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1 - Introduction

This paper aims to investigate the relationship between a CEO’s tenure and educational background on their propensity to engage in mergers and acquisitions. People are shaped by experiences and their backgrounds, and CEOs are no exception. Quantifying past events is often difficult, both in terms of data collection and model creation, and this includes the ability and desire to perform an acquisition. This paper will try to do so by looking at a CEO’s education, tenure and investment in the firm and how they can potentially drive this number.

Acquisitions are a key way for firms to grow, diversify and invest; and play a significant role in a company’s success. In 2020, the value of global M&A deals amounted to US$ 3.6 trillion, with the most important regions being North America, Europe and Asia-Pacific. Europe accounted for 27.4% of the total market, a notable increase from the previous year. Since the 2000s Europe has been experiencing a boom in M&A activity, compared to previous decades which were marked by inactivity. The introduction of a common currency, the Euro, together with wide deregulation and catching up to the US’ levels of technology has allowed Europe to be a prime place for such activity. The deregulations, coupled with privatizations, drove a great deal of cross-border consolidations, like the purchase of Unilever N.V. by Unilever plc in 2020, with a value of US$ 81.0 billion dollars. The banking sector also particularly benefited from this due to the large economies of scale and other benefits that come with size in the sector. The acquisition activity for companies also tends to be concentrated in the same sector as the buying firm – preferring to focus on creating economies of scale or eliminating competition – with a lesser number of firms engaging in diversifying activity.

However, Brexit and the slower recovery of the European economy to COVID-19 have had their impact on the sector, and since 2017 the numbers have been falling. In a sample of over 13 000 European companies this trend is clearly evident, but acquisition activity still remains an important part of strategic operations and growth for a firm nonetheless.

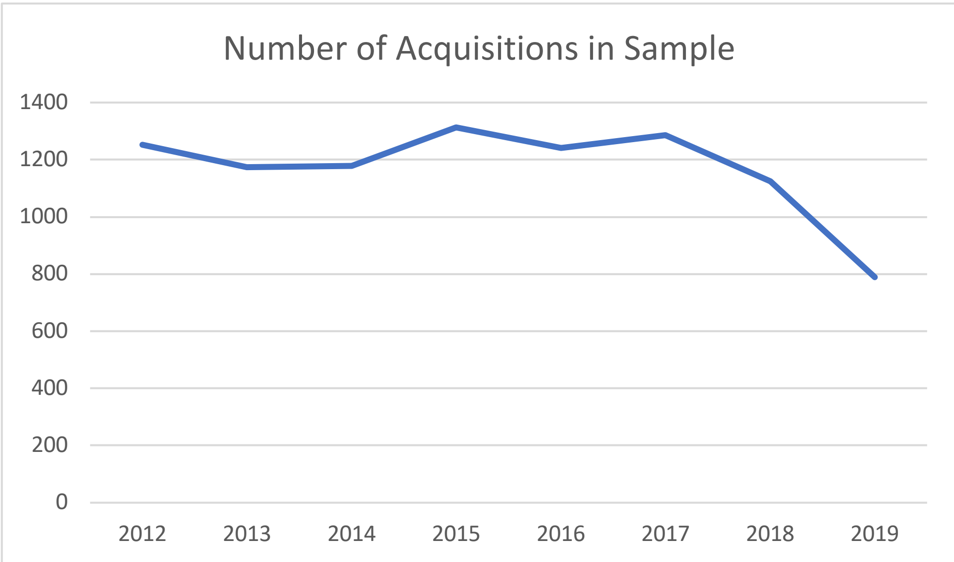

Figure 1

This study will in great part focus on European private companies' activities in acquisition, for a couple of key reasons. Firstly, a Europe-focused private-industry acquisitions study can contribute to the current literature as it is generally less researched than its US counterpart. Secondly, in the private sector a CEO has more discretion than they would if their company was public. A CEO's background and characteristics are therefore expected to have more influence on their choices and strategic plan than in a public company, making this investigation more interesting and relevant.

The topic of mergers and acquisitions has received particular attention from scholars, especially since Finkelstein (1992) wrote a notable paper on the subject. Upper Echelons Theory states that organizational outcomes are partially predicted by managerial background characteristics of the top-level management team. It is therefore important to investigate the backgrounds and experiences of top management, as they could have a decisive impact on the M&A behavior and decisions of a given firm. Most often, the CEO of a firm is the most powerful and influential member of the C-suite. While this is certainly not always the case, this paper will only consider CEO related experiences, and not those of the rest of the C-suite or the board of directors. Having such power, a CEO might decide to engage in an acquisition for numerous reasons. While the most obvious reasons include diversification, elimination of competition or market share growth, other unforeseen reasons might come into play. Some studies (Barkema & Gomez-Mejia, 1998; Galbraith & Kazanjian, 1986) point towards the fact that increases in firm size due to acquisition go hand in hand with executive compensation. This is driven partly by the egoistic nature of certain managers and a lack of incentives – such as CEO compensation being seldomly linked to the economic performance of the firm. Overall, with acquisitions playing a significant role in the growth of many firms and CEOs being the primary driver of these; I think it is important to examine the relationship between the two. Hence this paper will examine the relationship between acquisition activity and CEO background characteristics.

2 - Literature Review and Background Theory

Papers such as Finkelstein (1992) have shown the importance of CEO power in a firm, and attribute this power to a few key factors. A CEO, who is usually appointed and entrusted by a board of directors is responsible for major corporate and tactical decisions for a company; and hence most often times responsible for acquisitions.

There are numerous reasons for which the CEO is able to execute such power. The most obvious and relevant one (Finkelstein 1992) is structural power; which is related to the distribution of formal positions within a company. This encompasses aspects such as titles – with CEO being one of the most powerful – compensation and hierarchy structure in a firm. Ownership power suggests that a manager's ownership (in terms of shareholdings) of a company is a relevant indicator of the power they are able to exercise. In his paper, Finkelstein reported that "ownership power may not translate into active involvement in strategic decision making in the same way that structural and prestige power do"; and that "owners may be less involved than nonowners with the actual management of firms". However, that paper only considered publicly traded companies; and the situation might differ for private ones, as analyzed in this paper, for a couple of reasons. A considerable portion of the firms in my sample are family businesses (58%), leading to a larger number of CEOs which are also owners, and it would not seem likely for them to be less involved in management, as will be explained in the formulation of Hypothesis 3.

Expert power is defined as the ability to deal with environmental dependencies, and so managers with functional expertise in an area are said to possess this kind of power. While this mostly comes from prior real-world experience, I believe that education can have a similar effect and also contribute to this type of power as it provides further knowledge and other skills related to a CEO's role. Lastly, prestige power is stated to be a manager's ability to absorb uncertainty from the institutional environment. In his paper, Finkelstein uses elite education as one of the proxies to measure this type of power; indicating that education is not only important for the theoretical knowledge it provides, but also for the name of the university that a given manager carries with him and the connections he makes while there. Obviously, the more elite the school the more the name helps and the more likely the manager is to have met influential people which will help him later on in his career. Hence even if the education is not in the field of a given CEO's firm, it still plays a role in helping him exert power. In his paper, Finkelstein demonstrated how the strategic choice of a firm is largely influence by its key figure, the CEO, through its different power bases. Firstly, he showed how the four power measures were reliable and valid for examining power dimensions in a manger. Then, the four power measures were shown to be associated with perceived power within the firm, proving how CEOs are often the most powerful player within the company and hence the most relevant one when it comes to acquisition decisions. Lastly, he tested the predictive ability of the power measures concerning to acquisition activity, which is the most relevant to this research.

Overall, this paper provided a fresh perspective on analyzing CEO characteristics and set a standard on how to conduct a study on acquisition behavior of a firm, which many of the other paper cited in this study follow.

While this paper aims to model how a CEO's background influences their propensity to make acquisitions, it is still important to look at how other factors also affect these decisions. Wright et al. (2002) analyzed the effect of the level of vigilance on CEO compensation contingent on acquisitions. They questioned whether returns or firm growth due to acquisition influence CEO compensation. The main problem stems from agency theory, which recognizes the inherent conflicts of interests between principals and agents. These will create costs to the firm, and one way to reduce them is through monitoring activities, such as external monitoring agents (security analysts, independent outside board members and active institutional investors).

Naturally it is in the best interest of the firm for the acquisitions to be successful in the long run and drive shareholder value up, but a manager might be seeking immediate rewards or higher compensation; and these two do not always match. To some, increasing a manager's discretion might seem like a good idea as it is meant to lead to more actions being taken that will improve the firm's performance. However, this also comes with the risk of allowing CEOs to engage in more selfish behavior which only provides returns for themselves. Hence, some kind of monitoring activity might be needed to keep the managers in check, but exactly what effect does this have on their compensation? Wright et al. (2002) contended that with lax monitoring, personal motivation is a key driver in acquisition decisions and corporate strategy, and so a manager's returns will be directly associated with an acquisition resulting in an increase in firm size. On the other hand, a more vigilant approach will lead to a CEO's compensation being associated with returns to shareholders resulting from an acquisition. This paper gives an important insight into the attitudes that top managers have towards acquisitions relating to the kind of monitoring activity they are subject to, helping to shed some light on how a CEO's characteristics can impact their acquisition activity.

It is important to examine the prior experiences of top managers as they make decisions deeply impact the business and all stakeholders; and carry out these decisions as flawed human beings (Wright 2012). Their prior experiences will shape the way they confront new problems or face a situation like an acquisition. Practical knowledge gained through business-related networks or international environments are particularly important factors influencing executive propensity. According to upper echelons theory managers are heavily influenced by pre-formed perceptions they

have formed through prior experiences; so their actions and thoughts are based on their own individual interpretation of reality. Other scholars have also emphasized how prior experiences for managers are crucial in indicating managerial propensity (Galetkanycz and Hambrick, 1997)
The trend found (Wright 2012) is for CEOs who have had negative acquisition experiences in the past to keep having them in the future, and the same is true for positive ones. This is due to managers wanting to repeat their previous actions. If they had a negative outcome their decisions will be repeated to try to demonstrate that they were indeed correct. Top managers with positive experiences will form their own views and become more entrenched in their beliefs. This effect is however moderated if managers are also owners, as they tend to be more careful with the acquisition choices they make. The evidence in the paper points towards the fact that positive experience provides understanding of context and enhanced comprehension of the industry and its characteristics. This result provides a theoretical basis on which to expand upon, and will help form the arguments later presented in Hypothesis 1 and Hypothesis 2.

3 – Hypotheses

Hypothesis 1

CEO education is very relevant in shaping their mentality, building their skillset and giving them crucial knowledge about the industry they work in. Other papers have argued that “top managers' backgrounds and experiences influence the strategic choices they make” (Hambrick & Mason, 1984), and so it is a crucial aspect to investigate for acquisition activity. An education in the field of economics or finance, which in this paper were both placed under the ‘economics’ category, is meant to give managers a more tactical, strategic and hands on management style. With the knowledge they will have accumulated in their economics education, these top leaders will have greater expertise about M&A decisions and their impacts on the firm. With this additional knowledge also comes increased confidence, which will drive the number of acquisitions performed. Moreover, people with such education are more likely to pursue a job in their field, and so not only will they gain an education background in finance/economics, but a functional one as well. Top managers who have a background in economics should also be more capable of making a deal and creating the opportunities that lead to an increased number of acquisitions. Additionally, other researchers (Finkelstein) have found that in firms with a certain degree of diversification the job of a manager can be similar to that of managing a financial portfolio; hence giving an edge to CEOs with financial/economic backgrounds due to their familiarity with the topic and superior knowledge.

As previously mentioned, Finkelstein argued in his paper is that managers with functional backgrounds in finance are "associated with diversification posture and acquisition activity". However, their empirical results yielded little correlation between the two, so I wanted to investigate a similar but slightly different hypothesis. Instead of functional backgrounds in finance I will be investigating educational backgrounds in finance or economics; which will hopefully yield a different result.

I therefore expect managers who have undertaken such education to be more prepared and informed on M&A, and thus be more willing to make them happen. They will also feel more confident about their skills after pursuing such education, especially if it comes from an elite school and will be able to better exert their power (Finkelstein 1992).

Hypothesis 1: An education in the field of economics leads to a greater number of acquisitions

Hypothesis 2

The issue of CEO tenure and acquisition performance has already been extensively analyzed (Walters 2007), and pointed towards an inverted "U" relationship between the two. So, a new CEO is likely to be too inexperienced and lacks the confidence to make successful and profitable acquisitions, and so on average they turn out to be less profitable for shareholders. As tenure increases and reaches the later stages, the quality and profitability of acquisitions deteriorates due to the CEO's increased power bases, entrancement and strategic rigidity. They found the optimal tenure length for successful acquisitions to be of just over eight years, as it is a good balance between power, experience and flexibility.

New CEOs usually face high expectations and a steep learning curve, and so most of them lose their jobs in less than three years, making it difficult to have a proper impact on the firm and for their strategies to be put into play. They will either be less prone to engage in acquisitions or likely to make unsuccessful ones, as they will be more focused on skill acquisition and may not yet possess the experience and know-how required to make a successful acquisition. As time goes on, and if they manage to keep their job, their confidence increases alongside their skills and they will be able to dedicate more time to making informed decisions rather than learning the routine of the job. They will then likely have less time to dedicate to acquisitions and feel less confident in making them initially, thereby reducing their number.

However, as CEO tenure keeps rising, problems start to occur. It is common among managers to suffer from survivorship bias, thinking that they got to where they are because their decisions have always been the right ones. On top of that, as CEOs get older they might become increasingly selfish and put their personal interests ahead of those of the firm. This is especially relevant if lax monitoring activities are present, which as previously explained give managers more discretion and allow them to engage in more selfish activities; putting the priorities of shareholders and the firm second to theirs. While this means that the quality of the acquisitions decreases, I do not expect their number to diminish. On the contrary, as their tenure increases so does their skill, but also their confidence and entrenchment. As said by Hambrick and Fukutomi (1991); "each passing year in the job tends to bring the CEO a heightened sense of correctness in his or her established way of operating and viewing the world".

Hypothesis 2: As tenure increases, so does the propensity of a CEO to engage in an acquisition

Hypothesis 3

A manager might decide to acquire a company for a variety of reasons, and these might not always have the interest of the firm in mind. Depending on the form of control of a certain firm, acquisitions are expected to have variable outcomes for shareholders (Kroll et al. 1997). In a manager-controlled firm, with diffused shareholders, the CEO is going to have a lot of power and say in decisions; and this might sometimes result in abusive behavior. For example, they might engage in a takeover in order to boost their compensation even if this generates negative returns for shareholders. According to agency theory shareholders and manager's goals are out of alignment, and in a manager-controlled firm there are little incentives to bring the two agents' goals closer together. Hence managers are likely to take part and promote activities which mostly benefit themselves. Owner-controlled firms, where there is at least one major shareholder, are less likely to engage in this type of behavior as their actions are closely monitored and held accountable. Managers are put in check by said shareholders and become unwilling to engage in activities that mostly benefit themselves, out of fear of losing their job. With this form of control acquisitions tend to generate positive return to shareholders. This is also the case for owner-manager-controlled firms, where managers have at least a 5% equity stake in the company they are running. Since the CEO's wealth and compensation directly depends on the stock performance, they are highly motivated to engage in activities that benefit it. In a similar way, managers who are members of the founding family have the moral weight of having to manage a family business and its legacy, which will then hopefully be passed down the family line. This disincentivizes such managers from creating short term returns that boost their compensation, for example through acquisitions with the sole purpose to increase firm size, as is the case with manager-controlled firms. Because of this pressure owner-controlled and family-controlled firms face, they will be much more careful with the acquisitions they make, and finding worthwhile ones will take longer, more effort and will happen less frequently than with other types of managers who have lower expectations and involvement.

Hypothesis 3: Owner-controlled and family-controlled firms will engage in less acquisitions

4 - Methodology and Model

4.1 - Sample Construction

The original sample contained 13,939 companies, but that was shrunk down to 1,216 for this study. Only the firms with revenues greater than €250 million, mostly operating in industrial or service industries (being the most relevant and opportunity filled sectors in a modern economy for acquisition activity) which were at the zero or first level of their corporate group were selected. Hence branches of foreign companies or consortiums were excluded. Lastly, research about CEOs had to be done by hand and was a time-consuming process and not all firms could be covered, so I arrived at the final sample size of 1,215 companies.

The database with information about CEOs was completed by myself with first hand data collection; either from the Orbis database, the company's website or other sources (such as LinkedIn). The data regarding acquisitions was collected by my supervisor. The companies in this dataset are exclusively European (French, British, French, Spanish, German) private companies with revenues greater than 250 million euros. If the CEO had more than a 5% ownership stake in the company he was classified as an owner-manager. The 5% threshold is also used in other similar papers (Kroll et al. 1997) and it is the minimum requirement at which the SEC requires public disclosure, so it is a logical cutoff point. Additionally, if a CEO is also a member of the funding family he was classified as an owner-manager. This was done because in my beliefs CEOs who are part of the funding family act in a similar manner to owner-managers when it comes to acquisitions. As previously stated, owner-managers have an incentive to behave in a way that benefits shareholders due to their ownership stake, and so do family-managers due to the moral pressure. Therefore, these two types of CEOs were classified under the same type. Information regarding acquisitions and revenue was downloaded and reworked from Zephyr. This data spanned from 2012 to 2019 (8 years), and some managers had been in tenure for longer than that and others for less. Therefore, the deals made when the current CEO was not in power had to be removed. Additionally, as time goes on so does the number of acquisitions made by any manager, so regressing directly would not give a great indicator of how many deals the manager wants to engage in. Instead the number of deals performed was divided by the years in tenure, to see on average how many deals were made per year by the CEO.

```
data.loc[data.fake_tenure >= 9, "fake_tenure"] = 9
t = data.fake_tenure
c=0
data["deals_by_ceo"] = np.nan
for i in t:
    b = 19 - i + 1
    data["deals_by_ceo"][c] = data.iloc[c,b:19].sum()
    c += 1
```

Figure 2

4.2 - Independent Variables

<u>CEO Tenure</u> – Indicates the number of years the CEO has held this position since December 2020. Any time less than one year was rounded up to one year. Only acquisitions under the current CEO's tenure were counted. Since the data for acquisitions only goes up to 2019, CEOs with one year of tenure were eliminated. This data was collected either through the Orbis profile of the manager or the company website.

<u>CEO Ownership</u> – CEO ownership indicates whether the manager has either a 5% equity stake in the company (or parent company) or is a member of the founding family; indicated by a 1 if true and a 0 if false. As previously explained, I expect these two to have similar effects so they were grouped under the same category. This data was collected through the Orbis database where the shareholders of each company were found.

Economics – This variable shows whether the manager obtained an education in the field of economics or not, indicated with a 1 or a 0 respectively. There were 16 different fields in which CEOs obtained educations, but economics represented 43% of the sample so it made the most sense to use it as a binary variable, and it falls in line with the theory developed by others (Finkelstein 1992). If the manager obtained a master's degree on top of a bachelor's, the master's was considered the most relevant one. This data was primarily collected from the LinkedIn profile of the CEO or the company website.

Education	Freq.	Percent	Cum.
Biology	15	1.76	1.76
Chemistry	12	1.41	3.17
Communications	6	0.70	3.87
Computer Science	8	0.94	4.81
Economics	368	43.14	47.95
Engineering	290	34.00	81.95
Geography	6	0.70	82.65
History	4	0.47	83.12
Law	64	7.50	90.62
Marketing	10	1.17	91.79
Mathematics	16	1.88	93.67
Medicine	22	2.58	96.25
Philosophy	3	0.35	96.60
Physics	14	1.64	98.24
Political Science	10	1.17	99.41
Social Sciences	5	0.59	100.00
Total	853	100.00	

Figure 3 – CEO Education

4.3 - Dependent Variable

Number of acquisitions per year – This is a count, starting from January 2012 and ending in December 2019. What is counted as an acquisition is any percentage of equity takeover of another firm done by the acquiring company. The number of deals made in the time the CEO was in power was divided by their tenure to arrive at the final number. This data was collected by my supervisor through the Zephyr software platform. In the tables provided below (Figure 7) both the raw number of acquisitions made by the CEO are provided, as well as the acquisitions per year made by the manager, which is the dependent variable in the model.

4.4 - Control Variables

Log of Revenue – Revenue was used to account for firm differences in size, as bigger firms tend to engage in more acquisitions than smaller ones. With bigger revenues comes more capital and more expertise, so larger firms will have easier access to financing for acquisitions. Other studies (Ciscel and Carrol, 1980) also use revenue to account for firm size. However instead of using just the revenue, the natural logarithm was taken instead in an attempt to normalize the variable; as the raw revenue data was quite skewed and had a very large range. This can be observed in the detailed summary table reported below.

OperatingRevenue

	Percentiles	Smallest		
1%	250694.6	250000		
5%	259812.7	250000		
10%	269407.6	250000	Obs	1,216
25%	312705.2	250000	Sum of Wgt.	1,216
50%	448951.8		Mean	1757606
		Largest	Std. Dev.	2.22e+07
75%	795052.8	4.71e+07		
90%	1812616	5.32e+07	Variance	4.93e+14
95%	3160190	7.40e+07	Skewness	33.4584
99%	1.18e+07	7.65e+08	Kurtosis	1148.363

Figure 4 - Operating Revenue

4.5 - Preliminary Analysis

Some preliminary analysis was carried out on this dataset, some of which will be reported here.

Country	Freq.	Percent	Cum.
Belgium	110	8.46	8.46
France	213	16.37	24.83
Germany	747	57.42	82.24
Spain	37	2.84	85.09
United Kingdom	194	14.91	100.00
Total	1,301	100.00	

Figure 5 – Country

Ownership structure	Freq.	Percent	Cum.
Coalition	242	18.63	18.63
Family business	758	58.35	76.98
Firm controlled by a bank/insurance c..	25	1.92	78.91
Firm controlled by a fund/PE	25	1.92	80.83
Public company	81	6.24	87.07
State-owned enterprise	168	12.93	100.00
Total	1,299	100.00	

Figure 6 – Ownership Structure

As can be seen, the distribution of the Educations amongst CEOs is quite unevenly distributed, with Economics and Engineering making up 77.14% educations held by people in this position.

The countries in this sample are also not evenly distributed, with Germany making up more than half the constituents. The same problem also arises from the ownership structure where family businesses account for 58.35% of the sample. Larger countries like France and Germany will naturally have more firms than smaller ones like Belgium, so this is not a major concern in terms of quality of the data.

Variable	Obs	Mean	Std. Dev.	Min	Max
log_revenue	1,216	13.27397	.8710873	12.42922	20.45496
economics	1,216	.296875	.457069	0	1
shareholder	1,216	.3273026	.4694218	0	1
tenure	1,216	10.68503	10.9105	1	63
deals_by_ceo	1,216	.3980263	1.535145	0	28
deals_per_~r	1,216	.0536347	.202677	0	3.714286

Figure 7 – Descriptive Statistics

The descriptive statistics provided above show all the variables included in the regression, with the addition of deals made by the CEO, which provides an insight into the sample. The majority of firms in the sample have not even engaged in one acquisition in the time period, but this is to be expected as some of the firms included are quite small (revenues of 250,000 euros), and so they probably do not have the capital to perform such strategic actions. This is however not the case for all of the small firms in the sample.

	econom~s	log_re~e	shareh~r	tenure	deals_~r
economics	**1.0000**				
log_revenue	**-0.0081**	**1.0000**			
shareholder	**-0.0006**	**-0.1510**	**1.0000**		
tenure	**-0.0824**	**-0.1546**	**0.5713**	**1.0000**	
deals_per_~r	**0.0504**	**0.2214**	**0.0704**	**0.0477**	**1.0000**

Figure 8 – Correlation Matrix

The correlation matrix provides some insight about the interaction between the variables. Since some of them are categorical, a Pearson correlation was used to account for this. We can notice that tenure is positively correlated with being a shareholder or member of a family firm, which is sound as these managers have more of a say in decisions and are more invested in the firm than their counterparts. The deals completed by a CEO are also positively correlated with the revenue of a firm, as expected. Larger revenues imply a better capital structure, better talent and expertise working at the firm and most importantly easier access to funds to perform an acquisition. Tenure has a negative correlation with revenues, which also follows the theory presented by Walters (2007). As tenure of a CEO grows so does the selfishness and entrenchment of the said manager, driving up profits for themselves and putting those of the firm and shareholders second. Lastly, being a shareholder has an unexpectedly negative correlation with revenues, going against the theory that their interests are parallel to those of the firm, and being a shareholder also has a surprising positive correlation with the number of deals per year; the opposite of what is described in Hypothesis 3. These effects are unexpected and their significance will be truly seen in the regression that follows.

4.6 – Model

In order to test the three hypotheses, a regression model was employed to estimate the number of acquisitions per year given the independent variables. I used a simple OLS regression model for this estimation, which contained continuous and binary variables. The binary variables were used for the ownership end economics. The log of revenues was used as a control variable, and tenure was the other continuous variable. β_0 is the intercept and ε_i is the error term.

The resulting model follows this regression:

$$deals\ per\ year = \beta_0 + econ \cdot x_1 + share \cdot x_2 + tenure \cdot x_3 + \log(revenue) \cdot x_4 + \varepsilon_i$$

5 - Results

Source	SS	df	MS			
Model	3.19205156	4	.798012889	Number of obs	=	1,216
Residual	46.7176655	1,211	.038577759	F(4, 1211)	=	20.69
				Prob > F	=	0.0000
Total	49.9097171	1,215	.041077956	R-squared	=	0.0640
				Adj R-squared	=	0.0609
				Root MSE	=	.19641

deals_per_~r	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
economics	.0247663	.012392	2.00	0.046	.000454	.0490785
tenure	.0007877	.0006348	1.24	0.215	-.0004576	.0020331
shareholder	.0356374	.0146924	2.43	0.015	.006812	.0644629
log_revenue	.0560341	.006568	8.53	0.000	.0431481	.06892
_cons	-.7175932	.0886424	-8.10	0.000	-.891503	-.5436834

Figure 9 – Regression

The model achieves a low R-squared value, indicating there is a lot of unexplained variance. However, the p-values for most of the coefficients are significant at a 5% confidence level, indicating they are individually significant; except for tenure. This points towards the fact that there are some missing variables in the model that are needed to better explain the variance in the data. However, the ones that were present are all relevant (apart from tenure) and help explain some of the effects that drive the number of acquisitions, but not all that causes this phenomenon.

Economics tends to have a positive effect on the amount of deals made by the CEO, as described in Hypothesis 1. The term in the regression is significant at the 0.05 level and the Wald test rejects the coefficient being equal to 0. Therefore, an education in the field of economics helps managers engage in more acquisitions for their company. Having superior knowledge about M&As brings alongside it an increase in confidence and appears to have a positive impact on acquisition activity.

Being a shareholder or a member of the funding family also has a positive coefficient and positively impacts the number of deals performed by the

CEO, which is the opposite of what was predicted in Hypothesis 3. The term is also relevant as can be observed from the low p-value, so an alternative explanation to Hypothesis 3 is needed for this effect. One possible theory to explain this could be that managers and members of the founding family are driven towards increasing profits and benefits to shareholders more so than others, as it personally benefits them to do so. As discussed before, acquisitions are one such way to do this, as when they are successful they tend to drive the share price upwards, creating wealth for any shareholders. Since this is in the interest of owner-managers, they could be focusing a lot of their activity and the firm's strategy towards acquisitions in order to create this effect, and so having a higher propensity to engage in acquisition activity than their counterparts. In addition, being a private company may also imply that managers feel less pressure from shareholders as they have more discretion and power available, leading to a lack of monitoring activities from other actors towards the manager. As demonstrated by Wright et al. (2002) and Kroll (1997) a lack of monitoring activities can lead to acquisitions which are only favorable for the manager and less so for the rest of the firm. However, this is quite unlikely in this case as managers considered in this category had at least a 5% ownership stake in the company, meaning that making many acquisitions that benefit themselves but hurt the firm will also be unfavorable towards them due to their partial ownership of the company.

The effect of tenure on propensity to make acquisitions instead does not match the expected result (Hypothesis 2), and seems to be insignificant surprisingly. This could be due to fact that new CEOs engage in a similar amount of acquisitions as more tenured ones. One possible explanation is that new managers want to impress the board or shareholders and may be highly motivated to bring change to the firm. Therefore, they will tend to be very proactive and strive to have a meaningful impact, and one way to this is through M&A. Then as they gain more experience the 'novelty' effect fades away and is substituted by knowledge of the industry gained by the CEO. This allows them to keep engaging in acquisitions, but of a different type from those he was doing initially. Lastly as tenure keeps increasing the type of acquisitions change again and will become more focused on making a personal gain and increasing their compensation rather than generating returns for shareholders. So, while the number of acquisitions performed by a manager might stay more or less constant throughout their tenure, this does not mean their quality does. Instead, at the beginning and end of their tenure CEOs will probably be provide worse returns for the company that in the middle of their tenure, due to the reasons listed above. This is a plausible explanation for the lack of relationship between tenure and number of acquisitions. This view matches with the one found by Walters (2007) where they describe an "inverted U-shaped relationship" between CEO tenure and acquisition outcomes. However, to confirm this theory more data and further research is needed.

The intercept in this regression is negative and significant at the 0.05 level. Since a binary variable was used for whether the manager in question studied economics or not, when the interaction term is 0 it means that the education was in another field. When this was true, the number of acquisitions made is lower, indicated by the negative sign. Hence, not only does an education in the field of economics help managers make more acquisitions, but an education in another field or lack of one actually negatively impacts their propensity, which is surprising. An explanation for this is that a lack of education in this field makes CEOs more reluctant for two reasons. First of all, being less versatile in the world of finance their lack of knowledge in the area might intimidate them somewhat. Secondly, they could also be more technical managers, having more 'field knowledge' about their specific area but lacking in managerial skills. This is most likely true for the managers who come from an engineering background, which constituted a large part of the CEOs who did not have a background in economics.

The low R-squared does indicate some missing variables in the model. One such factor that could explain the number of acquisitions but for which data was not available is the level of power and discretion available to the manager. This could be measured with indicators such as salary, number of titles, board vigilance and shareholder percentage, a similar approach used by Finkelstein (1992) when analyzing power structures in the upper management of firms.

```
( 1)  shareholder = 0
( 2)  economics = 0

      F(  2,  1211) =    5.22
            Prob > F =    0.0055
```

Figure 10 – Hypothesis Testing

Here a Wald hypothesis test was carried out to test the significance of the coefficients. The null hypothesis is that the coefficients for the two independent variables are jointly equal to 0, and we reject this because of the low score on the test.

Variable	VIF	1/VIF
tenure	**1.51**	**0.661954**
shareholder	**1.50**	**0.667492**
log_revenue	**1.03**	**0.969999**
economics	**1.01**	**0.989721**
Mean VIF	**1.26**	

Figure 11 – VIF

The Variance Inflation Factor (VIF) was also checked to test for multicollinearity, but was not found as all of them are below 2.

6 - Conclusion and Discussion

The main problem with the model is the scarcity of data. Since this paper is mostly aimed at non-listed companies and data tends to be harder to find for these. In this case, the data had to be collected by myself and other colleagues over the span of several months, with a fairly labor-intensive process. Moreover, analyzing psychological and personal factors such as propensity to engage in an acquisition is inherently difficult, and an accurate model is hard to create. For example, the value of the acquisitions performed is an important piece of data which was missing for this investigation. Other studies analyzed in this paper also looked at the effect that the board of directors has and their monitoring activities, so it would be interesting to see what effect this has. If the data were to be collected for these firms it could be investigated if strict monitoring leads to a lower number of acquisitions as compared to lax monitoring.

As mentioned before, the overall model did not explain a lot of the variance in the data, indicated by the low R-squared. This presents a limitation to the conclusions that can be drawn from the regression performed; but provides space for further improvement of the model. In the future better and more varied data can be collected, on top of a more expansive and comprehensive model to capture more effects that impact the number of acquisitions.

With the private sector being inherently more difficult to collect data about with respect to public company, more data – both a larger sample size and more information about the board structure and the acquisitions performed – would be of great use in furthering the research in this area. As was seen in the descriptive statistics, a lot of the data was concentrated (country wise with Germany, ownership wise with family ownership, or education being concentrated in economics and engineering), so a larger sample size would help in creating a more homogeneous sample as well. While it is difficult to say which exactly are the effects in this case, having overrepresentation in the sample may lead to biased results as not all types of managers will have enough data points (German family business CEOs carry a lot more weight in the regression than other managers).

However, two of the variables that were investigated, an education in economics and being a shareholder, were proven to be significant. An education in the field of economics provides a CEO with greater financial and managerial knowledge, along with increased confidence which together drive up the number of acquisitions performed. Additionally, a lack of education in this field has actually decreases the propensity of a manager to engage in acquisition activity. It was also an interesting finding to discover that tenure was not statistically significant and that the number of acquisitions does not follow a linear relationship as described in Hypothesis 2. However, this might be explained by the inversed "U" shaped curve described by Walters (2007) for the quality of acquisitions. This theory could be further researched in future studies. Lastly, Hypothesis 3 was shown to be incorrect, and owner-managers instead of limiting the number of acquisitions performed by the firm due to their caution they drive up the numbers. One proposed explanation for this effect is that being a shareholder themselves, they are very prone to increasing shareholder values and will do so through M&As, driving their number upwards. While this definitely needs more investigation and further research, it is interesting to note this effect.

Overall, we have learned, together with the other numerous studies mentioned in this paper, that past experiences do affect the decisions that a manager will take in his career, and that they are influential in building their leadership style.

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