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Employee Ownership, Corporate Governance and Financial Performance

A review of academic literature and an analysis of French publicly-traded companies

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Abstract

More than a third of the 356 French largest publicly traded companies are partially owned by their employees. Academic literature is ambiguous on the advantages of this form of participation. If many studies have found productivity enhancement linked to employee ownership, economic models described several ways in which it can impact the share of value added and the relationship between employees and their firm. A large literature has also expressed concern about potential agency costs and a possible collusion between managers and employees to reduce shareholders' influence. Besides, this literature is mainly Anglo-Saxon and the extent to which it can be applied to the French case is uncertain.

Our own study on 356 French companies suggests that employee ownership may have a positive effect on revenue growth, a negative one on EBITDA margins but these results are weak. Our must strong and surprising result is an increased volatility of employment in employee owned firms.

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1 Table of Contents

2 Introduction

According to the French Code Civil, a corporation is created by two or several individuals who agree by contract to allocate some resources to a common enterprise with the aim of sharing the resulting profits. A corporation is therefore only defined by its shareholders and their interests. Yet, a large number of people take part in the everyday life of a corporation (executives, employees, suppliers) and even more are interested in its output (the State, its clients, …). This multiplicity of people concerned, called stakeholders, contrasts with the theoretical simplicity given by law and naïve economics to the unique objective given to a capitalist company: making profit.

The multiplicity of stakeholders seems even more complicated when some agents are linked to a company in different ways. Shareholders can be managers, suppliers, governments and, in the case we will be interested in, employees. Economic literature has always underlined the divergence of interests between employees and shareholders. The most canonical example is probably the Marxist theory which considers the violent opposition between shareholders, owners of the means of production, and employees, exploited sellers of their labor force, as the major cleavage of the capitalist era and a cause of the inevitable collapse of capitalism. Because it breaks this cleavage, employee ownership has a strong political and ideological dimension.

The symbolic and ideological value of employee ownership might be one of the main causes of its current development and explain why governments promote it through very advantageous tax provisions. But in the perspective of the modern economic theory, the advantages of employees having ownership rights are ambiguous. Those rights can be used by employees to improve their wages and work conditions at the expense of other shareholders, a situation in which conflict

of interests would be a source of inefficiencies for the firm. On the contrary, employee ownership could make shareholders and employees' interests converge and thus incentive employees to behave in the shareholders' best interests. The psychological effects of ownership on employees should not be neglected either.

Whether employee ownership has an effect or not on corporate governance and financial performance is an important issue for firms, investors and regulators. It is important to firms and investors because it may affect the value of equity and to regulators because tax provisions are costly and should be justified in terms of economic benefits. Some statistics can help understand to what extend employee ownership has become a preeminent issue. At the end of the 2000s', US employees' investment in their own company represented in average 14% of their net wealth[1]. We identified that in 2011, 140 firms among the 356 firms in the CAC-ALL-TRADABLE index has some form of employee ownership while employees were among the largest shareholders in some of France's largest companies such as Bouygues (19%), Air France-KLM (11.8%), Vinci (9%), Société Générale (7.2%)… Overall, employees own circa 3% of the CAC40 index.

This thesis has two objectives:

1. In the first part, we provide a broad review of the relevant academic literature in order to understand in which ways employee ownership can be expected to impact corporate governance and performance. In its current state, this literature does not allow to conclude in favor or disfavor of employee ownership.
2. In the second part, we try to analyze financial data from the CAC-ALL-TRADABLE index (formerly SBF 250) over the last ten years to see to what extend employee ownership has an effect on how firms are managed and how it impacts their results and distribution policy.

[1] See Blasi et al. (2008)

3 Prelude: Government and workers as causes of employee ownership

If we consider market economies as ruled by a Darwinist competition, then the very existence of employee ownership and its survival give a clue about its advantages for firms. With this perspective in mind, we can identify three reasons to the existence and recent development of employee ownership. Employee ownership

- gives a competitive advantage to firms
- improves the situation of employees
- is supported by the state through tax incentives

In 1979, Jensen and Meckling analyzed a wide spectrum of labor-managed corporations, from the Soviet type company to the German codetermination model. They notice that one of the common characteristic of all the models implying a managing function for employees is that they exist because they are imposed by the force of law.

The fact that labor-managed corporations do not exist spontaneously is a strong argument against their efficiency because free-market forces would naturally support those forms of organization if there were efficient. Jensen and Meckling add that even in the United-States, thanks to their pension funds, employees would be in position to take control over the ownership of their company if they wanted to. But they do not.

> *"The fact that this system seldom arises out of voluntary arrangements among individuals strongly suggests that codetermination or industrial democracy is less efficient than the alternatives which grow up and survive in a competitive*

environment"

Jensen and Meckling, 1979

Before exploring the advantages and drawbacks of employee ownership for firms, we will rapidly address Jensen and Meckling's point of view by wondering whether employees' motives or government incentives are satisfactory and sufficient explanations to the existence of employee ownership.

3.1 Employee ownership and the portfolio theory

Employee ownership would sound strange to an asset manager relying on the modern portfolio theory. This theory, introduced in 1952 by Markowitz, states that if risk-averse investors are willing to maximize their expected profit while minimizing their risk, they should design portfolios combining the least correlated assets. Indeed, the properties of the variance insure that a combination of imperfectly correlated assets has a lower variance than the weighted mean of assets. Reducing risk through diversification is costless because the expected value is linear, i.e. the expected return of the portfolio is the weighted mean of the expected returns of assets (Markowitz, 1952).

Employee ownership clearly violates the modern portfolio theory because it implies that employees put their savings in stocks that are highly correlated to the revenues they get from working. If their company goes bankrupt, they would lose both their jobs and their savings.

Why then do they invest in their own firms?

Markowitz, Blasi and Kruse (2009) take a "plausible numerical example" to show that below some levels of investment in the company stock (10 or 15% of the portfolio) the increase in risk remains relatively small. Nevertheless they underline that the relation between the percentage of the portfolio invested in the company

stock and the level of risk is convex (Figure 1. provides the illustration of their numerical example). Their analysis suggests that at least 21% of workers having shares in their company take excessive risks.

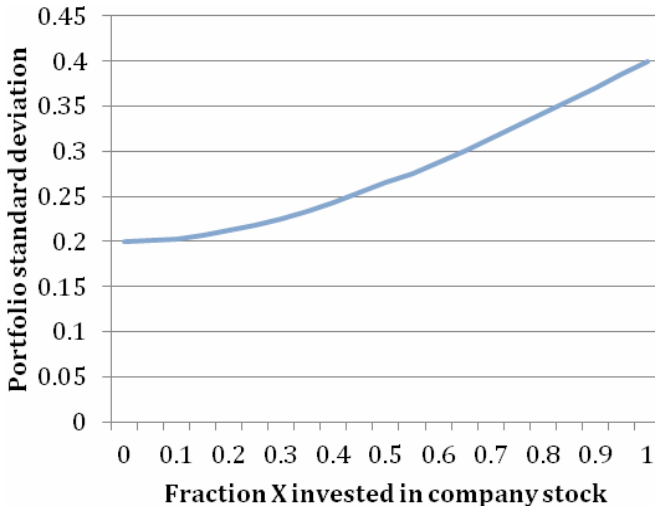

Figure 1 Portfolio standard deviation as a function of investment in company stock (Markowitz *et al.*, 2009)

Van Nieuwerbugh and Veldkamp (2006) provide another explanation to what they call the "own company stock puzzle". They think that, as an investor whose interests are concentrated in one company, employees are willing to acquire information available to shareholders which justifies a level of equity investment. The incentive to hedge competes with the will to learn.

3.2 Employee ownership and government incentives

An argument of proponents of employee stock ownership plans has been that it provides significant tax benefits. In the perspective proposed by Jensen and Meckling, we will paradoxically consider tax incentives as clues of inefficiencies for firms since market efficient decisions should not need to be subsidized.

But two studies by Scholes and Wolfson (1990) and Chaplinsky and Niehaus (1990) have challenged the view that ESOPs (Employee Stock Ownership Plan) are favorable because of tax provisions.

Chaplinsky and Niehaus argue that ESOPs affect shareholder wealth in two ways:

- Through tax benefits which directly depend on the dividend policy adopted by the firm, because dividends paid on ESOPs can be deductible. But the survey they realized shows that U.S. firms do not adapt their dividend policy to fully benefit from tax provisions after an ESOP. Then the dividend policy observed does not support the idea that ESOPs are primarily implemented for tax reasons.
- Through the redistribution of value between employees and shareholders, which depends on the price employees would be willing to pay relatively to the market price. According to the survey, ESOPs are associated with increases in employee compensation with only 6% of firms reporting a concession of employees in exchange for the ESOP.

Overall, the authors contest that tax provisions provide a sufficient justification of ESOPs. Scholes and Wolfson give an exhaustive description of tax advantages of ESOPs in the U.S. in 1990 and also conclude that "the case is very weak for tax provisions being the primary motivation in establishing an ESOP".

4 Employee ownership and Value – A review of literature

If we assume that governmental regulation and investment strategy of employees do not provide satisfactory explanations to the existence of employee ownership, then we must review the ways it can have an impact on firms. The literature identifies several potential implications employee ownership can have on companies:

- It can improve productivity
- It can affect the bargaining power of employees *vis-à-vis* their firm
- It may produce agency costs through a redistribution of control power between shareholders, managers and workers

Besides, some authors suggest that the ways firms are effectively affected varies from one culture to another.

4.1 Productivity

One of the most studied issues is the effects of ownership on productivity. Whereas detractors of employee ownership underlines that a profit-sharing system based on collective performance encourage free-riding, those in favor argue that there are more complex psychological effects at play. But even if gains of productivity are assumed, their sharing between employees and shareholders remains an issue to assess their financial impact.

4.1.1 Free-riding prevents ownership to be a rational incentive

In one of the most known financial paper on agency theory, Jensen and Meckling (1976) underline the loss of value for the firm induced by a "separation of

ownership and control". This separation occurs when shareholders (*principal*) delegates their power to employees (*agents*).

The case of the top management is the most commonly studied. In this case, agency costs derive from two problems. First, top managers are likely to have interests slightly different from those of shareholders. For example, since they are top executives in only one firm, they cannot diversify their portfolio like shareholders, which means that there are likely to be adverse to *specific* risks which should be ignored by rational investors. Second, their reward can be insufficiently correlated to the financial performance of the company, a situation where shareholders would be better off if the management made a little bit more efforts. A very common way to get a better convergence of interests between managers and shareholders is to give the top management a stake in the company or to define an equity-based compensation.

This solution relies on the fact that a top manager can individually have a significant impact on the financial performance of his firm. Through his equity-based compensation, his effort to create value for shareholders is directly rewarded. Such a mechanism cannot be applied to common employees because their individual behavior has a very marginal effect on the equity value. A rational and egoist individual would choose to free-ride since its own isolated effort is not rewarded.

4.1.2 Ownership can have psychological effects on productivity

If employee stock-ownership changes the behavior and the productivity of firms, the explanation should not be found in the analysis of a *homo œconomicus* maximizing its utility but rather in psychological effects. Numerous empirical surveys have been conducted to understand whether ownership modified the behavior of employees.

Several articles (e.g. Klein, 1987; Pierce *et al.,* 1991; Pendleton *et al.,* 1998) have underlined that it is not the ownership in itself, but rather a *feeling of ownership* that might produce attitudinal changes among workers. Therefore, the way the management deals with employee ownership is key to produce effects in terms of productivity. Variables such as the feeling to have influence and information as well as the perceived motivations of the firm to initiate ownership plans have an impact which directly depends on the behavior of the management toward its employee shareholders. Researchers tend to consider direct effects of employee ownership on their attitude as negligible. There is little, if any, *intrinsic* satisfaction associated with employee ownership.

The model proposed by Pierce *et al.,* and described in figure 2., illustrates how gains of productivity can be achieved through employee ownership. It highlights the central role of the *feeling of ownership* as well as how decisive is the behavior of the management in giving this feeling.

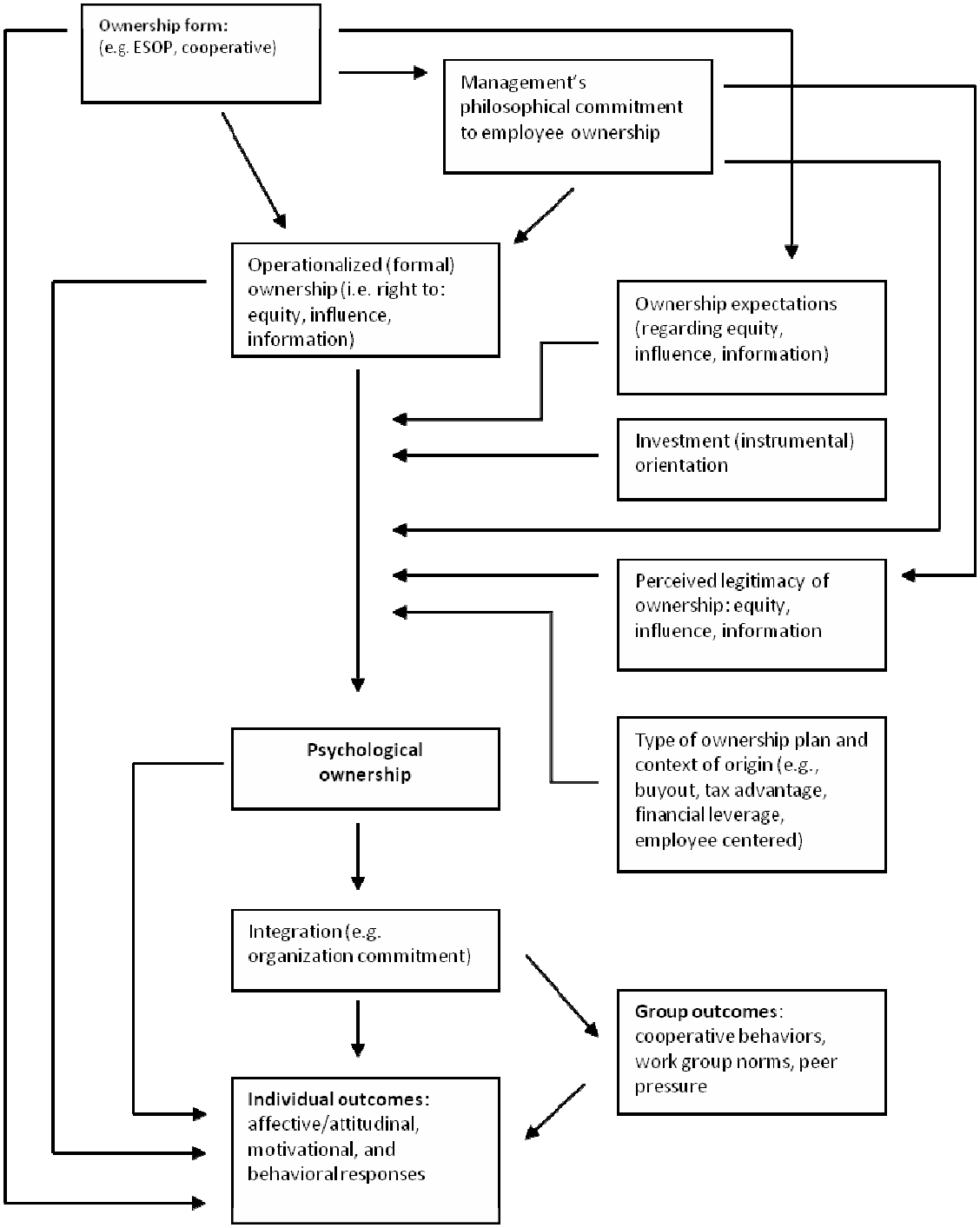

Figure 2. Employee ownership and productivity according to Pierce *et al.* (1991)

4.1.3 Involvement of employees and organizational improvements

Another source of efficiency which can be promoted by employee ownership is a better sharing of information between workforce and decision makers.

Taking a sample of German firms, characterized by a large representation of employees on the boards because of the co-determination system, Fauver and Fuerst find evidence that employee representation creates a bottom-up flow of information which favor good decisions. They show that the more an industry requires coordination, integration and information sharing, the more it benefits from the co-determination system. Besides, the authors suggest that employee representation also enables credible communication from the top management to workers, limiting work disruptions (Fauver and Fuerst, 2006).

4.1.4 A review of empirical studies

Table 1. summarizes the results of studies conducted to measure the impact of employee stock ownership on productivity and attitude in the last three decades.

Study	Results
Klein (1987)	▪ High satisfaction, high commitment and low turnover intention among employees are observed when employee ownership brings substantial financial benefits to employees and when management is committed to employee ownership. ▪ On the opposite, the study does not support an intrinsic value of employee ownership. ESOPs have no *direct* effect.
Jones and Kato (1995)	▪ Employee stock ownership plans are largely developed in Japan, with an average value per non-executive participant of $14,000. The study shows that ESOPs increase productivity by 4~5 percents in 3 or 4 years and enhance the efficiency of bonuses. ▪ Authors attribute this effect to enhanced long-term commitment and peer monitoring.
Pendleton and Robinson (2010)	▪ Using British data on employment relations, the authors conclude that the effect of employee ownership plans depends on the proportion of employees who participate. ▪ In case of a participation of the majority of workers, ESOPs have a positive effect on productivity independently of greater involvement of employees. ▪ When only a minority participates, ESOPs have to be combined to other forms of employee involvement to be effective. ▪ Besides, in some circumstances, motivated employees with ownership rights have negative impact through an excessive influence on the management.
Kuvaas (2003)	▪ Employee ownership may have intrinsic motivating effects
Pendleton, Wilson and Wright (1998)	▪ The authors study the effects of ESOP in four UK bus company. They find that feelings of ownership have significant positive effects on commitment and satisfaction
Fauver and Fuerst (2006)	▪ In Germany, employee board representation enhances information sharing, and thus has positive organizational impact on productivity ▪ The effect is stronger in industries requiring coordination and information sharing (trade, computers, pharmaceuticals, …)

Table 1 - Results of studies on linkage between productivity

4.1.5 Share of productivity gains

If we admit that employee ownership is associated with gains of productivity, we should not forget however that they are not necessarily synonymous of value creation for shareholders if they coincide with higher wages. The way the productivity gains, if any, are shared between shareholders and workers is thus decisive.

The survey conducted by Chaplinsky and Niehaus (1990) on the change in level of employee compensation highlights the importance of distributional effects of ESOPs. Among the 83 firms which adopted an ESOP or enlarged an existing one between 1983-1987 and answered the survey, 40 declared that the level of employee compensation increased because of the ESOP.

Level of Employee Compensation	N	%
Increased due to the ESOP	40	48.2%
Unchanged by the ESOP	33	39.8%
Decreased due to the ESOP	5	6.0%
No response	5	6.0%

Table 2 - Changes in compensations after an ESOP in the US

Do variations in wages offset the gain of productivity is a more complicated issue.

Studying US public firms, Kim and Ouimet find that the share of productivity gains depends on the size of the stake of employees in their company. When employees own a small part (below 5%), shareholders manage to get the largest part of the gains. On the opposite, when ESOPs are large, employees manage to capture nearly all the gains thanks to the control rights they have been granted. The ability of shareholders to retain value is positively affected by financial leverage and unionization rates. An exception observed is ESOPs of firms

in decline which implement those plans to conserve cash. Under those circumstances, ESOPs create no value at all (Kim and Ouimet, 2008).

4.2 Wages and employment bargaining

The fact that productivity gains do not automatically create value for shareholders when wages vary show how important it is to understand the process of determination of wages in situations where employees also happen to be shareholders.

In this section, we will review the implications of employee ownership in two traditional frameworks of labor economics: the insider-outsider model and the implicit contract theory under asymmetric information.

4.2.1 Why does it matter?

Neoclassical labor economics describe the relation between employees and companies in a market framework in which companies compete to get the best production factors at the best price while workers sell their time and competencies for the best wages they can get. In perfect competition, the classical result is a market wage which equalizes both the marginal productivity of labor and the loss of utility implied for the worker by the renunciation to leisure.

In the real world, the labor market is obviously imperfect. The labor supply is extremely heterogeneous with workers being characterized by a high degree of specialization and different career prospects. The labor demand is not atomistic either with some very large firms benefiting from oligopolistic positions in sectors employing hundreds of thousands of workers. The result of the combination of heterogeneity and absence of atomicity is that the labor market can be seen as a bargaining place between companies, representing shareholders, and employees.

The fact that wages and work conditions are not taken on a spot market but derive from negotiations means that changes in the balance of bargaining powers between employees and managers will affect the financial performance of companies and the wealth of shareholders.

4.2.2 An insider-outsider approach to bargaining

Insider-outsider models examine the bargaining of wages and of the size of the workforce between firms and workers, the latest group being divided between the incumbent workers (*insiders*) and the potential hires (*outsiders*).

There is a strong disparity of bargaining power between insiders and outsiders because replacing insiders with outsiders implies costly disruptions of the production process. The bargaining power of insiders generates inefficiencies which might be alleviated by employee ownership.

4.2.2.1 High wages and underemployment

The result of insider-outsider models is that insiders and outsiders have divergent interests and that the performance of companies is negatively affected by the market power of insiders. If we consider that unions and employees' representatives only care about insiders, then:

- In a growing industry, with the number of insiders being small relatively to the need of firms for workers, insiders will be in position to ask for higher compensations than market wages, which would negatively affect the number of new hires (Oswald, 1985).
- In a declining industry, insiders might have enough market power to maintain employment above the level required by the firm's prospect (McDonald and Solow, 1981).

Those two effects are clearly negative with regards to financial performance. The first one induces a loss of opportunities and money while the second one affects the ability of employers to adjust their workforce to their needs.

The insider-outsider model shows a divergence of interests between insiders and shareholders. Could employee stock ownership be an answer to that issue?

4.2.2.2 Employee ownership as a solution

Weitzman shows that profit sharing has theoretically an ambiguous impact. When insiders receive a given share of profits divided among them, they should tend to lower their expectations in wage-bargaining. But, because hiring more people means a higher divider when it comes to sharing a fixed part of profits, bargaining with insiders would lead to less employment (Weitzman, 1987).

Harbaugh argues that employee stock ownership could be a way to avoid this problem because workers who own equity individually would not be diluted when new workers are hired. On the contrary, insiders would push for more employment when it creates value for shareholders. Furthermore, employees owning equity do not lose anything but their wage when they leave the company, making them less reluctant to give up their job than if more traditional profit sharing advantages gave them an incentive to protect their it (Harbaugh, 2005).

4.2.3 Asymmetric information complicate bargaining

Since J.M. Keynes, economists are trying to understand why wages are relatively rigid and why adjustments to the conjuncture are realized through quantities, i.e. layoffs instead of price. The implicit contract theory is an attempt to explain the observation that wages do not really follow macroeconomic trends while unemployment does.

The fundamental idea of implicit contract theorists is that workers and firms do not only trade labor but also revenue insurance. According to standard microeconomic models, the spot price for labor should be its marginal productivity rate. Yet, in reality, salaries do not adjust to the variation of marginal productivity because their stability is implicitly guaranteed by employers.

Implicit contracts theorists argue that it is because employees and firms engage in a long term relationship in which employees accept to concede a discount on their wages (i.e. they accept a wage below their expected marginal productivity) in exchange for a relative stability of revenues, allowing firms to lay them off but not to cut wages.

4.2.3.1 Implicit contract models predicts inadequate level of employment

The introduction of asymmetry of information in the implicit contracts framework predicts inefficiencies at the microeconomic level in the form of suboptimal level of employment. A formal demonstration of this result can be found in the synthesis written by Azariadis and Stiglitz in 1983. They consider a situation where employees and managers negotiate wages and employment and where marginal productivity of labor varies (in a simplified world, *good state* or *bad state*) and is only known (at least better known) by managers when future wages are negotiated. In good states, firms are logically expected to employ more workers and to pay higher wages than in bad states.

But, sometimes, managers have an incentive to lie and to announce a bad state when the situation is good because the loss of output due to lower employment does not offset the gain obtained through lower wages. Then, in order to force managers to reveal the true state of the marginal productivity of labor, employees must negotiate agreements in which the level of employment in bad states is sufficiently low to make it very expensive for the firm to announce a false

state. This bargaining equilibrium implies an inefficiently low level of employment, except in the best states (Azariadis and Stiglitz, 1983).

4.2.3.2 A way to reduce inefficiencies with constant asymmetries

In a 1989 paper, Kovenock and Sparks analyses employee ownership in the implicit contract model under asymmetric information developed by Azariadis. In their model, labor contracts specify a wage, an ownership share in the firm and a level of employment, all of which depending on the state of the world announced by the management.

With this model, Kovenock and Sparks formally show how optimal contracts combining wage and shares can attain efficient employment level. A way to constrain truth telling is to design implicit contracts in which employees are offered more stocks in bad states. Indeed, if managers announce a false bad state, the dilution of shareholders could induce a financial loss greater than the gain obtained from lower wages. Therefore there is no more need to agree on inefficient level of employment in bad states (Kovenock and Sparks, 1989). Kovenock and Sparks argue that their result is consistent with empirical findings of a negative correlation between major employee stock purchase plans and profits or share value[2].

Another way employee ownership can help is simply by reducing asymmetry of information between managers and workers.

4.2.3.3 An involvement which favors transparencies

In a recent paper, Bova, Dou and Hope (2011) studied how non-management employee ownership reduces the tendency of firms to maintain

[2] Kovenock and Sparks quote two studies (Livingston and Henry, 1980 and Bhagat *et al*., 1985) and note that there is no incentive or tax effect linked to ESOPs explaining this correlation.

asymmetry of information towards financial markets and stakeholders. Previous literature underlined evidence that revealing information could weaken the bargaining power of firms vs. organized workers. A point supported by the empirical observation that strongly organized workers and large information asymmetries goes together (Hilary, 2006).

By aligning interests and making bargaining "simpler", non-manager employee ownership might reduce the cost of revealing information for managers. To check this hypothesis, Bova *et al.* compared US publicly-traded companies with ESOP plans vs a sample of non-ESOP firms and found ESOP firms far more transparent. They forecast more good and bad news, have better management guidance, organize more conference calls and publish clearer annual reports. Those results become more significant when the negotiation leverage of employees is stronger (Bova, Dou and Hope, 2011).

4.2.4 Employee ownership and strikes

In extreme cases, collective bargaining between firms and their employees is a source of strikes, which can be extremely costly to firms, both in terms of direct losses linked to the disruption of the production process and in terms of long-term labor relations. Can we expect employee ownership to soften the conditions of collective bargaining and reduce the incidence of strikes?

Cramton, Mehran and Tracy (2008) developed a model of collective bargaining in which unions have non-controlling stakes in companies. As a result, unions are impacted when strikes are costly to shareholders. The model predicts that employee ownership should lower the occurrence of strikes as well as their length, resulting in lower expected dispute costs. It should also enable union concessions. These effects are stronger when the ownership share of unions is

larger. When using a model calibrated to the U.S., the authors expect both the number of strikes and strike threat to be divided by two.

When they verify their conclusions with empirical data[3], Cramton *et al.* find that the percentage of disputes between unions and firms having implemented an ESOP is divided by two, which is consistent with their model.

If the market agreed with the results of Cramton *et al.*, then it should react differently to ESOP announcements depending on the features of collective bargaining of each firm. This prediction finds empirical support since stock price reactions are 50% larger for unionized firms than non-unionized.

4.3 Agency costs

4.3.1 Employee vs. shareholders: divergence of interests

Faleye, Mehrotra and Morck (2006) argue that shareholder employees want to maximize their revenues composed of wages and a share of profits. Following Jensen and Meckling (1979), they add that the present value of their wages and benefits is far greater than that of their rights to a share of profits. Their concern is to maintain high wages and to prevent risky initiatives. They neglect investments producing cash flows in the long term, beyond their wage horizon. To support this statement, they test several financial variables on a sample of more than 200 firms in which employees had a voice (more than 5% of outstanding shares) and on a control sample of more than 1800 firms.

Their results show that "labor voice" has a negative effect on shareholder value, sales and employment. Those findings can be explained by a tendency to avoid capital expenditure, research and development investments and more

[3] A sample of 142 ESOP surveyed firms in the US and collective bargaining data from 1970 to 1995 provided by the Bureau of Labor Statistics

generally risky investments. Their conclusion is clearly that employee ownership reduces shareholder value because employees and shareholders have divergent interests.

4.3.2 Managers and workers allied against shareholders

Until now, we have always considered a relationship in which managers negotiate with workers in the name of shareholders and in their interest. Yet financial theory often worries about managers and shareholders divergences, and then invites to analyze a three player game.

Some papers have suggested that managers could align the interest of workers with their own to get their support against shareholders. In particular, several articles have studied employee ownership as a protection against takeovers. When managers deter bidders, the value of the firm is negatively impacted since shareholders lose the hope that their shares might be bought above their market price during an unsolicited takeover.

In an empirical study, Chang (1990) shows that the effect of ESOPs on shareholder wealth depends on the aim of the plan. According to his results, when they are used as a wage concession or as an LBO, ESOPs create wealth for shareholders. On the opposite, stock prices react negatively when ESOPs are implemented as defense policy.

4.3.2.1 Making the firm less attractive

Pagano and Volpin (2005) suggest a model in which managers, whose main interest is to keep the control of their company, have an incentive to engage in generous long-term contracts with workers. In those circumstances, managers

would favor high wages and low monitoring. Indeed the cost of high wages is borne by shareholders while monitoring is the job of managers.

These concessions, which cannot be easily renegotiated, make the firm less profitable and thus less attractive to potential raiders. In return for their generosity, managers also expect their employees to lobby and demonstrate against hostile takeovers to protect their advantages, acting as "white squires".

Some variable affect those predictions. A strong equity stake of the management would align his interests with those of shareholders, for which hostile takeovers create value. On the opposite, high employment protection would make generosity more attractive to managers because it reduces the ability of raiders to renegotiate contracts after a successful takeover.

4.3.2.2 Employee ownership as a deterrent

The interest of economists for the use of employee ownership as a takeover defense has been raised by the judicial opposition of Polaroid and Shamrock holding in 1989. In Delaware, the law states that a company which has taken a 15% stake in another must wait three years before any merger unless it receives the support of 85% of the target's shareholders. Assuming that employees would support them, the management of Polaroid implemented a 14% ESOP to protect the firm from a bid of Shamrock. The maneuver was approved by the courts.

The relation between employee ownership and takeovers has been empirically tested by Chaplinsky and Niehaus (1994). They study both the stock price reaction to ESOP announcement for firms under takeover pressure, and the deterrent effect of ESOPs. They find that on average, defensive ESOP announcements are value neutral. But they generate negative stock price reaction when other defensive tactics are implemented at the same time or when employee and managerial ownership are largely increased.

When they look at takeover probability, Chaplinksy and Niehaus find that, *ceteris paribus*, non-ESOP targets are roughly twice often subjects of takeover than ESOP targets. This result, the authors add, is particularly important since other tactics like law suits and poison pills[4] seem to have little influence. They conclude that employee ownership is a strong shield against a loss of control.

These results are consistent with those of Gordon and Pound (1990) which detail price reactions to ESOPs announcements depending on managerial motives. Plans implemented under takeover pressure or which transfer control away from "outside shareholders", generate, in average, negative stock price reactions. On the opposite, ESOPs which are designed so that they cannot be used as an obstacle to takeovers produce positive share price reaction. The sample included 94 ESOP announcements between 1987 and mid-1989.

Type/Circonstance of ESOP	Price reaction (net-of-market)
Subject to takeover speculation	-4.5%
Structured to transfer control	-4.6%
Designed to prevent their use as a takeover defense	+2.4%

Table 3 - Market reactions to ESOPs depending on their motive (Gordon and Pound, 1990)

4.3.2.3 Entrenched managers and the "quiet life"

If employee ownership is a way for managers to prevent takeovers, it induces a loss of wealth for shareholders: they will never benefit from any control premium. But it has also an impact on management who gains independency. Some researchers have been interested in this issue.

Bertrand and Mullainathan (2003) analyze the effect of anti-takeover legislation across the United States to understand the management behaves relatively to its degree of entrenchment. They find that anti-takeover laws are

[4] A "poison pill" is a defense strategy by which existing shareholders (but not the bidder) are allowed to buy new shares at a discount. It implies dilution and extra costs for the raider.

associated with higher wages, in particular for white-collars, while entrenched managers tend to both reduce the number of new plants and abandon the old ones, without any significant effect of firm size. Bertrand and Mullainathan conclude that entrenched managers tend to adopt a "quiet way of life".

In a more recent study, Cronqvist *et al.* support this idea by showing that entrenched CEOs pay their workers more. More specifically, the employees who benefit the most from this generosity are those who are the closest to the CEO, both in hierarchical and geographical terms, and those who work in companies with aggressive unions. Those tendencies suggest that CEOs who have secured their positions try to improve their social relations at the expense of shareholders.

4.4 The performance of stakeholder-oriented firms

Whereas the agency theory considers the alignment of the interests of managers with those of shareholders as an objective, some researchers defend the idea that stakeholder-oriented firms have a competitive advantage over those who only care about shareholders.

4.4.1 Stakeholder firms vs. Shareholder firms in a context of uncertainty

In a recent paper, Allen *et al.* (2011) study the difference of behavior between stakeholder-oriented and shareholder-oriented firms in the context of imperfect price competition.

In their duopoly model, firms are confronted to a random shock impacting either production costs or demand for products. Uncertainty about costs gives an incentive to maintain high prices to guarantee positive margins, whereas uncertainty about demand invite to lower price to secure a level of sales. Stakeholder firms differ from shareholder firms because they have extra cost

associated with bankruptcy (stakeholders lose rents and opportunities when the firm does not survive).

When they consider a market occupied by stakeholder firms, Allen et al. find that the extra costs of bankruptcy can affect shareholders positively or negatively depending on the source of uncertainty.

- If costs are uncertain, firms will raise prices above what shareholder-oriented firms would have because they are more concerned with survival. The result is a softened competition on prices which favor both stakeholders and shareholders.
- When demand is uncertain, firms will increase their probability of survival by reducing prices sharply. Increased price competition will negatively affect the wealth of shareholders.

The second case studied, illustrating globalization, is when stakeholder firms compete with shareholder firms in the same market. The authors find the following results:

- If costs are uncertain, the shareholder firm has a greater value
- If demand is uncertain, the stakeholder firm can have more value provided that it is not excessively concerned by its survival (i.e. stakeholders have a limited importance).

4.4.2 Financial performance of stakeholder-oriented firms

Claessens and Ueda (2008) studied the impacts of a combination of changes in the relative powers of both financial institutions on workers. While they find that greater rights for financial institutions (financial liberalization) positively affect economic growth, more important rights to workers (employment

protection) have in general negative effects, except for knowledge-intensive industries because it encourages human capital investments.

In a recent study, Ginglinger, Megginson and Waxin analyzed the impact of mandated employee board representation on valuation and performance in large public companies in France (SBF 120). They found that the presence of employee representation on the boards of over a quarter of the sample had no significant effect on value and could even have a positive effect in the situation where directors are elected by employee-shareholders. Yet, those directors reduce payout ratios, increase labor cost, and make the board larger and more complex. They conclude that even representation of workers by left-wing unions favors higher profitability (Ginglinger *et al.*, 2011).

4.5 Why culture matters

Some authors have noticed that the existing literature on employee ownership is mainly Anglo-Saxon. We will rapidly review to what extent its result might to perfectly apply to the non Anglo-Saxon world.

4.5.1 Firms are not only dedicated to shareholders everywhere

Should a company act mainly in the interest of its shareholders and to what extend should it care about all its stakeholders? The answer to this question is decisive for the interpretation of our results because the incentive for employees to become shareholders depends on how much their wellbeing is spontaneously taken into account by the management. The answer to this question largely depends on cultural and juridical variables. For example, the German *co-determination* system legally guarantees that shareholders and employees have the same number of seats on the supervisory board.

In 1995, Yoshimori conducted a survey in Japan, Germany, France, the United States and the United-Kingdom showing the clear differences of views on the objectives of a firm. He asked senior managers whether:

- A company exists for the interest of all stakeholders (blue)
- Or if shareholder interest should be given the first priority (red).

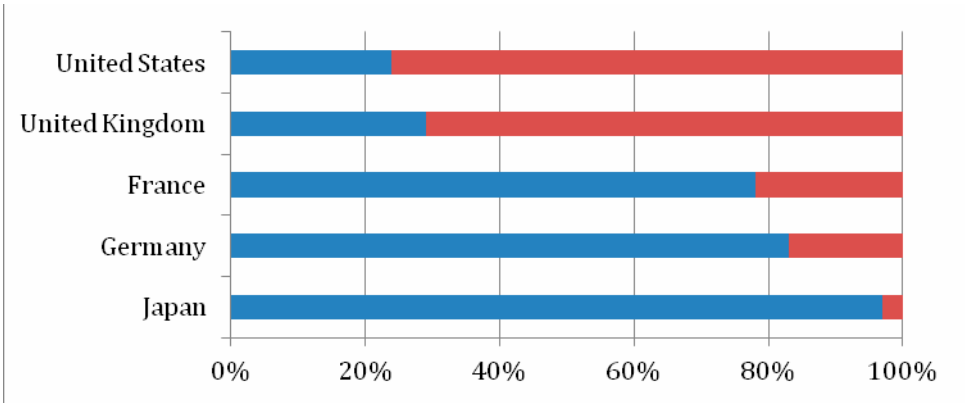

Figure 3 - The commitment of managers to stakeholders in advanced economies

The survey clearly shows that the perception of the objectives of a company clearly differs even among advanced economies (Yoshimori, 1995). The Anglo-Saxon world seems an exception where the traditional opinion that companies primarily exist to satisfy their shareholders is wide-spread. In France, Germany and Japan most managers do not agree and consider the interests of all stakeholders as important. In Germany, this is guaranteed by the legal system while it is imposed in Japan by social norms.

4.5.2 Cultural values may affect the way employees react to ownership

Caremelli and Briole (2007) underline that most of the literature on employee ownership has taken an Anglo-Saxon point of view whereas one can expect its effect to differ from one culture to another. To illustrate their view that

cultural relativity is essential is assessing employee ownership, they wonder to what extend culture values can moderate its impact. They identify four cultural variables – individualism, power distance[5], masculinity and uncertainty avoidance – and describe their potential effects.

- **Individualism/collectivism:** In individualistic societies, where people are supposed to look after their own interest and not that of the group, individuals should favor a bonus system over employee ownership which can be considered as an incentive based on collective achievements. Yet, empirical studies on the preference of compensation practices do not support this view. Considering the imperfection of previous studies, Caremelli and Briole argue that individualism can temperate the effects of employee ownership on worker attitudes. Indeed, if greater satisfaction is achieved through a feeling of justice, employee ownership should have less impact where people consider individual rewards as fairer.
- **Power distance** is correlated to the propensity of employees to consider they should have a voice. It affects the perceived rights of employee shareholders to have information and influence. Anglo-Saxon countries have typically low power distance culture, implying that the commitment and satisfaction of employee shareholders depends on the recognition of their rights. This recognition should be less decisive in high power distance cultures.
- **Masculinity** measures the value given to assertiveness, achievement and the acquisition of material things. The possession of equity stocks should have more psychological effects in masculine societies (for example Anglo-Saxon countries).

[5] "Degree of inequality among people which the population of a country considers as normal" (Hofstede, 1994) quoted by Caremelli and Briole.

- **Uncertainty avoidance** measures the degree to which people feel uncomfortable in unknown, surprising and/or unusual situation or their tolerance of ambiguity. Because employee ownership is risky and contrary to diversification, employees in countries with low uncertainty avoidance are more likely to favor employee stock ownership.

Overall, Caramelli and Briole suggest that the attitudinal effects of ownership on employees will vary from one culture to another. This fact is neglected by the empirical literature which is essentially Anglo-Saxon.

5 Employee ownership in French publicly-traded companies

The academic literature on employee ownership is ambiguous. Some issues like gains of productivity are subject to contradictory findings from one study to another. Some authors have described positive effects in labor relations but other have suggested that improved social relations are obtained at the expense of shareholders. Several articles have underlined the agency costs implied by employee ownership while others have paradoxically suggested that stakeholder-oriented firms could, in some circumstances, create more value for shareholders than shareholder-oriented firms. Finally, the academic literature is mainly Anglo-Saxon and it is therefore not necessarily relevant in all cultures. Overall, we cannot say that the existing literature enables us to conclude neither in favor nor in disfavor of employee ownership.

The aim of this section is to analyze public data on publicly-traded companies to test several hypotheses on employee ownership. In particular, we will try to determine if employee ownership has any effect on growth, on productivity, on operational profitability, on investments, on the distribution policy or/and on the stability of employment.

5.1 Description of the sample and data

The sample studied is the CAC-ALL-TRADABLE, an index of Nyse Euronext composed of the 356 largest public companies traded in Paris. The source of most of the data is FactSet, except for variables which are related to the shareholding structure. The source of those last data is Dafsaliens.

Because we consider a ten year period, a significant share of those data were not available. For example, some companies have been publicly traded for less than ten years.

Using Dafsaliens, we identified 160 firms with a form of employee ownership, and managed to find the percentage of ownership of employees for 140 of them. The distribution of the percentage of ownership is described in figure 4.

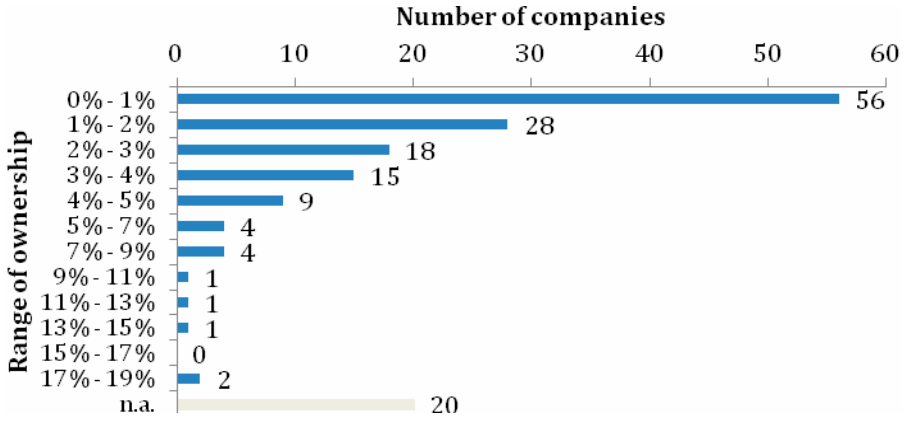

Figure 4 – Distribution of the percentage of ownership of employees in CAC-ALL-TRADABLE companies

We clearly see that, in most of the companies, employee ownership is still relatively marginal with percentage of ownership below 2% representing more than half of the sample. Employees own more than 5% of outstanding shares in only 13 companies.

Company	Employee Ownership
BOUYGUES	19,0%
AVENIR FINANCE	18,5%
AVIATION LATECOERE	14,9%
AIR FRANCE -KLM	11,8%
SAFRAN	9,6%
VINCI	9,0%
SAINT GOBAIN	7,8%
SII	7,2%
SOCIETE GENERALE	7,2%
RHODIA	6,2%
AXA	6,1%
BNP PARIBAS ACT.A	5,8%
TF1	5,7%

Table 4 – Companies with more than 5% of employee ownership

5.1.1 Variables

All the variables used in our study are described in the table below.

Variable	Description
Employee Ownership	The percentage of outstanding shares owned by the employees (non management) of a company in may 2011. The data is provided by Dafsaliens.
Dummy Employee Ownership (EO>0%)	Takes the value 1 if employee ownership is above 0% and 0 if not. Sometimes, Dafsaliens identifies employees as a significant group of shareholders but to not differentiate it from the management or the public. In this case, Employee Ownership takes the value "n.a." but the dummy variable takes the value 1.
Employee Ownership above 5% (EO>5%)	Takes the value 1 if employee ownership is above 5%.
(Employee Ownership)²	=(Employee Ownership + 1)²-1
Rank of Employees	Rank of employees among the shareholders identified by Dafsaliens
First Shareholder	Percentage of shares owns by the first (group) of shareholders identified by Dafsaliens.
First Shareholder above 20%	Takes the value 1 if First Shareholder is above 20%
Reuters Business Sector (25 variables)	Takes the value 1 when the company belongs to the Reuters Business Sector considered. Areva was added to "Energy" and Euro Ressources to "Mineral Resources"
Year (10 variables)	Identifies the year of the observation
Market Cap.	Market Capitalization at the end of the calendar year.
Beta	Financial Beta based on monthly data between 2005 and 2010. $\frac{cov(return\ of\ company; return\ of\ CAC40)}{var(return\ of\ CAC40)}$ Returns include dividends.
Total Assets	Total Assets on the 31st of December
Revenues	Total sales in the year
Revenue growth	Yearly growth in revenues
EBITDA	
EBITDA margin	EBITDA/Revenues
EBIT	
Op. CF	Operating Cash Flows in the year
Op. CF growth	Yearly growth in Op. CF.
Capex	Capital Expenditures
Capex/Op.CF	
Payout ratio	Dividends/Earnings

Dividends	
Number of Employees	Average number of employees during the year
Number of Employee growth	Yearly growth in the number of employees
Revenue per Employee	Revenues/Number of Employees
Revenue per Employee growth	Yearly growth in Revenue per Employee
Monthly return	Monthly financial return for shareholders, including dividends

5.2 Statistical method

In order to determine any statistical relationship between Employee Ownership and another financial or economic indicator, we use a two step process.

1. First, we try to eliminate sectorial biases as well as conjunctural effects. Indeed, it is likely that some industries (e.g. the financial industry) have more employee ownership than some other. Therefore, it is important to differentiate the variations that are linked to the shape of a specific industry from those who can be interpreted as the results of employee ownership. Since each industry has its highs and downs it is also important to isolate variations which can be attributed to a broader economic context. The first step of our statistical method would be to run a regression in which Reuter Business Sector and Years are independent variables. We will keep the coefficients of this regression which are relatively significant (risk level below 20%) and calculate a predicted value for each observation. The differences between the predicted and observed values are called residuals and represent the variations which are not explained by sectorial and conjunctural biases.
2. The second step consists in running a second regression on the residuals of the first one. We generally test Market Cap., Book Value,

Beta and Revenues as size factors and selected the significant ones (10% level). We also include the variable "First Shareholder above 20%" to test if a large shareholder moderates the power of employees. Eventually, we include the most significant variable(s) linked to employee ownership (Employee Ownership, EO > 0%, EO >5% or [Employee Ownership]^2).

5.3 Results

5.3.1 Revenues

In order to run our regression, we first eliminate observations which are inconsistent or abnormal. We use the following filters:

- Industry must be defined (Reuters does not provide any sector for two companies), as well as Market Cap. and Total Assets. We will use these filters in all our models.
- Revenues must be above €1mm
- Revenue growth must be between -50% and +50%. This filter is used to eliminate some extreme cases (e.g. large M&A transaction).

If we find a correlation between employee ownership and revenue growth, then we should consider two hypotheses:

1. Employee ownership has an impact on revenue growth
2. The growth profile of companies impacts their tendency to favor employee ownership.

In order to deal with this second hypothesis, and assuming that the growth profile of a company is mainly related to the industry in which it operates, we run a first regression of sectors and year over revenue changes. We keep all sectors that

are identified as significant dummy variables at the 20% confidence level. The coefficients obtained in our first regression enable us to compute predictive revenue growth for each company and each year.

The second regression will be run on the residuals of the first regression, which are independent from sector and conjuncture. In this regression, we introduce classical size factors: Market Cap., Beta, Book Value.

We keep only the Book Value in our final model since it is the only variable found significant. We also introduce two other variables: revenues and a dummy variable indicating the existence of a major shareholder owning more than 20% of the shares. The presence of such a large shareholder could temperate the power of shareholder employees.

Revenue Growth – Sectorial and conjunctural biases					
	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-,031	,011		-2,900	,004
APPLIED RESOURCES	-,093	,024	-,075	-3,801	,000
AUTOMOBILES AUTO PARTS	-,037	,019	-,040	-1,979	,048
BANKS	-,040	,017	-,049	-2,383	,017
CYCLICAL CONSUMER PRODUCTS	-,030	,012	-,057	-2,520	,012
CYCLICAL CONSUMER SERVICES	-,029	,012	-,055	-2,424	,015
FOOD BEVERAGES	-,027	,016	-,035	-1,687	,092
FOOD DRUG RETAILING	-,038	,029	-,025	-1,287	,198
HEALTHCARE SERVICES	,032	,019	,033	1,656	,098
INDUSTRIAL GOODS	-,021	,012	-,037	-1,675	,094
INSURANCE	-,064	,028	-,044	-2,281	,023
RETAILERS	-,034	,020	-,033	-1,670	,095
TECHNOLOGY EQUIPMENT	-,028	,015	-,039	-1,874	,061
TELECOMMUNICATIONS SERVICES	-,030	,023	-,026	-1,320	,187
UTILITIES	,048	,036	,026	1,328	,184
2001	,133	,018	,153	7,266	,000
2002	,074	,015	,113	5,019	,000
2003	,055	,013	,097	4,103	,000
2004	,116	,013	,217	9,030	,000
2005	,135	,013	,258	10,661	,000
2006	,147	,012	,288	11,812	,000
2007	,146	,012	,296	11,964	,000
2008	,102	,012	,209	8,390	,000
2010	,121	,012	,246	9,955	,000

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,358	,128	,120	,08146

Revenue Growth – Regression on residuals					
(Constant)	-,003	,007		-,400	,690
Revenues	,000	,000	-,025	-1,138	,255
Employee ownership	,211	,147	,031	1,435	,151
First_shareholder_above_20	,029	,008	,080	3,766	,000

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,088	,008	,006	,15428

This process enables us to find a positive impact of Employee Ownership over revenue growth, but with a weak confidence level. Besides, our model has a low predictive power with a R^2 of 13%.

Overall we have a clue that Employee Ownership might favor growth in revenues, but this clue is not strong enough to be considered as a satisfactory result.

But if we assume that employee ownership actually favors growth in revenues, then, since there are several ways to explain a higher revenue growth rate, we must test several hypotheses. The better growth profile could be explained by:

1. A sacrifice of operating margin
2. A better productivity
3. A higher level investment

5.3.2 EBITDA margin

In order to test our first hypothesis, we investigate the statistical impact of employee ownership using a method similar to the one we used to analyze the growth in revenues.

Again, we regress sectors and years on our dependent variable, i.e. EBITDA margin, then we calculate residual EBITDA margins before testing a model including Market Cap., Book Value, Beta and Employee Ownership. We only consider margin levels between -20% and 50% to eliminate extreme cases. Our final model does not include Beta which is not significant.

We find that Employee Ownership has a negative impact on EBITDA margin. This result seems quite strong with a risk level of 3.5% but it is not robust.

When we introduce "First Shareholder above 20%", the coefficient of Employee Ownership remains negative but the risk level becomes unsatisfactory (25%).

EBITDA margin – Sectorial and conjunctural biases					
	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	,083	,007		12,036	,000
AUTOMOBILES AUTO PARTS	,021	,010	,044	2,025	,043
BANKS	,172	,010	,352	16,426	,000
BIOTECHNOLOGY PHARMACEUTICALS	,072	,011	,132	6,275	,000
CHEMICALS	,037	,015	,049	2,442	,015
CYCLICAL CONSUMER SERVICES	,046	,008	,148	6,130	,000
ENERGY	,074	,012	,126	6,069	,000
FOOD BEVERAGES	,050	,010	,113	5,191	,000
FOOD DRUG RETAILING	-,038	,016	-,047	-2,317	,021
HEALTHCARE SERVICES	,075	,012	,131	6,265	,000
INDUSTRIAL GOODS	,018	,008	,055	2,348	,019
INDUSTRIAL SERVICES	,016	,008	,048	2,031	,042
INSURANCE	,045	,016	,058	2,880	,004
MINERAL RESOURCES	,084	,011	,171	8,009	,000
PERSONAL HOUSEHOLD PRODUCTS SERVICES	,077	,020	,076	3,809	,000
REAL ESTATE	,059	,020	,059	2,954	,003
RETAILERS	-,024	,011	-,045	-2,121	,034
TECHNOLOGY EQUIPMENT	,027	,010	,061	2,791	,005
TELECOMMUNICATIONS SERVICES	,144	,014	,204	10,032	,000
TRANSPORTATION	,036	,014	,053	2,590	,010
UTILITIES	,128	,017	,153	7,611	,000
2005	,019	,008	,060	2,425	,015
2006	,015	,008	,051	2,034	,042
2007	,018	,007	,060	2,355	,019
2010	,016	,007	,056	2,201	,028

EBITDA margin – Regression on residuals (Shareholder>20% excl.)					
(Constant)	,085	,002		37,817	,000
Market_Cap	,000	,000	,222	8,898	,000
Total_Assets	,000	,000	-,060	-2,399	,017
Employee Ownership	-,190	,090	-,049	-2,104	,035

EBITDA margin – Regression on residuals (Shareholder>20% incl.)					
(Constant)	,069	,004		15,386	,000
Market_Cap	,000	,000	,240	9,466	,000
Total_Assets	,000	,000	-,068	-2,700	,007
Employee Ownership	-,106	,092	-,027	-1,151	**,250**
First_shareholder_above_20	,019	,005	,092	4,005	,000

5.3.3 Productivity

In order to test productivity, we defined a new variable measuring productivity gains as the change in the ratio [Revenues]/[Number of employees]. In order to eliminate extreme cases, we only study yearly changes with absolute value below 30%. We find no statistical link between any of our variables related to employee ownership and productivity gains. None of those variables is significant while the overall regression has a R^2 of zero.

Revenue per Employee – Regression on Employee Ownership related variables

	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	,010	,003		3,028	,002
Employee Ownership > 0%	,004	,007	,018	,586	**,558**
Employee Ownership	-2,256	4,483	-,431	-,503	**,615**
Employee Ownership > 5%	-,008	,020	-,014	-,415	**,678**
(Employee Ownership)²	1,112	2,107	,447	,527	**,598**

	R	**R²**	**Adjusted R²**	**Std. Error of the Estimate**
	,023	**,001**	-,001	,11477

5.3.4 Share of capex in operating cash flows

We use our traditional two step method to test correlation between employee ownership and the share of capex in operating cash flows. We excluded ratio which were negative, considering them as non significant as well as those above 10. Among our traditional set of variables tested, only Beta and Total Assets are significant, while Market Cap. and Revenues were not. In our final model, Employee Ownership seems to have no significant impact on the share of operating cash flows devoted to Capex.

Capex/Op.CF – Sectorial and conjunctural biases					
	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	,413	,047		8,798	,000
AUTOMOBILES AUTO PARTS	,255	,118	,045	2,172	,030
BANKS	-,294	,130	-,047	-2,259	,024
CHEMICALS	,489	,157	,064	3,111	,002
CYCLICAL CONSUMER PRODUCTS	,214	,083	,055	2,572	,010
CYCLICAL CONSUMER SERVICES	,235	,076	,066	3,066	,002
ENERGY	,476	,137	,071	3,474	,001
FOOD BEVERAGES	,551	,111	,103	4,975	,000
HEALTHCARE SERVICES	,243	,140	,036	1,737	,083
INDUSTRIAL SERVICES	,152	,084	,038	1,811	,070
INSURANCE	-,618	,244	-,051	-2,538	,011
INVESTMENT TRUSTS	,769	,430	,036	1,788	,074
MINERAL RESOURCES	,204	,120	,035	1,691	,091
REAL ESTATE	1,412	,127	,229	11,116	,000
RETAILERS	,268	,140	,039	1,912	,056
TRANSPORTATION	,371	,151	,050	2,454	,014
UTILITIES	,591	,209	,057	2,828	,005
2000	,628	,169	,076	3,721	,000
2001	,648	,125	,108	5,178	,000
2002	,346	,098	,075	3,526	,000
2004	,213	,080	,058	2,644	,008
2005	,222	,079	,061	2,814	,005
2006	,271	,075	,079	3,589	,000
2007	,325	,075	,095	4,331	,000
2008	,266	,074	,079	3,566	,000

	R	**R²**	**Adjusted R²**	**Std. Error of the Estimate**
	,309	,095	,086	1,04953

Capex/Op.CF – Regression on residuals					
(Constant)	-,028	,050		-,569	,569
Market_Cap	,000	,000	-,068	-3,051	,002
Beta	,101	,049	,044	2,042	,041
Employee_ownership	-,291	1,102	-,006	-,264	,792

	R	**R²**	**Adjusted R²**	**Std. Error of the Estimate**
	,082	,007	,005	1,04923

5.3.5 Payout ratio

To analyze the payout ratio, we only selected ratios between 0 and 2. We find a very significant and positive impact of employee ownership. More specifically, our best final model includes the dummy variable Employee Ownership >0% which gives a higher R^2 (3.6%) and a lower Sig. than the ownership percentage of employees. This might be due to the fact that we lack the ownership percentage of employees for nearly 20 firms which have employee ownership.

Payout ratio – Sectorial and conjunctural biases					
	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	,166	,038		4,396	,000
APPLIED RESOURCES	,166	,066	,061	2,509	,012
AUTOMOBILES AUTO PARTS	,170	,052	,093	3,247	,001
BANKS	,311	,047	,218	6,630	,000
BIOTECHNOLOGY PHARMACEUTICALS	,147	,054	,076	2,735	,006
CHEMICALS	,244	,060	,105	4,063	,000
CYCLICAL CONSUMER PRODUCTS	,069	,044	,060	1,581	,114
CYCLICAL CONSUMER SERVICES	,225	,043	,207	5,234	,000
ENERGY	,253	,056	,123	4,530	,000
FOOD BEVERAGES	,178	,048	,121	3,738	,000
FOOD DRUG RETAILING	,463	,068	,166	6,845	,000
INDUSTRIAL GOODS	,135	,044	,116	3,072	,002
INDUSTRIAL SERVICES	,129	,044	,107	2,904	,004
INSURANCE	,310	,061	,128	5,050	,000
PERS. HOUS. PROD. SERVICES	,115	,079	,033	1,456	,146
REAL ESTATE	,459	,052	,256	8,853	,000
RETAILERS	,145	,054	,075	2,699	,007
TECHNOLOGY EQUIPMENT	,124	,049	,078	2,539	,011
TELECOMMUNICATIONS SERVICES	,316	,060	,134	5,221	,000
TRANSPORTATION	,202	,056	,096	3,588	,000
UTILITIES	,276	,071	,092	3,863	,000
2009	,090	,022	,085	4,172	,000
MINERAL RESOURCES	,124	,052	,069	2,389	,017

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,356	,127	,118	,30311

Payout ratio – Regression on residuals					
(Constant)	,232	,015		15,694	,000
Beta	-,086	,014	-,132	-6,106	,000
Total_Assets	,000	,000	-,046	-1,980	,048
Revenues	,000	,000	,109	4,736	,000
Employee Ownership >0%	,055	,014	,089	4,058	,000

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,189	,036	,034	,30503

5.3.6 Financial returns

We find a positive relationship between monthly financial returns (including dividends) and Employee Ownership. But this relationship is not very significant while its predictive power is nearly inexistent. There is no strong evidence that Employee Ownership influence in any way financial returns.

To eliminate extreme cases, only variations with absolute value below 30% were considered.

Monthly Financial Returns – Sectorial and conjunctural biases					
	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
Constant	,004	,004		,929	,353
FOOD BEVERAGES	-,016	,009	-,022	-1,712	,087
PERSONAL HOUSEHOLD PRODUCTS SERVICES	,011	,009	,016	1,292	,196
REAL ESTATE	-,024	,009	-,033	-2,555	,011
RETAILERS	-,031	,013	-,031	-2,423	,015
TELECOMMUNICATIONS SERVICES	,016	,009	,024	1,887	,059
2000	-,015	,006	-,040	-2,499	,012
2001	-,016	,006	-,042	-2,642	,008
2002	-,022	,006	-,059	-3,662	,000
2003	,012	,006	,032	2,002	,045
2004	,015	,006	,041	2,519	,012
2005	,021	,006	,063	3,768	,000
2006	,011	,006	,034	2,011	,044
2008	-,041	,006	-,126	-7,453	,000
2009	,022	,006	,065	3,903	,000
2010	,009	,005	,028	1,630	,103

	R	**R²**	**Adjusted R²**	**Std. Error of the Estimate**
	,205[a]	,042	,040	,09694

Monthly Financial Returns – Regression on Residuals				
(Constant)	-,001	,002	-,822	,411
Employee Ownership	,082	,055	,020	1,483	,138

	R	**R²**	**Adjusted R²**	**Std. Error of the**

				Estimate
	,020	,000	,000	,09598

5.3.7 Volatility of Employment

In order to test how Employee Ownership impacts the volatility of employment we take a three step approach.

Our measure of volatility for each variable (Revenues, EBIT, Capex and Number of Employees) is defined by the standard deviation of this variable over the last 10 years (or less when we lack data) divided by the average.

Since we study variables which are defined across several periods, we compute the last five years average of Market Cap., Total Assets and Revenues.

1. The first step of our analysis consists in eliminating sectorial biases.
2. The second step accounts for statistical links between the volatility or average of Revenues, EBIT, Capex, Market Cap. and Total Assets and the residual volatility of the number of employees.
3. The third step is a regression between employee ownership variables and the residuals volatility of the number of employees.

The second step shows that the volatility of employment is closely related to that of revenues.

In the third step we develop both a linear and a polynomial model. We find that introducing a polynomial regression improve the predictive power of our model, with an R^2 of 4.8% versus 3.6%. Our result is quite paradoxical since we find, with a very high degree of confidence (risk level of 1%), that employee ownership increases the volatility of employment. However, our polynomial

regression shows that this positive relation gets weaker when the percentage of employee ownership increases.

Overall, our model has a quite satisfactory predictive power with a R^2 above 50%.

Volatility of Employment – Sectorial biases					
	Unstandardized Coefficients		Stdized Coeff.		
Variables	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	,343	,014		24,225	,000
AUTOMOBILES AUTO PARTS	-,211	,074	-,141	-2,867	,004
FOOD BEVERAGES	-,089	,063	-,070	-1,419	,157
INDUSTRIAL GOODS	-,083	,045	-,092	-1,861	,064
INSURANCE	-,152	,115	-,065	-1,319	,188
INVESTMENT TRUSTS	,838	,229	,179	3,669	,000
REAL ESTATE	,287	,063	,226	4,593	,000
TELECOMMUNICATIONS SERVICES	,265	,082	,159	3,238	,001
TRANSPORTATION	-,155	,082	-,093	-1,894	,059
UTILITIES	,338	,103	,160	3,278	,001

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,430	,185	,163	,22807

Volatility of Employment – Vol. and Average of Revenues					
(Constant)	-,194	,017		-11,244	,000
Vol_Revenues	,477	,034	,599	14,040	,000
Revenues_Average_05-10	,000	,000	-,072	-1,697	,091

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,612	,375	,371	,18113

Volatility of Employment – Employee Ownership					
(Constant)	-,464	,022		-20,682	,000
Employee Ownership	3,087	,894	,188	3,453	,001

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,188	,036	,033	,37284

Volatility of Employment – Employee Ownership (Polynomial)					
(Constant)	-,481	,024		-20,284	,000
Employee Ownership	63,860	29,110	3,897	2,194	,029
(Employee Ownership)^2	-28,620	13,703	-3,711	-2,089	,038

R	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
,220	,048	,042	,37092

5.4 Discussion of results

Our first finding is that employee ownership may have a positive impact on sales growth. This weak result has no support in the literature since the relation between growth in revenues and employee ownership has not been often tested. The only article in our literature review to suggest a relation is the study of Faleye *et al.* (2006) who found a negative relationship. Their result is based on a sample of more than 200 ESOP firms, which is slightly more than the number of employee owned firms we identified.

We failed to correctly explain how this hypothetical extra growth in revenues could be achieved. Our analysis does not support productivity gains neither a higher investment level of firms partially owned by their employees. We find a negative correlation between employee ownership and EBITDA margin which may support the hypothesis that growth in revenues is achieved by lowering prices. But this result is not conclusive since there are other ways to explain a deterioration of margins. One could imagine that this negative relationship derived from higher wages in employee owned companies. Besides, this finding is not robust.

Allen *et al.* (2011) suggest that stakeholder-oriented firms can have a different behavior towards bankruptcy risk which implies a sacrifice of margins when companies face an uncertainty in demand and want to guarantee a minimal level of revenues. If we considered that firms faced more uncertainty in demand than in prices in the late 2000's, we could see in our findings some support to the conclusions of Allen *et al.*.

The lower level of EBITDA margin could also be explained by higher wages, which would support the conclusion of Chaplinsky and Niehaus (1990). A study of

the evolution of wages in partially employee owned companies could provide an explanation to this apparently negative impact of employee ownership.

On the opposite, we find no statistical evidence that employee ownership may induce productivity gains. Yet several studies have found positive links between productivity and employee ownership.

Our two stronger statistical findings are positive impacts on volatility of employment and payout ratio. The effect on payout ratio is opposed to the finding of Megginson *et al.* (2011), but it is consistent with tax incentives.

The finding that employee ownership increases the volatility of employment seems paradoxical. One could expect that the first preoccupation of employees is to guarantee the sustainability of their jobs. Our finding is consistent with some ideas reviewed in the first part of this thesis, but also in opposition to some.

The insider-outsider model predicts that insiders would lower employment volatility by preventing new hiring when firms benefit from growth and use their bargaining power to protect their jobs in period of decline. Harbaugh (2005) argues that employee ownership can be a solution to this problem because it aligns the interests of employees with those of shareholders without giving them extra incentive to protect their job since they do not lose any profit-sharing advantage when they leave the company (they keep their shares or sell it at the market price). Therefore, Harbaugh suggests that a better adaptability of the workforce can be achieved through employee ownership. The increased volatility of employment in partially employee owned companies is an empirical support to this idea.

On the contrary, our finding opposes the idea of Kovenock and Sparks (1990) that employee ownership reduces losses due to asymmetry of information. In the implicit contract under asymmetric information framework, creating higher employment volatility (by creating underemployment in bad states) is the way

employees' representatives constrain managers to reveal the true state of the firm to get better wages. This means that asymmetries of information lead to more drastic adjustments of the workforce. If employee ownership was a way to reduce this inefficiency, then we should observe a decrease in the workforce volatility.

Finally, we failed to identify any significant positive or negative impact of employee ownership on financial returns. This is consistent with the no-arbitrage hypothesis: if the market correctly anticipates the effect of employee ownership, then this effect is immediately integrated in prices. We could say that the absence of impact on financial returns over the long term support the idea that the market correctly and rapidly prices the advantages and disadvantages of employee ownership.

6 Conclusion

Our initial goal was to understand how employee ownership impacted corporate governance and performance so that we can appreciate its current development. After a review of the existing literature we identified some strong results, such as the aversion of financial markets for defensive alliances between managers and employees. But many issues such as the impact on productivity, on financial policy, on wage bargaining… which are decisive components of a firm performance remains without any consensual analysis.

Our own study of the financial data of the French largest 356 companies gave us some weak results. We found that employee ownership might favor growth in revenues and might negatively impact operational margins. However, we found strong statistical clues that employee ownership is associated with higher payout ratio and higher volatility of employment. But those two results are not supported by previous studies.

The finding of a positive correlation between employee ownership and higher volatility is probably the most interesting, because it is both surprising and relatively strong. Further analysis in order to verify this effect and to understand if it is balanced by concessions from firms (especially in terms of salary) should be conducted.

7 References

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