Theory of the Self-Owned Firm

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1. Overview

Self-owned companies are a puzzle to economics and challenge traditional ideas about the importance of private corporate ownership. I define a self-owned company as one which is owned by fiduciary owners, i.e. stewards who control the company but do not hold dividend shares. Dividends are reinvested or paid to charitable institutions. This creates two puzzles:

(1) Ownership is usually assumed to consist of economic and control rights. Economic rights are traditionally seen as being the basis for entrepreneurial motivation, and cited as a justification for private ownership of companies. On that background, it is puzzling how stewards are motivated to perform although they do not hold economic incentives.

(2) It is furthermore usually assumed – especially by agency theory – that if people who control the company do not have ownership and strong economic incentives, owners should have an interest in providing them with economic incentives relationships. This is also not the case for most stewards.

(3) The relation between company founders and stewards, as well as between residual claimants and stewards and between debtors and stewards, can be regarded as a principal-agent relationship. Agency theory would predict that it is difficult to motivate such fiduciary owners to comply with their task set by founders or to act in the interest of residual claimants.

These puzzles lead to the conclusion that self-owned companies will not perform well economically and will be outcompeted on the market. Thomsen (2017) and others however have proven not only their widespread existence in Europe (e.g. in the form of foundation-owned companies) but also their superior economic performance and their significantly longer life-expectancy. After having reviewed literature on these steward-owned companies, I will examine why they contradict standard thinking about company ownership, agency theory and owners' motivation. Then I shall set out to show that those companies should indeed perform just as observed if one core assumption of agency theory and many standard economic theories and ownership philosophy is abandoned – namely, that all actors have to be self-interested utility maximizers. After a review of the literature on intrinsic motivation, motivational crowding-out and crowding-in, as well as conditional cooperation, I will show why stewards in steward-owned companies are intrinsically motivated and how most agency problems are overcome. I shall demonstrate how they are able, through their hard commitment to an irrevocable ownership structure, to create a motivational landscape that "unlocks" and crowds-in intrinsic motivation. On this basis I will examine exactly how stewards will behave as stewards of the goals of the company, as agents towards debtors and as outside-equity providers. I shall suggest that both agency theory and economic ownership understanding miss two important points: (1) economic incentives might not always be the prior motivational source for owners and stewards. Instead autonomy to act (control rights in the hands of stewards) can crowd-in intrinsic motivation. (2) Agents might be willing to contribute to goals of principals when they intrinsically value the goals. I will conclude with a brief outlook and will suggest topics for future research.

2. Steward-Owned and Foundation owned companies

In many northern European countries-- in Germany, the Netherlands and especially Denmark -- an unconventional corporate ownership-structure can be observed: several hundred Companies in in this region can be counted as so-called "foundation-owned firms" or as steward- or trustee-owned firms. Often entire companies are owned by non-profit foundations and governed by trustees who have no economic interest in the company. Non-profit foundations are self-governing entities without "owners" who can allocate funds to external stakeholders other than charitable ones. Especially in Germany, many companies that are usually called foundation-owned are actually owned by other types of not-for-profit entities that sometimes have owners, though without economic rights. In general, ownership structures of these corporations ensure, by a variety mechanism, that:

(1) The majority of shares with voting rights are not tradable and instead are controlled by non-profit entities (foundations, associations, trusts). Boards of these foundations or owners of these non-profit entities are mostly selected by former members, and therefore co-opted.
(2) Most of the profits are reinvested into the company or donated, while a smaller percentage is payed to minority shareholders.

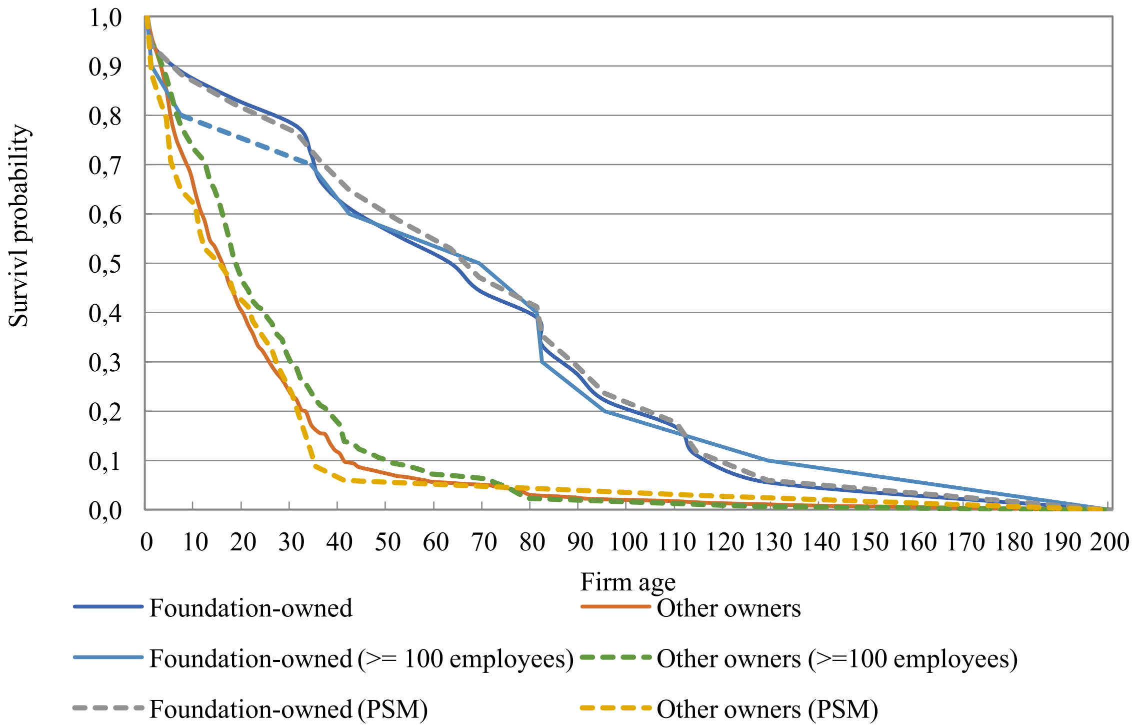
In Denmark foundation-owned corporations' market capitalization represents half of the entire value of the Danish stock market index (Hansmann and Thomsen 2012; Thomsen 1999), and of the biggest 100 companies, 25 are completely or partially owned by foundations. In Germany around 700 companies (the exact number is unknown) are partially or completely owned by both for-profit or non-profit foundations or non-profit entities (Franke and Draheim 2015). Large companies and world champions in different technologies but also smaller companies are owned by non-profit entities and have operated successfully for decades. Well-known examples are Bosch (Robert Bosch GmbH) with 400,000 employees and a yearly revenue of € 70 billion, Mahle (major automotive supplier) with 76,000 employees and € 11 billion revenue, and the optics company ZEISS, which established foundation-ownership more than 120 years ago. And Europe's largest drug-store chain DM Drogeriemarkt is mainly owned by a foundation. Outside Europe, the Indian Tata Group, which is considered to be one of the largest corporations of the world (more than 660,000 employees and € 100 billion in revenues), should be mentioned as a steward-owned company, given that 66% of it is owned by two charitable trusts (Thomsen 2011).

In the US non-profit foundation-owned companies were a common phenomenon until 1969 tax reforms prohibited non-profit foundations from owning more than 20% of a corporation (Fleishman 2001). Foundations that own companies can be either non-profit foundations or family foundations that benefit a family or private cause. In the latter case the foundation serves benefactors as a governance entity -- for example, one that ensures that voting rights are not diluted by split inheritance. Its function is similar to a trust in US law. I will focus mainly on the former: companies whose voting shares are mainly controlled by entities that have no economic interest and that are not (as family foundations) bound by the charter to create wealth for a family. A sub-group of all foundation-owned companies can be considered non-profit foundation-owned. But other structures as well, like charitable associations (gemeinnützige Vereine) or the German equivalent of LLPs (KGs) or charitable trusts, can fulfil the same function. I will define such companies as steward-owned companies for the purpose of this paper. This set of companies includes but is not limited to foundation-owned firms and does not include *all* foundation-owned companies.

Steward- and foundation-owned companies appear to contradict standard results of principal-agent theory, that principals cannot control the effort of their agents due to misaligned economic incentives. Most profits are either donated or reinvested and the role of the steward does not come with important economic incentives. In the worst case one might lose the job. However, several empirical studies of more than 300 companies in Denmark show that economic performance (profitability and market value) is better than in the case of private or dispersed ownership (Thomsen 1996; Thomsen and Rose 2004). Similar studies of companies in Germany find healthy economic performance, sometimes slightly below the average (Franke and Draheim 2015).

Børsting, Kuhn, Poulson and Thomsen (2016) furthermore show, from the data of Danish foundation-owned companies by a Kaplan-Meier survival model, that the survival rate of foundation-owned companies is considerably higher compared to normal companies (see Figure 1). While other companies have a 10% survival probability after 40 years, for foundation-owned companies the probability is 60%.

FIGURE 1: Kaplan-Meier survival curves



Foundation-owned companies have a high reputation among customers. According to a recent representative poll by the Allensbach Institute in Germany, 71% of Germans think foundation-owned companies are more long-term oriented and 55% think they serve the common good, while only 18% think the same of normal companies (Allensbach 2012). The same study finds that 77% of the managers of these foundation-owned companies are convinced that their ownership structure has a positive influence on the public image. Furthermore, interest in these unconventional structures seems to be increasing. A representative poll amongst the principals of family-owned companies with more than 100 employees in 2015 found 20% of decision-makers interested in transferring their company into a non-profit foundation structure, and 7% even had a strong preference to do that in the near future (Allensbach 2015).

All this evidence suggests that steward-owned companies are a phenomenon which has to be taken serious and cannot be classified just as an exception that confirms the rule.

3. Why steward-owned companies should not exist

3.1 Motivation Question of Steward-Ownership

Traditionally ownership of a company means owning shares that entitle one to control of the company, to residual claims (i.e. profits from operation of the company), to liquation profits or to profits from the sale of shares. It is generally believed that private ownership of all these rights is necessary so that talented people can be incentivized to found and lead companies and thereby create wealth for society. Private ownership of companies is thus regarded as essential for a functioning economy; it is the basis of capitalism itself. Entrepreneurs would not take the lead here just if they enjoy, for example, "baking bread" but they would do so if they have an interest in creating profit from the selling of the bread they bake. The baking of bread is no end in itself.

> "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest" (Smith 1979)

And clearly the success of companies *is* driven by the economic incentives of owners. Capitalism has indeed been able to establish a network of companies serving even the obscurest needs of people, just because it has been profitable to do so.

On the other hand, self-owned companies, foundation-owned companies and (in general) steward-owned companies -- are an anomaly to this basic capitalist principle. As Thomsen writes: "…foundations have no owners, and foundation board members do not have a personal profit motive. Apparently, the key driving force of the capitalist engine has been deliberately switched off' (Thomsen, 2017, 25). This applies not only to foundation-owned companies but to steward-owned companies in general. Stewards of Bosch for example do hold shares with voting rights but without dividend rights. Among the leaders of NGOs and other charitable organizations, motivation even without the profit incentive is apparent, but steward-owned companies are active in the normal business sector. The question thus is why stewards are motivated at all and why steward-owned companies show the solid economic performance cited above.

3.2 The approach of Agency Theory

When we consider steward-owned companies from the perspective of agency theory, the basic question arises as to whether any principal-agent relations obtain and who the principal or the agent might be. It is true that steward-owners (like foundation board members) might hire mangers and thereby create a principal-agent relationship. This relationship however has little to do with this basic puzzle -- how to explain the behavior of stewards themselves. Stewards however are agents from the perspective of several principles: these include shareholders with divided rights (even if sometimes dividend rights lie in the hands of a charitable foundation, voting rights may rest in hands of stewards or another foundation, creating a principal-agent problem), as well as debtors. And these also include founders that "donated" the company to steward-ownership with the expectation to create a long-term legacy, as well as past stewards who have "conditionally cooperated" and do not want future agents to abuse a system with which they voluntarily complied

Agency theory assumes self-interested utility maximizing managers and shareholders (Jensen and Meckling 1976), in a lighter form maybe a REMM (Resourceful, Evaluative Maximizing Model) (Jensen and Meckling 1994). Individuals, according to that theory, will always choose the option or alternative that will maximize their own utility. It further sees shareholders i.e. owners as principals and managers as their agents. Manager-owned companies do not create agency costs and are most efficient form the point of view of agency theory. In this case control rights and economic rights match directly and so the owner-manager will maximize directly his own expected utility -- here consisting of wealth and perquisites like prestige, power, a wealth of secretarial assistance or other firm specific goods. This is not the case in the modern corporation that needs more capital than individual owners can provide. This leads to the separation of ownership and control (Berle and Means 1991). While this separation can lead to dispersed ownership and can be beneficial for shareholders and owner-managers for diversifying risk, it also creates agency costs, and thus a trade-off between best risk-structure and incentives- structure (Arrow 1974). In this situation outside shareholders have an interest in maximizing shareholder value, while self-interested managers, who either do not hold any equity or hold only partial equity, will not automatically maximize shareholder-value. They might instead pay themselves high non-pecuniary benefits (what Jensen and Meckling call “perquisites”) and are generally less motivated to generate dividends in the situation of 100% manager-ownership. After all, if they own only x% of the company’s equity, they only receive x% of dividends, and the marginal costs of more economic payout increases compared to the situation of 100% ownership. Marginal cost of perquisites decrease for part-owners-managers. Perquisites decrease shareholder value and but may well increases managers’ utility – for example, the increased power or prestige gained through inefficient mergers or acquisitions. In short, self-serving managers will not be automatically willing to maximize shareholder’s wealth – a conflict of interest between principal (owner) and agent (manager) occurs. The difference here -- between the firm’s market value in a 100% owner-manager-scenario and the firm’s market value when outside-equity is employed and shareholder value is decreased by conflict of interest -- is simply regarded as the necessary cost of agency.

Owners and shareholders, so the theory predicts, will try to minimize these agency costs by trying to control the conflict of interest, e.g. by monitoring, corporate governance, incentive schemes and other mechanisms. This creates as well certain costs of agency. As Fama and Jensen summarize: “Agency costs include the costs of structuring, monitoring, and bonding a set of contracts among agents with conflicting interests, plus the residual loss incurred because the cost of full enforcement of contracts exceeds the benefits” (Fama and Jensen 1983a).

This conflict of interest, as Jensen and Meckling (1976) argue, also occurs when the company takes on debt. Debtors are interested in risk-averse application of the borrowed capital because while they have only a limited upside, they can lose all their money. Managers, however, will tend to use borrowed capital for riskier projects, increasing their both own upside and the debtors’ risk without giving them a higher upside. This again creates costs of agency and necessitates costly mechanisms to hinder managers from pursuing their own unchecked elf-interest.

From the perspective of agency theories, different approaches can be taken to lower agency costs. Corporate governance can ensure that delegation of decision-making by owners to managers does not concentrate excessive power in the hands of a few managers. Fama and Jensen (1983) have prominently argued that this separation of “decision-management” and “decision control” will lower agency costs. The approach here is “delegation and then control" -- first delegating the competence and then limiting it by instituting a board of non-managers that has to review decisions. However, the process of determining board membership should remain free from undue influence by former managers, who might have an interest in protecting their colleagues or camouflaging their own faults. So a number of European legislators (including the Germans) require a "cooling-off period" of two years for former CEOs before they can join.

Furthermore, Jensen and Meckling (1976) suggest aligning incentive structures of managers with those of shareholders, by paying them in stock-options, installing incentive-based payment systems, pay-for-performance etc.

Another view sees the market for corporate control as contributing much to overcoming the inefficiencies of principal-agent relationships and conflict of interest. Managerial teams compete for capital, residual rights holders and voting rights holders (Jensen and Ruback 1983; Manne 1965). Underperforming teams will face decreasing stock prices. This makes replacement of management or even a takeover of the company more likely and will benefit shareholders.

3.2 Steward-owned companies should not exist

While an owner-managed company has no agency costs (since control and economic interest remain in the same hands), less dispersed ownership-structures mean higher risk in the hands of owners. Less risk by higher diversification however creates agency costs, as showed. Steward-owned companies usually suffer the worst of both worlds. Because most of the dividend-shares and the majority of voting shares are held by entities that are not allowed to sell them (mostly by charter), risk diversification is low. In fact, many steward-owned companies are 100% owned by a foundation. At the same time, agency costs do occur. Both, any form of *moral hazard* and *adverse selection* should quickly undermine its performance and lead to a sellout of the company's assets, with every actor trying to get the biggest piece of the pie. More specifically, from the perspective of agency theory the following problems will manifest.

Donor-steward agency problem. Thomsen (ibid, 28) suggests seeing the relationship between the founder or owner of a company (who actually installs steward-ownership) and the stewards (who manage the company) as a principle-agent or, more precisely, a donor-steward agency problem. The donor-agency problem was first described by Fama and Jensen (Fama and Jensen 1983b, 1983a). Donors to charitable organizations will have an interest in their donation not being privatized by residual claimants. Since this is difficult to guarantee by contracts, the donor-agency problem will lead to organizations without any residual claimants, i.e., non-profit-organization. But lacking residual claimants means less control for the leadership of the organization. Applying this theory to the founder-steward relationship can help one to see the extend steward-ownerships that companies can be explained by agency theory. Indeed, founders might, as I will show, donate the company "to itself," thus creating a self-owned company. To ensure stewards cannot fully privatize the donation, they will lock economic rights in a foundation and ensure stewards will not be granted the economic rights but only control rights.

Up until this point, agency theory can fully explain steward-owned companies. However, as in the case of not-for-profits, the stewards now have large discretionary power and can act mostly without control. Non-for-profit managers will most probably see immediate reaction in donation-flows if they do not try to make maximum use of the donation for charitable projects. A multitude of websites and reports inform donors today as to which donations are most effective and which organization has the least overhead costs. A founder however donates the company forever. There is no anticipated donation-flow that could discipline stewards in that sense. There would have to be other reasons for stewards to perform and not abuse their role -- reputation, intrinsic motivation etc. How exactly this donor-founder-steward agency problem can be overcome will be analyzed later.

The large discretionary power of stewards creates several more agency problems:

1. Stewards hold the control rights, which might lead them to appropriate high "perquisites". Instead of maximizing shareholder value or maximizing the long-term survival of the firm, they could increase their power or prestige, engage in large acquisitions that are not good for them but not for the company, etc.
2. The procedure of coopting other co-stewards seems to be almost designed to be abused. Assuming self-interested agents, such typically small boards would make collusion relatively easy. Abuse does not need to take the open form that would lower a company's reputation: collusion might simply ensure that only like-minded people are co-opted, which would not challenge the power-positions or other perquisites that stewards would be appropriating.

3. Because of the lack of financial incentives, high-performing individuals would not be ready to take a stewardship role; only those not able to get higher compensation somewhere else would be open for it.
4. Because of the bad performance of stewards the company would perform badly, and high performing employees would leave.
5. Since all the above cited deficiencies are predictable under agency theory, possible debtors or minority shareholder would not provide capital unless at exorbitant prices.

From the perspective of agency theory, the multiple deficiencies of steward-owned companies are evident. The puzzle is why they are still as successful as this discussion so far indicates.[1]

4. Case Studies

Before moving on to provide a theory and explanation as to why steward-owned companies are successful and should be even more successful than their conventional counterparts, let us look at a few exemplary case-studies. Though not empirically representative, they can still help to inform the theory building in the next section. The basis for these case studies are several interviews I conducted with steward-owners of such companies[2], publicly available materials, historical studies (Bähr and Erker 2013; Plumpe 2014) and legal documents.

My primary aim with these short case studies is to shed light on the institutional setting that stewards are in, the way these settings have been configured and what current and former

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[1] In a recent study Hansmann and Thomsen (2012) try to show that a corporate governance system which is modeled in line with agency theory will create higher ROE and ROA in foundation-owned firms as well. From a sample of 121 Danish foundations they study foundation boards and their distance from operational managers. Foundation-owned companies with boards that behaved like "virtual owners" and that created a setting for company managers similar to private ownership (demanding profit maximization) had a higher ROE. Companies with less "managerial distance" and board members who were also active in the company had a lower ROE. But although these findings are in line with agency theory, the most important puzzle cannot be explained by this research: why are stewards (i.e. foundation board members) themselves motivated to perform their task? Also, it is interesting that even if stewards are at the same time the operational managers and foundation board members, companies are profitable and long-term oriented. They might have a smaller incentive to increase ROE since they do not directly prefer maximizing donation money (for the foundation) over investments in the company or other things. However it not at all clear what conclusions might be drawn from that study. Founders of steward-owned companies might choose steward-ownership to ensure the company stays independent and mission-driven (retaining a non-monetary mission) for the long term and thus might be interested in a stewards who will prefer investment in the company rather than higher profitability. Indeed companies like Bosch, Mahle, Zeiss, Dm and others have steward-ownership structures that ensure that stewards are not deciding on distribution of charitable donations, in order not to increase their incentive to create profits.

[2] Interviews in March 2017 with Dr. Wolfgang Malchow, a steward-owners of Bosch; with Prof. Dr. Kaschke head of ZEISS.

stewards and founders have said about the steward-ownership structure: why they chose it, why they think it would work and what the benefits and costs of it are.

4.1 Bosch

4.1.1 Facts and Structure

Perhaps the largest steward-owned company in Europe is Robert Bosch GmbH, with around € 73,1 billion in revenues, an EBIT (earnings before interest and tax) of € 4,56 billion, and 390.000 employees in 60 countries (Bosch Report 2017). Since 1964 the *Robert Bosch GmbH* (equivalent to a private limited company) has had three shareholders (Bosch Facts and Ownership 2017):

1. the heirs of Robert Bosch (current Bosch family) have 7% of voting rights, 8% of dividend rights;
2. the *Robert Bosch Foundation (Stiftung) gGmbH* (a charitable foundation that donates to causes favored by Robert Bosch) enjoys 92% of dividend rights but no voting rights;
3. the *Robert Bosch Industrietreuhand KG,* henceforth called IK, (something similar to a LLP or a trust without limits on perpetuity) owns 93% of voting rights but no dividend rights.

The heirs of Robert Bosch do not have any significant influence. The Robert Bosch Foundation may receive dividends if the IK decides to pay dividends. Foundation and IK block each other from selling shares with or without voting rights to outsiders and thereby ensuring this steward-ownership structure is protected for the long-term. No outside buyer will ever be able to buy Bosch. The foundation receives around € 70 million dividends a year (out of around € 4 billion in profits). The majority-voting-rights-holder, the IK, controls the company (Robert Bosch GmbH) and has ten trustee shareholders who do not have any dividend rights. These are the stewards of Bosch. Four of those shareholders are current and former Bosch C-level managers and six are business professionals who have known Bosch over time and bring an outside perspective (these currently include a former head of UBS Bank, the CEO of BASF and other highly reputed individuals). Two of these ten shareholders are managing partners, but all shareholders have only one vote and they try to take decisions unanimously if possible. If such a “fiduciary owner” (treuhändischer Eigentümer) turns 72 of age, he or she has to retire and a new person is co-opted by the remaining shareholders. Also, owners are always appointed only for five years and have to be reappointed by the other owners after that. The IK controls Bosch directly and indirectly through selecting the members of the supervisory board of Bosch and selecting the board of directors and CEOs (officially through the vote of the supervisory board). Because of German co-determination law („Mitbestimmung“) half of the 20 members of the supervisory board are elected representatives of Bosch employees.

4.1.2 The Emergence of the Steward-Ownership-Structure

The described structure was put in place 1964 (Bähr and Erker 2013). The founder Robert Bosch led and owned the company until he died in 1942. He brought it to unparalleled success. When he started to think about who would succeed him, none of his sons were old enough. However, he believed that someday one of his sons might be able to lead the company. But since Bosch senior placed the mission, survival and interest of the company first, he endowed a group of executors of his will with the power to take the best decision to restructure ownership, based on his wishes if and when the time had come. He outlined in his will three potential directions as to how ownership of Bosch could be structured in the future. One of those options was to find a steward-ownership solution, and the executors endeavored for ten years to educate and prepare Bosch junior. But they finally decided that it would be in the interest of Robert Bosch and in the long-term interest of the company to institute a different structure. The Bosch family received 8%, which they still hold today, and all shares they previously held above the 8% were bought by the Bosch Foundation for the face value of their shares in cash. The executors became to a large extent the fiduciary owners of the IK, i.e. the stewards. The stewards see themselves as owners or fiduciary-owners of Bosch, being responsible for the mission and survival of the Bosch company.

4.1.3 Motivation of Stewards

Most puzzling for agency theory as well as traditional microeconomic theory is obviously the motivational mindset of stewards, i.e., the owners of the *Industrietreuhand KG* (IK). They are steering the company but do not have economic incentives. They face clear constraints: they cannot sell their voting-rights and cannot receive dividends. Other than that, they are not controlled by anybody other than themselves, a solution that seems dubious at first sight but may be the secret of Bosch’s successful governance structure.

In an interview I conducted with him, one former C-Level manager of Bosch and current managing partner of IK[3] underscored the fact that fiduciaries had been entrusted with nothing less than "ensuring a positive long-term development of the firm." Ensuring profitability is a major necessary condition for the achievement of this goal, but it is in that sense only a means to another end. Stewards of Bosch underscore the fact that their interest is not different from the interest of the company.[4] They also have the aim of leading the company in a way that keeps it profitable, develops it and ensures the long-term existence.

Maximization of shareholder value is however definitely not the main motivating factor or decision criterion. A famous saying of founder Robert Bosch, which is endorsed by all his successors and stewards, is "I would rather lose money than trust" (Cicero 2012). Bosch has kept out of countries and economic areas that might have been a profitable business but that required corruption. Very early on they also started to invest heavily in green technologies. These investments have significantly lowered their profitability, as former CEO Fehrenbach emphasizes: "As a shareholder-owned public company we could not have invested so intensely" (ibid). The Bosch leadership was simply convinced that this was an important investment in the future of Bosch and the planet.

Valuing the company's survival and the ethical behavior just described, Bosch stewards do not regard the maximization of profitability as irrational. Both Malchow and Fehrenbach describe their approach to business as exactly similar to that of a normal family-owned business. But of course they are not family-owners and do have economic incentives, and agency theory – though not predicting an extreme shareholder-value-maximization behavior -- would expect Bosch stewards to abuse their power (or at least – in the absence of sufficient safeguards – to lack the motivation expected of profit-driven managers). So just because the

[3] Dr. Wolgang Malchow. Interview was conducted in March 2017 at Bosch headquarters near Stuttgart, Germany. It is perhaps worth noting that Dr. Malchow joined Bosch in 1979 and he became fiduciary owner in 2014, after having served for 35 years in several positions. In addition, Malchow's colleague, for years the CEO of Bosch and today managing partner at IK, came to Bosch in 1975. It is not unusual for Bosch to have long serving employees. In its 131 years of existence the current CEO is only the seventh to hold that office.

[4] „Ich habe ein Interesse daran, dass dieses Unternehmen langfristig erhalten bleibt. Vielleicht ein kleiner Unterschied insoweit zum Aktienmarkt. Beim Aktienmarkt ist der Eigentümer eher daran interessiert, dass er eine hohe Rendite, eine positive Entwicklung seines Aktienkurses hat, unter Umständen kann er das Unternehmen im schlimmsten Fall verkaufen, wenn sich dadurch der Aktienkurs positiv entwickelt. Das passt bei uns nicht. Bei uns passt eigentlich eher die Funktion des Familienunternehmens."

IK as owner of 93 % of voting rights can act pretty much as it wishes (within, of course, constraint contracts and by risk of reputation-loss), the behavior of its owners is a theoretic puzzler.

The company owners are, interestingly, quite aware and quite clear about what characteristics a fiduciary owner of Bosch must bring with her: Dr. Malchow explains that "for everybody of us owners it is very clear that we are fiduciary owners… we are dependent on finding the right people for this structure. People who are acting not because they can expect a higher bonus or to gain something else, but people who can say to themselves that 'I am intrinsically motivated to work and contribute to this company and its long-term success.' Indeed, if I [Malchow] or others, would only think in economic terms and interest, we would have chosen the wrong people." Finding and choosing people that have the 'intrinsic motivation' seems to be at the core of the success of Bosch's governance model: „with the system we have in place, we are absolutely dependent on having these dedicated personalities with exactly this attitude [intrinsically motivated]. And we are dependent upon our success in that we are growing them and attracting them. Otherwise the entire model we have would not function anymore. We rely on appropriately qualified persons who say: "Yes, I am prepared to take on this task with exactly this attitude."[5]

4.1.4 Succession

According to Malchow, the search for these intrinsically motivated and at the same time highly qualified people is not always simple. What makes it a little bit less costly is Bosch's tradition of recruiting the future co-owners of Bosch from the pool of current and former CEOs and C-level managers. The principles of the selection process however break with common wisdoms of agency theory. While publically traded companies require a cooling-off-period for managers before being able to join the supervisory board of a company, Bosch often makes former CEOs chief of the advisory board and co-owners right after they step back from their CEO role. The idea, as Malchow states, is to guarantee continuity. Any

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[5] The statement in the German original: „wir sind darauf angewiesen in unserem System, das wir haben, dass wir entsprechende Persönlichkeiten auch haben, die genau diese Einstellung dann haben und, dass wir die heranziehen. Sonst würde das ganze Modell, das wir haben, nicht mehr funktionieren. Wir sind darauf angewiesen, dass wir auch entsprechend qualifizierte Personen haben, die sagen: Jawohl, ich bin bereit, diese Aufgabe genau mit dieser Einstellung auch zu übernehmen." (Interview March 2017).

possible conflict of interest that could occur is avoided by six of the ten co-owners of Bosch coming from outside the company.

Another tradition at Bosch is to directly link the operative management and the steward-owners by including the current CEO and chairman of the company within the IK.

Further analysis of the intrinsic motivation of Bosch's fiduciary owners must await the theoretical part out of this discussion. One potential condition for the strong intrinsic motivation shall be mentioned here nevertheless: the special ownership-structure of the company. The current chairman of IK and former CEO describes it as follows: "Bosch's company-constitution convinced me already in 1975 when I had to choose an employer. The value which is generated by the company is payed out to employees in salaries and wages, a modest dividend is paid to the family, a larger part goes to Bosch foundation which uses it for charitable purposes and the rest stays in the company and secures the future developments of Bosch. This is also the reason we can invest so heavily in research and development at Bosch, and why we are so innovative and have produced so many innovations in the automotive and technology sector (Fehrenbach 2011).[6]

It is interesting how strongly this co-owner underlines the values of the unconventional ownership structure, not only identifying himself with it but publically attributing the important successes of Bosch with it.

4.1.5 Access to Capital

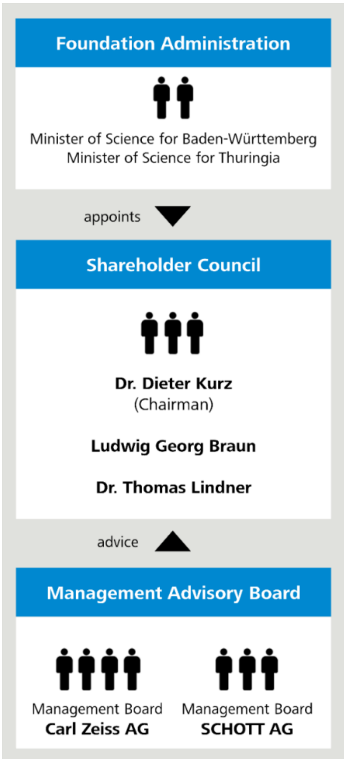
Bosch has no outside-shareholders who provide the company with new equity if it needs more capital. The need for capital is entirely served by issuing bonds, and this is not too expensive for Bosch since it has an AA-Rating. In total, € 4,1 billion (4,6 in US $) in bonds (of which are 1,35 billion Chinese yuan) have been issued globally by the entire Bosch group, as of 28th April 2017. Bank loans are normally not used for financing at Bosch.

[6] In the original German: "Die Unternehmensverfassung von Bosch hat mich schon 1975 bei der Wahl des Arbeitgebers überzeugt. Was das Unternehmen an Wertschöpfung erzielt, fließt in Löhne und Gehälter, eine bescheidene Dividende fließt an die Familie, ein größerer Teil an die Stiftung, die es dann wieder für gemeinnützige Zwecke einsetzt, und der Rest bleibt im Unternehmen und sichert dessen Zukunftsentwicklung ab. Das ist auch der Grund, weshalb wir bei Bosch so viel in Forschung und Entwicklung stecken können. Weshalb wir innovativ sind und so viele Neuheiten für Fahrzeuge und andere Technikbereiche hervorgebracht haben" (Fehrenbach 2011).

4.2 Zeiss

4.2.1 Ownership Structure

The oldest steward-owned company in Germany are Zeiss and Schott Optics. Both are owned today by the Carl-Zeiss Foundation, a foundation that donates or reinvests all its profits. In total both companies together made a revenue of € 6 billion in 2016 (6,5 in US $) and an EBITDA of € 840 million in 2015. Approximately 39,000 employees work for Zeiss and Schott. The foundation governance is split in two sub-units that hold the power -- the "shareholder council," the "foundation administration" and one advisory board.[7] The shareholder council has three members and takes the role of executing all shareholder and voting rights the foundation holds: these are in the stewards of the companies. The chairman of the council is at the same time the head of the supervisory board of the companies. Only persons that bring with them extensive leadership experience of large companies can become shareholder council members, according to the statues of the foundation. Since its inception, a CEO of Zeiss holds the chairmanship of this council. The other two members are experienced business leaders. Similar to Bosch, Zeiss appoints council members for five years. However, unlike Bosch managers, they cannot directly co-opt or reappoint themselves. They make a proposal as to who should be the council members but CEOs of the companies (along with the German Business Association and Foundation Association) also make proposals and make proposals.



The ultimate decision however lies with the foundation administration. The administration automatically consists of the two Ministers of Science of the German "Bundesländer" Baden-Württemberg and Thuringia. The administration decides on the distribution of the dividends (the foundation charter prevents ministers from replacing tax-spending with foundation money). While this structure seems to give the ministers considerable powers, the actors at Zeiss confirm that this is not really the case and they are not at all state-owned (XX). The ministers change regularly with legislation-periods while the shareholder council members stay. The current chairman Dr. Dieter Kurz was the

[7] See diagram on the right. Source: https://www.zeiss.com/corporate/int/about-zeiss/the-carl-zeiss-foundation.html#carl-zeiss-foundation

chairman of Zeiss for ten years before he became the chairman of the supervisory board in 2012 (and he remains in that position today).

All important decisions are made by the shareholder council. Decisions about divided payments to the foundation are also taken by the shareholder council. While the foundation administration will be interested in higher dividend flows because it is responsible for distributing them, the administration does not push the shareholder council members to pay out higher dividends. The statutes of the foundation very clearly lay out a range of minimum and maximum dividends. Only if the companies' equity capital ratio is above 20% are dividends allowed to be paid out. If the ratio is between 20% and 25% the council may pay out between only 2% and 3% of the earnings after taxes. When the equity capital ratio is above 40%, between 5% and 14% of after-tax earnings may flow to the foundation. The rest has to be reinvested. This rule severely limits the likelihood of the foundation administration putting in place a shareholder council interested in high dividend payments. While the founder-steward agency problem might be moderated by the presence of the foundation administration, the problem would still be relevant and it is not clear how merely selfish actors would overcome it. The foundation administration is not at all involved in any economic governance of the company, and so government Ministers are also neither being punished or hailed for the company's performance. They are also able to distribute only relatively small funds (compared to the budget they manage as ministers) and are appointed by the head of the government and not directly accountable to voters.

As in Bosch, the shareholder council selects indirectly the CEOs of Zeiss and Schott through the supervisory boards of the companies. The link between company and foundation is however not as direct as it is in the case of Bosch.

4.2.2 Emergence of the Steward-Ownership Structure

At the end of the 19th century, under the weight of industrialization and the growing economic inequality, the debate about ownership of land and productive means moved many people in Germany. Marx argued for common ownership while Pope Leo XIII underlined the importance of private property in 1891 and Bismarck tried to prevent a socialist revolution by introducing social insurance schemes. Around this time Ernst Abbe -- entrepreneur, pioneer, professor of physics, and co-owner of the very successful Carl Zeiss optics manufacturing company -- created the practice of foundation-ownership.

He held the conviction that the value and the profits of Zeiss did not belong to him alone, but to the workers who co-produced its success and to the society (and university) that laid the ground for technological advancement. Although the legal system in his times (as well as today) would place the value and the profits with him as the owner, he argued that this would not correspond to the actual reality. A worker-cooperative or a shareholder company was no option for him, and so he decided to create, posthumously, the Carl Zeiss foundation, which was organized in 1889. The foundation ensures that the company cannot be sold and profits are either reinvested or donated to the common good. In 1896 he himself wrote a long and detailed set of statutes for the Zeiss foundation, which where a remarkable legal innovation and earned him a PhD in jurisprudence. There, Abbe laid further down important social rights for the workers, among them "Mitbestimmung", health and pension insurance for the workers, 8 hours working day and others.

4.2.3 Motivation of Stewards

Donor-steward agency problems seem to be more stringent in Ziess than in Bosch but by no means irrelevant. The motivation of stewards is still an important question. In an interview the current chairman and steward of the shareholder council emphasized to me how important the structure of Zeiss is for (intrinsically) motivated employees who are happy to innovate and secure in the long-term existence of the company: "It [the foundation-structure] is long-term oriented and the reinvestment of most part of the profits supports the conditions for success in the high-tech sector. Sometimes this requires a stamina and special employees who are willing to put effort in it. …it is always of utmost importance to have stellar ideas by tinkerers and innovators, special performance by innovative teams and long-term orientation of the management…"(Kurz 2014).

Dieter Kurz, along with the current CEO of Zeiss Prof Kaschke[8], especially praises the independence Zeiss has obtained through its structure. Speaking in terms quite similar to statements that Bosch stewards were making, Kaschke said that only in this way are they able to invest long-term in technology. Asked what the aim of his work and the company was, he answered: "We are here to ensure the long-term existence of the company. The goal of the company of course is to create a positive impact for society." He adds that the company has already invented important technologies often in the past, assisted their break-through, and

[8] Interview conducted in Oberkochen in March 2017 with current Zeiss CEO Prof. Dr. Michael Kaschke.

created a positive impact for the entire humanity. One example is neurosurgery and optical instruments. Although profitability and good economic performance are important for Zeiss, especially because no outside equity-holders are allowed, these forward-looking goals seem to be important for managers and employees and guide the work.

Conversations with employees in the company underscore this picture. Most randomly selected employees say the company is owned "by us" and a high percentage seem to know exactly why and when Ernst Abbe instituted the self-ownership structure that is today in place.

4.2.4 Access to Capital

Zeiss generally also finances itself by debt. Only when it acquired one large other companydid it form a daughter company (Zeiss Meditec) and offer part of the stock (not the majority) on the stock market. According to the statutes of the foundation such an operation is not allowed on the ownership-level of the main company, however. When the existence of the company is at stake, the shareholder council has the discretionary power to bring parts of the stock on the public market.

4.3 Mahle

Since the institutional-setup and the incentive structure of Mahle are very similar to that of Bosch, I will only briefly describe the most important facts.

The Mahle GmbH is one of the largest automotive suppliers in Germany. Its products can be found in every car produced in Germany and a large percentage of all cars on the world. Revenues in 2016 were at € 11,4 billion, the EBITDA in 2015 at € 1,1 billion. Mahle employees as of 2016 numbered 76,000. Its governance structure is very similar to Bosch, but without family-owners.

Two shareholders own Mahle:

- the *Mahle Stiftung GmbH,* a charitable foundation that holds 99,9% of the shares with dividend rights (without voting rights)
- The *Mabeg Verein zur Förderung und Beratung der Mahle Gruppe e.V.,* henceforth Mabeg, holds only 0,1% of shares but 100% of voting rights.

The Mabeg shareholder is organized as a private non-for-profit member-association. Each member has one vote, but membership is not salable. The current chairmen of this association are former Mahle C-level managers (as in the case of Bosch, they came to their steward position directly from their role as manager), along with current supervisory board members.

The Mahle foundation, though owning 99.9% of the company, receives only 3% of Mahle's yearly after-tax profit, which was € 8,5 million in 2015 (Mahle Stiftung 2016).

This steward-ownership structure was put in place in 1964 by both founders -- the "Mahle-Brothers," who were ideologically convinced that a company should be self-owned and not tradeable on the market. Since then Mahle has seen enormous growth: in the last ten years revenue has more than doubled.

Mahle finances its capital needs mainly through debt and in 2014 issued € 1 billion in debt bonds. At the same, through a Brazilian daughter-company, Mahle has time access to the equity market (Ollrog 2014).

5. Steward-Owned companies are there to stay

I have mentioned before that the sheer longevity of so many steward-owned companies and the various studies that show their economic strength (Børsting et al. 2016; Thomsen and Rose 2004; Thomsen 1996; Franke and Draheim 2015) present a puzzle to agency theory. The examples cited above show again that stewards are not abusing their power, and apparently they are neither as unmotivated nor as lazy as agency theory would predict them to be. My task in this section will be to explain theoretically why we should expect steward-owned companies to be as successful as they are.

There have been some attempts at explanation already. Some see the strong long-term focus of foundation-owned companies as a competitive advantage and a reason for its continuing existence (Børsting et al. 2016). Due to long-termism companies can be, for example, more patient than their competitors, and even less profitable for longer periods and still create trust among customers. However, although long-term orientation will most probably be a competitive advantage, the question remains as to why actors inside a steward-owned company are actually acting in that long-term manner in the first place. A theory that tries to explain steward-owned companies needs to show why actors behave as they do and why this will lead to a company that is long-term success. Furthermore, a theory of self-owned companies needs to explain the factors that encourage or discourage stewardship behavior. My approach is closest to the explanatory approach of Thomsen (2017, p. 36f). He suggests that we learn from "identity economics" (Akerlof and Kranton 2005, 2010) as to how people can be attached to a company or organization and will thereby behave to further the interests of the organization.

I will begin by explaining normal individual behavior, similarly to the agency theory, starting with the individual and the institutional settings she is confronted with. Central to the theory will be the observations that psychologists, behavioral scientists and economists have made in the last decades: namely that individuals can in some cases be motivated intrinsically, while in other cases only extrinsic incentives make them act. These experiments have drawn a different picture of the nature of man than the one agency theory assumes, and describe different settings in which different behavior can be expected. This will help me explain how the ownership-structure of steward-owned companies serves as a credible promise and commitment that can "unlock" intrinsic motivation and overcome a potential conflict of interest. I shall then show why steward-owned companies actually will have lower agency costs than normally owned companies.

5.1 Model of Man and Intrinsic Motivation

It is essential to the argument of *agency theory* and "*private ownership as an economic incentive"* that work and effort are something agents will avoid unless they face sufficient extrinsic incentives. Less work and more leisure or more money instead are what everybody will aim for, or so agency theory assumes. It depicts human actors as self-interested utility maximizers that are mainly motivated by economic incentives, fear of punishment or other potential goods they can gain if they perform a task. In short, agency theory, along with the usual justifications of ownership, see actors as basically disinterested in the work they perform or the company they work for. Work is for them just a *means* to another end, be it more power, more money, more social recognition or other "perquisites," as Jensen and Meckling call it (1976).

But this very assumption is highly limiting and will turn out to be the main reason these theories cannot explain phenomena like steward-owned companies. They do not take into account a source of motivation known by us all: the enjoyment or inner satisfaction we can experience when performing a task or generating an output we really seek to generate. This fact is reflected not only by impoverished musicians and artists who continue to work on their projects despite the economic challenges; "intrinsic motivation" is actually the experience of many ordinary people as well. According to Deci (Deci 1971, 105) "one is said to be intrinsically motivated to perform an activity when one receives no apparent reward except the activity itself." This does not only mean one enjoys or derives utility from the activity (like playing a card game) but it could also mean one values or derives utility from the direct outcome of the activity. An example might be an artwork that is produced after hard work – potentially not always enjoyable –or maybe a new product innovation that a developer worked hard for and is very excited about. Doing such hard work can sometimes be stressful but it is still completed out of intrinsic motivation.

In line with Lindenberg (2001) and Frey and Osterloh (2005) we can distinguish between *enjoyment-based* and *obligation-based* intrinsic motivation. The former is especially important when the actual activity creates direct satisfaction and has been studied especially by Deci (1971, 1985) and Ryan and Deci (2000). These authors actually limit their notion of what intrinsic motivation is to this form of motivation. The latter obligation-based intrinsic motivation was introduced into economics by Frey (1997) and has been shown to be relevant in issues of tax ethics or environmental protection when people feel an obligation to do something — for example, in the case of paying taxes (even though there is no punishment for not doing so) just because one feels obliged to help the community. The economic literature considers this a case of intrinsic motivation, while Deci and his colleagues would count it as an internalized extrinsic motivation. In this paper I will go with the somewhat broader notion of Frey (1997), because it is sufficient to show that non-economic and non-external motivation is the key to understanding steward-ownership.

A multitude of literature finds evidence for intrinsic motivation. Some is derived from field experiments, some from lab experiments, some from empirical data. To give us a better understanding of intrinsic motivation I will introduce some of this data.

5.1.1 Crowding Out

The most important experiments in this field have been able to prove the existence of intrinsic motivation by showing what occurs when it is destroyed. Psychologists have early on (e.g. DeCharms 1968) assumed that it can be destroyed if the *locus of control* is shifted from the inside to the outside, e.g., when an activity that was previously enjoyed, thus intrinsically motivated, is then externally rewarded.

One of the most well-known experiments in the field is the puzzle-game experiment of Deci (1971). In the three sessions of the experiment participants have a puzzle game in front of them. In the first session, all are left to it with no instructions, and most participants think they have to wait for something else before they try to solve the puzzle. In the second session, some participants are told they will be rewarded for solving the puzzle. In the third session, everybody is again (as in the first) just left with the puzzle. Interestingly, participants who were told in the second round that they would receive a reward in case of success perform significantly weaker in the third round and give up on trying to find a solution to the puzzle much earlier than the others. The explanation is what economist now call “crowding-out” of intrinsic motivation, an elimination of intrinsic motivation by extrinsic incentives. As soon as the extrinsic incentives are missing, intrinsic motivation is no longer a source of motivation and performance is lower.

Another example for crowding-out are the experiments that Gneezy and Rustichini (2000) conducted in Israel. Exploiting an Israeli tradition of students going from house to house to collect donations for charitable causes, they sent three groups of students to collect donations for charitable causes. One group was first given a talk about how important that charitable cause was, another group heard this talk as well and wer told they would receive a reward of 1% of what they collected, paid not by the donation money but by professors. A third group received equivalent instructions but instead of 1% they could expect 10% as a reward. The results confirm the crowding-out theory: most donations were collected by the group of students that received no reward, second most by the group that could expect to receive a 10% reward while the 1%-reward group did worst. Interesting is also a small extension of the experiment by the same researchers: when asked how they would incentivize others to collect the maximum amount of money, most participants voted for the 1% reward, exactly the solution that motivated the least.

The study shows how extrinsic incentives crowd-out intrinsic motivation -- not gradually but abruptly. To speak in the words of the psychologists, the *locus of control* shifts from the inside to the outside and the focus of one's attention as well, just as soon as economic rewards are used and independent of whether they are very large or not. The 10%-group performed better than the 1%-group because both groups had seemingly similarly lost large part of their intrinsic motivation but the extrinsic incentive for the 3rd group was of course significantly higher. It led the authors to title their paper "Pay enough or pay nothing".

Today an abundance of empirical evidence exists for the crowding-out effect. Several meta-analyses of more than a hundred experiments have been conducted, all strongly supporting crowding-out of intrinsic motivation by extrinsic incentives (e.g. Deci, Koestner, and Ryan 1999; Tang and Hall 1995). While these laboratory experiments mainly focus on enjoyment-based intrinsic motivation, there have been several studies in the lab and in the field examining crowding-out of obligation-based intrinsic incentives (Frey and Osterloh 2005, 16f).

Social norms: Gneezy and Rustichini (2001) have found parents late in picking up their kindergarten children more often when a penalty for late pick up existed than without. The penalty was just perceived as a price and removed the feeling of moral wrongness of a late pick up that would make kindergarten teachers finish late with their work.

Not-In-My-Backyard-Effect syndrome (NIMBY): Frey and Oberholzer-Gee (1997) found that a Swiss community agreed to have a nuclear waste repository built near their community after a board of experts had selected the community as the safest place for such a repository. However the agreement level of 50.8 % dropped to 24.6 % when compensation was offered. It did not change when compensation was increased, but when non-personal community compensation (public library and public parks) was offered, agreement rates rose again.

Similar studies have found people to be less open to donate blood when compensated for it (Uptorn 1973; Titmuss 1970), be less ready to avoid environmental pollution when they have the feeling of being controlled for it (Kelman 1981; Hahn 1989; Baumol, Oates, and others 1993). Also lab-experiments simulating the principal-agent relations have found agents to show more effort when principals guaranteed a fixed payment, and showed less effort when principals set a pay-for-performance rule -- which then led the some authors to see the work-contract as a partial gift-exchange (Irlenbusch and Sliwka 2005).

Intrinsic motivation can also be observed independent of crowding-out experiments. Frey and Osterloh (2005) find three streams of literature that discuss effects of what I called intrinsic motivation in the business world also. *Voluntary rule-following* is a behavior that cannot be explained by agency theory. As long as people understand the necessity of a rule they seem to be intrinsically willing, without the necessity of punishment, to obey the rules (Tyler 1999; Tyler and Blader 2000). Furthermore, the literature on *extra-role behavior* shows that employees often over-perform and demonstrate “corporate citizenship” behavior by cooperating much more than economically necessary (Organ and Ryan 1995). Still another important phenomenon is the creation of *Open Source software* (like Linux or Android) or knowledge (like Wikipedia) without any economic incentive. On Wikipedia people do not even reveal their actual names, making it impossible to gain reputation in the real world (Gallus 2016; Osterloh, Rota, and Kuster 2003).

The evidence reported above suggests a somewhat unsettling conclusion for economists: namely that the price effect does not always work. Increase in payments does not lead inevitably to an increase in efforts, but the reverse is often true. This undermines important parts of microeconomics -- the theoretical justifications for private ownership and in particular agency theory. But this underscores it at the same time. Agents can very well be motivated intrinsically without economic incentives, under conditions that will be examined below.

However as soon as incentives like stock-options or pay-for-performance are put in place, principal-agency-theory creates what can be called a self-fulfilling prophecy. When economic incentives become a source of motivation, strong economic incentives are probably best and agency theory can be applied.

5.1.2 Institutions for Intrinsic Motivation

Having reviewed some of the literature on intrinsic motivation and crowding-out, the question remains: what are the best institutional settings for intrinsic motivation. In short, what helps with the crowding-in?

Competence, autonomy, relatedness

While there are multiple theories about what supports intrinsic motivation, Deci and Ryan’s (2000) *Self-Determination theory* is perhaps most celebrated. They see three factors especially that contribute to a setting which can nourish intrinsic motivation: *Competence, autonomy,* and *relatedness*. They summarize how any crowding-out "can be most parsimoniously described in terms of thwarting the three basic psychological needs" (ibid, 69). Since their article was highly influential not only in psychology but also in economics and business (and cited more than 21,000 times), let me cite the relevant passage in full (ibid):

> The theory argues, first, that social-contextual events (e.g., feedback, communications, rewards) that conduce toward feelings of competence during action can enhance intrinsic motivation for that action. Accordingly, optimal challenges, "effectance"-promoting feedback, and freedom from demeaning evaluations were all found to facilitate intrinsic motivation. For example, early studies showed that positive performance feedback enhanced intrinsic motivation, whereas negative performance feedback diminished it. […] feelings of competence will not enhance intrinsic motivation unless accompanied by a sense of autonomy or, in attributional terms, by an internal perceived locus of causality. […] people must not only experience competence or efficacy, they must also experience their behavior as self-determined for intrinsic motivation to be in evidence. This requires either immediate contextual supports for autonomy and competence or abiding inner resources.

Relatedness is not a necessary requirement for intrinsic motivation, according to the authors, but does foster it. It is especially observed in family situations.

Even though, to an economist's or lawyer's ear, competence and autonomy seem to be vague criteria, Ryan and Deci show strong empirical evidence to support their claim. [9] Both of the factors will help me later to analyze the effects of steward-owned companies on intrinsic motivation.

Framing, Personal and incomplete contracts, procedural fairness

Frey and Osterloh (2005) propose a different set of institutions that could foster intrinsic motivation. The most important for our task of identifying institutions that can promote stewardship behavior are *framing, personal and incomplete contracts and procedural fairness*. Framing can influence the behavior of people quite directly. Simply naming a game "Wall Street game" or "community game" produces different kinds of behavior among

[9] Ryan and Deci (2000) cite the following famous authors and papers to support their thesis: "the needs for competence (Harter 1978; White 1963), relatedness (Baumeister and Leary 1995; Reis and Erber 1994), and autonomy (DeCharms 1968; Deci 1975)."

participants in experiments: in the former case less pro-social and in the latter more pro-social (Liberman, Samuels, and Ross 2004).

While anonymous short-term contracts with precise job descriptions lead to less pro-social behavior, contracts that are personal, trust-based and incomplete contracts can do the opposite. Frey and Osterloh conclude: “these results might be summarized such that the less the situation approximates a competitive market, the more prosocial behavior will be observed” (Frey and Osterloh 2005, 23). It is also true that perceived procedural fairness can sustainably support intrinsic motivation and willingness to contribute to a common good and to following the rules (Tyler and Blader 2000; Tyler and Lind 1992).

These streams of literature can further inform us what conditions will be favorable to a firm that is owned and governed by persons who are neither incentivized economically nor controlled directly.

5.1.3 Conditional Cooperation

After having laid some grounds for a theory of steward-owned companies by introducing intrinsic motivation, crowding-out and crowding-in, I will introduce one last stream of behavioral science literature in support of my theory: the research on conditional cooperation.

Ostrom, Fehr, Gächter, Fischbacher and many others were able, in numerous laboratory and field experiments, to show how people could indeed be very cooperative and restrained from purely (short-term) utility maximizing behaviors (Fischbacher, Gächter, and Fehr 2001; Henrich et al. 2001; Ostrom 2000, 2014). They found that while some humans (about 30%, according to the experiments of Fehr and Gächter) behave as agency theory would predict and free-ride on any occasion, a large part (50%) however could be classified as “conditional cooperators”. They cooperated under certain conditions, when they could expect or observe others to cooperate as well. This research has led to the term “homo reciprocans,” which underscores the reciprocity shown by many humans (Bowles and Gintis 2002; Fehr and Gächter 1998). It was also shown that, in settings in which a certain number of conditional-cooperators existed, selfish actors’ behavior was overridden and actors continued to contribute to a common pool for example. Furthermore, experiments could show how “altruistic punishment”, i.e costly and economically illogical punishment behavior by people who did believe another’s behavior was unfair (e.g., punishing a non-cooperative actor although it decreases one’s personal profits) , could boost cooperation rates (Fehr and Schmidt 1999; Fehr, Gächter, and Kirchsteiger 1997).

The research on conditional cooperation is especially interesting for steward-ownership theory. A steward-owned company can be seen as a commitment-mechanism that enables all actors to count on others' cooperation or, more precisely, the impossibility for others to be merely motivated by selfish-motives. This will be developed further below.

5.2 Theory of Steward-Owned companies

Steward-Owned companies are (in my definition) companies that follow two principles:

- The Majority of voting shares are not tradable or saleable to outsiders, and not inheritable. They are in the hands of owners or trustees and are not connected to economic rights.
- A big part of the economic rights are in the hands the company itself or a charitable foundation.

As I have shown, principal-agent theory would expect these companies to fail early or not exist at all, because the trustees are assumed to be potentially underperforming due to the absence of a controlling mechanism or a market for corporate control. I also have shown that they would have difficulties receiving capital at all or would pay high prices.

Furthermore, I pointed to the contradiction between one form of justification of private ownership of companies (economic incentives) and the existence of steward-owned companies.

But as I am attempting to show here, steward-owned companies are no longer a puzzle if one basic assumption of principal-agent theory is lifted: that actors always must act in a selfish utility maximizing way. If at the same time other behavior is allowed -- e.g., intrinsically motivated and potentially pro-social behavior -- incentive-structures change dramatically. The theory of steward-owned companies does not need to assume naively that actors will always behave intrinsically motivated. On the contrary, this theory builds on the research cited above and identifies two major events under which most intrinsic motivation can be destroyed and thus actors can be assumed to act in a self-interested manner.

1. Crowding-Out. When locus of control is shifted, autonomy taken away and extrinsic incentives or punishments can be expected, intrinsic motivation will be crowded-out and selfish-behavior can be expected
2. When conditional cooperator can no longer reasonably expect the cooperation of other actors to a common pool (for example the existence of the company). They might stop showing prosocial behavior as well.

I will proceed as follows. (1) First I shall examine whether the institutional set-up of steward-owned companies can be seen as fostering intrinsic motivation and prosocial i.e. stewardship behavior. In what kind of settings are agents in? What can we reasonably expect of them? (2) I shall then set out to answer the question as to how intrinsic motivation and pro-social behavior on the part of stewards can reduce agency costs for donor-founders and capital providers and thus overcome important parts of the agency problem. I will also show that some agency costs cannot be decreased. My arguments will challenge the understanding that private ownership of companies is most important because of the economic incentives it creates, and I will show that the autonomy and freedom it gives to owners may be the factor that motivates at least to the same extent.

5.2.1 Institutional Conditions for Intrinsic Motivation and pro-social behavior

Although steward-owned companies might function as I will show below -- because of strongly intrinsically motivated stewards --they are not built on a naïve belief about the nature of man. Indeed, the basic set-up itself can be best explained by a principal-agent or better a donor-agency-theory, which I described in section 3 and has been laid out by Fama and Jensen (1983b).

I will assume a private owner of a company who intends to ensure for the future (with her still running the company) or for her absence (be it moving on in life or passing away) that the company will keep *its mission* and will *survive in the long-term.*

Long-Term and Mission and motivation

This motivation is not that uncommon among founders or owners. Many see their company as their contribution to society or humanity, and many value the long-term existence through its long-term “good” or “ethical” behavior more highly than extraordinary economic wealth. Obviously, owners and founders will have differently strong preferences for economic wealth and will favor different arrangements of steward-ownership. Some might put only new ownership-structures in place at the end of their lives, others will first ensure that their children receive some wealth. Other are satisfied with less and will donate everything to a foundation (as for example the Mahle-Brothers and Ernst Abbe of Zeiss have done). But every founder or owner who sets out to install steward-ownership will prefer long-term survival of the company and its mission over maximum economic wealth. Steward-ownership will make the majority voting-shares unsalable and thus will "destroy" the premium a potential buyer might pay for having the control over it -- a wealth-loss every founder of steward-owned companies will have to pay. Installing steward-ownership for mere economic reasons seems illogical exactly because of these costs.

Many donor-founders (i.e. founders or owners who donate their company to steward-ownership) also give dividend rights or shares of their steward-owned companies to charitable foundations (as in the case of Bosch or Mahle). For this reason one can also assume that donor-founders have a certain interest in donating profits of the future and locking the divided distribution. But most steward-owned companies in Germany do *not* direct the decision of how much dividend will be directed towards charitable aims into the hands of people who decide about the donation money. To the contrary, the people who are closer to the business than sometimes even its CEOs will usually decide whether dividends are paid. As we saw in the case of Zeiss and Mahle, dividend payments to charitable foundations are even importantly limited by foundation charters. The intention is that maximizing charitable giving never be the guiding decision criterion and never put the company at risk.

All this naturally leads to the conclusion that the motivation for long-term survival of the company trumps most of the other motivations of founders, just as our survey of Bosch, Zeiss and Mahle confirms. Mahle directs as little as 3% of after-tax profits to their 99.9% dividend rights shareholder (the charitable foundation) and reinvests the rest. Bosch reinvests regularly around € 3.9 billion of their around € 4 billion profits a year and the situation is not any different in the case of Zeiss.

Institutional Setup

Long-term survival expectation, continuity of mission and the values of the company can lead owners or founders to set up a structure that binds them and all future stewards or fiduciary owners to place always these values and the company itself above maximum profitability.

“Donating” one’s ownership stake in such a way to the company itself (or connected foundations or entities) makes it “self-owned” and creates a donor-agency-relationship. Donor-founders will be particularly interested in creating the conditions so that successors will take on the role of stewards in a responsible manner. They will try to prevent any behavior of stewards that destroys the company because of short-term or unethical behavior. If they could reasonably expect future stewards to actually behave in a merely self-interested utility maximizing way, i.e. stewards appropriating through their power large company resources, it is hard to see how they would be willing to pay the price for steward-ownership, which would be diminished economic returns for themselves..

However, binding future agents to certain behavior is almost impossible. Contracts cannot anticipate all potential future events of companies that are here to stay for more than 100 years. Hence, contracts will never be complete, especially in the case of employment-like contracts -- just as a great wealth of literature shows (e.g. Conner and Prahalad 1996; Simon 1951; Prahalad and Hamel 2006; Osterloh and Frey 2000). And research about intrinsic motivation shows that relying merely on the force of contracts will even tend to crowed-out motivation. Once crowded-out, an only half-complete contract will be even more likely to be abused. Probably the only possible avenue for founders to take is thus to ensure that future actors are intrinsically motivated and willing to contribute to the long-term survival of company and values.

In the light of research about intrinsic motivation, framing and conditional cooperation, it is rational for donor-founders to engage in the following activities:

(1) Framing the stewardship role, by being a role-model and signaling to others their value-commitment.
(2) Creating a setting that nourishes and crowds-in intrinsic motivation and prevents crowding out.
(3) Ensuring that conditional cooperators will be willing to cooperate and help the company towards being long-term oriented and staying true to its values. This means potential cooperation-abusers must have high hurdles, so that cooperation-willing participants are expecting cooperation and will cooperate themselves.

The "Unlocking of Intrinsic Motivation"

(1) Framing and Signaling

Restructuring ownership and installing steward-ownership is perhaps the strongest signal a founder can send to future employees or stewards. Steward-ownership is not only a commitment that can be undone or changed but a legally binding and strong signal to all active and future stakeholders. Interestingly, all steward-owned companies[10] do not only informally change their understanding of ownership and still leave the right to sell voting rights in the hands of fiduciary owners: all steward-owned companies chose a legally binding structure to prevent a sale of company-control and many also prohibit dividend rights to be sold out of the charitable entity that holds it. So the signal a founder herself sends is strong: she will never be able to change that structure in order to realize more private profits. She closes doors that she cannot open again. But in almost every case she opens other doors, especially the door for a long-term independent survival and continuance of values and missions of the firm.

So donor-founders use steward-ownership as a commitment-mechanism, that helps them to commit to something to which they cannot commit in normal ownership-structure. Furthermore, donor-founders will have an interest in framing the steward-role in the "best" way they can. This means framing for future stewards guidelines as to what good stewardship is, perhaps by being already a living example of a good steward -- by placing the interest of the company and its values first and not extracting high percentages of the profits privately. While an empirical study of the behavior of donor-founders still has to be done, anecdotal evidence supports my point here. In the companies of Zeiss, Bosch and Mahle, stories about the humbleness of their donor-founders are well circulated.

Obviously, this question is not a question of the total sum donor-founders received but a question of relation – did the company, relatively speaking, get prioritized by the founder as well? This question has to be answered in the affirmative in the case of Bosch, Mahle and Zeiss. Experimental evidence on the impact of framing and the theoretical considerations shows that this can be a rational behavior for donor-founders. It will increase the probability

[10] One exception is known to the author (Neuguss in Hamburg, Germany).

of stewards behaving in similar ways. Furthermore, it is rational as well for any succeeding steward who has an interest in the long-term survival of company and values to also frame the role also for future stewards.

(2) Creating a setting that crowds-in intrinsic motivation and prevents crowding out

Competence and *Autonomy*, Deci and Ryan have shown, are important factors that prevent intrinsic motivation from being crowded-out. The basis, however, for any intrinsic motivation is a *task or a goal people find worth while pursuing* (Ryan and Deci 2000). Maximizing somebody else's wealth, i.e. maximizing shareholder-value, especially if this person is not a close person, will most probably never be a goal or task that can really foster intrinsic motivation. Agency theory quite rightly predicts unmotivated agents if the goal is set in this way.

Steward-owned companies have a different goal, and they see profits as necessary but mainly as means to an end – viz., to secure the existence of a company and its mission and perhaps to donate a portion of the profits. This allows stewards but also employees to more easily connect to this goal, identify with it and crowd-in intrinsic motivation. Interestingly, both Bosch owners and Zeiss CEO told me in interviews that they are actively using this argument in recruitment talks – with a positive effect. They make potential employees aware that they are not working (mostly) for somebody else's private pocket, but that profits are reinvested or donated (and only partly paid out to the Bosch family or outside shareholders). This effect could mean that companies with a strong social mission or particularly responsible business behavior will be more likely to succeed in a steward-ownership structure and also be more likely to choose such a structure. The knowledge that profits are reinvested or donated -- and thus that stewards can be regarded as trustees or fiduciaries who are as well working for the values of the company -- might also foster greater identification with the company's values and tradition, leading as well to more intrinsic motivation, just as identity economics would assume (Akerlof and Kranton 2005, 2010; Tyler 1999).

It's not only the goal of the company (the "why") and the related work stewards perform that can potentially crowd-in intrinsic motivation. The way their position in the company is structured, the freedom they have to shape their work-life -- in short, "how" they can work --

will most probably crowd-in intrinsic motivation as well. In most cases steward-owners are totally independent or only depended on co-stewards. They enjoy almost all the autonomy they could possibly crave as private owners of a business, and so they are self-determined in the best sense (Ryan and Deci, 2000). The only thing they cannot changed is the "steward-ownership-lock," i.e. the ownership-structure itself. Giving stewards this enormous freedom might seem like the largest risk for donor-founders, but it is at the same time, from the perspective of the cited empirical evidence, (1) the best condition for intrinsic motivation and (2) arguably the best decision in face of an uncertain future. Some donor-founders might legally bind future stewards to not changing the mission of the company or to adhering to certain principles. This might help to foster cooperation by conditional cooperators who want to have a certain mission of the company ensured in the future. But this can also decrease the company's flexibility to respond to unforeseen market challenges, decrease autonomy and thus intrinsic motivation of stewards

Steward-owned companies are providing a commitment mechanism (Mayer 2013) for founders or stewards that can unlock intrinsic motivation. Donor-founders have irrevocably committed themselves to answer both the "why" and the "how" question in ways that can crowd-in or prevent crowding-out of intrinsic incentives. Especially the irrevocable commitment to place the values and survival of the company above shareholder maximization, and to reinvest large parts of the profits now and in the future -- these can be seen as a strong and credible commitments which every steward will acknowledge. This signals to stewards that every hour of work they commit to the company will neither today nor in the future serve others just for their private wealth. Instead they know, they are mainly contributing to a goal to which they want to contribute.

(3) Conditional Cooperators

Conditional cooperators stop cooperating when they can reasonably expect most others will not cooperate. In short they can be said to "like to be the good ones, but dislike to be the dumb ones." Conditional cooperation can be a phenomenon happening not only between the presently active stewards but also, potentially, between the presently active co-stewards (or founder) and future stewards. Any donor-founder or steward who is motivated will be interested in maintaining the line of intrinsically motivated stewards; their own "belief" in the steward-ownership structure will actually depend to a certain extend on their expectation about future stewards. For this reason, the donor-founder-steward agency relationship can also be described as a past-steward / current-steward and as a current-steward / future-steward agency relationship.

According to the research on conditional cooperation above reviewed, stewards or donor-founders will be less willing to abstain from advancing their own personal economic gains (through appropriating company resources), as long as they know past or future stewards have and will behave in a more egoistic manner. Even when abstaining for a moment from the assumption of intrinsic motivation, the company's long-term survival and mission can be conceptualized as a common-pool resource. Everybody can contribute to it and probably increase the total payoff for everybody -- or else not contribute and abuse it, thus maximizing personal economic gains but destroying the resource altogether and creating a welfare loss for others. While Hardin (1968), in line with his famous paper, would expect a "tragedy of the commons" and call for private owners or the state, Ostrom (1990) would more likely argue for peer-monitoring and peer-sanctioning mechanisms. Most steward-owned companies have a group of stewards, and it could be argued that they monitor each other to some extent. The fact that Bosch stewards are partly company-insiders and partly outsiders is especially likely to create a monitoring situation. On the other hand this would be a very weak monitoring mechanism in light of an assumption of strong self-interest, since the coordination costs to form a "cartel of egoists" would not probably be very high. (They could, for example, maximize their utility by appropriating perquisites, and their power by unnecessary acquisitions. etc.). That is why steward-owned companies cannot be explained by either of these theories. Steward-ownership might be conceptualized as a common recourse depending on conditional cooperation of past, present and future stewards, but the most powerful mechanism of cooperation is ensuring intrinsic motivation.

As I have shown in the Bosch case study, Bosch stewards are aware of the vital importance of their steward-selection process. As one steward said, "we absolutely rely on intrinsically motivated and qualified people."[11] From a theoretical perspective such selection process indeed sets important incentives: intrinsically motivated stewards will have an interest in selecting other intrinsically motivated stewards to secure their legacy and justify their own intrinsic motivation. For this, it turns out, missing economic incentives actually help. It

[11] Dr. Malchow in the cited interview in March 2017.

selects-out less intrinsically motivated people who will go somewhere else to maximize their economic wealth or utility. Stewards are just left to choose between people with intrinsically highly motivated or people with lesser prospects of receiving elsewhere the compensation they really desire, thus simplifying the filtering out of non-intrinsic motivated people.
The selection process itself might even crowd-in motivation. Since there is no clear process of ”how to become a steward,” a candidate's actual selection as a steward might come as an unexpected award. Unexpected awards, as many field experiments and a large literatures show (e.g. Frey and Gallus 2017; Gallus 2016) can strongly crowd-in intrinsic motivation and increase the performance of award-winners significantly.

For intrinsically motivated stewards the conditional-cooperation challenge they face might be best modelled as an assurance game, also called stag hunt in game theory (Skyrms 2004). Assurance games are different from a typical prisoner's dilemma because both actors would be better off when cooperating in this game, while in the prisoner's dilemma the highest payoff for an individual is gained by non-cooperation. In the assurance game cooperating agents are losing the most when they cooperate but the others do not; they are losing the second most if both do not cooperate and are winning the most if both cooperate.

Table 1: Assurance Game

	Non-Cooperation	Cooperation
Non-Cooperation	2, 2	2, 0
Cooperation	0,2	4,4

I assume that intrinsically motivated actors will experience highest utility as long as their successors will continue with the same motivation, ensuring that what they have achieved is not destroyed. But if successor stewards can be expected to abuse the system, current cooperating stewards will experience less utility and will be driven to non-cooperation to maximize their utility. There could also be a situation, however, in which current stewards are so highly intrinsically motivated and so value the outcome of their work that expected abuse in the future will not change their behavior. But since one key motivation for setting up a steward-owned company is the long-term survival of it, it is most likely that stewards will be less intrinsically motivated when this cannot be expected.

Table 2: Assurance Game between successor stewards and current stewards

	Successor will abuse	Successor will not abuse
Current Steward abuses	Low intrinsic motivation, Minimizing Risk but destroying the company	Succor probably not motivated and will tend towards abuse
Current Steward does not abuse	Current steward will feel betrayed. If he can expect this situation, he will decrease work effort and may abuse as well	Best situation for the company and its mission. Intrinsic motivation strong for both actors.

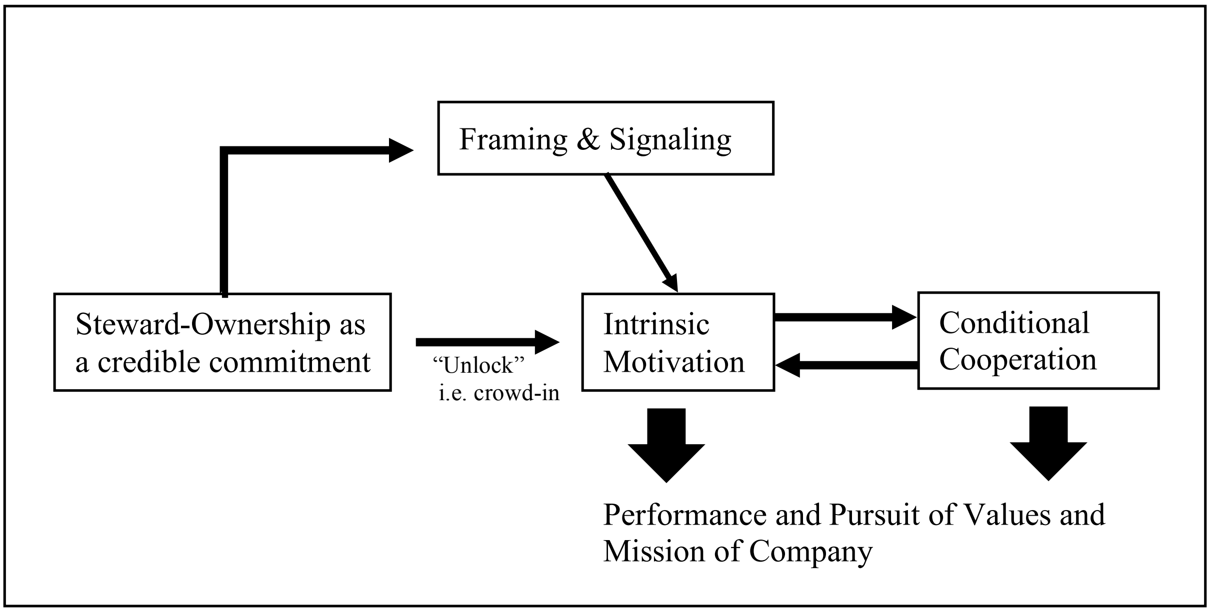
Summing up, the combination of strong credible commitment made by donor-founders, intrinsic motivation and conditional cooperation leads to the following: It turns out that conditional cooperation, most probably, rests mainly on intrinsic motivation. Furthermore, intrinsic motivation is based on the commitment mechanism of steward-ownership which "unlocks" it. At the same time, intrinsic motivation relies on expected cooperation and the framing which was set forth by founders at the very beginning. This "motivational landscape" constitutes the condition for steward-ownership's success. Most central to it is the irrevocability of steward-ownership. Steward-ownership is the only corporate form that can commit a company irrevocably to the values and mission that unlock intrinsic motivation (Thomsen 2017, 35).

Size

Another side-issue that might have an important influence on all other mechanisms is the size of the group of stewards. Some companies promote almost all employees to stewards and partners, thus creating a worker-owned company. Others limit this to a smaller number, making the pool of people who have to be motivated intrinsically smaller. In the latter setting, upholding intrinsic motivation and solving the conditional-cooperation problem might much be easier. Stewards can then independently choose how to behave towards most other stakeholders in the company (especially employees), and whether to adopt a management policy in line with agency theory or one that is more in line with stewardship theory,.

On the other side, enlarging the pool of steward-owners decreases the risk of abuse, since peer-control mechanisms will most probably kick in to a greater extent.

Figure 3: Motivational Landscape in of Steward-Owned Companies



5.2.2 Agency costs and performance of the firm

So far I have only sketched out the motivational landscape of steward-owners. What this new view on the motivations of stewards will mean for the questions Jensen and Meckling (1976) have asked and answered, namely agency costs, shall now be examined.

i. Behavior of stewards/trustees

Let us first analyze the expected behavior of stewards facing the institution of steward-ownership and the motivational landscape I just described.

- Due to the selection process and the many institutions that crowd-in intrinsic motivation, we can expect stewards to be intrinsically motivated and pro-social in their behavior towards the values or mission of the company and the company's existence.
- Feeling directly connected to the company's values and being dedicated to its mission, stewards will try to maximize the life-time of the company. Only in the rare event of mission-fulfillment do some very intrinsically motivated stewards not maximize the life-time of the company.

- Because of (1) strong intrinsic motivation, (2) attachment to company, work and goals, and (3) a selection process that has selected out non-intrinsically motivated actors, the risk of stewards granting themselves extra high non-pecuniary payments or even pecuniary payments is low.
- Accordingly, monitoring is not needed, and it is in fact mostly non-existent. Potential peer-monitoring by co-stewards will lower the risk of malpractice as well.
- The absence of a market of corporate control reduces often observed short-termism. Stewards do not have to justify their decisions to any analysts or stock-market traders, giving them a stronger feeling of independence and crowding-in intrinsic motivation.

The result is that there are almost no agency costs. The stewards understand themselves as principals and agents at the same time: the ones that take the ultimate decision not for their own profit, but for the company. So the typical agency costs, which are observable and predictable in situations in which agents to not have economic incentives, are non-existent. The usual costly monitoring mechanisms might fall awaym at least at the level of stewards (stewards are of course free to monitor their managers, just as agency theory predicts). New costs are "selection" costs for the company. This process might be costly especially for companies that require high qualifications. On the other hand, steward-ownership companies change their stewards only very rarely, searching and selection-costs therefore do not occur very often.

ii. Debt

Jensen and Meckling (1976) see agency costs being created when a manager-owner takes on debt because a conflict of interest between owner and debtor arises. Debtors have a limited upside (the interest rate) while their downside (losing the entire loan) is limited but not so small. They have an interest in low-risk taking by the manager-owners. Managers on the contrary have an interest in telling debtors they would pursue a less risky project but then use the money for more risky operations, since they will benefit from the upside.

But after having proved how important agency costs are in debtor-agent relationship, Jensen and Meckling admit that agency costs might be less important if actors have the chance to build up their reputations and have a long-term perspective. It would decrease their incentive to betray debtors. This, they admit, could potentially make agency costs in the debtor relationship negligible. In their view the only reason this argument does not make any difference to their theory is because agents have only a limited life expectancy and will never be so long-term oriented that agency costs are nil. While family-owned firms can show that long-term orientation can extend over generations, steward-owned companies also have empirically proven to be very strongly long-term oriented. Stewards, since they do not participate directly in an upside but are motivated to sustain the company and its mission for the long-term, will most probably behave almost perfectly like an immortal agent. Stewards for the most part are intrinsically interested in the long-term success of the company, which means they are very aligned with the interest of debtors. They will not take more risk than the debtor would prefer to take and will do everything they can to avoid bankruptcy. Debt-steward relationships thus do not create high agency costs. The conflict of interest can be assumed to be quite negligible. Many steward-owned companies (like Bosch and Mahle) indeed raise most money by issuing bonds.

iii. Equity

Agency theory has different reasons for assuming that agency costs are created in case a company takes in outside equity (ibid). One is that managers will be less motivated and pay themselves high perquisites. Their interest in maximizing shareholder value will not be as intense as the interest of outside shareholders, because they can also maximize their utility in another way, by growing the company and having more power etc. So agency theory suggests incentivizing managers and monitoring them to moderate the conflict of interest and lower agency costs. The fear of managers being less motivated to perform for the company or even betraying the company is, as I have tried to show, avoided to the most part in steward-owned companies.

Indeed, another potential conflict of interest, which is also mentioned by agency theory, does also play a role in steward-owned companies. Stewards might not maximize shareholder value and ROE but instead maximize whatever the mission of a company is, if it is a particularly mission-driven company, or maximize the long-term survival. So they might not be interested in high profitability and will reinvest heavily. This could mean less cash-flow will be available for dividends. Outside equity givers, here principals, will expect this behavior and price it in, making equity more expensive for steward-owned companies. This creates agency costs.

There are, of course, a variety of tools to minimize agency costs that will be used by stewards to decrease equity costs. They can grant shareholders a minimum guaranteed dividend or a put-option to sell their shares for a certain price back to the company.

Also the entire range of mezzanine finance tools can and will probably be used. I shall specifically mention only subordinated debt, because that is probably the cheapest way of raising equity-like capital for a steward-owned company. Since it bears a higher risk, subordinated debt will be more costly. At the same time the risk is manageable, especially for larger and already established steward-owned companies, since stewards have mostly the same interest as debtors, i.e. to ensure a sustainable long live of the company.

In the interviews I conducted with stakeholders of Zeiss and Bosch, they admitted that outside equity is a no-go for them on the level of the parent company. This creates for them a certain pressure to be profitable in order to have enough equity to grow. Bosch was successful in doing this and only raised debt by issuing bonds. In total around € 4.1 billion have been issued with a very low interest rate due to their AA-rating.

Zeiss and Mahle on the contrary have taken the step of issuing shares on the stock market, but only of a daughter company (Carl Zeiss Meditec), which it controls by 65%.

iv. Impact Capital

While standard agency theory will predict higher outside-capital costs for steward-owned companies, there is one important assumption which can be questioned and which could change the game. Agency theory assumes shareholders that are merely interested in maximization of their shareholder value. This does not hold true anymore for a growing part of shareholders. So called “impact-investing” or “responsible investing” are fast growing sectors in today’s economy. As a report of the world economic forum shows, this sector is expected to grow significantly in the next years because of one of the largest intergenerational wealth transfers of the last 100 years (Sidgmore 2014). Younger high-net-worth individuals are observed to show greater interest in impact oriented investing (ibid). As much as successful steward-owned businesses can count on intrinsically motivated stewards, they might also in the future be able to count on a growing number of impact investors. These investors are intrinsically motivated not only to maximize ROI but also to support the purpose of a firm. This seems to be a perfect match for companies and stewards that see profits often as a means to an end and not an end in itself.

Steward-owned companies might even provide the solution to one of the biggest challenges and the agency costs impact investors face. Impact investing often creates a new principal-agent problems. Impact investors provide cheap capital to companies that pledge to be impact maximizers. However, as long as the ownership structure of an impact company is as conventional as non-impact companies, a conflict of interest exists: manager-owners might just want to increase their wealth while impact investors want to create impact and provide cheap money. Why could a clever owner-manager not use the cheap money and maximize his or her own profit with it? To prevent this and lower the agency costs, impact investors have imitated conventional solutions for overcoming the principal-agent problem while never actually questioning ownership structures themselves. They installed corporate a governance mechanism and tried to set up almost complete contracts, even though this has been proven impossible. Either they are asking owner-managers to measure an “impact factor” which is easy to measure but which cannot prove any potential impact (because owners have hundreds of backdoors to pollute, for example, the environment in a different way). Or they put a highly differentiated impact-measurement system in place which is so heavy to administrate that it decreases performance of the company and distracts the entrepreneurs.

An easy solution to ensure their capital is not wasted, and to create private profit instead of impact, would indeed be steward-ownership. Steward-ownership’s disadvantage on usual capital markets, i.e. stewards not having the interest to maximize ROI but mission and company long-term success, becomes the advantage here in the impact-investors market.

6. Conclusion

I set out to show why, theoretically, steward-owned companies should work, contrary to what agency theory would suggest. Steward-owned companies, and “self-owned” companies as well, have turned off the main engine of capitalism -- economic incentives for owners. They are characterized by two principles:

- The majority of voting shares are not tradable or saleable to outsiders, and not inheritable. They are in the hands of owners or stewards and are not connected to economic rights.
- A good part of the economic rights are in the hands of charitable entities, and only a part might be held by outside-investors

As I have shown, the usual understanding of private company ownership and principal-agent theory would expect these companies to fail early or even never to exist at all, because the stewards are assumed to be potentially lazy under-performers given the lack of controlling mechanisms or a market for corporate control. I also have shown that they would have difficulties raising capital.

After having introduced research by behavioral economists and psychologists on different sources of motivation and pro-social behavior, I have shown that the motivational landscape in steward-owned firms is radically different from normal firms. Steward-firms unlock intrinsic motivation by credibly promising to stakeholders that the long-term existence of the company and its values are prior to shareholder value maximization. And steward-owned companies donate a large part of their profits and reinvest an even larger part, making it even more easy for stewards to crowd-in intrinsic motivation. In addition, crowding-out of intrinsic motivation is prevented by giving stewards autonomy and selecting them as if they received an unexpected award. Stewards holding the voting rights without significant economic rights can also credibly signal to others that they are intrinsically motivated. I have shown how intrinsic motivation can foster conditional cooperation of current and future stewards to contribute to a common-pool resource: the company's long-term existence and mission. This in turn helps overcome the principal-agent problem, at least to a large extent. Furthermore, I was able to show the alignment of interests of debtors and stewards in reducing much of the expected agency costs. While traditional maximizing shareholders do face agency costs when investing in steward-owned companies, impact investors could actually profit from the setup. Steward-owned companies seem to have found a key to unleashing enormous motivational potential in stewards and employees, a potential that companies operating with the assumptions of agency theory often leave unattended. In an age of "Generation Y" steward-owned companies might gain an important competitive advantage.

Furthermore, I was able to prove that private ownership of companies can still create motivation among "owners" if these owners have control rights but not economic rights.

While is generally assumed private ownership of productive means is necessary because of the economic incentives it generates, the theory of self-owned companies can prove something different: private ownership can motivate because of the autonomy and self-determination it gives to owners. Especially in the case of steward-owned companies, this fact probably contributes much to the motivation of stewards. How much of the motivation of company founders of normal companies is due to autonomy and self-determination and how much to the economic incentives -- this is a question for future research. Research on life-satisfaction of self-employed shows that independence and self-determination can create higher life satisfaction than people with higher salaries but less self-determination experience (Benz and Frey 2008).

Thus it might be very interesting to unbundle the true benefits of private ownership to understand whether autonomy or economic incentives make the difference. Crowding-Theory (Frey, 1997) suggests that both factors might not add up but rather exclude each other. From the perspective of a theory of the self-owned firm, normal publically traded companies are "owner"- and "steward"-less companies. There is no person holding a position of autonomy and thus the motivational benefits of autonomy will be less prominent. On the other hand, independent CEOs might take the role of a steward who has important powers, but such a CEO does not face the same motivational landscape of steward-owned businesses. He has can be fired by shareholders and he is required to maximize the shareholder value and not the long-term existence of the company or even the fulfillment of a mission. From that perspective it is understandable that economic incentives have to be the motivational source.

Regarding the institutional setup of steward-owned companies it is often said that they do not have real owners. But pushing the argument to its end, one might claim: while publically traded companies have abolished the owners, steward-owned companies have instituted ownership.

7. Future Research

The theory laid out here has tried to answer the most pressing questions concerning the functioning of steward-owned companies, but it has had to leave many questions open. What is the effect on employees and on customers? Interview statements suggest a strong crowding-in occurs among employees in steward-owned companies. This question has to be researched theoretically and empirically. And the principal-agent relationship between customer and producer might be changed through steward-ownership -- for example, perhaps increased trust by customer and lower marketing costs for steward-owned businesses. Also, as Thomson (2017) suggests, steward-ownership signals long-term orientation and might create a competitive advantage in certain industries in which customers depend on the long-term existence of a company.

Another important question concerns how stewards will manage a company and whether intrinsically motivated actors will also rely more heavily on intrinsically motivated managers and employees. Bosch for example abolished individualized bonus payments and pay-for-performance that could have crowded-out intrinsic motivation of managers. Research on the effects of this ownership-structure on management practices his needed.

While both agency theory and my own arguments here have mainly studied whether actors are *motivated* or not, there may be an even more important additional question: which system brings the most *able* managers to a position where they can best use their abilities? This question is altogether ignored by agency theory (and I have delayed considering it here as well). Capital markets can signal a manager ex-post, after he operated and has shown numbers, whether he is performing well or not, but seldom ex-ante. Many doubt that capital markets perform this task really efficiently. Especially if people shall be selected that have intrinsic motivation, capital markets will most probably fail. Relying instead on the blood stream and inheriting the power over a company is almost equal to relying on mere chance. What the lottery of diffused sperm will produce is not defined (and although education can do some work, it cannot do everything). But for centuries steward-owned companies have been practicing a stable and successful means of choosing heads of companies: able, intrinsically motivated people select other able and intrinsically motivated people. It follows the principle: Who is able knows also who else is able. Bosch currently has only its seventhy CEO in its entire history (similarly for its stewards), and Bosch demonstrates how stable such a method can be. Further theoretical and empirical exploration of various succession methods is needed to bear this out.

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