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Earnings Management in State-Owned Enterprises

A quantitative study comparing earnings management between Swedish state-owned and privately-owned enterprises

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Abstract

Background: Earnings management has been a popular topic to research and get a better understanding of the opportunities and incentives that drive the behavior. Furthermore, a vast majority of the previous research has targeted the private sector, mainly looking at privately-owned enterprises. However, as accrual-based accounting methods has become increasingly more common within state-owned enterprises, there has been more focus on the EM behavior of these enterprises and what part the state-ownership aspect of the enterprise plays in this behavior. The current literature on the matter is quite limited, both in quantity and in the geographical context, making it a relevant subject to investigate.

Purpose: The purpose of this study is to provide further evidence on the relationship between state-ownership and earnings management by comparing the earnings management behavior of state-owned enterprises and privately-owned enterprises in a Swedish context.

Methodology: This study uses a positivistic research philosophy with a longitudinal design where a deductive approach is used through a quantitative research method to investigate the relationship between state-ownership and earnings management. All the data was secondary data gathered through financial databases, financial reports, and academic articles. The data was analyzed using Spearman correlation matrix, Pearson correlation matrix and OLS regression.

Findings: Our findings indicated that state-ownership has no effect on the amount of EM in Swedish firms. We did however find that the amount of EM increases in SOE's when they appoint a CEO with background from a similar position in a POE. We also found that state-ownership does not influence the amount of EM during economic downturns. Finally, we found that the EM of POE's remain unchanged based on their level of leverage, while SOE's increase their EM as their leverage ratio increases.

List of Abbreviations

EM = Earnings Management

SOE = State-Owned Enterprise

POE = Privately-Owned Enterprise

BOD = Board of Directors

ROA = Return on Assets

PAT = Positive Accounting Theory

CEO = Chief Executive Officer

NR2 = NACE Rev 2

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1. Introduction

In this chapter the Background of the thesis will be presented, followed by the Problematization. The Problematization will in turn be followed by the Purpose of the thesis.

1.1 Background

Earnings management (EM) is a practice where organizational decision-makers manipulate the financial reports of their organizations due to different incentives, to achieve certain desired outcomes. It can be argued that EM within the public sector is a topic that especially deserves attention, considering its ties to politics. When public sector organizations, such as state-owned enterprises (SOE) manipulate their earnings it indirectly hinders the public from correctly judging the performance of its government, as EM practices makes it harder for stakeholders such as citizens to monitor or interpret the financial performance of their elected government officials (Bisogno & Donatella, 2022).

The opportunity for a manager to manipulate the earnings of its firm arises from the room that is given for managers to use their judgement when manufacturing financial reports, such as when estimating impairments of assets or accruals (Healy & Wahlen, 1999). All in all, there are multiple accounting methods that a manager must consider and choose between, and this gives a manager the opportunity to make decisions on which accounting method to use based on what results are the most desirable outcome for the manager. If a manager uses this room for professional judgement in a non-opportunistic manner it can positively affect the informative value of the financial reports. Although, when it is instead used to manage earnings, it rather negatively affects the information of the financial reports, and thus counters the principle of financial reports being informative (Deegan & Unerman, 2011).

There is not a clear consensus regarding the view of EM. It has been suggested that researchers only perceive EM as a problematic practice if it is done to an extent where it cannot be observed by market participants at a low cost (Dechow & Skinner, 2000). Furthermore, it is argued that regulators have a more problematic view on EM, as they would perceive EM as problematic even though the financial reports would reveal sufficient information for investors to detect EM and adjust the numbers. This, because it is argued that it would make the playing field uneven between investors, as some would not possess the necessary competence to adjust the reported numbers. However, there are also researchers on the other side of the discussion. Parfet (2000) acknowledges that when there is room for opportunistic behavior within law and regulation, there are people who explore this room for

the greater good and people who exploit this room based on self-interest. This can be observed in every part of society and might therefore be applied to managers within corporations too, which means that there are managers who will use this room of opportunity for the greater good.

A variation of terms for the phenomenon of manipulating financial statements have been used in the previous literature within the field. The most prominent variations are “earnings management” and “creative accounting”, where the first term is dominating the American literature and the latter is the most commonly used term in the European literature (Vinnari & Nääs, 2008). Other terms that have been used for describing the practice includes “income smoothing”, “earnings smoothing”, “financial engineering”, and “cosmetic accounting” (Amat & Gowthorpe, 2005). For our study, we will use the term “earnings management” to refer to the practice.

The phrase state-owned enterprise refers to an enterprise that is owned by a government, as the name suggests. Though, the phrase does not only include enterprises that are directly owned by the government, but enterprises that are owned by regional governments or municipalities also fall under the term SOE. Furthermore, the term also includes enterprises with various levels of state-ownership, i.e., enterprises where the state holds either a majority or a minority stake (PWC, 2015). For clarity, we will only use the term SOE when referring to a firm that has direct government ownership.

In Sweden, the state has a significant ownership within several enterprises across a variety of markets. There is currently a total of 43 fully-and partially owned enterprises within the state-owned company portfolio, where two of these enterprises are listed on the Swedish stock exchange. For regional government owned enterprises, the number of enterprises is 144, and for municipality owned enterprises the amount is 1854 (SCB, 2023). The purpose of these SOE’s is to create value, and for some of the enterprises to make sure that specific goals for social missions can be reached (Regeringskansliet, 2022). The state of Sweden plays an important role when it comes to the Swedish economy, exemplified, Vattenfall AB which is a fully owned SOE is the sixth largest enterprise in Sweden when looking at turnover (Statista, 2022). The combined revenue for all the SOE’s during the period January-June 2022 was 223,9 billion SEK, which was an increase of 15,1% compared to the same period during the prior year, which indicates an economic growth within the sector of SOE’s in Sweden (Regeringskansliet, 2022).

A large amount of the literature on EM within the public sector has been conducted in China (Bisogno & Donatella, 2022). It is only over the last 15 years that the EM research within the public sector in Europe has started to take off (Vittari & Nääs, 2008), which researchers have credited to the increasement of accruals accounting within these organizations (Bisogno & Donatella, 2022). Though, the research that has been conducted so far has had a dominating focus on EM within municipalities (Bisogno & Donatella, 2022). As there has only been limited research on EM within SOE in Europe, there is limited knowledge of how SOE's and private-owned enterprises (POE's) compare when it comes to EM in different European contexts (Capalbo et al., 2014; Capalbo et al., 2021). We would therefore like to add to the current knowledge through this study, by comparing how SOE's and POE's in Sweden differs when it comes to managing earnings.

1.2 Problematization

The literature on EM has been developed through numerous academic studies over the years, where researchers mainly have focused on examining the phenomenon within privately owned enterprises (POE) using different theoretical approaches and research methods (Dechow et al., 2010; Jones, 2011). However, there has recently been an upswing in the interest of conducting similar studies of EM within the public sector as accrual accounting has become more common in these organizations over the last 15 years (Bisogno & Donatella, 2022).

The upswing in interest on researching EM in the public sector has been noticeable in Europe, although the current literature regarding EM in the public sector in European countries largely focuses on government authorities and municipalities, leaving EM in European SOE's as a topic that is still relatively undiscovered (Bisogno & Donatella, 2022). EM studies on SOE's have however been conducted in China to a larger extent and for a more extended period of time (Bisogno & Donatella, 2022; Wang & Yung, 2011; Ding et al., 2007), but there have also been a few studies carried out in Europe over the past years (Capalbo et al., 2014; Capalbo et al., 2021; Gaio & Pinto, 2018). A general consensus has not yet been reached between researchers regarding if there are more opportunities to manage earnings in SOE's or POE's, as some have argued for more opportunities in SOE's due to agency problems and monitoring problems (Wang & Yung, 2011), while others have argued for a more limited opportunity (Burgstahler & Dichev, 1997; Capalbo et al., 2014). Nevertheless, much of the research argues for the existence of unique incentives in SOE's, while the hybrid nature of

SOE's also allows incentives from the private sector to influence managers of these enterprises as well (Bruton et al., 2015; Gaio & Pinto, 2018; Capalbo et al., 2014).

The empirical studies that have been carried out so far have largely focused on the difference in the amount of EM between SOE's and POE's, and the results have so far been indicating that POE's manages earnings to a larger extent than SOE's (Ding et al., 2007; Wang & Yung, 2011; Capalbo et al., 2014; Gaio & Pinto, 2018). Although, empirical evidence has also suggested a lower accruals quality in SOE's (Ben Nassr et al., 2015). Furthermore, there has also been evidence pointing towards a positive relationship between state-ownership and increasing amounts of EM during election years (Capalbo, 2021). By viewing SOE's as hybrid organizations where elements from both state-ownership and private ownership are present factors, it is reasonable to expect that these firms will both be managed and operate differently from POE's (Bruton et al., 2015). Therefore, it would also be a realistic possibility that the EM behavior differs between these different types of organizations, but at this time it is still very uncertain how state-ownership affects EM behavior, as the current literature mostly have focused on the differences in the level of EM between SOE's and POE's. Moreover, we argue for the existence of certain incentives for managers to manage earnings that are stronger in SOE's than in POE's. It has been stated that managers within POE's generally hold their positions for a considerably longer period when compared to managers within SOE's (Capalbo et al., 2021). Furthermore, it has been suggested that the appointment horizon for a manager is a strong incentive for earnings management (Dechow & Sloan, 1991). For instance, it has been found that managers who are approaching the end of their appointment are incentivized to manage earnings to maximize the short-term earnings. Therefore, SOE managers may be more incentivized to manage earnings to maximize the earnings in the short-term, due to the shorter tenure of their management. There are also arguments from EM research within pure public sector organizations which has suggested that there are greater opportunities to manage earnings within the public sector compared to the private sector (Vittari & Nääs, 2008; Pilcher & Van der Zahn, 2010), along with suggestions that the incentives to manage earnings are greater within the public sector, compared to the private (Pilcher & Van der Zahn, 2010).

Further incentives for managers in SOE's to manage earnings could be due to the political connection that SOE's have. Large corporations have previously been predicted to adjust their earnings downwards, to relief themselves from the political pressure that they would risk receiving by reporting high profits (Watts & Zimmerman, 1990). Though, research has

indicated that corporations with state-ownership, are likely to manage their earnings in election years due to the political scrutiny that firms with political connections receive during these times (Capalbo et al., 2021). This suggests that the political incentives for SOE's to manage earnings differ quite drastically from POE's. This is since POE's shifts earnings downwards to reduce pressure from the government, while it seems that SOE's manage their earnings to reduce potential negative exposure to the public for the incumbent government. Managers would be incentivized to manage earnings to help the government get re-elected due to the fact that SOE managers generally have a short tenure and have the chance to extend it through the help of politicians.

Firms have also been predicted to manage earnings because of debt contracting (Watts & Zimmerman, 1990), meaning that they would increase earnings to avoid breaching a debt covenant when their firms are highly leveraged. Although, it seems that this incentive is stronger in POE's than it is in SOE's, since state-ownership is viewed as a security, due to government implicit guarantees, which would give SOE's favorable credit terms (Gaio & Pinto, 2018). Furthermore, it has also been suggested that there is a greater risk for being detected when managing earnings in SOE's compared to in POE's, as there are more stakeholders that scrutinize the firm when the state is involved with the ownership of a firm (Burgstahler & Dichev, 1997; Capalbo et al., 2014). This could be seen as something that limits the opportunity of EM within SOE's and we thus argue for the necessity to conduct further empirical tests, given that there are contradicting views regarding how EM differs between SOE's and POE's.

Much of the previous EM research on SOE's within the European context has not mentioned literature covering EM in a government setting and has mostly relied on either previous EM studies within SOE's or POE's (Capalbo et al., 2014; Gaio & Pinto, 2018). Although, given that SOE's are hybrid organizations we argue that to increase the current understanding of how EM behaviors differs between firms with state-ownership or purely private ownership, it would be necessary to consider a combination of literature from EM in SOE's, EM in the private sector, as well as EM within government settings (Vittari & Nääs, 2008; Pilcher & Van der Zahn, 2010; Clémenceau & Soguel, 2017; Stalebrink, 2007), which could help us increase the understanding of how the EM differs between SOE's and POE's.

It should also be stated that there are multiple reasons for why it would be possible that the results from previously conducted research on EM within SOE's is not entirely transferable to the Swedish context. Firstly, the results from articles studying a Chinese sample may transfer

poorly to the Swedish context due to the special institutional setting in China, where the POE's in China are in a weaker position compared to SOE's due to political and historical factors, which could affect their EM behavior (Ding et al., 2007). It has also been found that the Chinese government are executing extensive monitoring of opportunistic managerial behavior in firms, which could perhaps reduce the amount of EM within the Chinese firms (Wang & Yung, 2011). Secondly, there has been research observing a mixed sample of SOE's from different European countries (Gaio & Pinto, 2018). Thus, country specific circumstances may not have affected the results to such an extent that a single country sample would have done. Finally, the studies that have used a sample of Italian SOE's (Capalbo et al., 2014; Capalbo et al., 2021) may be more transferable than the previous mentioned research, given that both Sweden and Italy are European countries who are members of both the EU and OECD, where both countries are guided by the OECD recommendations in their governance systems of SOE's. Although, when considering that SOE's have politically motivated incentives to manage earnings, it could be possible to see some variance between samples in different political contexts.

As mentioned, there is currently a limited understanding regarding how EM differs between SOE's and POE's, which we argue could be problematic for different reasons. Firstly, we argue that there is currently limited knowledge regarding how incentives for EM shifts depending on the owner background, i.e., between state-ownership and private-ownership, and our study could help to increase the understanding of this problem. Secondly, it could be argued that it is problematic to not know how these politically connected organizations are potentially deceiving stakeholders, such as citizens, by using EM to hide the true performance of the SOE's, which indirect could hide aspects of the performance of the government. Finally, SOE's does in some cases, such as in Sweden represent some of the largest enterprises in the national economy (Statista, 2022). Thus, it is necessary to increase the overall knowledge of these firms, as they in some cases are large contributors to a nations' economy, and one way of increasing the understanding of how these firms operate would be to look at how they manage earnings.

1.3 Purpose

The purpose of this study is to provide new evidence regarding the relationship between state-ownership and EM and showcase differences in EM behavior between SOE's and POE's.

2. Literature Review

In this chapter the Institutional Background of Swedish SOE's and the relevant literature to the topic of EM in SOE's will be presented. First, the institutional background of Swedish SOE's will be presented. This will be followed by theory of hybrid organizations and then PAT and agency theory, which will be followed by a review of general EM research, as well as governance research relevant to the activity of EM. A general model summarizing the literature review is then presented and is followed by a four hypothesis and lastly a research model of our study.

2.1 State-Ownership

2.1.1 Institutional Background of Swedish SOE's

The state-ownership within enterprises in Sweden has occurred during different points in time and for different reasons. Many of the enterprises originate from business operations within government authorities and government monopolies. However, in present times, most of the enterprises are operating within fully competitive markets. Due to globalization, technological development, and an increase in competitiveness on markets, conditions have changed for several of the Swedish SOE's. As a consequence, the Swedish portfolio for SOE's have seen large changes over time (Regeringskansliet, 2020). Furthermore, it has been stated by the Swedish government (Regeringskansliet, 2020), that in order for the state to be an active and professional owner of these enterprises, it is important to continuously see the reason for state-ownership in these organizations, as well as consider their mission and orientation.

The Swedish state has the ambition to be an active and responsible owner of the country's SOE's. The government has an organization within the department of finance which specializes in ownership management and corporate administration. This organization is responsible for the development and management within a majority of the country's SOE's. The basis of the government's corporate governance is rooted in the Swedish model for corporate governance, where the SOE's are legally bound to the same association laws as the POE's, with the shareholder's meeting as the highest decision-making organ. Furthermore, this means that the board of directors (BOD) is responsible for the organization at large, the governance of its operations and to provide the goals and strategies for the enterprises in question. However, a key difference between Swedish SOE's and POE's is that the Swedish guidelines for the governance of SOE's does not allow the managers in SOE's to have a variable pay as part of their compensation structure (Regeringskansliet, 2020).

The majority-owned SOE's in Sweden are guided in their corporate governance by the Swedish state's governance policy from 2020 (Regeringskansliet, 2020). In the partly-owned SOE's, the government has to negotiate with the remaining owners in order for the policy to be applied. This policy contains government the missions and goals for the enterprises, together with applicable frameworks and principles for the governance of these enterprises. The policy mainly follows the OECD guidelines for corporate governance within SOE's, where Sweden participated both in the creation of the original OECD guidelines from 2005, as well as the revised guidelines from 2015. The OECD guidelines provide frameworks for governance in these enterprises together with a clear separation of the governments' role as owner in these enterprises and other governmental roles. The guidelines are recommendations designed for governments to ensure that SOE's operate with effectiveness, transparency, and responsibility. Finally, the guidelines are also meant to decrease the possibility for governments to act as passive owners, or as overly interventionistic owners (Regeringskansliet, 2020).

According to the state's governance policy of SOE's, the government office appoints nominees for the BOD in the non-publicly traded enterprises, where the BOD is then chosen during the shareholders meeting. This indicates that the current government has an indirect effect on the BOD within these enterprises (Regeringskansliet, 2020). Similar to POE's, SOE's have set economic goals including value creation by working towards long-term, ambitious and realistic goals, keeping the financial risks at reasonable levels, provide owners with direct return on their investment and in an efficient way monitor, measure and follow up on profitability, efficiency and level of risk. However, in the Swedish state's governance policy, it is also explained how these SOE's are largely focused on sustainable business practices in order to create sustainable growth and value. As an example, it is stated how these enterprises are to conduct their business operations in a way that supports sustainable development, a development which satisfies present needs without jeopardizing the needs of future generations. It is also stated that the SOE's are to act exemplary in their sustainable business practices, and to act in a way which inspires trust into these enterprises (Regeringskansliet, 2020), indicating a larger focus on goals other than pure profitability and revenue maximization.

2.1.2 Hybrid organizations

SOE's have historically been described as organizations that generally have been operating with a lower level of efficiency than POE's. Though, as the modern SOE's tend to have a

higher level of private ownership than during the past century, they now combine elements of both private ownership and state-ownership, thus they have now been described as hybrid organizations (Bruton et al., 2015). Contrary to POE's, the prime objective of SOE's is not always to maximize profits (Ghost & Walley, 2008). Thus, given that some SOE's main objective is not maximizing profits, it should not be assumed that they will behave or be managed in the same manner as POE's (Bruton et al., 2015).

It has been argued that a high concentration of state-ownership has a negative relationship to firm performance, due to the softer budget constraints that are associated with state-ownership (Bai & Wang, 1998). The reason behind this is that a firm with state-ownership would be able to have ongoing losses without risking bankruptcy, due to financial support from the government. This would weaken the incentives for these firms to stay within the budget (Bruton et al., 2015). Furthermore, the CEO background of hybrid organizations has been deemed likely to affect the operation of the firm. It is not uncommon for CEO's in SOE's to have a background from working within the governmental sector, and in such instances, it is likely that the mindset of the CEO affects the way that his firms operate (McCall, 1998). This could mean that a CEO with such background, would be more likely to be swayed by the requests of governmental officials, such as redistribute profits to fund government welfare objectives (Shi et al., 2014). When a SOE employs a CEO with this type of mindset, while also having a high level of government control, it may hinder the financial performance of the firm as well as the efficiency of the firm, since the main goals of the government tends to be non-financial goals (Bruton et al., 2015). Although, it has been seen that the government objectives can shift in times of an economic downturn. During the financial crisis in 2009, a French SOE changed their CEO from one with a pure governmental background, to one with experience from the private sector with the purpose of increasing the financial performance of the firm (Bruton et al., 2015).

Hybrid organization literature have suggested that SOE's are found to be more prone to agency conflicts between principals when state and private ownership is mixed (Ghosh & Whalley, 2008). Since the principals in these cases often have conflicting interests, the firm has to decide whose interests will be prioritized.

2.2 Positive Accounting Theory

Positive accounting theory (PAT) was introduced by Watts and Zimmerman in their article from 1978, and the theory's use lies in explaining which accounting practice will be used by

the management of a firm within specific circumstances. PAT is built upon the notion that all managers are motivated by their own self-interest and thus will favor the accounting practices that are most likely to maximize their own wealth. Given that the theory provides predictions for which accounting choices managers will favor due to their opportunistic behavior, it provides relevant insight into why and when managers are likely to manage their firms' earnings, since EM practices are an opportunistic way to exploit accounting choices.

In their article from 1990 Watts and Zimmerman provides three hypotheses that frequently have been tested in PAT studies, which represents incentives for managers to choose different accounting methods based on different situations. The hypotheses are bonus plan hypothesis, debt/equity hypothesis and the political cost hypothesis. The bonus plan hypothesis claims that a manager is likely to choose an accounting method that increases the earnings of the current period as it increases the likelihood of an increase in the present value of the bonus that will be paid out to the manager. In some cases, managers may also opt to decrease earnings in the current year if it seems unlikely that a bonus will be achievable, and by doing so the manager shifts earnings into future periods and thus increases the chances of receiving a higher bonus in those periods (Healy, 1985). This type of earnings reducing strategy is referred to as an "earnings bath". As SOE's in Sweden does not include bonuses in the compensation structure of their managers, the managers will not be incentivized to manage earnings due to bonuses, meaning that the bonus plan hypothesis will not be applicable for Swedish SOE's.

The debt/equity hypothesis focuses on a managers' choice of accounting method when managing a highly leveraged firm (i.e., with a high debt/equity ratio), where it is predicted that the higher the debt/equity ratio is, the more likely it is that the manager will resort to income increasing accounting methods. The explanation to this is that a highly leveraged firm is likely to be in proximity of breaching its debt covenant, and by then choosing an income maximizing accounting method, the firm is likelier to avoid a breach of the covenant and thus avoids the costs that are related to such a breach (Watts & Zimmerman, 1990). This hypothesis was supported in a study by Sweeney (1994), where it was found that there was an increase in income-increasing EM prior to breaching the debt covenant for a sample of first-time debt covenant violating firms. We argue that SOE's are less likely to be incentivized to manage earnings due to high leverage compared to POE's, since having state-ownership tend to lead to favorable credit terms (Gaio & Pinto, 2018).

Moreover, the political cost hypothesis predicts that large firms are likely to use accounting methods that reduce their earnings so that the firm will receive less political scrutiny from the government. For instance, this can be done to reduce suspicions about an occurring monopoly and thus reduces the risk of politicians implementing laws that are unfavorable for the firm (Watts & Zimmerman, 1990). As an example, Jones (1991) suggested that in order for firms to qualify for import relief, there was a tendency to increase discretionary accruals in order to reduce earnings. When applying this to SOE's who have ownership ties to politics, it is expected that they would manage earnings on behalf of the government, to avoid upsetting stakeholders such as citizens (Capalbo et al., 2021). Since SOE's often hold large market shares and pay dividends to the government, it could perhaps lead to negative effects in future elections for the incumbent government if the SOE's would disclose large surpluses.

2.3 Agency Theory

Agency theory is a theory highly linked to the phenomenon of separation of ownership and control within corporations. The concept of the separation of ownership and control can be defined as the gap between the risk-bearers within corporations (the owners of the firm) and the corporate decision-makers (managers of the firm), (Fama & Jensen, 1983). This gap exists because of the valuable information held by corporate managers which is out of reach for the corporate owners together with the owners little to no possession of direct control over corporate decisions (Fama & Jensen, 1983). The idea of the existence of an agency contract between risk-bearers and corporate decision-makers has been used as a tool to explore and understand the relationship between the two parties.

The fundamental idea of agency theory was mainly developed by Jensen & Meckling (1976) and explains that there is an agency relationship present between the principal of a firm (owner) and the agent of a firm (manager). The two are bound together by a hypothetical agency contract which is based on the idea that the agent performs some sort of service for the principal and where the principal surrenders the decision-making authority to the agent. This relationship, however, is not without its issues. When acting rationally, both the agent and the principal are utility maximisers acting in their own self-interests. This creates an information asymmetry and distrust between the two actors, where the principal cannot entrust the agent to make beneficial decisions for the principal. This issue creates the need for the principal to have certain control mechanisms and monitoring systems of the agent in order to ensure that the agent manages the firm in the interest of the principal.

These control mechanisms and monitor systems are referred to as agency costs and include monitoring costs incurred to limit the deviant activities conducted by the agent and costs of paying the agent (bonding costs) in order to minimize the risk of the agent making decisions that would harm the principal or that the principal will receive compensation if the agent would make such decisions that would harm the principal. In reality, it is speculated that it is impossible for the principal to ensure that the agent will act in the principal's interest at all times if the agency cost is zero. Therefore, most agency relationships include both monitoring costs and bonding costs, but even when both of these types of agency costs are present there might still be some divergence between the decisions taken by the agent and the decision that would maximize the investment of the principal. The monetary consequence of this divergence is also seen as an agency cost and is referred to as residual loss (Jensen & Meckling, 1976).

As a lack of monitoring of the agent can cause economic damage to the principals, researchers have aimed to identify certain monitoring mechanisms that would be especially effective to tame the opportunistic behavior of an agent. One such control mechanism is the BOD, which has been argued to be the most important control mechanism of a firm (Fama & Jensen, 1983). Moreover, it has been suggested that a lack of independence between the BOD and the management of a firm weakens the incentive for the BOD to monitor the management effectively (Hillman & Danziel, 2003), which could provide managers with an opportunity for opportunistic behavior.

When applying the agency theory to SOE's however, it has been argued that the agency problem should be viewed differently than it would in a POE (Aharoni, 1982). Aharoni (1982) argues that there is no principal in SOE's, but that the government (the shareholders) which would normally be considered the principal should rather be considered an agent in this case. Therefore, the agency problem in an SOE would rather be between agents, rather than between a principal and an agent. Thus, it could be expected to see more opportunistic behavior within more hierarchical layers within the organization of a SOE than in a POE, as there will be more layers of agents who will act opportunistically to self-maximize their wealth. As the government will still have means of monitoring the managers of SOE's, it is also possible that the monitoring will be used in a more opportunistic manner in a SOE than in a POE.

Researchers have argued that there are also structures outside of the firms that affect the agency problems within the firms and the extent of opportunistic behavior from agents. For

instance, Fama (1980) has suggested that managers are being disciplined by the labor market, as their current performance will determine the demand for their services in the future. As Swedish SOE's does not offer their managers bonuses, it could however be possible that the labor market would provide stronger incentives for SOE managers than POE managers. The explanation for this would be that the lack of short-term financial incentives would shift their attention to long term financial gains from the labor market. So, a SOE manager could be incentivized to increase earnings to attract better offers from the managerial labor market.

Demsetz (1983) have provided further arguments for outside structures disciplining managers as he argues that managers are incentivized to consider the interests of their shareholders, as they have most likely invested a significant amount of human capital in the firm, which they would jeopardize by acting in contrary to the shareholder interests. As SOE's does not offer variable pay to their managers, while there is also a higher turnover rate of managers in SOE's than in POE's, it is likely that managers in SOE's are more likely to prioritize their investment of human capital since they do not possess the same opportunity to chase short-term financial gains.

Furthermore, by viewing the government as an agent, where the government officials have also invested significant human capital to reach their position, similar to managers, they would also be expected to try to maximize their tenure in the position as a government official. Since the government would be the agent in this case, one could make the case for the citizens being the principal, but since they lack the resources to monitor the agents to the same extent as in a conventional POE, the government would have large opportunities to use opportunistic behavior to prolong their tenure. If the managers then in turn would try to prolong their tenure as a manager by pleasing the government, they would be incentivized to help the government to be opportunistic.

Previous EM studies on SOE's have argued that it is more likely that agency problems will thrive in SOE's rather than within POE's (Wang & Yung, 2011). The explanation for this is that there will be several conflicts of interest within SOE's, such as between state and minority shareholders and between owners and managers. Since SOE's generally are consisted of a highly levelled organizational hierarchy where it is likely that information is distorted when moving between the levels it can be hard to control the conflicts between different actors in the SOE's. Furthermore, SOE's are also believed to experience higher difficulties in establishing an effective monitoring, since monitoring is often done by people

in connection with the government. Due to these increased agency problems in SOE's managers could easier engage in opportunistic behavior, such as managing earnings.

On the contrary, it has been suggested that the motivation to conduct earnings management is lower in SOE's compared to POE's because of the difference in the quality of governance between the two ownership structures (Ding et al., 2007). Suggestions have been made that SOE's have better quality governance systems compared to POE's, which would indicate that SOE's experience less agency problems and thus have lower motivation for earnings management (Beatty et al., 2002). Furthermore, similar suggestions have been made with the argument that SOE's experience more pressure for transparency and high-quality financial reporting compared to POE's (Ball & Shivakumar, 2005).

2.4 General incentives for earnings management

Earnings management have been defined by Healy and Wahlen (1999) as:
"*(...) when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers".*

Research implies that there are differences between the utilization of earnings management within SOE's and POE's (Bisogno & Donatella, 2022). Since the literature has had a larger focus on earnings management within private owned firms, there has been many suggestions on both the incentives for managing the earnings of a firm and the factors that influence this management.

It has been suggested that some incentives are related to market expectations and the valuation of a firm, where these market incentives occur because of managers perception of a connection between a firm's reported earnings and its market value. Managers then tend to use discrete accounting practices as a response to the market information (Callao et al., 2021). The phenomenon of market pressure has both been suggested to be an efficient monitoring mechanism for the shareholders of a firm (Jensen & Meckling, 1976; Jensen, 1986), and also to have no significant effects on firms (Porter, 1985). However, it has been demonstrated that the choice of earnings management is different depending on manager decisions and how the managers adjust the firm according to pressure and requirements from the market. As an example, weak firms with low value often use earnings decreasing methods, leading to a reduction in firm value in order to go for a market niche (Callao et al., 2017). In the case of

SOE's in Sweden and market pressure incentives for EM, it is hard to make a direct connection because of the small amount of publicly traded SOE's (only 2 out of 43 SOE's in Sweden are publicly traded).

Incentives for earnings management caused by market pressure can also be connected to certain specific events in the life of a firm. During events like initial public offerings (IPOs), buy-outs, equity offerings and mergers, managers can use EM to increase or decrease the earnings of the firm in order to match the market expectations (Callao et al., 2021). Although the events above could be applicable for SOE's too, they are hard to measure for SOE's in Sweden, again because of the lack of publicly traded SOE's.

When it comes to equity offerings, firm decision-makers are more motivated to report positive earnings or an increase in earnings during the year before an equity offering in order to artificially create firm growth. By doing this, firms can make themselves more attractive for investors and thus raise their funds (Easton & Zmijewski, 1989). Regarding management buyouts, managers can use earnings management to increase the probability of their own capital gains by generating advantageous buy and sell opportunities of the firm's stock for themselves (Spohr, 2005). By conducting this kind of accounting practices, managers are able to maximize their own personal gains according to agency theory. In similar ways, managers can raise the earnings of the firm during mergers and acquisitions in order to create a favorable exchange ratio (Erickson & Wang, 1999). Earnings management is also commonly observed during IPOs because of the lack of information on the firm during prior years when the firm was not publicly owned. This forces investors to heavily rely on the financial information exclusively published by the firm itself during the IPO. This creates a large information asymmetry between investors and firm decision-makers, which can be exploited by the managers of the firm through EM (Rao, 1993).

The literature on EM has also examined the relationship between EM and different phases of the business cycle. Within this matter, two theories have been highly emphasized. The first theory is the counter-cyclical EM theory which states that firms are more likely to conduct EM behavior during a recession period of the economy due to external pressure from investors and creditors or because of the will from the firm to appear stable when it comes to income process and the firms overall financial condition (Hong & Jang, 2021). The second theory referred to as the pro-cyclical adjustment of EM theory, which states that the level of EM is higher during an economic boom period because of the will from the firm to avoid disclosing net income lower than the expectations set by analysts, or lower than the net

income average of firms within the same market (Hong & Jang, 2021). The second theory would thus indicate that the amount of EM would be lower in times of recession. Although the two theories are paradoxical, research has not concluded if one of the theories holds true. While research has suggested that firms will perform more upwards EM during a booming economy and that EM is positively associated with the overall economy (Conrad et al., 2002; Cohen & Zarowin, 2007; Wang et al., 2015; Ze-To, 2012), different studies has proposed the opposite, which is that EM increases during times of recession (Jahmani & Toney, 2016). Because of the lack of consensus about whether EM is pro-cyclical or counter-cyclical, it could be of interest to further expand on the knowledge by examining how SOE's adapt their EM to economic downturn. Since previous literature on SOE's financial behavior during economic downturn has suggested that SOE's can change their focus towards a more financial -performance based focus during such times, it could be fair to believe that the state-ownership of these firms make them behave differently to POE's in the matter.

It has been suggested that managers are incentivized to engage in EM practices by contracts that are monitored through accounting numbers (Healy & Wahlen, 1999). One study found that firms close to breaching their debt covenant are likely to manage their earnings (DeFond & Jiambalvo, 1994), though, Sweeney (1994) deemed firms to be more likely to manage their earnings after breaching their debt covenant. The findings of DeFond and Jiambalvo (1994) support the debt hypothesis of Watts and Zimmerman (1990) which predicts that managers are likely to use accounting actions to reduce their leverage ratios prior to breaching debt covenants. Moreover, the findings of Sweeney (1994) would suggest that the debt hypothesis not only can be applied to firms that are close to a breach of debt covenants, but highly leveraged firms in general. It has also been found that CEO's who are in the last years of their employment manage earnings through reducing R&D spending, to increase their short-term earnings (Dechow & Sloan, 1991). This supports the bonus plan hypothesis (Watts & Zimmerman, 1990) as the evidence suggests that the variable pay in a manager's contract factors into the accounting choices he will make.

Managers who face a threat to their job security have also been found to be more likely to manage earnings (DeAngelo, 1988). For instance, it was found that managers who were in a proxy fight actively increased earnings through accounting discretions. This supports Demsetz (1983) arguments that managers in some instances out of self-interest of their human capital investment in the firm has to act in the interest of the shareholders. By managing earnings

upwards, a manager could deceit shareholders that it is in their best interest to retain the manager.

Political incentives have also been identified as incentives for managers making decisions to alter the firm's earnings. For starters, firm's earnings are highly influenced by tax-changes, empirical evidence shows that firms tend to increase their discretionary accruals in the years prior to tax-increases (Desai & Dharmapala, 2006). During time periods of lower tax rates, firms instead tend to increase their earnings in order to take advantage of the lower tax rates (Jasrial et al., 2018). Another political incentive is the government action of import relief which has been defined as "several measures taken by the government to temporarily restrict import of a product or goods in order to protect domestic products from competition" (Van Der Boom & Ung, 2010). This action can be based on subsidies, tax exemption and low interest loans (Jones, 1991). The political connection that comes with the state-ownership of SOE's might be beneficial when it comes to governmental decisions of import relief, where the government are able to strengthen their SOE's competitiveness on the market through subsidies, tax exemption and low interest loans.

Suggestions have been made that managers use discrete decision making in order to produce short-term book-tax differences (Philips et al., 2003). Managers also have incentives for earnings management within price-regulated markets. In these regulated markets, managers are pressured by antitrust authorities when it comes to market shares and price control. Therefore, managers of firms within these markets tend to report lower and more pessimistic earnings forecasts in order to not appear "too" profitable and attract attention from these authorities since this would lead to high political costs for the firm (Watts & Zimmerman, 1986). However, in the case of SOE's where the state is a majority owner, the political cost hypothesis could explain how SOE's instead reduce their earnings in order to reduce the pressure and scrutiny from the citizens. This could be of significance for SOE's since the citizens trust is crucial if the current government are to be re-elected. Finally, studies have also shown that politically connected firms can use earnings management to increase and preserve the reputation of the firm (Braam et al., 2015), firms that are politically connected have also been suggested to be more likely of conducting earnings management in a positive manner, i.e., report higher earnings and increase performance, in order to increase their chances receiving commercial exposure (Chaney et al., 2011), which could be a way for the incumbent government to appear as if their term of office resulted in better governance of and financial results for the SOE's than what is actually true.

2.5 Governance factors related to earnings management

The governance system of firms is developed on the notion that firms should seek out to maximize the shareholder value, which is usually done by either controlling the management to work towards the interests of the owners or aligning the interests of the management with the interest of the owners (Jansson et al., 2013). Thus, the governance could perhaps act as a tool for the shareholders to pressure managers of SOE's to reduce political cost of the firm, in order to maximize the value for the shareholders. As previously mentioned, there are reasons to expect that SOE's have different political incentives than POE's to manage earnings, since the economic performance of SOE's possibly could impact if the incumbent government would be re-elected or not. Thus, the government would have reasons to manage earnings to reduce scrutiny from citizens, and the governance of the SOE's would be a tool for the government to enforce managers to act in their best interest. The government would have motives to manage earnings upwards or downwards depending on the situation. A firm with a large market share or a legal monopoly would be likely to use an earnings-reducing method, as it is possible that large profits from firms in such positions may provoke citizens. It is however possible that the government also in some scenarios would have motives to increase earnings, as it has been indicated that politically connected firms are likely to manage earnings upwards (Chaney et al., 2011). Thus, it seems SOE's in some instances can reduce political cost by increasing earnings, which could be a way for the incumbent government to display their competence to its citizens.

Furthermore, it is likely that managers in SOE's may be more susceptible towards the demands of their shareholders. Demsetz (1983) has argued that it can be in the best interest of managers to consider the interest of the shareholders in order for the managers to protect their human capital investment in the firm. Since it has been suggested that the manager tenure is shorter in SOE's (Capalbo et al., 2021), it could be argued that a manager of a SOE would be more incentivized to protect their human capital investment compared to a manager in the private sector.

In order for managers to be able to follow up on personal incentives to manage earnings, they would have to be provided an opportunity that would allow such opportunistic behavior. Whether this opportunity exists or not would to a large extent be determined based on how effective the governance of the firm, since the governance of a firm is the system that is intended control the management, and thus limit opportunistic behavior (Jansson et al., 2013).

Moreover, the quality of the monitoring of management has been identified as an important factor of detecting and hindering EM within the firm (Dechow et al., 1996). Furthermore, the authors identify some key characteristics of a weak governance structure. One of these characteristics is board structure, where size of the BOD, equity ownership of a director, and if the CEO is also the chairman of the BOD are considered to be a part of the structure. Moreover, the BOD has been identified as a vital control mechanism because of its monitoring function to limit opportunistic behavior of the agents within a firm (Fama & Jensen, 1983), and it should thus be considered a governance factor that is very relevant to the activity of managing earnings. Furthermore, evidence from empirical studies have provided insight in how EM can be reduced through the monitoring from the BOD (Davidson et al., 2005; DeFond & Jiambalvo, 1994). It has for instance been found that having a majority of outside directors on the BOD reduces the likelihood of EM. We would argue that if SOE's were to manage earnings to reduce political costs, which would be in the interest of the government (i.e., shareholder), it would be likely that they would nominate candidates to the BOD that would serve in their interest by allowing or promoting political cost reducing EM. In this case the BOD as a governance factor in a SOE could be less effective than in a POE at detecting EM.

Information asymmetry is a factor that has both been argued and proven to provide opportunities for EM behaviors of managers. Richardson (2000) have argued that firms that the underlying reasons for why some firms encounters information asymmetry could be because the shareholders are lacking incentives, resources, or access to information that is vital to monitor and detect opportunistic managerial behavior, such as EM. In the scenario of a SOE, it could be expected that the shareholders are lacking incentives of monitoring and detect EM, if the manager is managing earnings to decrease political costs, which in that case the EM would be beneficial for the government, who is also the shareholder. It could also be the case that the management of the SOE's are pressured to reduce political cost by the BOD, as the shareholders of SOE's could have a lot to gain from reducing the political cost of the firm.

Furthermore, as Wang & Yung (2011) have argued that SOE's are highly layered hierarchical organizations where information asymmetry is likely to cause agency problems, it could also be possible that there would be a lack of accessible information for shareholders to detect EM in SOE's. Moreover, Bruton et al., (2015) has suggested that SOE's hires managers from the private sector when they want to increase the financial performance of the firm. It could be a

possibility that hiring managers from the private sector that are pressured to increase the financial performance, while also experiencing more opportunities to manage earnings due to information asymmetry could increase the EM of an SOE.

A recent empirical study has provided evidence regarding the function of the BOD's in SOE's (Thompson & Alleyne, 2022). The findings have suggested that the BOD's of SOE's often are appointed due to political reasons, which had negative consequences for their independence in their role as a board member, which further indicates that the BOD in a SOE would be likely to encourage political cost reducing EM behavior from managers.

2.6 General model

The following model (Figure 1) illustrates the main categories of incentives and opportunities contributing to EM behavior in SOE's that we have identified based on our literature review findings, from which our hypotheses will be developed. The model visually shows the connection between stakeholder pressure and political costs for SOE's, where the hybrid nature of their organization together with the state-ownership of the firm moves the avoidance of scrutiny from the government towards the avoidance of scrutiny from the people in order for the incumbent government to be re-elected. It also shows how the business cycle, and more specifically an economic downturn, which for POE's usually leads to less EM due to a general acceptance of lower financial results during such times, might be the opposite for SOE's due to a shift from soft budget constraints to a bigger focus on economic performance. Furthermore, the model illustrates how highly leveraged SOE's that are close to breaching a debt-covenant could differ in their decision making compared to POE's. When this phenomenon occurs within POE's, managers often choose accounting practices that maximize short-term earnings to counter additional costs of breaching the covenant. However, since state-ownership tends to be seen as an extra security for creditors, SOE managers might not be as inclined to conduct EM to such an extent as managers within POE's when in proximity of debt-covenant breaches. Finally, the model also explains a current CEO within an SOE with experience from a similar position within a POE could have more opportunity to use his extensive accounting knowledge within a less governed environment which SOE's have been argued to be, i.e., the information asymmetry between a SOE manager and the shareholders would be greater if the manager has managerial experience within a POE.

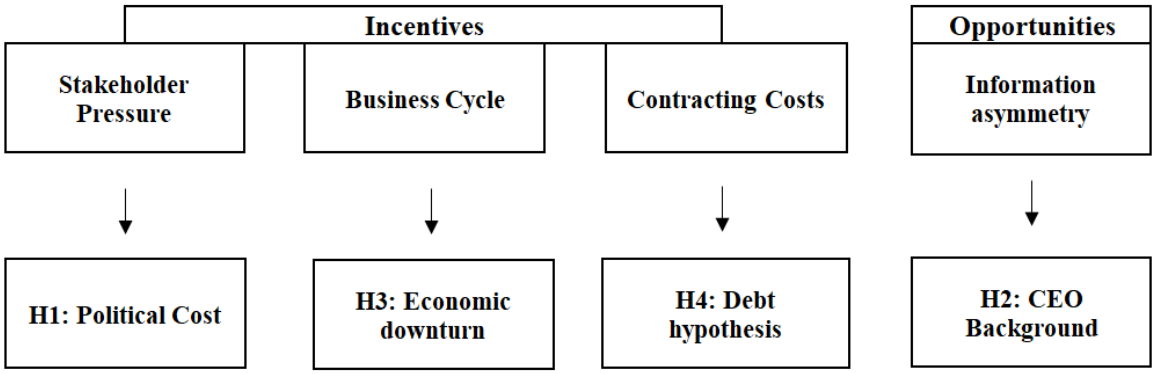

Figure 1: General Model

2.7 Hypothesis formulation

2.7.1 Hypothesis 1 – State-ownership and level of EM

As SOE's are hybrid organizations, where a mix of traits from both public sector organizations and POE's are present (Bruton et al., 2015), it would be reasonable to expect that the incentives for these enterprises to manage earnings consists of a mix of both public sector incentives and incentives from the private sector. Agency theory and PAT both predict that managers are opportunistic individuals whose prime objective is self-profit-maximization (Jensen & Meckling, 1976; Watts & Zimmerman, 1978). This objective has previously been predicted to be met in accordance with the bonus plan hypothesis of Watts & Zimmerman (1990), meaning that managers would choose an accounting method that would maximize their bonuses. Though, as managers in Swedish SOE's are not entitled to variable pay (Regeringskansliet, 2020), it is more reasonable that they would self-maximize by caring for their investment of human capital that they have put in to reach a management position by being aware of the interests of the shareholders (Demsetz, 1983). Furthermore, it has been suggested that the government should not be considered the principal when observing the agency relationship of an SOE, but rather an agent (Aharoni, 1982). Thus, a SOE could be described as an organization with multiple layers of agents whom all have their own individual goals that they are trying to obtain.

In the case of SOE's, the government is usually the majority shareholder, and they are the one that assigns the BOD, who in turn assigns the CEO. Thus, the CEO of a SOE would be incentivized to act in line with government interests when making decisions to maintain the position as a CEO. There is also a connection to be made between this type of incentive and the political cost hypothesis of Watts & Zimmerman (1990), where it is argued that large firms would choose earnings reducing accounting methods to reduce pressure and scrutiny

from the government. In the case of SOE's, the firms would rather be predicted to manage earnings to reduce pressure and scrutiny from citizens, given that the incumbent government would need the citizens support to get re-elected. Furthermore, the incentive to act in accordance with shareholders could well be stronger in SOE's rather than in POE's as manager tenures tend to be shorter within SOE's (Gaio & Pinto, 2018). Since the government is an agent in an SOE, it could be expected to be more opportunistic behavior from multiple levels of the organizational hierarchy in a SOE compared to a within a POE. Moreover, if the government is an agent, it would make the citizens the principal, which would likely mean that the monitoring of agents within SOE's is done to a lesser extent than in a POE, as the principal in a POE would both possess greater incentives and means to monitor.

Pilcher and Van der Zahn (2010) have also argued for the possibility of managers in public sector having a greater incentive to manipulate financial reporting compared to those within the private sector, due to the pressure from a wide array of stakeholders (e.g., elected officials, media and public). The authors further explain that the performance of management of public sector organizations are being evaluated based on financial reporting incentivizing them to manipulate these statements to improve compensation or career development. As SOE's are not pure public sector organizations though, it must be considered that there may be deviations from their arguments when transferring them to an SOE.

Empirical results about EM within government authorities can provide a further hunch of how state-ownership influences EM. A quantitative study investigating earnings management in the Swiss cantons (sub-national governments) (Clémenceau & Soguel, 2017) has found that finance ministers have been inclined to manipulate financial reports to cover up surpluses. The study also found that the finance minister has been likely to lower deficits through manipulation of financial statements. The explanation to why these practices occurred was that it helped avoiding the public pressure to either increase public spending, or relief tax pressure. Moreover, research within the Swedish context (Stalebrink, 2007) has provided evidence of similar EM behavior within Swedish municipalities, as they were found to manage their financial reports by depreciation and write-offs estimates. It was found that the municipalities were likely to increase these expenses during periods with higher profits, thus actively maintaining a continuous small surplus. Given that SOE's are hybrid organizations it would not be expected that this EM behavior translates directly to SOE's, though they may very well be incentivized to manage earnings in similar fashion as these SOE's also are under political scrutiny from citizens. As SOE's pay dividends to the government, and as some of

the Swedish SOE's have large market shares or a monopoly, it is possible that stakeholders would be unsatisfied by seeing SOE's disclose large surpluses.

Incentives aside, researchers have previously argued for increasing opportunities for EM within SOE, as these enterprises are more likely to experience agency problems compared to POE's (Wang & Yung, 2011). When adding the incentives that seem likely to either be unique for SOE's or stronger in SOE's than in POE's along with the increasing opportunities for EM, it seems like a possibility that state-ownership could have a positive impact on EM. Although to the hybridity of SOE's, incentives that are mutual with POE's would also have to be considered when speculating in their EM behavior.

Furthermore, capital markets have been found to incentivize EM behavior within POE's (Spohr, 2005). Gaio and Pinto (2018) argue that capital markets impact EM of managers in SOE's by adding pressure to meet performance benchmarks, though they also state that SOE's have less of a need to be conservative and to use EM practices in comparison to POE's. Although, given the lack of listed SOE's in Sweden, the capital markets incentive would not be prominent in the vast majority of the Swedish SOE's.

Previous research within the field has indicated mixed results regarding the amount of EM when comparing POE's and SOE's, where results tend to lean towards more EM within POE's. Exemplified, research has suggested that a greater level state-ownership is associated with more abnormal accruals as well as lower earnings quality (Ben-Nasr et al., 2015). On the other hand, Capalbo et al., (2014) has studied EM within SOE's in Italy where the results suggested that SOE's are found to be practicing EM using accruals. However, the results further indicate that the SOE's does it to a lesser extent when compared to POE's. Further results with similar indications can be found in a mixed sample of European countries where POE's with minority state-ownership had lower levels of abnormal accruals, as well as a higher quality of accruals in comparison to private POE's. Gaio and Pinto (2018) explain the underlying factors to this relationship to be that state-ownership in private firms lower the incentives for managers to use EM practices, due to government implicit guarantees. SOE's with no private ownership were however found to have lower levels of both accrual quality and abnormal accruals.

By looking at SOE's as hybrid organizations and thus incorporating both incentives from the private and public sector, we argue that there are reasons to believe that there exists a positive

relationship between state-ownership and earnings management. We therefore propose the following hypothesis:

Hypothesis 1: State-ownership has a positive relationship to earnings management in Swedish firms.

2.7.2 Hypothesis 2 – CEO Background

Due to different interests between private ownership and state-ownership, SOE's are more driven by objectives and goals that are not purely financial, but rather focuses more on social goals than what POE's generally do (Bruton et al., 2015). SOE's are also able to operate without as much worry about the long-term survival compared to private organizations and have been found to overspend their budget due to this. Perhaps it is possible that CEO's in POE's have to be more knowledgeable in accounting matters due to the bigger stress that these organizations encounter to survive long-term. SOE's have been identified as an organization where there are more opportunities for opportunistic behavior compared to POE's, due to agency problems and lack of monitoring (Wang & Yung, 2011). Thus, an individual with managerial experience from POE's that now is a CEO for an SOE would be likely to possess a high accounting knowledge, which would mean they could be more skilled when it comes to managing earnings, and they would now be in an environment with poorer monitoring which would give them greater opportunities to manage earnings. Wang & Yung (2011) has also suggested that SOE's encounters information asymmetry due to having highly layered organizational hierarchies, which would further suggest the opportunities for managers to act opportunistically within these types of firms, while managers with an advanced accounting knowledge also would further increase this information asymmetry.

Empirical results from Clémenceau & Soguel (2017) indicated that the higher level of education (higher accounting knowledge) of the finance minister of Swiss cantons increases the likeliness of the use of EM practices. Given this, it may be possible that a similar phenomenon could be found when looking into management of enterprises in other contexts, meaning that a manager with more accounting knowledge is more likely to use EM practices. Furthermore, SOE's have been found to recruit managers with experience from the private sector when they want to increase the financial performance of the entity (Bruton et al., 2015). It could therefore be seen like the managers with experience from the private sector that are hired to increase the financial performance of an SOE would be incentivized to manage earnings upwards to live up to the pressure of improving the financial performance, while also

possessing better tools to do this compared to managers with a background from only SOE's or the public sector. This leads us to the following hypothesis:

Hypothesis 2: The relationship between state-ownership and earnings management is positively moderated by POE-managerial background of the CEO in a SOE.

2.7.3 Hypothesis 3 – Economic downturn

As stated by Jensen & Meckling (1976), the agency theory binds the manager and the owner of a firm together in an agency relationship where the owner wants the manager to act in the owners' interest, but the owner wants to maximize his own self-interest. This creates the agency costs previously explained. It is suggested that this agency relationship might be more complex and filled with agency problems within SOE's compared to POE's because of conflicts of interests between the state as an owner and other minority owners, as well as conflicts between owners and managers because of the organizational hierarchy leading to distorted information within the SOE (Wang & Yung, 2011). Given this, managers might have to choose between which owners to satisfy based on the managers own self-interest. During times of economic downturn, managers might be more pressured by the owners to keep the financials of the firm stable. Based on Capalbo et al., (2021) suggestion of how managers within SOE's are kept at their position for shorter periods of time compared to managers within POE's, it might be possible that managers within SOE's are forced to cater for the state as an owner more than minority owners within these SOE's. The state as an owner might change the objectives during an economic downturn towards more economic oriented goals rather than non-economic goals (Bruton et al., 2015). Furthermore, since managers are incentivized to consider the interests of their shareholders, because of the amount of human capital managers invest into the firm that could be lost if certain owner-interests are not met (Demsetz, 1983) it could be possible that managers within SOE's increase the amount of EM during economic downturns compared to managers within POE's in order to keep their position within the enterprise. Moreover, it is also possible that SOE's are more pressured than POE's to maintain high earnings during recessions since the governments only financial gains from SOE's are from dividends, while the owners of POE's can capitalize from the trading of stocks. Thus, it is possible that private ownership would be more patient during an economic downturn, as they probably have a bigger focus on the future price of the share than receiving on-going dividends.

When looking at the activity of EM through a business cycle perspective, it has been suggested that the amount of EM activity within POE's fluctuates with the different phases of

the business cycle (Hong & Jang, 2021). Several studies have suggested that the level of EM is higher in POE's during economic boom and then decreases during economic recession. In a study by Conrad et al., (2002), it was proposed that firms increase their EM activity during economic boom and that the reason behind this phenomenon is because investors react more negatively towards poor performance during such times. The same suggestion has also been made in a study on EM and the overall market level (Cohen & Zarowin, 2007), i.e., the amount of EM increases when the market increases and vice versa. Similar results have also been reported by Ze-To (2012) where the author concluded that managers are more likely to increase EM during up-markets to avoid large impacts on stock prices.

Even though prior studies indicate that the amount of EM decreases during economic downturn, we argue that the phenomenon could be the opposite when state-ownership is involved. As previously stated, SOE's as hybrid organizations are not entirely driven by economic performance and income maximization, but also have non-financial goals because of the government's ownership within the firm (Bruton et al., 2015; Ghost & Walley, 2008). These non-financial goals have been observed to change during economic downturns (Bruton et al., 2015) towards a more economic-oriented focus, indicating how SOE's try to increase economic performance during such times. Parallels may also be drawn to the suggestion that Swedish municipalities use EM to avoid large surpluses and deficits throughout the economic cycle (Stalebrink, 2007). As stated earlier, Swedish SOE's only benefits the owner economically through dividends, not through stock trading, which strengthens the idea of SOE's behaving differently to POE's during recessions. Having this in mind that managers generally have a higher risk of being replaced in SOE's in combination with managers incentive to fulfil large owners' interests, it could be the case that state-ownership and level of EM during economic downturns are connected. We thus provide the following hypothesis:

Hypothesis 3: The relationship between economic downturn and earnings management is positively moderated by state-ownership.

2.7.4 Hypothesis 4 – State-ownership and the debt hypothesis

The leverage ratio and debt contracting of a firm have previously been identified as an indicator of which accounting choices will be made by a manager of the firm (Watts & Zimmerman, 1990). As a highly leveraged firm could be at risk of breaching a debt covenant, which would incur additional costs for the firm, the manager would be predicted to choose an accounting policy that maximizes the short-term earnings. As SOE's generally focus less on economic performance than POE's it could be a possibility that managers of SOE's would be

less affected by debt contracting when making accounting choices (Bruton et al., 2015). As state-ownership tends to be viewed as a security for creditors, given the government implicit guarantees, it may further reduce this incentive for a manager to increase earnings due to debt contracting, and thus the manager would not be incentivized to manage earnings due to debt contracts at the same extent as a manager of a POE (Gaio & Pinto, 2018).

Empirical evidence supporting this argument can be found in DeFond & Jiambalvos' (1994) article, where their results indicate that POE's that are close to breaking their debt covenants were found to manage their earnings upwards. Furthermore, in a large sample research of SOE's across various European countries Gaio and Pinto (2018) found evidence suggesting that SOE's have a lesser need to be conservative compared to POE's due to the government protection. This would indicate that firms would be less likely to manage earnings due to being highly leveraged when state-ownership is a present factor, which brings us to propose the following hypothesis:

Hypothesis 4: The relationship between leverage and earnings management is negatively moderated by state-ownership.

2.7.5 Research Model

The following model (figure 2) is a visual representation of the formulated hypotheses, where it is shown how State-Ownership has a positive relationship with earnings management in Swedish firms (H1), the POE background of the CEO positively moderates the relationship between state-ownership and earnings management (H2). The relationship between economic downturn and earnings management is positively moderated by state-ownership (H3) & the relationship between leverage and earnings management is negatively moderated by state-ownership (H4).

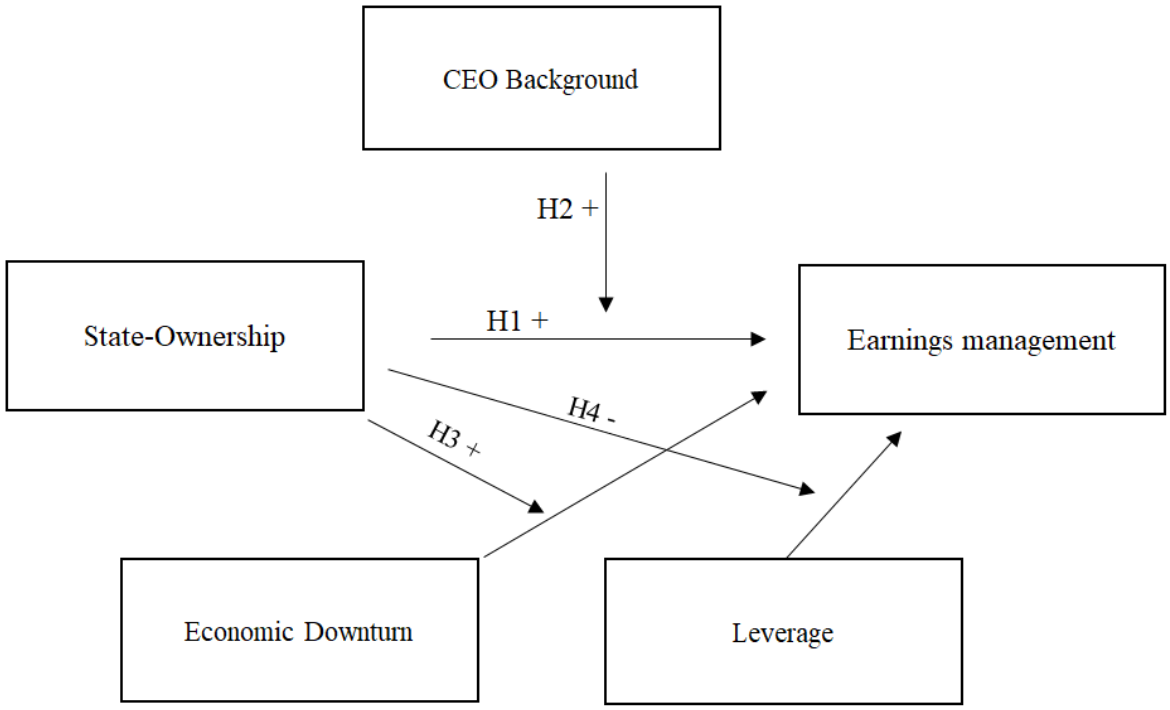

Figure 2: Research Model

3. Methodological approach

This chapter presents the methodology of our research. First the Research Philosophy is presented, followed by Research Approach, Empirical Design, Sample Selection, Data Collection and Selection, and Ethical Considerations. Lastly Operationalization of Variables, Data Analysis, and Statistical Control is presented.

3.1 Research Philosophy

The research philosophy is defined as the underlying systems of beliefs and assumptions about the development of knowledge (Saunders et al., 2016). Moreover, Saunders et al., (2016) explains positivism as one of the dominating philosophies within the subject of business administration. The focus when conducting research in accordance with a positivistic philosophy is to use a scientific method that will ensure that the data that is produced will be unbiased or free of influence from human interpretation. This would be done by focusing on observing measurable facts and consistencies would ensure that the data that will be produced will be both credible and meaningful (Crotty, 1998). Furthermore, Crotty (1998) explains the importance of being neutral when collecting data according to positivistic philosophy, to ensure that the results will not be influenced.

Developing hypotheses in accordance with a positivistic research philosophy can be done by using existing research and theories, which then will be tested and either confirmed or rejected, which helps the continuing development of the theories (Saunders et al., 2016). We have relied on three theories when developing the hypotheses for this thesis. Firstly, we have used theory on hybrid organizations as it gives an understanding on the specific effect that state-ownership has on how firms operate and has thus helped us predict how state-ownership may affect EM. Secondly, we have used agency theory to help predict how information asymmetry and the governance systems that are in place in firms may affect EM in both SOE's and POE's. Lastly, PAT has been used as it has given us understanding on certain motives that may incentivize EM from managers in specific scenarios. We have followed a positivistic research philosophy and thus our hypotheses have been developed through already existing theories, and that the data collected consists of already existing information, which will ensure that it is free from our influence.

3.2 Research approach

This study was formed based on a deductive research approach which is focused on the examination of previous empirical research within the subject of choice (Bell et al., 2022). Findings within this empirical literature are then used in the formulation of hypotheses with the purpose of further expanding on the current literature and research. Therefore, since our purpose was to provide new evidence regarding the relationship between state-ownership and EM, and to showcase differences in EM behavior between SOE's and POE's, we have reviewed a large amount of existing literature about EM in different types of organizations, as well as theories explaining opportunistic management behavior, and also theories portraying differences in characteristics between different types of organizations.

Furthermore, the majority of the existing EM research has been conducted quantitatively, as the most popular method for detecting EM is calculated from numerical data taken from financial reports of the observed entities. Bell et al., (2022) have explained quantitative research as a strategy that largely focuses on large quantities of data. Quantitative research also allows for objective measurement, which is explained to be useful when comparing different types of organizations, as it allows for fine differences between the different types to be observed (Bell et al., 2022). We have therefore used a quantitative research strategy for our study, as it was the most fitting approach for our purpose of providing new evidence regarding the relationship between state-ownership and EM.

3.3 Empirical Design

Our study will follow a longitudinal design, meaning that a sample will be observed over a time period, where data is collected at multiple occasions. By using a longitudinal design, a researcher may be able to get increased knowledge about the time order of variables in the study, which could allow the researcher to make causal inferences (Bell et al., 2022). Moreover, there are two main types of longitudinal designs to consider when conducting research following a longitudinal design. One of these types is the cohort study, which is when an entire cohort of people, or a random sample of the cohort is selected to be the focus of the study's data collection. Although, when it comes to conducting business research the other type of longitudinal design, the panel study, is the most common choice. When conducting a panel study, data will be collected about the same people or organizations at the minimum of two occasions, covering the same variables (Bell et al., 2022). Our study will follow the design of a panel study and we will also incorporate the use of a focus group and a matched control group, where a focus group of SOE's will be observed and compared to a

matched control group of POE's. Our chosen time-horizon will be the years 2008-2021 where we will conduct yearly observations of the discretionary accruals. Longitudinal studies are deemed to handle ambiguity problems quite well, contrary to designs such as cross-sectional studies (Bell et al., 2022). We therefore believe a longitudinal design will be a suitable design for our study, as we have a relatively small focus group it is suitable to examine large amounts of data to reduce ambiguity problems.

3.4 Sample selection

Our sample consists of a total of 78 firms, where 26 of the firms are SOE's and 52 are POE's. We followed Gaio & Pinto's (2018) sampling approach by including a larger quantity of POE's than SOE's in order for the sample to better represent the population of firms in Sweden, as there are more POE's than SOE's. The timeline that our sample covered was interval between the fiscal years of 2008-2021. This specific timeline was chosen as it allowed all hypotheses to be tested as well as minimizing the risk of random accounting practices during certain years affecting the overall result of the study. The total amount of firm year observations is 1057. The entirety of our sample can be seen in *Appendix 1* and *Appendix 2*.

Our intention was to exclude as few SOE's as possible, and we thus opted to use an imbalanced dataset, rather than exclude the firms which had no data during certain years of the timeline of the study. As the government held a legal monopoly of the retail of pharmaceutical goods until 2009 the data for pharmaceutical retailers only covered a timeline between 2010-2021, as the year of 2009 was the earliest year of any privately owned pharmaceutical retailers. The other reason that some SOE's had missing data is due to being founded later than 2007.

The process of defining our sample started by taking the 43 Swedish SOE's and then applying Wang and Yung's (2011) definition of an SOE, where they defined a SOE's as a firm with 30 percent or more state-ownership. We also excluded foreign enterprises which the Swedish government possessed ownership over. Furthermore, when matching SOE's we only considered matching them with firms that had no form of government ownership (i.e., no municipal-owned or sub-government-owned enterprises, or firms owned by the AP-funds). This led us to exclude some SOE's operating in sectors that are very specific to the public sector, which made it impossible to find a matching POE. Following, we also excluded all financial institutions from our sample of SOE's, as we are unable to measure the EM of these

types of corporations through the use of the Modified Jones Model. These exclusions left us with a sample of 26 SOE's in total.

Following, as we intended to match each SOE with two POE's, where we matched each SOE's with the two POE's with the most similar amount of total assets in the same sector or similar sector, and with the same legal status (i.e., public, or private corporation) in the fiscal year of 2021. To determine the sector, we primarily used the Nace Rev 2 codes identifier (NR2). In a few instances the sector had to be slightly adjusted to find a match. For instance, this was adjusted for the SOE's that had a legal monopoly during the entire or a limited period of the timeline of the sample. In one instance a non-listed SOE in the betting sector had to be matched with a listed POE, due to the lack of non-listed POE's in the specific sector. The choice of matching POE's based on total assets was based on that it is used to calculate the size of a firm, which has been found to significantly impact EM in previous research (Capalbo et al., 2014; Capalbo et al., 2021; Wang & Yung, 2011).

3.5 Data collection and selection

When conducting an empirical research study based on quantitative data, there are multiple ways of collecting the necessary data. Depending on what the study aims to examine, data may be collected through self-constructed interviews, surveys, or structured observations, referred to as primary data. However, due to high demands of time and resources (Bryman & Bell, 2022), primary data is not always suitable. As a solution secondary data, collected by someone else rather than the primary user, may be used in order to acquire the data needed to conduct a certain study. The data used in this study will be exclusively secondary data. The reason for this is that the key financials needed to measure EM within the 78 selected enterprises according to the MJM are most efficiently and accurately acquired through a financial database.

Two different databases, Bureau Van Dijk's Orbis, and Retriever Business were used in the data collection process where Orbis was used to retrieve a majority of the financials complemented by Retriever Business to retrieve the missing figure of depreciation (DEP) for all the enterprises together with the number of directors on the board for each firm and each year. Along with this data collection method we were also forced to manually retrieve all financials for every enterprise in our sample for the first 5 years of our timeline due to a large number of missing values on Orbis and Retriever Business. The manual data collection was done through finding and gathering our key financials from the financial statements of our

sampled enterprises for the years 2007-2011. To collect information about the professional background of the SOE CEO's we primarily used Retriever Business and LinkedIn. In some instances, company press releases and news articles were used to collect the necessary information.

3.6 Ethical considerations

When conducting scientific research using real world data and information about organizations and individuals, it is important to acknowledge and respect the rights of those included in or affected by the study. These research ethics are to be considered throughout the entirety of the study, which includes seeking access to information, collecting the data, analyzing the data, managing the data, and finally reporting the data (Saunders et al., 2016). The majority of the data used in this study has been gathered through databases granted access to us through Jönköping International Business School. We have also gathered data from our chosen sample through financial reports which are available both through Retriever Business, and also through each organization's website. The independent variable *CEO POE Background* required us to gather information about the professional background of each CEO within our sampled organizations and timeline. In order to respect the privacy of these individuals, no CEO has been named in the study.

3.7 Operationalization of variables

3.7.1 Dependent variable

Discretionary accruals

When conducting studies regarding the examination of accounting EM, most of the literature has focused on detecting the discretionary accruals within the total accruals conducted by the chosen enterprises (Bisogno & Donatella, 2021). By retrieving the discretionary accruals, it is possible to estimate the discretionary components of reported income (Chen, 2010). Thus, it was fitting for this study to replicate the previously used methods to measure the amount of EM within SOE's and POE's in Sweden, both because this method has proven to be efficient and accurate as well as making this study comparable to the previous literature within the field.

In order to estimate the amount of EM that a certain organization is utilizing, there are several different models which can be used. The most frequent models used are the accrual-based models, which have gained popularity because of the large focus on how management use discretionary accruals. These models provide an estimation of the discretionary components

of reported income (Chen, 2010). Similar to several other studies examining EM within the public sector, specifically within SOE's (Wang and Yung, 2011; Ho et al., 2015; Gaio and Pinto, 2018; Kim, 2018; Beladi et al., 2020) this study will use the modified Jones model (MJM) when calculating the estimated level of earnings management. The model is an altered version of the Jones (1991) model where modifications were made to the model by Dechow et al., (1995) by deducting the variance of receivables. In a study by Dechow et al., (1995) on the efficiency and accuracy of different famous models for detecting EM, the authors concluded that even though all of the models tested in the study are usable for detecting EM, the MJM provides the most powerful tests for EM detection. This gives us an indication of the widespread popularity of the model in the literature and strengthens the choice of using the model in our study.

The MJM assumes that the total accruals (TA) of an enterprise consists of non-discretionary accruals (NDA) and discretionary accruals (DA), where the discretionary accruals translate to the level of EM conducted by the enterprise (Dechow et al.,1995). This means that the amount of discretionary accruals can be obtained by deducting the non-discretionary accruals from the total accruals. Using the MJM, we are able to estimate the NDA for each year of our timeline and for each specific firm. The MJM uses a set of variables together with firm-specific parameters in order to estimate the NDA. The reason for using firm-specific parameters is to reduce the risk of certain external factors influencing the result in an unrealistic way, since different firm sectors are affected by such external factors in diverse ways compared to each other. However, because of the time-consuming process that comes with using firm-specific parameters, we instead opted to use mixed sector specific parameters. The equation for total accruals is shown below:

$$\mathbf{TA = NDA + DA}$$

Where the variables are:

TA = total accruals

NDA = Non-discretionary accruals

DA = Discretionary accruals

In order to acquire the total accruals, we follow the formula consistent with previous studies (Healy, 1985; Jones, 1991; Dechow et al., 1995), where TA is defined as the change in non-cash assets subtracted by the change in current liabilities, subtracted by depreciation. We are

thus provided with an estimate of the TA by reducing the change in current assets with the change in cash and the change in current liabilities, followed by subtracting the short-term loans with the depreciation. Below is the equation for the calculation of TA:

$$TA\tau = \Delta CA\tau - \Delta CL\tau - \Delta Cash\tau + \Delta STD\tau - Dep\tau$$

Where the variables for period τ are:

$TA\tau$ = Total accruals for the period τ

$\Delta CA\tau$ = Change in current assets for the period τ

$\Delta CL\tau$ = Change in current liabilities for the period τ

$\Delta Cash\tau$ = Change in cash for the period τ

$\Delta STD\tau$ = Change in short-term loans for the period τ

$Dep\tau$ = Depreciation for the period τ

As mentioned earlier, different firms are affected differently by external factors. Thus, we need to estimate the sector-specific parameters for each of our chosen firm-sectors. In order to estimate the sector-specific parameters ($\alpha 0$, $\alpha 1$, $\alpha 2$, $\alpha 3$) we conduct a linear regression for each firm-sector identified within our chosen sample, where TA acts as the dependent variable and 1/Aτ -1, $\Delta REV\tau - \Delta REC\tau$ and $PPE\tau$ act as independent variables. Our study included the seven following firm-sectors: *industrial, gambling, service, property, retail, mining,* and *transportation.* In line with previous research (Peasnell et al., 2000; Kothari et al., 2005), we divide the all the variables with the previous years' total assets in order to reduce problems with heteroscedasticity. The model used for regression incorporates the estimates of TA and in the model below, where the DA is shown as the residual and the NDA is all variables left of the residual. The equation to estimate sector-specific parameters states:

$$\frac{TA\tau}{A\tau - 1} = \alpha 0 + \alpha 1\left(\frac{1}{A\tau - 1}\right) + \alpha 2\frac{(\Delta REV\tau - \Delta REC\tau)}{A\tau - 1} + \alpha 3\left(\frac{PPE\tau}{A\tau - 1}\right) + \varepsilon\tau$$

Where the variables for period τ are:

$TA\tau$ = Total accruals for the period τ

$A\,\tau - 1$ = Total assets for the period $\tau - 1$

$\Delta REV\tau$ = Change in revenue for the period τ

$\Delta REC\tau$= Change in receivables for the period τ

$\Delta REV\tau - \Delta REC\tau$ = change in cash revenue for the period τ

$PPE\tau$ = Property plant and equipment for the period τ

$\varepsilon\tau$ = Discretionary accruals for the period τ

The non-discretionary accruals for the chosen period and firm sector are then estimated by calculating the change in cash revenue and fixed assets, where the MJM inserts the change in receivables into the original Jones model when looking at revenue (Dechow et al., 1995). When the sector-specific parameters have been estimated, the final equation for estimating NDA is as follows:

$$NDA\tau = \alpha 0 + \alpha 1\left(\frac{1}{A\tau - 1}\right) + \alpha 2(\Delta REV\tau - \Delta REC\tau) + \alpha 3(PPE\tau)$$

Where the variables for period τ are:

$\Delta REV\tau - \Delta REC\tau$ = **Change in cash revenue for period τ**

$PPE\tau$ = **Property plant and equipment for period τ**

$A\tau - 1$ = Total assets for period $\tau - 1$

$\alpha 0$. $\alpha 1$, $\alpha 2$, $\alpha 3$ = **Sector specific parameters**

When all these steps have been completed, we are able to reduce the TA for each year and firm sector by the estimated NDA which leaves us with the DA for the period. Finally, once the estimated values for DA have been calculated we have transformed them into absolute values. This was done since this study only aims to measure the absolute amount of DA rather than if it is negative or positive EM.

3.7.2 Independent variables

3.7.2.1 State-ownership

Multiple previous EM studies focusing on SOE's have defined SOE's as firms with a level of state-ownership of 30 percent or more (Wang & Yung, 2011; Capalbo et al., 2014; Capalbo et al., 2021). We will also use this definition to decide which firms are state owned or not, and a dummy variable will be used to represent state-ownership where it will take the value of 1 for SOE's and 0 for POE's.

$$State\text{-}Ownership = Dummy\ variable\ (0,1)\ 0\ indicates\ POE\ and\ 1\ indicates\ SOE$$

3.7.2.2 CEO POE Background

To test Hypothesis 2, we had to make a distinction on what qualifies as managerial POE background for a current SOE CEO. We determined to define POE background of a SOE CEO as when a person has held a CEO position of a POE during one of the 10 most recent years prior to the current year. The limit of 10 years was chosen as it becomes more difficult to find information about a CEO's professional background the further back in time you go. SOE's with a CEO that has a POE managerial background will be given a dummy variable with the value 1, and SOE's with a CEO with no POE managerial background will be given a dummy variable with the value 0.

$$CEO\ Background = (0,1)\ 0 \text{ indicates no POE background of the CEO, 1 indicates POE background of the CEO}$$

3.7.2.3 Economic Downturn

Previous research has measured economic downturn as periods when the annual GDP growth is negative (Filip & Raffournier, 2014). To define which years of our sample that should be regarded as economic downturns we will assess the change in GDP over quarters. A dummy variable with the value of 1 will be assigned to the fiscal years where the GDP growth is negative during two consecutive quarters, or in the case of these quarters being split between two fiscal years both years will be given a 1. A dummy variable with the value of 0 will be assigned to the years with no economic downturn.

$$Economic\ Downturn = Dummy\ variable\ (0,1)\ where\ 0\ indicates\ no\ economic\ downturn, and\ 1\ indicates\ an\ economic\ downturn$$

3.7.2.4 Leverage

When testing for Hypothesis 4, we want to examine the relationship between leverage and EM within SOE's. We expect the relationship between leverage and EM to be negatively moderated by state-ownership. We will use leverage as the independent variable in order to

examine the relationship between state-ownership and debt contracting. We will measure the leverage of the firms in our sample through the debt-to-equity ratio (total debt/equity), which is how previous SOE EM studies has measured leverage when used as a control variable (Capalbo et al., 2014; Capalbo et al., 2021; Wang & Yung, 2011).

$$Leverage = \frac{Total\ Debt}{Equity}$$

3.7.3 Control variables

The following control variables have been identified and chosen after reviewing the current literature on EM in SOE's.

3.7.3.1 Size

The size of a firm has commonly been used as a control variable in previous EM research on SOE (Capalbo et al., 2014; Capalbo et al., 2021; Wang & Yung, 2011), and has been found to have an impact on the EM of a firm. Previous studies have measured size as the natural logarithm of the total assets of a firm, and we will use the same measurement for our study.

$$Size = The\ natural\ logarithm\ of\ Total\ Assets$$

3.7.3.2 Return on Assets

Return on assets (ROA) has previously been used in EM studies as an indicator of a firms' profitability (Capalbo et al., 2014; Capalbo et al., 2021; Wang & Yung, 2011). It has been found that the ROA have a positive relationship with EM, though it is unclear if it is because profitable firms are more likely to manage earnings, or if it is because EM using firms become more profitable (Wang & Yung, 2011).

The return on assets is calculated by dividing net income by the total assets.

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

3.7.3.3 Board size

As the quality of governance of a firm has been argued to influence opportunistic behavior such as EM (Dechow et al., 1996). Jensen (1993) has argued that the BOD becomes less effective when it consists of more than 7 or 8 members, as they become less effective, which allows more opportunistic behavior from the CEO. We will therefore include the board size as a control variable to account for the effect of governance on EM, where the number of directors is measured.

$$Board\ Size = Number\ of\ Board\ of\ Directors$$

3.7.3.4 Government political orientation

Previous studies exploring the political impact of state-ownership within SOE's have suggested that political orientation has a powerful impact on several business-related activities within these enterprises (Jehiel, 1981). To account for any potential effects that the ideology of the incumbent government may have on EM, we have included a dummy variable to represent the ideology of the incumbent government where 1=social democratic and 0=non-social democratic.

3.8 Data Analysis

In order for us to test our four hypotheses, we estimated multiple ordinary least square (OLS) regressions. When examining the relationship between one or more independent variables (simple or multiple linear regression) and a dependent variable, OLS regression is a widely used technique for estimating the coefficients of the linear regression equations. By doing this, we are able to observe the relationship between our independent variables and our dependent variable, and thus, accept or reject our hypotheses.

Before we could conduct our linear multiple regression analyses, we had to estimate our dependent variable DA by following the steps explained in the operationalization of DA, using the MJM. When the dependent variable had been estimated we could start with our linear multiple regressions. To examine our four hypotheses, we conducted four different linear multiple regressions. For the first hypothesis (H1) we wanted to explore the relationship between state-ownership and EM, for this we conducted a linear multiple regression where we

included *State Ownership* as the independent together with our control variables and used *DA* as the dependent variable. For the second hypothesis (H2) we wanted to explore if the managerial background of the CEO in SOE's positively moderated the relationship between state-ownership and EM. For this regression, we wanted to include the independent variables *State Ownership* and *CEO POE background* together with the control variables as well as the interaction variable *INTER SO CEO.* The interaction variable was acquired by multiplying the variable *State Ownership* with *CEO POE background.* But because of problems with multicollinearity when running the model, we had to use a sub-population consisting of the sample firms with state-ownership by running the model with *State Ownership* as selection variable including only firms where state-ownership = 1. Furthermore, we included *CEO POE Background* as an independent variable, all control variables, and *DA* as the dependent variable. For our third hypothesis (H3), we wanted to examine if state-ownership positively moderated the relationship between economic downturn and EM. The regression contained the independent variables *Economic Downturn* (dummy) and *State Ownership,* all control variables and the interaction variable *INTER Down SO.* The interaction variable was acquired by multiplying the variable *State Ownership* with *Economic Downturn.* In the fourth and final hypothesis (h4) we wanted to explore if state-ownership negatively moderated the relationship between leverage and EM. For this regression we included the independent variables *leverage* and *State Ownership* together with all control variables as well as the interaction variable *INTER LEV SO.* The interaction variable was acquired by multiplying the variable *State Ownership* with *leverage.*

To get a clear view and understanding of all our variables we included the descriptive statistics for each of our variables. These descriptive statistics show the maximum, minimum, mean value as well as the standard deviation of each variable. Since it would also be of interest to observe how all of our chosen variables are connected to each other, we conducted both a Spearman correlation as well as a Pearson correlation. Saunders et al., (2016) explain that the Spearman rank correlation gives us an indication of how two variables are associated with each other, while the Pearson correlation gives us an indication of the linear relationship between two variables. In the Spearman rank correlation, variables can assume the rank of +1 to –1, where +1 translates to a perfect positive association of ranks and –1 translates to a perfect negative association of ranks. The rank of 0 indicates that no association of ranks exists. In the Pearson correlation, variables can assume the value of +1 to –1, where +1

indicates a total positive correlation and –1 indicates a total negative correlation. The value of 0 indicates that there is no correlation.

3.9 Statistical Control

3.9.1 Heteroscedasticity

The phenomenon of heteroskedasticity states that the observations of the residuals (or error terms) are scattered unequal when running regression analyses. The opposite term of heteroskedasticity is called homoskedasticity and assumes constant variances for different observations of the residuals (error term), which is favorable when conducting OLS regressions (Studenmund, 2014). Heteroskedasticity can have some severe statistical consequences, such as causing OLS to no longer be the minimum-variance estimator making the results untrustworthy. It can also cause the OLS estimates of the standard errors to be biased, which then leads to a certain unreliability in the hypothesis testing (Studenmund, 2014).

In order to minimize any issues with our statistical tests and thus the results of our study, we tested if our study had any problems with heteroskedasticity. We tested for heteroskedasticity by creating a scatter plot of the residuals for each model which showed no indications of heteroskedasticity.

3.9.2 Multicollinearity

Multicollinearity is the statistical term for when an independent variable is highly correlated to one or more independent variables in a linear regression equation. The stronger the linear relationship is between two independent variables, the more likely that the model is affected by multicollinearity (Sudenmund, 2014). The main problem when a model is exposed to multicollinearity is that it affects our certainty of how each independent variable specifically impacts the dependent variable, which affects the stability and reliability of our tests.

To examine if our study has been affected by multicollinearity, we first checked the correlation between all of our variables through the Spearman and Pearson correlation matrixes. We also controlled the VIF-value (Variance Inflation Factor) for each of our regression models. According to Hair et al., (2013) models with VIF-values larger than 10 are likely to be affected by multicollinearity. However, all of our models showed a low VIF-value, indicating that our results were not affected by multicollinearity.

3.9.3 Autocorrelation

When basing a study on multiple observations of the same variables for different years, known as a time-series, there is a risk that the study is affected by autocorrelation. Autocorrelation implies that the value of the error term for a variable from one time period is systematically dependent on the value of the error term from another time period (Studenmund, 2014). Similar to issues with heteroscedasticity, autocorrelation can cause the OLS to no longer be the minimum-variance estimator, as well as cause the OLS estimates of the standard-error to be biased, leading to unreliability when testing hypotheses (Studenmund, 2014).

In order for us to check if autocorrelation existed within our study, we used the Durbin-Watson d test. The Durbin-Watson test determines if there is first-order autocorrelation in the error term for the model. The Durbin-Watson tests indicated no autocorrelation in any of our models.

4. Results

In this chapter the results of our empirical tests are presented. First Descriptive Statistics is presented, followed by a Bivariate Analysis consisting of both a Pearson and a Spearman correlation matrix, followed lastly by the Regression Analysis. In the Regression Analysis the results of the 4 models of our study are presented.

4.1 Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
DA	1057	0.00015	1.348	0.107	0.129
CEO POE Background	1057	0	1	0.83	0.37
State Ownership	1057	0	1	0.33	0.47
Economic Downturn	1057	0	1	0.21	0.40
Leverage	1057	-42.089	1829.612	7.358	61.203
ROA	1057	0.000	10.565	1.586	1.547
BOD	1057	1	18	5.482	2.685
Size	1057	9.087	20.478	14.550	2.309
Political Orientation	1057	0	1	0.517	0.5

Table 1 Descriptive statistics from the period 2008-2021.

Table 1 shows that the maximum value of DA is 1.348, and the minimum value is 0,00015, while the mean is 0.107 and the standard deviation is 0.129.

Economic downturn has a mean value of 0.21, which indicates that 21 % of the observations were in a year of economic downturn.

The Leverage variable has a maximum value of 1829.612 and a minimum value of -43.089. The mean value is 7.358.

The highest ROA is 10.565 and the lowest is 0. The reason for this low minimum value is that one of the firms in our sample had no operating revenue during the fiscal year 2010. The lowest number of BOD is 1 and the highest 18. The minimum size of a firm in our sample is 9.087 and the maximum is 20.478.

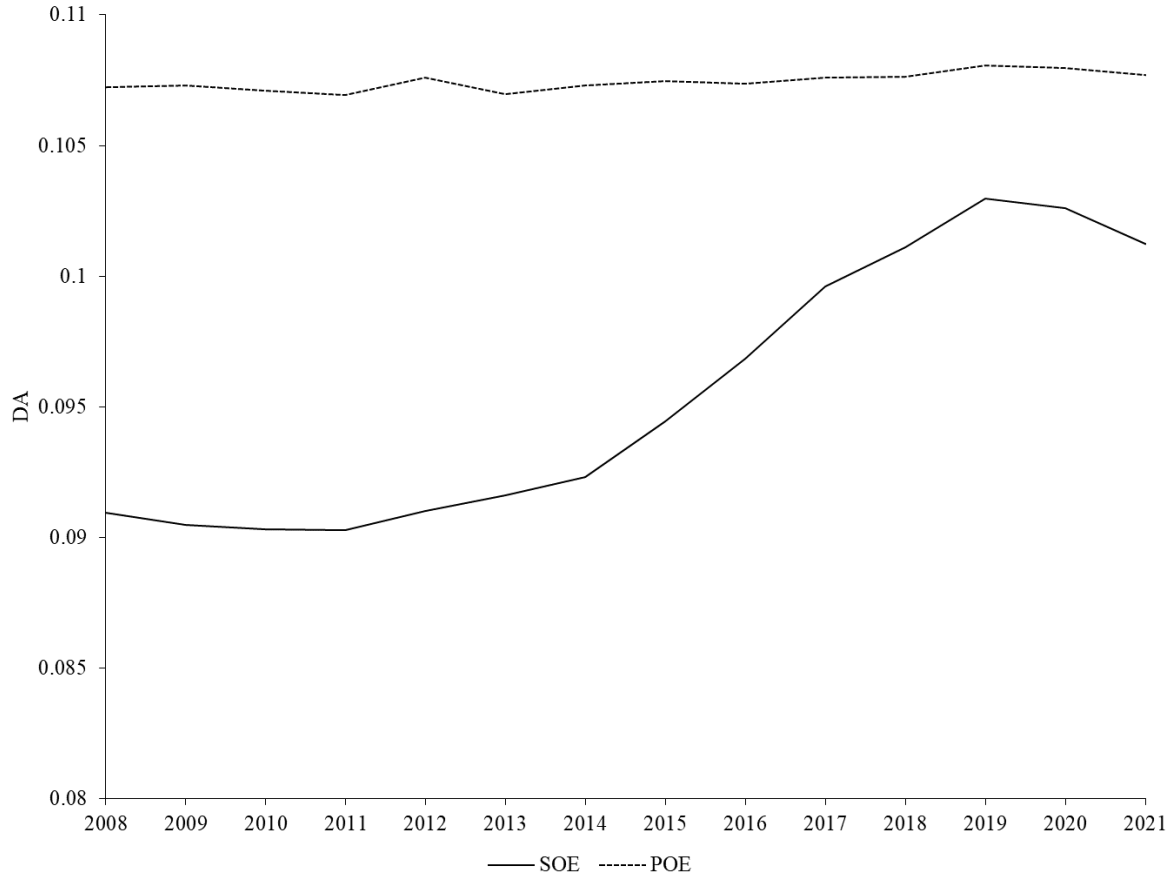

Figure 3 Yearly Averages of Discretionary Accruals between 2008-2021.

Figure 3 shows the yearly average amount of DA of SOE's (solid line) and POE's (dotted line). By observing *Figure 3* we can see that the amount of DA of POE's have been higher than the amount of DA in SOE's throughout the entire timeline of our sample and has been kept at a constant level during the entire timeline. However, we have seen an increase in DA over time in our sample of SOE's, particularly between 2014 and 2019. A possible explanation to the increase of DA in SOE's may be credited in part to the removal of multiple legal monopolies that were previously held by SOE's (Regeringskansliet (n.d.-a.); Regeringskansliet (n.d.-b.).

4.2 Bivariate Analysis

Table 2 contains both a Spearman and a Pearson matrix where we can see that the dependent variable DA shows a significant positive relationship with CEO POE background at a 0.05 level on both matrixes (0.073* & 0.065*), indicating that CEO POE background in the private sector contributes to more DA. There is also a significant negative relationship between DA and state-ownership at a 0.05 level in the Spearman matrix (-0.065*) while the Pearson matrix indicates that there is no significant relationship between the two variables. According to Spearman's matrix this means that state-ownership is associated with less DA for Swedish firms. Furthermore, there is a significant positive relationship between DA and the interaction variable INTER SO CEO at a 0.05 level in the Pearson matrix (0.063*), but no significant relationship according to the Spearman matrix. According to the Pearson correlation this means that DA increases when the CEO in SOE's have CEO experience from POE's. There is also a significant positive relationship between DA and the interaction variable INTER LEV SO at a 0.05 level in the Pearson matrix (0.075*) while the Spearman matrix shows a significant negative relationship at a 0,05 level (-0.067*). According to the Pearson correlation this indicates that DA increases when Swedish SOE's are highly leveraged. This is however the opposite according to the Spearman matrix, which indicates that DA decreases when Swedish SOE's are highly leveraged. Moreover, there is a significant negative relationship between DA and ROA in the Pearson matrix at a 0.05 level (-0.075*) but shows no significant relationship in the Spearman matrix, which means that an increase in ROA contributes to a decrease in DA. Finally, there is a significant negative relationship between DA and the control variables BOD (-0.091** & -0.137**) and Size (-0.069* & -0.152**) in both matrixes, indicating that a larger number of members on the board as well as larger firm size contributes to less DA.

There is a significant negative relationship between State Ownership and POE CEO background in both the Pearson (-0.634**) and Spearman (-0.634**) correlations, which indicates that there are less CEOs with POE background in SOE's than in POE's. This is an expected outcome, as all POE's in our sample has a CEO with POE background.

Both matrixes show a positive relationship between state-ownership and all four of the interaction variables. The explanation to this is that all interaction variables are computed through multiplying the state-ownership variable with either CEO POE background, economic downturn, or leverage.

ROA and Size is negatively correlated in both the Pearson and Spearman matrix. The explanation to this is that the smaller firms in our sample are more profitable in relation to their total assets than the larger firms.

	Spearman=Top Right, Pearson=Down Left	1	2	3	4	5	6	7	8	9	10	11	12
1	DA	1.0000	.065*	-.065*	-0.0338	0.0531	-0.0173	-.067*	-0.0262	-0.0035	-.137**	-.152**	-0.0056
2	CEO POE Background	.073*	1.0000	-.634**	-0.0306	.212**	.199**	-.604**	-.292**	.101**	-.340**	-.233**	0.0250
3	State Ownership	-0.0079	-.634**	1.0000	-0.0003	-.294**	.632**	.974**	.383**	-.156**	.570**	.278**	0.0028
4	Economic Downturn	-0.0299	-0.0306	-0.0003	1.0000	0.0203	-0.0310	-0.0034	.532**	-0.0220	-0.0131	-0.0064	-.160**
5	Leverage	-0.0101	0.0430	-.067*	0.0095	1.0000	-.160**	-.182**	-.122**	.181**	-.226**	-0.0371	-0.0225
6	INTER CEO SO	.063*	.199**	.632**	-0.0310	-0.0417	1.0000	.628**	.193**	-.097**	.382**	.118**	0.0285
7	INTER LEV SO	.075*	-.429**	.734**	0.0013	-0.0416	.500**	1.0000	.368**	-.127**	.574**	.300**	0.0207
8	INTER DOWN SO	-0.0154	-.292**	.383**	.532**	-0.0256	.193**	.284**	1.0000	-.073*	.219**	.106**	-.084**
9	ROA	-.075*	.137**	-.184**	-0.0097	0.0391	-.096**	-.080**	-.080**	1.0000	-0.0536	-.443**	-0.0128
10	BOD	-.091**	-.298**	.502**	-0.0172	-.086**	.337**	.405**	.191**	-0.0403	1.0000	.372**	0.0071
11	Size	-.069*	-.233**	.272**	-0.0101	-0.0299	.111**	.269**	.104**	-.334**	.389**	1.0000	.091**
12	Political Orientation	0.0206	0.0250	0.0028	-.160**	0.0099	0.0285	.071*	-.084**	-0.0326	0.0067	.095**	1.0000

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2: Spearman and Pearson correlation matrix

4.3 Regression Analysis

	Model 1	
Variables	B	Std. Error
State Ownership	0.0102	0.0098
ROA	-0.008**	0.003
BOD	-0.004*	0.002
Size	-0.005*	0.002
Political Orientation	0.007	0.008
Constant	0.202***	0.0285
Anova sign.	<0.001	
Adj. R-square	0.0161	
Vif-value highest	1.516	
	n=1057	
Note: *** p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10		

Table 3. The dependent variable is Discretionary Accruals.

Model 1:

$$\mathbf{DA}\tau = \beta 0 + \beta 1 \textit{State Ownership}\tau + \beta 2 \textit{ROA}\tau + \beta 3\ \textit{BOD}\tau + ß4\ \textit{SIZE}\tau + ß5\ \textit{Political}\tau + \varepsilon\tau$$

Table 3 displays Model 1, which is the first of the four multiple linear regression models that are tested in the study. The total number of observations is 1057, and the model is significant on a 0.001 level. Furthermore, the model has an adjusted r-square value of 0.0161 which indicates that the independent variable State-ownership along with the control variables explain 1.16 % of the variance of DA. The highest Vif-value is 1.516. According to Hair et al., 2013, a Vif-value under 10 is an indicator of low multicollinearity, thus the model does not show any sign of multicollinearity. The Durbin-Watson statistic for the model is 1.360. According to Studenmund (2014), a Durbin-Watson statistic of 2 indicates that no autocorrelation exists while a statistic of 0 indicates extreme positive autocorrelation and a statistic of 4 indicates extreme negative autocorrelation.

As can be seen in Table 3, there is a non-significant negative relationship between state-ownership and the dependent variable DA (0.0102). This relationship is opposite to the positive relationship between State-ownership and DA that we predicted in the first hypothesis (H1). As the relationship was non-significant, the result suggests that state-ownership has no significant effect on DA.

Moreover, Table 3 shows that three of the control variables have a significant relationship with the dependent variable DA, which are ROA (-0.008**), BOD (-0.004*) and Size (-0.005*). This indicates that ROA, BOD, and Size significantly affect DA.

	Model 2		Model 3		Model 4	
Variables	B	Std. Error	B	Std. Error	B	Std. Error
State Ownership	-0,031*	0.010	0.009	0.0107	-0.009	0.012
Leverage	0.000	0.000				
INTER LEV SO	0,027***	0.006				
Economic Downturn			-0.011	0.012		
INTER Down SO			0.004	0.021		
CEO POE background					0,042**	0.016
ROA	-0,001***	0.003	-0,008**	0.003	-0,020*	0.008
BOD	-0,004*	0.002	-0,004*	0.002	-0.004	0.007
Size	-0,006**	0.002	-0,005*	0.002	0.002	0.004
Political Orientation	0.003	0.008	0.005	0.008	0,030†	0.015
Constant	0.202	0.029	0.204	0.029	0.196	0.028
Anova sign.	<0,001		<0,01		<0,01	
Adj. R-square	0.034		0.015		0.040	
Vif-value highest	1.523		1.755		1.452	
	n=1057		n=1057		n=351	

Note: *** p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10

Table 4. The dependent variable is Discretionary Accruals.

Model 2:

$$\mathbf{DA}\tau = \beta 0 + \beta 1 \text{State Ownership}\tau + \beta 2 \text{Leverage}\tau + \beta 3 \text{INTER LEV SO}\tau + \beta 4 \text{ROA}\tau + \beta 5 \text{BOD}\tau + \beta 6 \text{Size}\tau + \beta 7 \text{Political}\tau + \varepsilon\tau$$

Model 3:

$$\mathbf{DA}\tau = \beta 0 + \beta 1 \text{State Ownership}\tau + \beta 2 \text{Economic Downturn}\tau + \beta 3 \text{INTER Down SO}\tau + \beta 4 \text{ROA}\tau + \beta 5 \text{BOD}\tau + \beta 6 \text{Size}\tau + \beta 7 \text{Political}\tau + \varepsilon\tau$$

Model 4:

$$\mathbf{DA}\tau = \beta 0 + \beta 1 \text{State Ownership}\tau + \beta 2 \text{CEO POE background}\tau + \beta 3 \text{ROA}\tau + \beta 4 \text{BOD}\tau + \beta 5 \text{Size}\tau + \beta 6 \text{Political}\tau + \varepsilon\tau$$

Model 2 is based on *Hypothesis 4: The relationship between leverage and earnings management is negatively moderated by state-ownership.* For this model we conduct a multiple linear regression where DA acts as our dependent variable, Leverage, State Ownership and INTER LEV SO as our independent variables as well as all our control variables. This model has 1057 numbers of observations and is significant on a 0.001 level. The adjusted r square value for the model is 0.034 which means that our independent variables together with the control variables explain 3.4% of the variance in the dependent variable DA. The highest observed VIF-value for the model was 1.523 which is acceptable. The Durbin-Watson statistic for the model is 1.395, indicating that no autocorrelation exists.

According to the regression for model 2, State Ownership shows a significant negative relationship with DA on a 0.05 level (-0.031*). The independent variable Leverage shows no significant relationship with DA at any level (0.000) in model 2. The interaction variable INTER LEV SO LEV SO shows a strong significant positive relationship with DA on a 0.001 level (0.027***), which suggests that the relationship between leverage and DA is positively moderated by state-ownership. This suggestion is contrary to what we predicted in our hypothesis (H4). Furthermore, model 2 shows that there is a strong significant negative relationship between ROA and DA at a 0.001 level (-0.001***), a significant negative relationship between BOD and DA at a 0.05 level (-0.004*) and a strong significant negative relationship between Size and DA at a 0.01 level (-0.006**).

Figure 4 visualizes the interaction effect of state-ownership on the relationship between leverage and DA. It shows that as leverage increases in SOE's the DA increases and moves closer to the DA levels of POE's. This means that state-ownership positively moderates the relationship between leverage and DA.

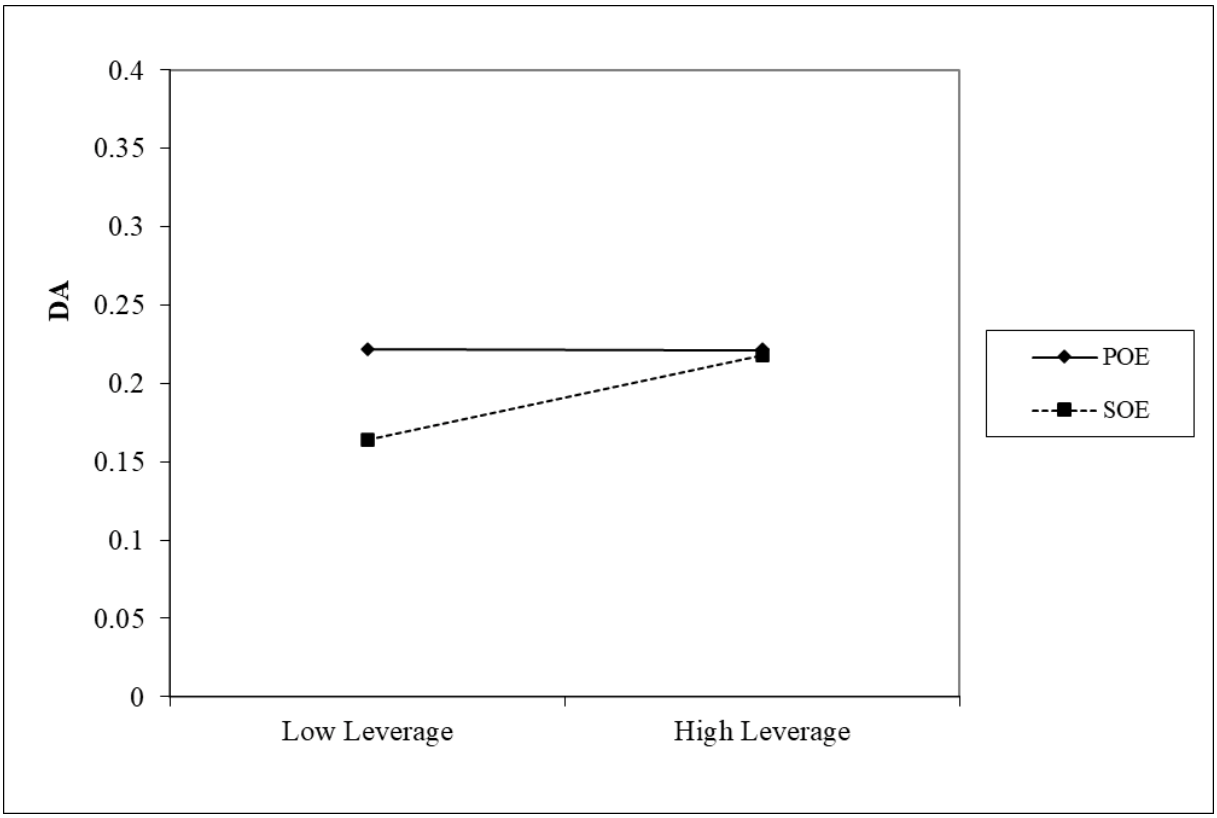

Figure 4

Model 3 shows the regression for *hypothesis 3: The relationship between economic downturn and earnings management is positively moderated by state-ownership.* It includes DA as the dependent variable, State Ownership, Economic Downturn and INTER Down SO as the independent variables as well as all of our control variables. The model has 1057 numbers of observations and is significant at a 0.01 level. The adjusted r square value for the model is 0.015 which means that the independent variables together with the control variables explain 1.5% of the variance of the dependent variable DA. The highest VIF-value of the model is 1.755 which is acceptable. The Durbin-Watson statistic for the model is 1.358, indicating that no autocorrelation exists in the model.

Model 3 shows a non-significant positive relationship between State Ownership and DA and a non-significant negative relationship between Economic Downturn and DA. It also shows a non-significant positive relationship between the interaction variable INTER Down SO indicating the state-ownership of SOE's has no impact on the amount of DA during economic downturns. This is contrary to what the hypothesis predicted. Furthermore, model 3 shows a moderate significant negative relationship between the control variable ROA and DA at a

0.01 level (-0.008**) and a weak significant negative relationship between the control variables BOD and Size and the dependent variable DA at a 0.05 level (-0.004* and -0.005*).

Figure 5 visualizes the interaction effect of state-ownership on the relationship between economic downturn and DA. It shows that there is no difference on the amount of DA between SOE's and POE's during economic downturns, and thus that state-ownership does not moderate the relationship.

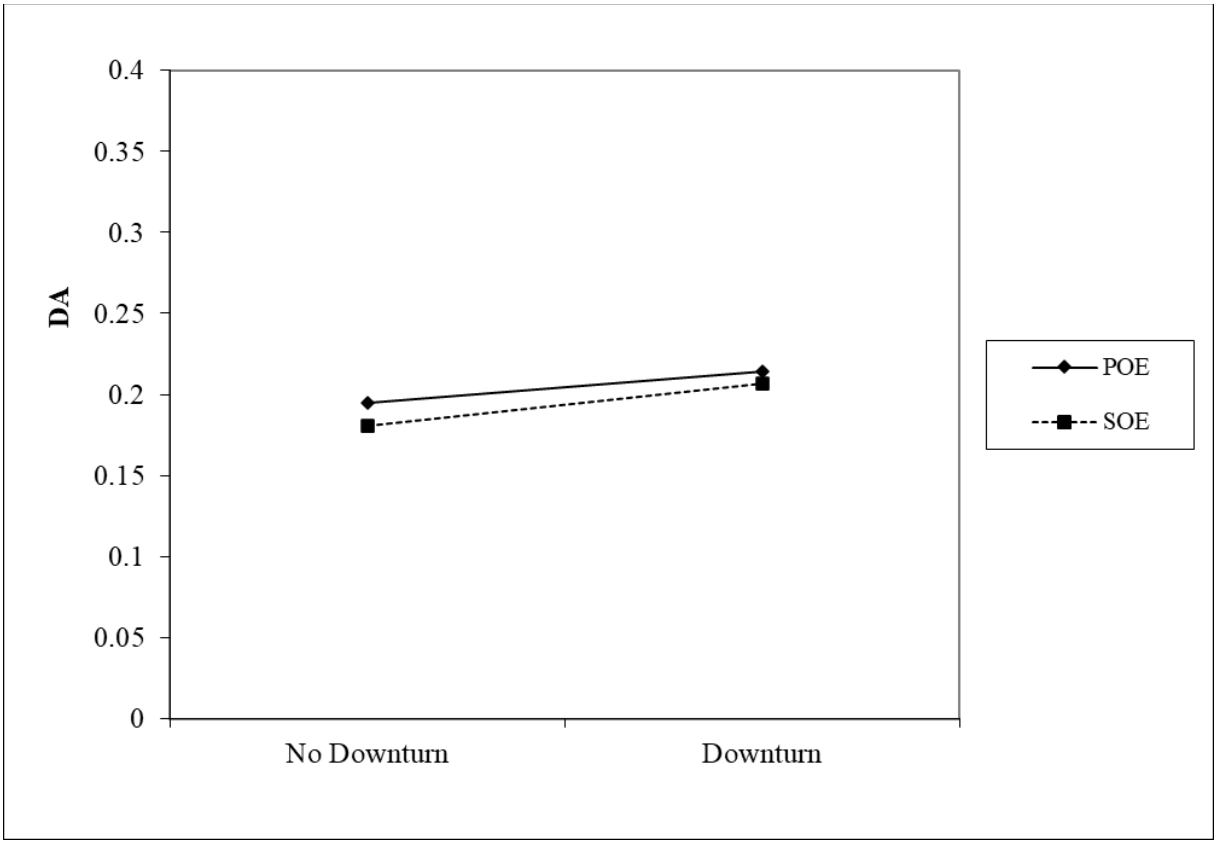

Figure 5

Model 4 is a test of *Hypothesis 2: The relationship between state-ownership and earnings management is positively moderated by POE-managerial background of the CEO in a SOE.* The variables included in the model are DA as the dependent variable, CEO POE Background, and State Ownership as the independent variables, and all four control variables. Furthermore, when conducting the test for this hypothesis only a sub-population consisting of the sample firms with state-ownership was included. This means that we compared the SOE's with and without a CEO with POE managerial background and their respective levels of EM. We did this because the original model with the interaction variable encountered high levels of multicollinearity, and thus forced us to test the interaction through a sub-population

instead. The model is significant on a 1 % level and has an adjusted r-square of 0,040, which means that the independent variables together with the control variables explain 4% of the variance of the dependent variable DA. As the highest Vif-value is 1.452, there is no indication of multicollinearity. The Durbin-Watson statistic for the model is 0.876 which is acceptable. Model 4 shows a positive relationship on a 1 % level between CEO POE Background and DA (0.042**), which indicates that a CEO POE background of a CEO in a SOE has a moderating effect on the relationship between State-ownership and DA. A negative relationship was found between ROA and DA (-0.020*). Furthermore, a positive relationship between Political orientation and DA was found on a 10 % level (0.030†). This is an indication of a higher amount of DA when the incumbent government is social democratic.

To increase the reliability and overall quality of our tests, we ran some alternative tests to see if our results were robust and stable. We have controlled the effect that year and industry have on the results, and we found that neither year nor industry had any significant relationship with the dependent variable DA. Neither did year or industry have any effect on the results of the models in our thesis. Furthermore, since we used leverage as an independent variable for hypothesis 4, we could not include it as a control variable in the same model and thus excluded it as a control variable in all the other models as well in order to use the same control variables for every test. However, leverage is a commonly used control variable when conducting studies about EM (Capalbo et al., 2014; Capalbo et al., 2021; Wang & Yung, 2011), which made us run additional tests for every model where we added leverage as a control variable to see if it changed the results. This did not seem to have any notable effects on our results. We also had to make some adjustments when testing for hypothesis 2 because of the multicollinearity that occurred between the interaction variable INTER CEO SO and the independent variable CEO POE Background. We therefore had to conduct the test by using a sub-population with the SOE's and observe how CEO background affected DA in those firms instead of using a standard interaction variable.

5. Discussion

This chapter contains a discussion of our findings in relation to each of the hypotheses. First the relationship between State-ownership and EM is discussed, followed by a discussion of the moderating effect that the background of the CEO has on the EM in a SOE. Furthermore, the moderating effect of State-ownership on the relationship between Economic Downturn and EM is discussed. The last section contains a discussion of the moderating effect that State-ownership has on the relationship between Leverage and EM.

5.1 State-ownerships effect on EM

Hypothesis 1: State-ownership has a positive relationship to earnings management in Swedish firms.

In our research regarding how EM behavior differs between SOE's and POE's the first hypothesis (H1) aimed to investigate the relationship between state-ownership and EM in Swedish firms. The findings of our study indicated that the predicted positive relationship between state-ownership and EM does not exist. Moreover, our results indicated an insignificant positive relationship according to the multiple regression analysis while the bivariate analysis indicated an insignificant negative relationship according to the Pearson correlation and a significant negative relationship according to the Spearman correlation. Figure 3 suggested that DA was higher in POE's than SOE's. Therefore, we reject hypothesis 1.

The predicted positive relationship between state-ownership and EM for which we argued for in Hypothesis 1 was mainly based on the idea that owners of SOE's are agents with more opportunistic motives than conventional POE owners, while managers in SOE's are more incentivized to care for their human capital investment in their firm than managers in POE's, which could make the managers more likely to be swayed by the interest of the owners out of their own self-interest (Jensen & Meckling, 1976; Demsetz, 1983; Ahari, 1982). This could lead to SOE's managing earnings to reduce political costs, as political costs could prove damaging for the owners of these firms. As previously explained the political cost hypothesis which states that firms manage earnings to reduce scrutiny from the government might work in another way for SOE's where the government is the majority owner. In the case of SOE's, the firm might instead need to avoid scrutiny from the citizens and thus manage their earnings to make the SOE's appear well-managed by the incumbent government. Thus, managers

would be incentivized to manage earnings in the best interest of the government as the majority owner in order to remain at his position within the firm. If the predicted positive relationship existed, it would mean that the state-ownership positively affects EM.

Our findings however indicate an insignificant positive relationship between state-ownership and EM, which means that state-ownership has no significant impact on the amount of EM within our sample group. Our results differentiate to some previous studies of similar phenomena where it was suggested that POE's manage their earnings to a higher extent than SOE's (Ding et al., 2007; Wang & Yung, 2011; Capalbo et al., 2014).

Hypothesis 1 was formed based on a combination of ideas from hybrid organizations theory, agency theory and PAT. As SOE's are hybrid organizations, we argued that managers of SOE's potentially could have more incentives to manage earnings compared to managers in SOE's as they would have a mix of incentives from both the public and the private sector. Moreover, as it has been argued that the government should be considered an agent rather than a principal (Aharoni, 1982), we argued that it should be more opportunistic behavior and weaker monitoring within SOE's, which could lead to more earnings management. We also argued that the incentive for managers to nurture their human capital investment is greater in SOE's than POE's, which could make managers more easily swayable by demands of the shareholders. Finally, we argued that the incentive to manage earnings due to political cost is greater within an SOE than a POE, due to the greater political connection of such a firm.

However, while both PAT and agency theory has been heavily used in explaining studies similar to ours, criticism exists on the theories capability to accurately predict accounting practices within empirical research. This is due to accounting practices being complex and intertwined with the business environment which is a subject to change. Furthermore, these theories have largely been developed based on publicly held corporations, while the majority of our sample consists of privately held corporations, which could have contributed to inaccurate predictions. Thus, we believe our inaccurate prediction may have been a result of us relying too heavily on PAT and agency theory, which may not be suitable for a sample with a majority of privately held firms.

Since our findings were not in line with our predicted hypothesis, we want to explore other possible explanations for our results. In contrast to our findings, previous studies have suggested that POE's manage their earnings to a larger extent than SOE's (Ding et al., 2007; Wang & Yung, 2011; Capalbo et al., 2014), while a study by Gaio & Pinto (2018) indicated a

non-significant relationship between state-ownership and EM which is in line with our results. A large amount of the research on the difference in EM between SOE's and POE's has been conducted within a Chinese context (Ding et al., 2007; Wang & Yung, 2011) where results often point towards more EM within POE's. Our findings might be different because of the amount of publicly traded SOE's in China compared to Sweden, along with the large political and structural differences between the two countries. This potential explanation is supported by the findings of Gaio & Pinto (2018) where the authors suggested that publicly traded SOE's are more likely to have higher levels of abnormal accruals than publicly traded POE's. This because of the market pressure that comes with being a public firm, and thus to meet performance benchmarks which creates more incentives to manage earnings. Many of the SOE's in China are also some of the largest firms in the country giving the smaller POE's different incentives to manage earnings compared to POE's in Sweden. Having this in mind, it might be the case that Swedish SOE's do not behave different compared to POE's when it comes to EM in contrast to the widespread findings in a Chinese environment.

As mentioned, the findings we observed regarding hypothesis 1 was contradicting both against much of the previous research (Ding et al., 2007; Wang & Yung, 2011; Capalbo et al., 2014) together with theoretical arguments we made based on agency theory, PAT (mainly the political-cost hypothesis) and the theory on hybrid organizations. This implies that there is no connection between state-ownership background of the firm owner and the amount of EM in Swedish firms, which is similar to the findings of Gaio & Pinto (2018) but in another geographical context. Because of these findings, we conclude that our interpretation of how agency theory and PAT would explain the relationship between state-ownership and amount of EM was wrong. We would thus, based on this knowledge, argue that an explanation for this relationship might lie within other theoretical approaches.

As a summary, we find no evidence of the predicted positive relationship between state-ownership and EM, however we do suggest that the non-significant positive relationship between state-ownership and EM in our study might be affected by the small amount of publicly traded SOE's in Sweden as well as a smaller number of large firms within the Swedish SOE-portfolio compared to sample groups of previous studies (Ding et al., 2007; Wang & Yung, 2011; Gaio & Pinto, 2018).

5.2 CEO Background

Hypothesis 2: The relationship between state-ownership and earnings management is positively moderated by POE-managerial background of the CEO in a SOE.

The second hypothesis of our study aimed to test the effect that POE-managerial experience has on the amount of EM within SOE's. This was tested by examining the relationship between CEO background and EM for the SOE's within our sample. Our results suggest that the relationship between state-ownership and EM is positively moderated by CEO POE background, thus indicating that the predicted relationship does exist. In detail, the result indicated a positive significant relationship according to the regression analysis, as well as a positive significant relationship and association of ranks according to the Pearson correlation and the Spearman correlation. Therefore, we accept the hypothesis (H2).

Hypothesis 2 was mainly based on the findings of Bruton et al., (2015) where it was suggested that SOE's which are not solely driven by economic goals are less worried about long-term survival and have been found to overspend their budgets due to soft budget constraints. Managers within SOE's are instead incentivized to manage the business according to political pressure from the government as an owner. Moreover, Bruton et al., (2015) also suggested that SOE's have been found to recruit managers with experience from the private sector during harsh economic periods in order to increase the economic performance of the enterprise. This could be an indication of how managers with background in POE's are assigned because they are considered more knowledgeable of accounting methods and more suitable for increasing the economic results of the firm. Wang & Yung (2011) also suggested the information asymmetry between owners and managers is larger in SOE's because of high levels of organizational hierarchy, we believe that this large gap could be utilized by knowledgeable managers to conduct more EM. Our argument that POE background for managers within SOE's would lead to more EM was also built upon the findings of Clémenceau & Soguel (2017) where it was suggested that a higher level of education and financial knowledge (accounting knowledge) of the finance minister in the Swiss cantons led to more EM, further strengthening the argument of assigning managers with POE background within SOE's could lead to more EM.

Our findings are somewhat in line the findings of Clémenceau & Soguel (2017) where the authors suggested that a higher education level of the financial minister and more financial experience led to more EM in the Swiss cantons. Our findings indicate that the logic of

Clémenceau & Soguel (2017) can be applied to SOE's as well, as it seems a higher accounting knowledge of a manager in a SOE leads to more EM. Furthermore, based on our findings we cannot rule out the arguments made by Wang & Yung (2011), that SOE's have increased opportunities for opportunistic behavior. However, our findings indicate that individuals with a managerial background in the private sector has better opportunities to manage earnings in SOE's, than individuals without this background.

In conclusion, the observed findings on hypothesis 2 was somewhat in line with study by Clémenceau & Soguel (2017) from which the hypothesis was partly derived, and in line with the theoretical arguments based on agency theory and theory on hybrid organizations. The findings were also in line with arguments made in previous research regarding the opportunities for EM that exist within SOE's (Wang & Yung, 2011). This leads us to suggest that information asymmetry provides useful explanation to some EM behavior in SOE's.

5.3 Economic Downturn

H3: *The relationship between economic downturn and earnings management is positively moderated by state-ownership*

The third hypothesis was included in this thesis to test the moderating effect that state-ownership has on the relationship between economic downturn and EM, where we predicted that state-ownership would have a positively moderating effect on the relationship between earnings management and an economic downturn. As the results showed that state-ownership had an insignificant positive effect on the relationship between economic downturn and EM, Hypothesis 3 is rejected.

The hypothesis is based on theory on hybrid organizations and agency theory. Furthermore, the reasoning behind the hypothesis is based on the notion that the usually ineffective and non-profit oriented SOE's tend to become more profit oriented during times of economic downturn, which could increase the likeliness of earnings management (Bruton et al., 2015). The incentive to increase the financial performance of SOE's during an economic downturn would initially be of an incentive of the owners, as they have to be more vary of resources during scarcer times. The state as an owner would also be more likely to expect on-going dividends, as their primary economic benefit from owning firms comes from this rather than stock trading. Although, managers in turn would also be incentivized to increase the financial performance during these times, as it would be a necessary measure for them to prolong their manager tenure. It has been suggested that the manager tenure is shorter in SOE's than in

POE's (Capalbo et al., 2021) and therefore a manager could potentially be more effected by the objectives of the owners in a SOE than they would in a POE.

Our findings indicate that an economic downturn has no effect on the amount that a firm manages its earnings, which means that we cannot provide any more evidence regarding if EM is pro-cyclical or counter-cyclical with the business cycle. Furthermore, our findings also indicates that state-ownership has no effect on the relationship between an economic downturn and EM. We expected that SOE's would increase their focus on financial performance during economic downturns, and that this would incentivize both shareholders and managers to increase DA during these times.

One reason for the outcome of our result may be that the vast majority of the firms in our sample are non-listed corporations. Previous studies regarding the relationship between EM and the business cycle have largely focused on the effect the business cycle has on EM based on market pressures, investor reactions and share price control (Conrad et al., 2002; Cohen & Zarowin, 2007; Ze-To, 2012). Considering that most of our sample firms are unlisted, it is possible that the explanation for the non-existing relationship between economic downturn and EM within our sample could be that non-listed firms are not incentivized to manage earnings due to the business cycle. A further possible explanation to our results is that 2 out of the 3 years in our sample that was an economic downturn came before the year of 2014. As can be seen in figure 3, the level of DA in SOE's has been on an upwards trajectory during the timeline of our sample, and it was considerably lower in SOE's between the years 2008 to 2014, compared to from 2014 to 2021.

The encountered findings on hypothesis 3 was contradictory both to previous research on EM and the economic cycle (Cohen & Zarowin, 2007; Ze-To, 2012) and to our predicted assumptions based on the theoretical approaches of agency theory and theory on hybrid organizations. That is, we did not find any evidence that that state-ownership would increase EM during economic downturns. Thus, we conclude that agency theory and theory on hybrid organizations did not grant an explanation on how the state-ownership affects EM during economic downturns.

5.4 Leverage

Hypothesis 4: The relationship between leverage and earnings management is negatively moderated by state-ownership.

The fourth and last hypothesis of our thesis was developed to test how the relationship between leverage and EM was affected when adding state-ownership as a moderating variable. We predicted that state-ownership would have a negative moderating effect on the relationship between leverage and EM. Our results however indicates that state-ownership has a significant positive effect on the relationship between leverage and EM, which is opposite to what we predicted. This means hypothesis 4 is rejected.

The hypothesis was mainly developed from PAT, and the notions of Watts and Zimmerman's (1990) debt hypothesis, which predicts that highly leveraged firms will be likely to increase their earnings to avoid additional cost from their debt contracting. Meanwhile, empirical evidence from a previous EM study on SOE's have suggested that SOE's have less of an incentive for accounting conservatism than POE's, which is credited to the facts that SOE's have government implicit guarantees, and that creditors are less concerned with downside risk of SOE's (Gaio & Pinto, 2018). Therefore, we predicted that the debt hypothesis would be more applicable to POE's than SOE's, and as such that state-ownership would be a negative moderating factor.

However, we found no relationship between leverage and EM on its own, and we found that state-ownership had a significant positive moderating effect on the relationship between leverage and earnings management. This result is opposite to what was expected, and it is also opposite of Gaio and Pinto's (2018) findings of SOE's being less conservative than POE's. As the majority of the sample firms are non-listed, the findings would suggest that the debt hypothesis of PAT is more applicable in non-listed SOE's than it is in non-listed POE's in Sweden. Furthermore, a possible explanation to why state-ownership has a positive moderating effect on the relationship between leverage and EM could be that the main financial benefits for the shareholders of SOE's comes from dividends rather than stock trading, and managing earnings could be a method of increasing profits, and justifying paying dividends when a firm is highly leveraged. Thus, a parallel could be made to the political cost hypothesis, as managing earnings when highly leveraged could be a tool to manage the public image of the firm, to justify dividends. Hypothetically, politicians could be able to keep a lower tax rate, while more discretely gather funds to finance their political agenda.

Moreover, we believe an alternative explanation to the result regarding leverage and state-ownership could be that the lion's share of our sample consists of privately held firms. PAT is developed based on the behavior of publicly traded corporations, and therefore it may not have been a good fit to predict accounting choices of firms that are privately held. As the debt

hypothesis of PAT seemed more accurate when predicting accounting choices of SOE's with a high leverage ratio compared to when predicting their POE counterparts, the implication could be that SOE's are being run in more resemblance to a publicly traded POE than a privately held POE when it comes to which accounting choices will be made while being highly leveraged.

Our findings regarding hypothesis 4 provided opposite results compared to previous findings regarding how SOE's manage earnings due to leverage (Gaio & Pinto, 2018). However, our findings indicate that the debt hypothesis of Watts and Zimmerman (1990) provides more accurate predictions on the relationship between leverage and EM of private SOE's than it does for private POE's. Thus, we find no reason for why the debt hypothesis of PAT would be less relevant for SOE's than for POE's, contrary to our initial predictions.

5.5 General Discussion

Our results have provided some suggestions about how POE's and SOE's compares when it comes to EM. We found that SOE's and POE's does not significantly differ when it comes to managing earnings in general, as well as managing earnings during economic downturns. However, we found that SOE's and POE's significantly differs regarding EM due to leverage, as SOE's are more incentivized to manage earnings when their leverage is high compared to POE's. Lastly, we found that SOE's manage their earnings to a larger extent when their CEO has managerial experience from the private sector.

Both hypothesis 1 and hypothesis 4 was largely based on PAT, where hypothesis 1 focused on SOE's EM due to political costs, while hypothesis 4 focused on SOE's EM due to leverage (Watts & Zimmerman, 1990). Given that our prediction of a positive relationship between state-ownership and EM proved incorrect, we have found that the political cost theory of PAT does not offer theoretical explanations to explain the differences in EM between SOE's and POE's. We originally predicted that the debt hypothesis of PAT would better explain EM in POE's than in SOE's. Although, this prediction was proven to be incorrect as the debt hypothesis was found to give better explanations for EM in SOE's than POE's. Thus, we suggest that PAT is useful to explain why SOE's manages earnings due to leverage. Meanwhile, while we still argue that it is reasonable that SOE's manages earnings to avoid political cost, we found no evidence to suggest that the political cost hypothesis is useful to predict an existing relationship between state-ownership and EM.

Moreover, despite a large focus on political costs, hypothesis 1 was also partially drawn from agency theory, where we argued for a positive relationship between state-ownership and EM due to the government (and shareholder) being an agent (Aharoni, 1982), and thus more opportunistic than a conventional owner. We also argued that the managers in SOE's are more incentivized to protect their human capital investment in the firms, due to shorter manager tenures in SOE's than in POE's (Demsetz, 1983; Capalbo et al., 2021). Thus, if the government wanted them to manage earnings (e.g., to reduce political cost) they would be incentivized to do it to extend their tenure as manager. Although as the predicted positive relationship between state-ownership and EM was non-existent, we suggest that these mentioned aspects of the agency theory do not prove useful when predicting a direct relationship between state-ownership and EM.

Moreover, the aspect of a managers human capital investment being an incentive to manage earnings was also used as an argument in hypothesis 3, where we predicted that an economic downturn would have a positive moderating effect on the relationship between state-ownership and EM. As the hypothesis was rejected, it further indicates how the aspect of a managers human capital investment proves not useful in predicting EM in SOE's.

However, we did find that the information asymmetry aspect of the agency theory was useful when predicting EM in SOE's. Hypothesis 2 was developed largely based on information asymmetry, where we argued that a private CEO background of a SOE CEO would have a positive moderating effect on the relationship between state-ownership and EM. The reasoning behind this was that the POE background of a CEO would likely mean that the CEO had a higher accounting knowledge than a CEO with no POE background, thus leading to more information asymmetry within the SOE, which creates better opportunities for EM. As hypothesis 2 was approved, we suggest that information asymmetry is indeed useful to explain EM in SOE's.

Due to the inaccuracy of our predictions in hypothesis 1 and hypothesis 3, we argue that we may have relied too heavily on theories that assumes that humans will act opportunistically if given the chance. Both PAT and agency theory puts large emphasis on that each individual within an organization is purely driven by maximizing their own wealth on behalf of others. The theories may overstate the opportunistic nature in humans, while also offering a very simplistic explanation for human behavior, which could perhaps lead to faulty predictions of behavior of individuals. Given that these theories offer simple and one-sided explanations to human behavior, we believe that the use of other theories that could explain how individuals

are motivated by other objectives than wealth-maximization could be useful to predict EM in SOE's.

6. Conclusions and Implications

This chapter contains the conclusions and implications of our study. First the conclusions in relation to each hypothesis is presented, which is then followed by Theoretical Implications, Practical Implications and Empirical Implications. Lastly the identified Limitations of the study and suggestions for Future Research within the topic of EM in SOE's are presented.

6.1 Conclusion

The purpose of this thesis has been to provide new evidence regarding the relationship between state-ownership and EM and showcase differences in EM behavior between SOE's and POE's.

First, based on our findings, it seems state-ownership does not affect EM in Swedish firms.

Second, we found that EM seems to increase in state-owned firms where the CEO has CEO background from a POE, compared to if the CEO only has CEO background from SOE's.

Third, our findings indicate that state-ownership does not influence the amount of EM a firm will have during an economic downturn. The implication of this is that the ownership background does not affect the extent the firm will manage its earnings when the economic cycle shifts downwards.

Finally, we discovered that the EM of POE's remain unchanged based on their level of leverage, while SOE's increase their EM as their leverage rate increases. This is indicating that leverage is a better predictor of EM behavior of SOE's than POE's.

Based on our findings, it seems like the debt hypothesis of PAT (Watts & Zimmerman, 1990) is useful to predict the EM of SOE's by assessing the firms leverage ratio. Furthermore, it seems that a mix of hybrid organizations theory and agency theory (with a focus on information asymmetry) are suitable for predicting how the background of a CEO in a SOE may affect the EM levels of the firm.

6.2 Theoretical Implications

Our research has contributed theoretically to the debate regarding the relationship between owner background and EM. Multiple researchers have argued for the existence of a positive relationship between state-ownership and EM (Capalbo et al., 2014; Wang & Yung, 2011; Ding et al., 2007; Ben-Nasr et al., 2015), while Gaio and Pinto (2018) have argued that state-ownership affects EM, but without stating if the effect is expected to be positive or negative.

As our study found that state-ownership does not seem to influence EM, we contribute to the debate by providing evidence in disagreement with the arguments of a relationship between state-ownership and EM. Our findings rather suggest that there is no difference between private ownership and state-ownership regarding the amount a firm will manage its earnings.

Aside from the differences between SOE's and POE's when it comes to amounts of EM, it also exists a debate regarding if POE's or SOE's provides more opportunities for managers to manage earnings. On one side, it has been argued that SOE's have more agency problems leading to more opportunities for EM (Wang & Yung, 2011), while on the other side it has been argued that more stakeholders lead to more limited opportunities to manage earnings, which in turn limits the opportunities to manage earnings in SOE's due to the large amount of stakeholders (Burgstahler & Dichev, 1997; Capalbo et al., 2014). Our findings indicate that SOE managers with managerial experience from POE's are more likely to manage earnings than managers with no POE managerial background. This finding could be viewed as an indication of opportunities for EM in SOE's, as it could mean that the POE background managers notice opportunities to make use of their accounting knowledge to manage earnings in SOE's, and thus manages earnings to a higher extent than the managers with no POE background. It could however also be an indication that POE managers generally are more opportunistic than SOE managers. Nevertheless, we contribute with evidence regarding the existence of opportunities to manage earnings in SOE's, though it is unclear if the opportunities are actually greater in SOE's or not.

Difference in incentives for managing earnings within POE's and SOE's is also a subject that has sparked discussion within the literature on EM. Arguments have been made that there are more incentives for managing earnings in SOE's. There have been suggestions in the literature that the incentives are greater in SOE's based on shorter managerial tenure in these enterprises, making managers maximize the economic performance during their appointment (Capalbo et al., 2021; Dechow & Sloan, 1991). The political connection of SOE's have also been argued to create more incentives for SOE's, where the government as the owner aims to avoid scrutiny from the citizens and thus increase the chance of getting re-elected by keeping the profitability of the SOE's at a reasonable level (Watts & Zimmermann, 1990; Capalbo et al., 2021). Since we could not find any evidence on a difference in the amount of EM between POE's and SOE's, we cannot conclude that there exists a clear difference in the amount of nor power of incentives for managing earnings between POE's and SOE's. This does however not

mean that there is no difference in the incentives between the two types of enterprises, but instead that both types have incentives that affect EM to a similar degree.

The hypotheses argued for and tested in this study was largely based on the combination of previous literature within the field of EM for both private and public organizations as well as the theoretical approaches of agency theory as well as positive accounting theory. However, due to our results only allowing us to accept one of our four hypotheses, we conclude that there are other theoretical approaches which might be used to explain the relationship more accurately between state-ownership and EM.

Based on our findings, we would argue that PAT does not seem to offer a reliable base to predict accounting choices of privately traded firms. Furthermore, we believe that both agency theory and PAT's simplistic explanations of what motivates individuals and their lack of nuance regarding this may have led us to exaggerate the opportunistic behavior of managers and owners. For instance, both PAT and agency theory predicts the behavior of individuals largely based on the assumption that they will make decisions that are favorable for themselves, often at the expense of others. Perhaps adding elements from a theory such as the stewardship theory could provide meaningful contributions when predicting the behavior of individuals in SOE's. The stewardship theory provides more nuance to the behavior of individuals than agency theory as it explains that managers and principals may be either opportunistic agents or may be stewards that can be trusted to make responsible decisions (Davis et al., 1997). As SOE's provide fewer short-term economic incentives than POE's, while the firms often times are meant to bring benefits to the public, it could be that individuals who are more driven by moral values than pure wealth maximizing values who would choose to work for such organizations.

Furthermore, within agency theory the managerial labor market has been identified as a factor that influences decisions of agents (Fama, 1980). Given the non-existence of bonus pay in SOE's, we may have underemphasized the impact that the managerial labor market may have for the decision making of agents within SOE's. The labor market incentive could explain why a SOE manager would manage the earnings of a highly leveraged firm, as it would signal a better economic performance of his firm, which he could be compensated for in a future employment. The labor market could also explain why a SOE manager with POE background would manage earnings, as a perceived better economic performance of his firm would be a way for the manager to still be relevant for hires in the private sector. We believe that a mix

of theories providing more nuance to the decisions of individuals, as well as a bigger focus on the managerial labor market could have provided more accurate predictions for our study.

6.3 Practical implications

This thesis has found no evidence to suggest that state-ownership affects earnings management of Swedish SOE's. Our result is in line with Gaio and Pinto (2018), but contrary to the findings of numerous other studies (Capalbo et al., 2014; Wang & Yung, 2011; Ding et al., 2007). The implication of this is that the amount of earnings management in Swedish firms will not be affected by if the owner is of private or state background. Furthermore, this thesis found evidence suggesting that the managerial background of CEO in a SOE influences the firms amounts of managed earnings. This is somewhat in line with the findings about EM in public authorities (Clémenceau & Soguel, 2017), where the authors found a connection between a higher accounting knowledge and EM. Our findings suggest there could be a similar relationship between accounting knowledge and EM in SOE's. Moreover, no evidence was found indicating that an economic downturn affects the EM of a SOE. Lastly our findings suggests that leverage is a stronger incentive for EM in SOE's than in POE's.

Our research contributes to the EM literature of SOE's by providing an initial knowledge of how Swedish SOE's and POE's differs when it comes to manage earnings. This knowledge could be useful for the many stakeholders of SOE's, as it helps to better understand how these firms are performing financially, and it also indirectly helps to understand the performance of the incumbent government. Furthermore, as some of the Swedish SOE's are among the largest firms in Sweden, the knowledge from our research contributes to the overall understanding of the largest firms in the Swedish economy.

The results provided by our study also highlights how specific events affect the accounting behavior of SOE's when it comes to managing earnings. Previously it has been found that SOE's increase their EM during election years (Capalbo et al., 2021), and now we can add to the connection between specific events and EM within SOE's through the suggestion that the event of an economic downturn does not affect the amount of EM in SOE's. This might lead to a more complete picture of when SOE's are likely to manage their earnings.

Moreover, our research could be useful for stakeholders with interest in information from financial reporting, as our research contributes with information about the reliability of the reported numbers in the financial reports of SOE's. Given our findings about SOE's being more inclined to manage earnings due to leverage than POE's, our information could

furthermore be useful for stakeholders such as creditors. Our research could potentially be of use to increase the accuracy in the creditors risk assessment of SOE's, as we have provided empirical evidence of how the EM behavior of a SOE might change depending on their leverage ratio.

6.4 Empirical Contributions

To our knowledge there has been no previous studies on EM within SOE's in Sweden. We have thus contributed with more empirical evidence about EM within SOE from a new geographical sample. Capalbo et al., (2014) stated the demand for EM research within different EU member states to help generalize the current empirical findings of EM within SOE's in the EU, which our research contributes to. Moreover, Wang and Yung (2011) expressed the need for more research within unlisted SOE's. As our sample of SOE's consists of a large majority of unlisted firms, we have contributed with empirical evidence to the EM research on unlisted SOE's.

6.5 Limitations

One of the limitations to this thesis is the discrepancy between total assets between our some of the SOE's and their POE counterparts. Especially the larger SOE's proved difficult to find a match for with similar amount of total assets that was not a publicly traded POE. It is possible that we could have found more precise evidence with a smaller discrepancy between total assets of some of the SOE's and POE's.

Furthermore, we would like to point out our size of our focus group as a limitation. As there are only a limited number of Swedish SOE's there is a higher risk of random events increasing than if the focus group had been larger.

Since there is only one publicly traded SOE in Sweden, our study is not able to capture any differences between publicly traded SOE's and non-publicly traded SOE's. We see this as a limitation when it comes to understanding the impact that the capital market has on the relationship between state-ownership and EM.

Lastly, since the Swedish SOE's are spread across a large number of industries, we opted to use 7 sector specific parameters, rather than firm specific parameters for each firm due to time limitation. This could have had a negative impact of the replicability of our study.

6.6 Future Research

Because of the issues we encountered when attempting to match the chosen SOE's with POE's within similar sectors and similar in size based on total assets, we argue that it would be of interest as well as importance to conduct more studies on how the EM behavior of SOE's and POE's differ. Furthermore, we highlight the importance of doing so within a context where the SOE's are easier to match with POE's, in order to reduce the risk of results being affected by the differences between the SOE's and their matched POE's. Moreover, we suggest that future research should also examine the relationship between state-ownership and EM in a context where studies are able to utilize a larger sample of SOE's. This because the amount of Swedish SOE's is rather limited which runs the risk of practices by a few enterprises having a large impact on the results.

We also suggest that future research should follow up on the findings of Gaio & Pinto (2018), of how publicly traded SOE's differ to non-publicly traded SOE's since our study is very limited in capturing capital market effects on EM in SOE's. We thus recommend future researchers to use a sample with a similar amount of non-publicly traded SOE's and publicly traded SOE's to further investigate the incentives that come with a SOE being publicly traded.

We argue that it would be of great interest for future research to expand on our finding regarding hypothesis 4. Since our results indicated that state-ownership moderates the relationship between leverage and EM in the opposite way of how we theorized, we argue that this phenomenon needs more investigation. We thus suggest future research to include our formulated hypothesis (H4) in future studies within the field in order to get a better understanding of how state-ownership moderates the relationship between leverage and EM.

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Appendices

Appendix 1: Table of Sample Displaying Total Assets

Following table displays our entire sample where the left column consists of SOE's and the right column of the POE's that have been chosen as a match. Total assets of all firms in the fiscal year of 2021 are presented in Appendix 1.

Focus Group	Total Assets 2021 (th SEK)	Matched Control Group	Total Assets 2021 (th SEK)
AB GOTA KANALBOLAG	157 934	Falkenberg Terminal AB	103 703
		Svitzer Sverige AB	183 936
AB SVENSKA SPEL	7 503 000	Aktiebolaget Trav & Galopp	2 731 000
		Betsson AB	9 175 443
AKADEMISKA HUS AKTIEBOLAG	125 181 543	M2 Assets Management	47 535 000
		Erik Sehlin Fastigheter AB	80 199 185
AKTIEBOLAGET SVENSK BILPROVNING	320 843	Dekra Industrial AB	519 072
		Kiwa Sweden AB	311 222
APOTEK PRODUKTION & LABORATORIER AB	769 002	QPHARMA AB	455 704
		RECIPHARM Uppsala AB	265 148
APOTEKET AB	11 989 000	Apotek Hjärtat	4 422 863
		Kronans Apotek	2 856 074
GREEN CARGO AB	3 448 000	Hector Rail AB	1 252 109
		BDX Företagen AB	1 392 366
INFRANORD AB	2 635 000	Strukton Rail AB	1 130 744
		Serneke AB	2 951 396
JERNHUSEN AB	21 507 000	Ramsbury Property AB	21 972 513
		Volvo Car Real Estate 1 AB	16 631 264
LERNIA AB	1 192 000	Manpower Aktiebolag	810 968
		Adecco Sweden AB	810 043
LUOSSAVAARA-KIIRUNAVAARA AKTIEBOLAG	94 645 000	Zinkgruvan Mining AB	5 474 167
		Boliden Mineral AB	64 594 000
MILJOMARKNING SVERIGE AB	33 281	Qvalify AB	34 839
		Bureau Veritas AB Sverige	26 882
POSTNORD AB	30 590 000	United Parcel Service AB	704 645
		DHL	3 530 180
RISE RESEARCH INSTITUTES OF SWEDEN AB	4 201 328	SAAB Dynamics	5 754 878
		Novavax AB	3 593 711
SAMHALL AKTIEBOLAG	4 914 000	MIAB AB	362 922
		Randstad AB	896 628
SJ AB	8 470 000	A-Train AB	2 390 577
		Transdev Sverige AB	2 486 565
SOS ALARM SVERIGE AB	1 151 443	Verisure Sverige AB	2 660 803
		Tunstall AB	219 461
SPECIALFASTIGHETER SVERIGE AKTIEBOLAG	36 157 000	Humlegården Fastigheter	38 877 000
		Fastighets AB L E Lundberg	28 143 300
STATENS BOSTADSOMVANDLING AB SBO	981 448	Wåhlin Fastigheter i Märsta	965 364
		Söderstaden i Östergötland	975 459
SVEASKOG AB	91 438 000	SCA Skog AB	3 838 252
		Billerud Skog	17 334 000
SVEVIA AB (PUBL)	5 147 000	Skanska Sverige	17 911 586
		NCC Industry AB	2 602 867
SWEDAVIA AB	25 711 000	Aviator Airport Services AB	196 371
		Menzies Aviation Sverige AB	155 098
SYSTEMBOLAGET AKTIEBOLAG	7 702 000	Coop Butiker och Stormarknader AB	5 005 000
		City Gross	1 590 127
TELIA COMPANY AB	237 025 000	Tele 2	26 798 730
		Ericsson Telefonaktiebolag	305 614 000
TERACOM GROUP AB	4 912 000	Ascom (Sweden) AB	682 084
		Rebtel Networks AB	449 440
VATTENFALL AB	782 358 000	Sydkraft Nuclear Power	20 322 427
		E'ON Eldistribution AB	48 426 161

Appendix 1: Table of sample displaying total assets.

Appendix 2: Table of Sample Displaying Sector

Following table shows the entirety of our sample with SOE's in the left column and POE's on the right. NR2 Codes for all of the firms in the fiscal year of 2021 is presented.

Focus Group	NR2 Code	Matched Control Group	NR2 Code
AB GOTA KANALBOLAG	5222	Falkenberg Terminal AB Svitzer Sverige AB	5222
AB SVENSKA SPEL	9200	Aktiebolaget Trav & Galopp Betsson AB	9200
AKADEMISKA HUS AKTIEBOLAG	6820	M2 Assets Management Erik Sehlin Fastigheter AB	6820
AKTIEBOLAGET SVENSK BILPROVNING	7120	Dekra Industrial AB Kiwa Sweden AB	7120
APOTEK PRODUKTION & LABORATORIER AB	2120	QPHARMA AB RECIPHARM Uppsala AB	2120
APOTEKET AB	4645	Apotek Hjärtat Kronans Apotek	4773
GREEN CARGO AB	4920	Hector Rail AB BDX Företagen AB	4920 5229
INFRANORD AB	4212	Strukton Rail AB Serneke AB	4212 4120
JERNHUSEN AB	6820	Ramsbury Property AB Volvo Car Real Estate 1 AB	6820
LERNIA AB	7010	Manpower Aktiebolag Adecco Sweden AB	7820
LUOSSAVAARA-KIIRUNAVAARA AKTIEBOLAG	0710	Zinkgruvan Mining AB Boliden Mineral AB	0729
MILJOMARKNING SVERIGE AB	7120	Qvalify AB Bureau Veritas AB Sverige	7120
POSTNORD AB	7010	United Parcel Service AB DHL	5229
RISE RESEARCH INSTITUTES OF SWEDEN AB	7219	SAAB Dynamics Novavax AB	2540 (secondary 7219) 7219
SAMHALL AKTIEBOLAG	8121	MIAB AB Randstad AB	8121 (secondary 7810) 7820 (secondary 7810)
SJ AB	4910	A-Train AB Transdev Sverige AB	4910 4931
SOS ALARM SVERIGE AB	8020	Verisure Sverige AB Tunstall AB	8020
SPECIALFASTIGHETER SVERIGE AKTIEBOLAG	6820	Humlegården Fastigheter Fastighets AB L E Lundberg	6820
STATENS BOSTADSOMVANDLING AB SBO	6820	Wåhlin Fastigheter i Märsta Söderstaden i Östergötland	6820
SVEASKOG AB	6420	SCA Skog AB Billerud Skog	0210 1712 (secondary 0220)
SVEVIA AB (PUBL)	4211	Skanska Sverige NCC Industry AB	4120 4211
SWEDAVIA AB	5223	Aviator Airport Services AB Menzies Aviation Sverige AB	5223 5223
SYSTEMBOLAGET AKTIEBOLAG	4725	Coop Butiker och Stormarknader AB City Gross	4711 4711
TELIA COMPANY AB	6190	Tele 2 Ericsson Telefonaktiebolag	6110 2630
TERACOM GROUP AB	7010	Ascom (Sweden) AB Rebtel Networks AB	6120 6120
VATTENFALL AB	3511	Sydkraft Nuclear Power E'ON Eldistribution AB	3511 3513

Appendix 2: Table of sample displaying NR 2 codes.