, showed different characteristic on why this wave occurred with reference to earlier waves. Since the wave of 2004 until 2007 occurred in a period of increased globalization it is interesting to investigate global waves instead of industry or region specific waves, which has been done in previous research. We noticed that the merger and acquisition waves of all regions did not have a common begin and end date. That is, looking at the whole world we see a merger and acquisition wave from 2004 until 2007, but when we look at the separate regions other waves can be seen. Although the wave in the regions United States, United Kingdom and the European Union are close together, they
differ a few quarters. For the region Brazil, Russia, India and China we notice a complete different period, from 2006 to 2010. Nevertheless, apart from the emerging markets we can see the merger and acquisition wave of 2004 until 2007 as a worldwide wave. The tests in this paper do not support earlier research, which is not surprising since this paper looks at the wave as a worldwide phenomenon where other research looks at region specific waves. However, when the waves are viewed separately credit market liquidity seems to have the highest contribution to predicting a wave or the amount of deals per quarter. Although earlier research showed that credit market liquidity had influence on these predicting variables it was more seen as a moderating variable. The other variables give less constant results, except that all models show that the wave or the number of deals are not majorly affected by industry or region specific variables, nor is it affected by a high Tobin’s Q. The European Union and the BRIC countries show a higher contribution for the variable MSCI world index, which confirms with Schleifer and Vishny (2003) their theory, where the United States and the United Kingdom show a higher contribution for the variable growth GDP of the Target Nation. Concluding we can state that merger and acquisition activity for the time period 2001 to 2012 was more affected by the macro-economic factors than the industry and nation specific variables. This will also be interesting to view future mergers and acquisition waves when we know that these macro-economic factors trigger these kinds of waves. Interesting is whether the BRIC countries have, or will have, a similar wave than the “developed” economies and that the merger and acquisition wave can be seen as a more worldwide phenomenon with an explicit explanation.
7. References


Reisman, G. (1999). 'When Will the Bubble Burst?'. Ludwig von Mises Institute, August 18


8. Appendix

Graph 1: Deals per Year and Transaction value per year

- **Deals per Year**
- **Total transaction Value per Year**
Table 3 Summary statistics

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>no. of deals</td>
<td>2,264</td>
<td>1,960</td>
<td>1,926</td>
<td>2,234</td>
<td>2,522</td>
<td>2,628</td>
<td>2,644</td>
<td>1,827</td>
<td>1,213</td>
<td>1,597</td>
<td>1,536</td>
<td>465</td>
<td>22246</td>
</tr>
<tr>
<td>%</td>
<td>10.18</td>
<td>8.81</td>
<td>8.66</td>
<td>10.04</td>
<td>11.34</td>
<td>11.81</td>
<td>11.89</td>
<td>8.21</td>
<td>5.45</td>
<td>7.18</td>
<td>6.90</td>
<td>2.09</td>
<td>100</td>
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<td>European Union</td>
<td>343</td>
<td>252</td>
<td>242</td>
<td>247</td>
<td>363</td>
<td>454</td>
<td>508</td>
<td>317</td>
<td>200</td>
<td>262</td>
<td>235</td>
<td>59</td>
<td>4,072</td>
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<td>United Kingdom</td>
<td>557</td>
<td>422</td>
<td>372</td>
<td>483</td>
<td>540</td>
<td>548</td>
<td>547</td>
<td>361</td>
<td>191</td>
<td>273</td>
<td>253</td>
<td>85</td>
<td>5,450</td>
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<td>United States</td>
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<td>1,240</td>
<td>1,250</td>
<td>1,442</td>
<td>1,547</td>
<td>1,509</td>
<td>1,378</td>
<td>932</td>
<td>666</td>
<td>868</td>
<td>903</td>
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<tr>
<td>BRIC</td>
<td>26</td>
<td>46</td>
<td>62</td>
<td>62</td>
<td>72</td>
<td>117</td>
<td>211</td>
<td>217</td>
<td>156</td>
<td>194</td>
<td>145</td>
<td>36</td>
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<td>Transaction Value in milj.</td>
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<td>361536</td>
<td>405952</td>
<td>602312</td>
<td>850225</td>
<td>1060265</td>
<td>909956</td>
<td>576288</td>
<td>573448</td>
<td>569048</td>
<td>490513</td>
<td>77761</td>
<td>7030310</td>
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<tr>
<td>%</td>
<td>7.87</td>
<td>5.14</td>
<td>5.77</td>
<td>8.57</td>
<td>12.09</td>
<td>15.08</td>
<td>12.94</td>
<td>8.20</td>
<td>8.16</td>
<td>8.09</td>
<td>6.98</td>
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</tr>
<tr>
<td>GDP growth</td>
<td>0.25%</td>
<td>0.60%</td>
<td>0.80%</td>
<td>0.75%</td>
<td>0.77%</td>
<td>0.75%</td>
<td>0.87%</td>
<td>0.21%</td>
<td>-0.41%</td>
<td>0.99%</td>
<td>0.50%</td>
<td>0.41%</td>
<td></td>
</tr>
</tbody>
</table>
Table 4

Logit test on a merger and acquisition wave per quarter. Growth GDP Target Nation is the growth of the GDP per quarter of the Nation the Target Company is established in. MSCI World Index is the average world index as measured by the MSCI per quarter. C&I loan spread is the commercial and industrial loan rates minus the federal fund rate. Industry M-to-B is the average market-to-book ratio of the industry of the acquirer per quarter.

The first numbers are the coefficients and the smaller numbers are the z-statistics.

The first three columns are logit tests with the entire sample. The columns IV, V, VI and VII are respectively logit tests with only United States, United Kingdom, European Union and BRIC acquirers.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>3.493</td>
<td>-0.047</td>
<td>3.787</td>
<td>8.508</td>
<td>4.452</td>
<td>3.138</td>
<td>-4.619</td>
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<tr>
<td></td>
<td>0.000</td>
<td>0.568</td>
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<tr>
<td>Growth GDP Target Nation</td>
<td>73.882</td>
<td>74.556</td>
<td>223.055</td>
<td>23.168</td>
<td>22.801</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td>0.000</td>
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<tr>
<td>MSCI World Index</td>
<td>0.002</td>
<td>0.002</td>
<td>-0.003</td>
<td>0.001</td>
<td>0.004</td>
<td>0.003</td>
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<tr>
<td></td>
<td>0.000</td>
<td>0.000</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<tr>
<td>C&amp;I Loan Spread</td>
<td>-2.537</td>
<td>-2.574</td>
<td>-2.655</td>
<td>-2.169</td>
<td>-3.927</td>
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<td>0.000</td>
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<tr>
<td>Industry M-to-B</td>
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<td>-0.197</td>
<td>0.077</td>
<td>-0.071</td>
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<td>yes</td>
<td>yes</td>
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<td>Yes</td>
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<tr>
<td>pseudo R²</td>
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<td>correlation of prediction with actual wave</td>
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<td>0.496</td>
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<td>0.407</td>
<td>0.672</td>
<td>0.401</td>
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<td>12838</td>
<td>4156</td>
<td>3360</td>
<td>1257</td>
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</table>
Table 5

Regression on the number of deals per quartile. Growth GDP Target Nation is the growth of the GDP per quarter of the Nation the Target Company is established in. MSCI World Index is the average world index as measured by the MSCI per quarter. C&I loan spread is the commercial and industrial loan rates minus the federal fund rate. Industry M-to-B is the average market-to-book ratio of the industry of the acquirer per quarter.

The first numbers are the coefficients and the smaller numbers are the t-statistics.

The first three columns are regressions with the entire sample. The columns IV, V, VI and VII are respectively regressions with only United States, United Kingdom, European Union and BRIC acquirers.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
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<tr>
<td>Intercept</td>
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<td>501.604</td>
<td>779.934</td>
<td>3970.314</td>
<td>289.082</td>
<td>339.725</td>
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<tr>
<td>Growth GDP Target Nation</td>
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<td>1351.935</td>
<td>1013.021</td>
<td>289.082</td>
<td>339.725</td>
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<td>MSCI World Index</td>
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<td>0.127</td>
<td>-0.029</td>
<td>0.015</td>
<td>0.069</td>
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<td>Industry M-to-B</td>
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<td>18.190</td>
<td>3.878</td>
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<td>-0.740</td>
<td>-0.770</td>
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<tr>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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</tr>
<tr>
<td>Region dummy</td>
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<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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</tr>
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<td>0.638</td>
<td>0.620</td>
<td>0.642</td>
<td>0.659</td>
<td>0.572</td>
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<td>21976</td>
<td>12838</td>
<td>4160</td>
<td>3367</td>
<td>1258</td>
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</table>
**Table 6**

ANOVA test results. With this ANOVA test we see what the impact is of each variable on the regression and therefore the number of deals. Growth GDP Target Nation is the growth of the GDP per quarter of the Nation the Target Company is established in. MSCI World Index is the average world index as measured by the MSCI per quarter. C&I loan spread is the commercial and industrial loan rates minus the federal fund rate. Industry M-to-B is the average market-to-book ratio of the industry of the acquirer per quarter.

The first three columns are ANOVA tests with the entire sample. The columns IV, V, VI and VII are respectively ANOVA tests with only United States, United Kingdom, European Union and BRIC acquirers.

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<thead>
<tr>
<th></th>
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<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
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</thead>
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<td>0.026</td>
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<td>C&amp;I Loan Spread</td>
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<td>Adjusted $R^2$</td>
<td>0.623</td>
<td>0.058</td>
<td>0.638</td>
<td>0.620</td>
<td>0.642</td>
<td>0.659</td>
<td>0.572</td>
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