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1 Summary and Introduction

Organizational Economics is a subfield in economics that aims to understand how to efficiently govern transactions in markets and within organizations by using either central planning and hierarchical authority relations or decentralization and economic incentives. Applying the Organizational Economics reasoning allows understanding various modes of economic organization as optimal, if potentially still inefficient, responses to social constraints, namely incentive, coordination, and information problems.

The field delivers important insights as the success of firms hinges critically on how they are organized, and, a fortiori, how wellbeing of nations depends on institutional quality (potentially more than on physical resources). The field applies modern microeconomic theory (non-cooperative game theory, contract theory, behavioral economics) that then is tested against reality using case studies, cross-sectional econometric studies, laboratory and field experiments.

Various fundamental questions are addressed: Why do firms exist and what distinguishes transactions performed within firms or in markets? What determines the efficient internal organization of firms? How are interactions between firms affected by internal determinants? What can we learn for non-profit organizations from studying for-profit firms?

This chapter can only provide a very brief introduction into an already large and fast growing body of related literature. We refer the interested reader to the references discussed in the articles presented here, to a more extensive survey in Gibbons (2010), and to the Handbook of Organizational Economics, Gibbons and Roberts (2012), which is a comprehensive survey of the field to date.

2 Theories of the Firm

2.1 The Nature of the Firm

Coase (1937) was the first to formulate a very simple, yet crucial question: What is the nature of the firm, or more specifically, when does a transaction take place within a firm and when is it carried out on a market? While in markets the price mechanism determines the allocation of goods, within firms this allocation is determined by fiat, i.e., the power of the boss. While Coase conjectured that in small groups fiat is the more efficient allocation
mechanism but that in larger groups “bureaucracy costs” arise and the price mechanism becomes superior, Alchian and Demsetz (1972) highlight that there is no natural distinction between fiat and the price mechanism. They argue that employees are not slaves that have to obey but essentially follow (monetary) incentives - very much like market participants.

2.2 Transaction Costs Economics

Williamson (1971), Klein and Alchian (1978), and Williamson (1979) develop an alternative explanation for the choice between firms and markets and set the foundations for Transaction Costs Economics (TCE) that has since been hugely influential. They argue that contracts are incomplete as it is impossible to foresee and/or describe all future contingencies. These incomplete contracts have to be completed and renegotiated along the way which might cause inefficiencies due to haggling. This is a real problem as the parties cannot always easily switch to alternative contracting partners if there is a hold-up problem; i.e., if parties must make “relationship specific investments” ex-ante that increase the potential surplus that can be generated in their relationship. Such investments lose (part of) their value when the relationship ends. It is assumed that it is not possible to contract ex-ante on the investments nor on how to share the surplus ex-post. As a result, the parties have inefficient investment incentives as when they negotiate on how to share the surplus ex-post, the ex-ante investments are already sunk and do not affect the bargaining outcome. Klein and Alchian (1978) and Williamson (1979) argue that vertical integration solves the hold-up problem. If the “buyer” (buying firm) buys the “seller” (selling firm) then he can force him to invest and to produce the efficient quantity. TCE posits that the graver the hold-up problem, the higher the likelihood of vertical integration. Gibbons (2010), on the occasion of Williamson’s Nobel Memorial Prize for laying the foundations of TCE, summarizes the accomplishments of TCE and sketches the opportunities for TCE’s future. TCE does not well explain why, after being purchased by the buyer, the seller’s bargaining power is so greatly reduced. Moreover, this argument explains the benefits of integration only. Hence, TCE is not a theory that fully answers Coase’s original question.

2.3 Property Rights Theory

These methodological problems are solved by the more formal property rights approach of Grossman and Hart (1986) and Hart and Moore (1990) (GHM). GHM provide a property rights based definition of a firm: A firm consists of the physical assets that it owns. They
demonstrate that the ex-ante allocation of property rights affects not only the ex-post distribution of surplus but also the ex-ante investment incentives. While “specific control rights” can be contracted away, “residual control rights” remain with the owner. The latter include the right to exclude others from the usage of the asset. Hence, owning an asset increases the surplus share that the party can appropriate in ex-post negotiations. Hence, allocating property rights efficiently mitigates hold-up problems. This property rights theory of the firm clearly highlights costs and benefits of integration: Allocating ownership of an asset to a party increases this party’s ex-post bargaining power, its surplus and its ex-ante investment incentives. However, only one party can effectively control an asset; hence allocating ownership to one party means not allocating ownership to another party, weakening this other party’s investment incentives. See Aghion and Holden (2011) for an excellent survey of the development and applications of GHM’s approach over the last 25 years.

2.4 Empirical Support

Often, the acquisition of Fisher Body by General Motors in 1926 is used as the prime anecdote to illustrate the dangers of hold-up. It is claimed that GM was led to acquire its supplier of car bodies because Fisher Body held up General Motors. However, Coase (2000), documents that this tale is factually incorrect as GM acquired in 1926 only the remaining 40 percent of the shares of Fisher Body that it did not already own.¹ But next to the GM-Fisher Body anecdote there exists extensive supporting empirical evidence for transaction cost economics, starting with Monteverde and Teece (1982), Masten (1984), and Joskow (1985), documenting a correlation between integration decisions and transaction costs. However, as critics have noted, TCE has the weakness that it makes few falsifiable predictions. The property rights theory makes falsifiable predictions, however, the according empirical tests are very demanding on the data. Whinston (2003) assesses that, unfortunately, the supporting evidence on transaction cost economics tells us little about the property rights theory’s empirical relevance.

Baker and Hubbard (2003) and Baker and Hubbard (2004) exploit the introduction of on-board computers (OBCs) in the trucking industry between 1987 and 1997. This technological innovation increases the set of feasible contracts. This in turn affects optimal ownership structure. The improvements in the contracting environment have led to less independent

¹There is a lively and extensive discussion whether or not the GM-Fisher Body case is a fitting example for TCE. See Roider (2004) for a summary of this discussion.
contracting and larger firms. Overall, ownership patterns in trucking reflect the importance of both incomplete contracts and of job design and measurement issues. Gebhardt (2012) is a rare example providing direct causal evidence in favor of the key predictions of property rights theory exploiting a natural experiment, quasi-randomly assigning ownership over housing property. In line with GHM, owners have stronger incentives to undertake relationship specific investments to their property than renters do.

2.5 Recent Advances

Baker et al. (2002) employ relational contracts to gain novel insights into the theory of the firm. They show how and why informal agreements sustained by the value of future relationships within firms (vertical integration) differ from those between firms (non-integration). Intuitively, integration affects the parties’ renegotiation temptations on a given relational contract, and hence determines what is the best relational contract sustainable by the parties. Next to straight integration/non-integration, also hybrid forms (joint ventures, alliances, networks) affect the efficiency of relational contracts; cf. Baker et al. (2008).

Azoulay (2004) analyzes how firm boundaries influence employees’ incentives for information acquisition. He uses detailed project-level data from the pharmaceutical industry to document that firms are more likely to outsource the coordination of data-intensive clinical trials, while they are more likely to assign knowledge-intensive trials, that are associated with more severe contracting problems, to internal teams. Within the firm, subjective performance evaluations are combined with flat explicit incentives while in the subcontractor firm high-powered incentives on a narrow set of monitorable tasks are provided. Hence the choice here is not between the market and a hierarchy (internal organizational and incentive structure), but between different hierarchies within the firm or at the subcontractor.

3 Internal Organization

The previous section aimed at understanding why firms exist. But for a firm to produce valuable output the different interests of a firm’s stakeholders have to be aligned. The internal organization of a firm helps to achieve its goals. The instruments needed and used are property rights, hierarchy and contracts. Property rights ensure that all inputs and all outputs have a clearly defined owner. Hierarchies are about the organization and allocation of decision rights within a firm. Contracts help to organize tasks and align the interests of
owners, managers, and workers.

The remainder of this section will cover Decision-Making in Organizations (3.1) which is aided by well structured Hierarchies (3.2) and effective Leadership (3.3). It is important to understand the role and structure of Employment in Organizations (3.4). Adding up these many different aspects helps to understand how a complementary set of Processes in Organizations (3.5) affects productivity. Finally, we discuss briefly the Role of Financial Structure (3.6).

3.1 Decision-Making in Organizations

One key question of Organizational Economics is how decision are made within a firm. Who decides what in which situations? What information is used for decision-making? Initially, decision rights reside with the owners; cf. section 2.3. They can delegate them to managers who might delegate them further down the hierarchy. So allocating decision rights critically depends on authority.

Authority

At least dating back to Max Weber’s arguments, authority (or power) has been recognized as an important element in social interactions. While this is universally accepted and authority is an often discussed topic in the leadership and management literature, it is not obvious how to capture its essence in economic modeling. Aghion and Tirole (1997) offer a simple and intriguing way to think about authority in an economic sense that is rich enough to allow subtle differentiation and deliver rich results. Authority can be formal, i.e., the formal right to make a decision, or real, i.e., the actual ability to make an informed decision. Hence, being informed is an important element for having authority.

Aghion and Tirole (1997) note that delegation empowers subordinates to implement their preferred projects and thus increases their incentive to exert effort and use all their information. But this comes at a cost: the loss of control. In real organizations this might represent a real cost since firms and workers rarely have the same objectives. Consequently, delegation is only optimal if the divergence in preferences is not too large, i.e., the worker does not have too strong incentives to misrepresent his private information; cf. Dessein (2002). Furthermore, delegation is more appropriate if the actual decision is relatively more important for the agent than for the firm and in situations where the principal has insufficient prior
information to make good decisions; cf. Aghion and Tirole (1997).

Disagreement

Van den Steen (2009) points out that as long as all stakeholders perfectly agree about the course to take, it does not matter who takes the decision. But as soon as there are differences in the beliefs about the right thing to do, the one with the right to decide can enforce his most preferred project. Consequently, people prefer to control decisions themselves if disagreement is more likely. Furthermore, the more control rights a person has, the more income rights will he ask for and vice versa. Therefore it is not surprising, that decision rights often reside with those who have more at stake, i.e., the owners. As a result, in equilibrium all income and decision rights will be concentrated in one hand. Hence, income and control are more likely to reside with one person as disagreement increases.

However, in reality we find many firms that have multiple owners, e.g., stock companies, which are run by managers instead of owners. Hence, a firm can be seen as a mechanism to give a manager or a board of managing directors a quasi centralized asset ownership and thus all the authority and decision rights; cf. Van den Steen (2010). Finally, compliance of workers can be achieved by moving asset ownership from workers to the firm. Thus, the outside option of the workers decreases whereas the inclination to obey increases.

Influence Activities

Milgrom and Roberts (1988) point out that a new problem arises if decision rights reside with agents within the firm. These agents might be susceptible to influence activities. Agents further down in the firm’s hierarchy might be tempted to get their way not by supremely exerting effort but by lobbying the decision maker and offering her favors. Doing so usually implies real costs for the organization: a lower quality of decisions and a waste of resources spent on influence activities. Possible solutions are a limited access to decision makers and compensation and promotion schemes that favor actions that are aligned with the firm’s objectives. Complimentary to these arguments, Prendergast and Topel (1996) point out the threat of favoritism as another limit on the delegation of authority. In their model, authority has to be granted as objective measures of employee performance are scarce and firms have to rely on subjective judgments by supervisors. This subjectivity, in turn, opens the door to favoritism, where evaluators might favor some employees over others.
Communicating Soft Information

Alonso and Matouschek (2008) analyze in a fairly general set up the optimal delegation of decision rights by an uninformed principal to an informed but biased agent. Generally, the principal offers the agent a set of decisions from which he can choose his preferred one. Alonso and Matouschek (2008) compare centralized and decentralized coordination when managers are privately informed and communicate strategically (via cheap talk) in a multi-divisional organization. Decisions must be coordinated across divisions but also adapted to local conditions. Interestingly, a higher need for coordination improves horizontal communication but worsens vertical communication. As a result, decentralization can dominate centralization even when coordination is extremely important relative to adaptation.

In circumstances where delegation is optimal but not feasible, it could be valuable to sell the assets to the agent who manages them. This is an extreme case of delegation, since property rights are transferred to a new independent firm which means vertical disintegration; cf. Baker et al. (1999).

3.2 Hierarchies

When talking about decision making in the previous section, we always implicitly took the existence of hierarchies for granted. This section now sheds light on the question why hierarchies emerge as an optimal form of organizing a firm instead of a simple owner-workers-relationship.

Radner (1992) and Radner (1993) emphasize the significance of managing and hierarchies. In larger firms, the burden of managing must be divided because of limited capacities (e.g., time or attention). This division of power favors a decentralization of information and information-processing and therefore also a specialization in clearly defined fields of activities. Specialization is often efficient. But the price for efficiency is a loss of control not only through delegated decision rights but also through decentralized goals and incentives of the different divisions of a firm.

Geanakoplos and Milgrom (1991) argue that there is a need for higher level managers to coordinate the lower level managers and propose a multilevel hierarchy to address the above problem. Furthermore, they give arguments for a natural bound for firm size: Top management cannot participate in or coordinate serial decisions if it is too far away - in terms of hierarchy levels - from the operating divisions. This generates an endogenous upper limit for the number of hierarchical layers.
Hart and Moore (2005) assume that there are two types of managers, specialists and coordinators. While specialists think about the efficient usage of the asset under their control, coordinators think about the joint usage of assets. Which type should now be more senior to the other and get his way if there are conflicting ideas about the usage of assets? Hart and Moore (2005) show that the coordinators should. By being senior, they have many different divisions and their assets under control. In case they have an idea which utilizes synergies between the assets, they must not be overruled by specialists because of efficiency reasons. Thus, the ideas of coordinators are more valuable. Performing comparative statics analysis shows that coordinators become more valuable when there are more synergies between the firm’s assets. This then favors a more centralized organization of the firm.

Garicano (2000) takes a somewhat different angle towards hierarchies. His model of hierarchy is based on the organization of knowledge in production. Managers are problem solvers. The higher the hierarchical level, the harder (and less frequently occurring) are the problems managers at this level can solve. Thus, the knowledge concerning the most common problems is at the production floor. If the person cannot solve a problem, he asks the higher level, and so on, until the problem is solved or it becomes too unlikely that the problem can be solved at all. Consequently, the trade-off is about communication costs versus knowledge acquisition costs. Is it cheaper to learn to solve the problem on my own or to ask someone who might know? This results in an optimal span of subordinates for every hierarchy layer.

Garicano and Rossi-Hansberg (2012) develop this framework to study the impact of information and communication technology (ICT) on growth. Innovations in ICT affect optimal organization structure and innovation incentives. Though advances in information technology always increase growth, counterintuitively at first, improvements in communication technology may lead to stagnation since the payoff to exploiting existing technologies through organizations increases relative to the payoff from new innovations.

### 3.3 Leadership

The last section helped to understand why there are bosses and subordinates. But are managers just technical specialists, coordinators, or problem solvers? What about their function as leaders? Not every manager with formal authority is a leader. But leadership exercised by a manager might have a strong impact on the team.

Hermalin (1998) defines a successful leader as someone who encourages following. The most simple reason for followers to follow is that the leader has superior information and can
credibly convince his team that he is not misleading them. Thus, leadership is about credibly signaling the profitability of projects. To convince his subordinates that a project is very important, the leader can offer gifts (leader sacrifice) or work overtime himself (leading by example). The latter is superior to the former because it is not just a transfer between leader and subordinates but increases the effort of the leader and thus of the team as a whole.

Rotemberg and Saloner (1993) investigate how leadership style (autocratic versus democratic) influences the generation of ideas (e.g., improvement proposals) by subordinates. Ideas are valuable to the firm. Hence, incentives to exert effort and make a proposal must be created. This can be done with a reward for every proposal that is realized; but the chance that a proposal can be dismissed lowers this incentive. Now the leader comes into play. An empathic (democratic) leader who is not only concerned with profit maximization but also the utility of his subordinates is more likely to implement a proposal even if it has negative expected net profit. Following the logic developed in Aghion and Tirole (1997), see section 3.1, this increases the incentive to think about new proposals and is more valuable in new industries where a lot of courses of actions have to be explored. Instead, an autocratic leader will only implement projects that have a positive net profit thus lowering the incentive for subordinates to make proposals. This is more valuable in established industries, where improvements are rare.

Van den Steen (2005) notes that a manager can have an indirect, but appreciable, influence on a firm's behavior. A manager with a strong vision (belief) attracts workers with similar beliefs because those who agree get a higher utility by working for this manager while those who disagree get less. Sorting takes place which leads to an efficient alignment of beliefs, aids coordination, and fosters the formation of an organizational culture. But there is also a dark side: strong beliefs may lead to wrong or inefficient investments and slow down learning since beliefs within the firm are too homogeneous. As a consequence, eventually the most and least successful firms have a strong organizational culture. While for the successful ones culture helped to push forward the earlier identified course of action (that ex-post turned out to be correct), for unsuccessful firms, their culture holds them captive to an initially set - unfortunately wrong - course of action.

### 3.4 Employment in Organizations

While property rights theory, following GHM (see section 2.3), defined a firm as the set of assets it owns, it is a simple fact that no firm can produce without employees. However, as
soon as next to the owner employed workers enter the scene, the so-called moral hazard problem emerges. Workers that are not residual claimant to the consequences of their actions will in general have preferences over their choices that are not well aligned with the firm owners’ preferences. Specifically, if effort is unobservable a worker can shirk without being punished since he alone knows how much effort he really exerted. For this reason economists are very interested in understanding compensation schemes designed by firms for their workers. An optimal contract should ensure that employees behave in the desired way, i.e., take the actions that are in the interest of the firm. Therefore, an optimal compensation scheme has to provide incentives that align interests of firms and workers.

Pay for Performance

Following Holmström (1979) and Grossman and Hart (1983), models have been developed that demonstrate that by tying the level of the agent’s compensation to the amount of output produced, the agent is given monetary incentives to increase his output. Lazear (2000) documents conclusively that workers respond to such incentives. In a firm where pay was changed from hourly wages to piece-rates, the average output increased substantially. This is due to two effects: an incentive effect from a stronger dependence of pay on output and a sorting effect from the new scheme being more profitable for more productive workers. Consequently, the average output per worker and average wage increased. But piece-rates are only optimal if the monitoring costs and potential quality decline (quality can be interpreted as an additional task of the job which is not rewarded explicitly and therefore neglected) do not outweigh its benefits.

Executive Pay

Specific attention has been paid to the design of incentives for executive management. For a long time, the focus of the debate about executive pay was set on the right structure of compensation schemes, stressing, like Jensen and Murphy (1990) the low pay-performance sensitivity of executive pay. Jensen and Murphy (1990) showed for a panel data set of CEOs in the largest, publicly traded U.S. companies from 1974-86 that, on average, CEO wealth changes by only $3.25 per $1,000 of shareholder value, i.e., managers could buy corporate jets with a 99.7% discount. Furthermore they pointed out that managerial ownership had declined over the previous 50 years which caused this low level of pay-performance sensitivity. Gibbons and Murphy (1992), for a sample from 1971-89, argued that the presence of substantial career
incentives, also discussed in section 3.4 could account for these low powered explicit incentives. However, using a panel from 1980-94, Hall and Liebman (1998) showed that CEOs are in fact not paid like bureaucrats but that there is a strong relationship between firm performance and CEO compensation. This relationship is generated almost entirely by changes in the value of CEO holdings of stock and stock options. Furthermore, they show that both the level of CEO compensation and the sensitivity of compensation to firm performance had risen dramatically since 1980, largely because of increases in stock option grants.

In the light of this dramatic increase in executive compensation - from 1970 to 2005 average executive compensation increased by the factor eight - there was a shift in the discussion away from the structure of pay more towards trying to explain this change in levels. Bebchuk and Fried (2004) gained a lot of popularity by arguing in their book “Pay without Performance” that strong executives with control over weak company boards expropriate shareholders by effectively granting themselves excessively generous pay packages. This behavior, they argue, is only restrained by outrage that excessive packages cause in the general public, and hence firms try to hide the true level of compensation by issuing stock options or offering large pension packages, see Bebchuk and Jackson (2005), that are not as readily observable to outsiders. However, if anything, boards have become stronger over the last 20 years, so the Bebchuk and Fried argument has a hard time explaining the time trend. In contrast, e.g., Murphy and Zabojnik (2004) employ a more neo-classical approach and describe compensation as the result of an increasingly competitive labor market for executives. Recently another explanation has gained popularity, the so called firm size approach. Baker and Hall (2004) and in particular Tervio (2008) and Gabaix and Landier (2008) argue that the drastic increase in average CEO pay can be largely explained by the increase in average firm size measured by market capitalization which boosted the marginal return to CEO talent.

Gaming / Multitasking / Distorted Performance Measures

Designing incentive contracts can be difficult in reality as performance measures often are very noisy (and hence risky) and distorted. But in designing an incentive contract one cannot abstain from using them. The less risky and distorted, the more valuable is a measure. In reality those are rare, so a firm has to balance these two attributes when designing an incentive scheme; cf. Baker (2002).

Workers’ behavior can be very sensitive to the reward system. Kerr (1975), and subsequently many others, show that carelessly designed compensation schemes might encourage undesired
behavior. Thus, if undesired behavior is observed, one should cautiously investigate whether it is encouraged by the present reward system and change it accordingly. Nevertheless, a compensation scheme will never determine all behavior.

Another example is given by Oyer (1998): non-linear bonuses which are given for reaching some thresholds or meeting some quotas at the end of a fiscal year can provide incentives to sales-employees to manipulate prices and timing of business. An incentive arises to work hard mainly at the end of the fiscal year to get the bonus. This causes non-smooth production and in aggregate even creates measurable seasonal cycles at the macroeconomic level.

We already touched on multitasking while talking about piece-rates above. Holmström and Milgrom (1991) show that a compensation system also allocates attention among tasks if a job consists of multiple tasks. Often if the incentive pay for one task increases, effort is allocated away from the other tasks. That is the reason why a fixed wage, which we observe very often in reality, can be optimal for jobs with multiple tasks. Holmström and Milgrom (1991) also offer suggestions for optimal job design: each task should be in the responsibility of one employee only and tasks should be grouped in jobs such that one job only has easily measurable tasks or only hard to measure tasks. Furthermore, outside activities during working hours should be restricted if job activities are hard to measure.

**Dynamic Incentives**

Unfortunately, as discussed above, firms do not always have access to good verifiable measures of performance. This limits the scope of explicit contracting. However, often firms can observe fairly well how workers perform and whether or not they live up to expectations. Though this information is usually “soft”, i.e., contracts based on these observations are not court enforceable, the contracting partners can still use this information to increase the efficiency of their interaction. A simple version of dynamic incentives is the so called “termination contract” that offers pay if performance is satisfactory but punishes deviation from desired actions. A more sophisticated way to provide incentives are bonus contracts where remuneration is based on subjective performance appraisals. Bilateral compliance has to be insured by the shadow of the future: workers exert effort in exchange for future bonus payments and firms live up to their promised bonus payments as this will ensure continued cooperation by the workers. A rich theoretical literature has been developed to analyze these situations; cf. Bull (1987); MacLeod and Malcomson (1989); Baker et al. (2002); Levin (2003). In reality, most worker contracts are a combination of implicit and explicit elements which can
be made self-enforcing if enough surplus can be generated by cooperation. As argued above, the contracting partners must believe that implicit parts of the contract will be fulfilled. Otherwise cooperation, although valuable, will not take place. In addition if renegotiation (further cooperation after deviation) is possible, the self-enforceability is undermined since punishment is not credible; cf. MacLeod and Malcomson (1989). Obviously, self-enforcing implicit contracts imply restrictions that can affect incentive provision; cf. Levin (2003). Nevertheless, informal mechanisms are often used in trade to enforce agreements. Besides legal enforcement, these mechanisms are aimed at punishing deviation from agreements by loss in reputation which then results in future losses in profits; cf. MacLeod (2007).

**Tournaments**

Besides piece-rates, fixed wages, and bonuses, rank-order payment schemes or tournaments are very popular; cf. Lazear and Rosen (1981). Tournaments provide a bonus (or higher future wages if used in the context of promotion) for the most productive workers depending on their rank. This creates an incentive to exert effort to win the tournament while reducing measurement costs as only relative measures are needed and variation in performance due to common factors is eliminated. Moreover, tournaments can mitigate commitment problems in the presence of subjective performance evaluation. If bonuses based on subjective appraisals are paid, the firm might be tempted to - wrongly - claim that the worker has failed to perform in order to save on bonus payments. In a tournament scheme the firm can simply commit to pay a prize to the winner; the payment is easily verifiable and given that there is no way to save on payments, the firm has no incentive to misrepresent relative performance.

**Career Concerns**

Workers are not only concerned about their current pay but also about future career prospects, in particular promotions. Holmström (1999) points out that dynamic incentives arise from career or reputation concerns if effort or ability cannot be perfectly measured but an imperfect signal serves as basis for promotion decisions. Employees then tend to undertake actions which improve the measures upon which promotion is based. This can, but generally does not, induce efficient behavior. E.g., workers might work excessively hard at the start of their career or investment managers at the beginning of their career might be too conservative (risk-averse) in their decisions to avoid revealing their abilities to the market.

For the firm it is important to learn workers’ abilities to make efficient promotions and
job-assignments. But if ability is private information, it is hard to figure out who is the best candidate for a job. This problem is called adverse selection and is due to information asymmetries before the employment contract is signed. It can be partially overcome by signaling activities of potential employees - e.g., school records; see a large literature following Spence (1973) - or screening activities by firms. Firms can either offer contracts that endogenously induce workers to sort according to their different types or they can actively try to gather hard information, e.g., by assessment centers.

MacLeod and Malcomson (1988) show that piece-rates are not sufficient to cope with moral hazard and adverse selection problems simultaneously. They argue, however, that fixed wages might be. A form of termination contract offers a fixed wage depending on rank with wage, ability, and performance increasing with rank. Depending on the achieved rank the employees get promoted or demoted. This provides incentives to perform well. But it also induces self selection of the workers if they prefer quitting to demotion (quitting serves as a signal about the worker’s type). So problems associated with adverse selection can be mitigated.

Within teams, observing individual abilities is even harder. Nevertheless, it is possible to extract information from the team members’ allocation of time to projects. Meyer (1994) investigates teams which consist of one senior manager and the equivalent of one junior manager (one junior manager working only on this project, or two junior managers working on two projects). The observed team output is noisy but contains information about the abilities of the team members. The more a person is specialized in the project, the more information team output contains about his ability. If a team consists of one senior and one junior, this gives more information about the junior. In teams consisting of one senior and two juniors more information about the senior is generated. Consequently, there is a trade-off, since specialization of one cohort increases information about this cohort but decreases information about the other one.

In the labor market, promotions are generally regarded as a signal for ability and productivity (the firm promotes the best workers to a higher position). Waldman (1984) employs a model where only the current employer observes a worker’s ability but the labor market has to rely on observing the task assigned to the worker to infer his ability. In this model, wages are associated with jobs, not ability, and worker-task assignments are in general not fully efficient. Ricart I Costa (1988) applies a similar logic to a two-period model of managerial task assignment where the current employer observes the actual performance of the manager, while outside employers can observe only task assignments. The model generates, realistically, small ability-based wage differentials within a task, and large wage differentials
between tasks. Bernhardt and Scoones (1993) consider a setting where high wages serve as signals for a good worker-firm-match (the firm is willing to pay high wages to workers who are especially valuable within the firm). But the combination of promotion and low wage encourages competing firms to lure these workers away from the actual employer to get an able worker who is potentially better matched with them. This explains why wages often rise with turnover.

Baker et al. (1994a) and Baker et al. (1994b) were granted access to the detailed personnel data of a large US financial services firm and document interesting patterns: There is a clear hierarchy within the studied firm, which is rather stable over the years. Almost everyone entering at lower levels went through the same number of promotions to reach higher levels. Thereby, the nature of the jobs changed to somewhat less functional tasks in upper ranks. There is strong evidence for an internal labor market allocating workers to jobs resulting in long careers within the firm with a number of job changes. Careers evolved through one-step promotions with entries and exits at all levels whereby career outcomes were determined by general and firm-specific human capital and by learning the employee’s ability. The salary was strongly related to the hierarchy level which is consistent with tournament theory. But there seemed to be an additional individual component of salaries since large overlaps of pay across levels could be observed. Obviously, wage setting seems to result from a combination of on-the-job training, learning about worker’s ability and incentives rather than one of the concepts alone. Furthermore, wage setting in this firm seemed to follow a wage policy. Each year there were rewards based on the performance of the actual year that employees competed for. I.e., incentives were set by assuming that performance is a signal of ability and favored those with high performance or - assuming performance increasing in human capital endowment - high levels of human capital. Gibbons and Waldman (1999) offer a formal model that explains these results.

Lazear (2004) suggests that the Peter Principle (workers are promoted up to their level of incompetence) is a natural outcome in merit based promotion hierarchies. Assuming that performance is noisy and promotion takes place if a certain standard is met, it is more likely that those with positive realizations of random shocks are promoted. This results in a lower expected ability/performance after promotion if expected noise is zero. The noisier the performance, the more important is the effect. Firms take this decline into account by setting required minimum standards higher and by lengthening the pre-promotion period. Nevertheless, the described effect can hardly be neutralized completely.
Behavioral Aspects in Contracting

A number of recent contributions start to form the emerging field of behavioral contract theory. Mainly, these papers try to incorporate social preferences into the analysis of optimal contracts in situations of moral hazard. The presence of these social preferences is confirmed by numerous studies. Taking them into account when analyzing optimal contracts generates important new insights, and might help us gain a better understanding of real-world contracts and organizational structures; cf. Camerer and Malmendier (2007)\(^2\) for a more comprehensive survey.

In an early theoretical paper, Kandel and Lazear (1992) try to incorporate social relations into a formal model. They model “peer pressure” where co-workers inflict social sanctions on agents who fall short of some norm. As an additional instrument to provide incentives, peer pressure is efficiency enhancing. This can have implications for a firm’s policy. Kandel and Lazear (1992) highlight the importance of profit sharing plans as well as “spirit building activities” as means of enhancing the power of peer pressure.

Rotemberg (1994) investigates altruism towards co-workers assuming that people become altruistic (i.e., favor increases in others’ payoffs) if doing so changes the others’ behavior in a way that benefits them in return (rational altruism). His model predicts that in teams where payment depends on joint output, altruism tends to arise which can help to raise productivity. Hence, firms should encourage the formation of altruistic feelings. In authority relations the picture looks somewhat different: if the supervisors’ job is to monitor workers and decide about pay accordingly, then altruism is predicted to be absent. But if supervisors have no influence on pay but decide about task assignments, they develop altruism towards their workers while workers do not feel altruistic.

Englmaier and Wambach (2010) explore optimal payment contracts in the presence of inequity averse (equal split of payoffs is most valuable) employees; cf. Fehr and Schmidt (1999). In this situation, the optimal contract has to trade off three factors: insurance, incentives, and fairness. The agent’s concern for a fair distribution of profits leads to a tendency towards linear sharing rules. Furthermore, they find that Holmström’s sufficient statistics result is violated as optimal contracts may be either overdetermined or incomplete. Finally, turning to the multiple–agents case, the fairness motive gives a rationale for the widespread use of team incentives even if the performed tasks are independent.

Englmaier and Leider (2012) employ reciprocity, the urge to reward generous behaviour, as possible source of incentives to (partially) substitute performance pay given the fact that monetary incentives are quite rare in the real world. This picks up on the idea of the labor relation as gift exchange, first formally stated by Akerlof (1982). Englmaier and Leider (2012) derive an optimal contract when agents are reciprocal. This contract uses both explicit and implicit incentives, where less explicit incentives are used if the agent is more reciprocal and the less informative the output is about the effort choice. Empirical evidence supports their theoretical finding: firms that use personality tests in hiring (assuming that these firms are more interested in reciprocity) rely more on reciprocal incentives in compensating workers. At the same time, these firms do use incentive pay for managers, generating a high value of the return gift (effort) by workers to encourage gifts by managers.

Herweg et al. (2010) analyze a moral hazard model which assumes that agents are loss averse and form endogenous reference points against which they evaluate their incentive payments. In this setting, it turns out, simple bonus contracts are optimal as they avoid most of the time that agents fall short of their expected earnings.

Hart and Moore (2008) pursue a slightly different avenue. They argue that a contract provides a reference point for a relationship as it affects a party’s feelings of entitlement. A party’s ex-post performance depends on whether it gets what it feels entitled to relative to outcomes permitted by the contract. A party who feels shortchanged shades on performance. The simple model in Hart and Moore (2008) provides a rationale for long-term contracts and simple employment relationships. Moreover, they provide a formal way to express the commonly held idea that contracts “have a meaning” and change the nature of a relationship.

3.5 Processes in Organizations

Until now we considered firms simply as groups of employees organized in hierarchies that work for the owners of a firm. We investigated how to organize the hierarchy, how to promote the best and how to pay everyone to get the job done. Thereby, we collected several theoretical suggestions and empirical findings like puzzle-pieces. But what is still missing is the picture as a whole: what distinguishes a highly productive firm?

Some empirical findings see managerial quality as key factor for firm performance. Whether and how individual managers influence corporate strategy and performance was investigated by Bertrand and Schoar (2003) in an empirical study. Their data reveals that there are systematic differences in corporate decision-making across managers. More importantly,
organizational variables, i.e., corporate practice, appear to systematically depend on the specific executives and seem to be strongly related to corporate performance. Managers who generate higher performance receive higher rewards and are more likely to be found in firms with more concentrated ownership.

Bloom and Van Reenen (2007) conduct a survey to explain differences in firm performance by managerial quality (indicators of managerial best practice). Their measures of these indicators are strongly correlated with firm performance. They find a significant variation across countries with US firms on average performing better than European firms. But the much bigger gap in performance is found within countries. As an explanation for bad management Bloom and Van Reenen (2007) present low levels of product competition and family firms passing management control by heredity (to the eldest male heir).

But what is good management then? Milgrom and Roberts (1995) argue that complementarity of practices is the key feature of fit and productivity. Two practices are said to be complementary if applying one increases the returns of applying the other. A good manager has to achieve this fit by investigating potential complementarities (or synergies) and combining them accordingly. Milgrom and Roberts take as examples modern manufacturing versus mass production: In mass production the firm concentrates on a narrowly specified product line to benefit from economies of scale. This makes flexibility of production low and the product line narrow. Consequently, it is more appealing to use a piece rate payment scheme. Product development and marketing are also affected by a narrow product line as are other divisions. The other extreme is modern manufacturing with more flexibility in production, a broadened product line and smaller lot sizes. Here, increased flexibility makes a broader product line more attractive. Customer preferences can be met without large inventories. This in turn advances smaller lot sizes. Marketing and product development are then obviously different from mass production due to the broader product line but also other divisions have to adjust their strategies accordingly. Each form of production can be successful if every part of the organization is aligned with the production process. But mixing practices of the two will hardly lead to high performance. This insight is very important if a firm needs to adopt to environmental changes. In changing processes the manager has to be aware of the complementarities because changing only one process without adjusting the ones that are complementary will most likely result in lower performance. Thus, central coordination is important in managing change.

Empirical evidence emphasizing the importance of complementarity in processes comes from Ichniowski et al. (1997). They present a study on productivity change due to alternative
employment practices (e.g. flexible job design, employee participation, extensive communication, employment security,...). These practices had a positive effect on productivity while changes in individual employment practices had small or no effects. Thus, the alternative employment practices seemed to be complements to incentive pay schemes (i.e., incentive pay worked better with these new practices).

3.6 The Role of Financial Structure

Building on the insights of GHM (see section 2.3), Aghion and Bolton (1992) and a host of subsequent researchers analyzed the effects of financing structure on investment incentives. In particular, understanding the contingent allocation of control rights has revolutionized the field of corporate finance and opened up avenues for coherently understanding Venture Capital or Private Equity Financing. Tirole (2005) offers a brilliant coverage of this field.

Gertner et al. (1994); Stein (1997), and Scharfstein and Stein (2000) analyze the relative merits of internal versus external capital markets. While the owner-provided financing in internal capital markets might reduce managers’ entrepreneurial incentives, internal capital markets make it easier for corporate headquarters to allocate scarce resources to competing projects within the firm. Headquarters hold control rights that allow for actively shifting funds from one project to another (*winner-picking*). This possibility to create value implies that internal capital markets may be beneficial even if they do not succeed at all in relaxing overall firm wide credit constraints. However, in internal capital markets divisional rent-seeking might lead to inefficient investment. Division managers try to raise their bargaining power and extract greater overall compensation from the CEO. As the CEO is herself an agent of outside investors, this extra compensation may take the form of preferential capital budgeting allocations (instead of cash wages). This can lead to “corporate socialism” where weak divisions are subsidized by profitable ones.

4 The Role of Institutions

4.1 Communities and States

Various scholars have highlighted the interaction of governmental institutions and the efficiency of private economic activity.
Dixit (2009) examines economic governance and its relationship to corporate governance. Economic governance establishes the security of property rights, the enforcement of contracts, and collective action. These are the three prerequisites for the functioning of market economies.

North and Weingast (1989) study the evolution of the constitutional arrangements in seventeenth-century England. The new institutions, introduced after the Glorious Revolution of 1688, allowed the government to commit credibly to upholding property rights. This elimination of confiscatory government, hence nominally a weakening of the crown, allowed the government enhanced access to capital markets and laid the foundation for the rise of the British Empire.

Greif et al. (1994) interpret the emergence of merchant guilds during the late medieval period as a commitment device that allowed rulers of trade centers to commit to the security of alien merchants. The merchant guild guarded the merchants’ property rights and evolved in response to crises to extend the range of its effectiveness. The authors argue that this institution contributed to the massive expansion of trade during the late medieval period. To make their argument, they resort to a repeated games argument.

4.2 Government Agencies

While governmental institutions are important for private economic activity, the emergence of bureaucracies can bring its own problems.

Shleifer and Vishny (1993) show that the structure of government institutions and the political process are very important determinants of the level of corruption in a country. Due to its illegality and the need for secrecy, corruption is much more distortionary and socially costly than taxation. Banerjee (1997) argues that the fact that government bureaucracies are often associated with red tape, corruption, and a lack of incentives need not be proof of government failure. He argues that governments have to step in in exactly those situations where markets fail, hence the price system is not available to solve allocation problems. In such a situation, the above mentioned deficiencies might be part of a second best outcome. In particular, he shows that the existence of a welfare-oriented constituency within the government is necessary in order to explain the presence of red tape and corruption. In a related vein, Prendergast (2003) argues that bureaucracies tend to be used when consumers cannot be trusted to choose outcomes efficiently. Under the reasonable assumption that a primary means of bureaucratic oversight is consumer complaints, distortions in oversight ensue. As a result, observed bureaucracies are always inefficient.
5 Conclusion

Organizational Economics is a fast developing subfield in economics that aims to understand how to efficiently govern transactions in markets and within organizations. The last years have seen an impressive growth of our stock of knowledge about these questions. We believe that newly available micro-data will improve our understanding further and will also spur the development of new theories. Another key area for progress will be the incorporation of behavioral economic approaches into parsimonious models. This might enable us to improve the communication with neighboring disciplines - OB, social psychology - and facilitate mutual learning. Moreover, we predict Organizational Economics to play a key role in understanding the puzzling persistent productivity differences that have been documented in recent empirical studies.

References


6 Author Biographies

Florian Englmaier (born in 1974) studied Economics at the University of Munich where he received a PhD in Economics (summa cum laude) in 2005. Since 2012 he is a full Professor of Organizational Economics at the University of Würzburg. Prior to his current appointment, he held a chair in Organizational Economics at the University of Konstanz, an assistant professor position at the University of Munich, a PostDoc Position at Harvard (joint appointment Economics Department and HBS), a PostDoc Position at University College London (ELSE) and has spent terms as a visiting scholar at the Stanford GSB and the Kellogg School of Management. His research interests are in Organizational Economics, Industrial Organization, Contract Theory, Behavioral Economics, Political Economics, and Experimental Economics.

Maria Micevski (born in 1982) studied Economics at the University of Konstanz where she is currently pursuing her PhD. She is interested in applying behavioral economics and psychology to contract theory and Organizational Economics.