## What is the impact of Private Equity Funds on the LBO value creation?

Financial theory and Legrand case study analysis

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#### Abstract

This paper studies the role of Private Equity funds in LBO value creation. Our approach begins with a literature review, addressing how the Private Equity sponsors can intervene in the management and the financial optimization of their target. Then we propose a quantitative framework to measure the value creation in a LBO development, for the different stakeholders. We observe the importance of approaching the value creation through a multi-criteria analysis, taking into account the temporal aspect and a peers control sample for the company. We finally apply this framework to the Legrand case study, a French manufacturer of electrical products, acquired in 2002 by Wendel and KKR. For this case study, we conclude that value has been created for both the firm, the shareholders and the debtholders, notably thanks to an active and long-term involvement of the sponsor and the managers.

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#### Introduction

In the aftermath of the 2007 world financial crisis, numerous financial models have been questioned and criticized about their opaqueness and resulting excessive risk-taking specifications. Over the last decade, French LBOs have notably been subject to vehement criticism about the true purposes of their financial engineering and a value creation that would be only dedicated to the sponsor, at the expense of the company itself and its employees. As such, the flourishing literature review is in our view divided in two categories: papers qualitatively studying the drivers of LBO value creation (such as, as a reference, Kaplan (1989/2008)) and papers questioning, often by statistical analysis, whether Private Equity sponsors, from a general point of view, contribute or not to value creation (Thesmar (2011)). Our approach will be slightly different: admittedly, the first purpose of this paper is to investigate about the drivers, explaining how the Private Equity sponsors can intervene in their target and create value. This will be the point of the first section of this paper. But above all, this paper aims at addressing the three following issues, in the second section: (i) how to measure and to have a comprehensive analysis of value creation for each different stakeholder of the firm?; (ii) for whom does a LBO development create value and in which extent?; (iii) what are the sources of conflict between the different stakeholders? After having proposed a framework analysis, to approach the value creation, we will apply this framework to the Legrand case study, a French manufacturer of electrical products, acquired in 2002 by Wendel and KKR, and relisted from 2006. This case study approach is in our view crucial to validate, from a practical point of view, the analysis developed in the first two parts. As such, we will face interesting practical difficulties, supporting the fact that measuring the value creation in a LBO development is not straightforward.

Hence, despite the two first comprehensive theoretical sections, it is important for us to have also bottom-up approach, our case study analysis having significantly helped to build the theoretical framework analysis.

Eventually, we choose not to discuss in this paper about the basic definitions and general presentation of an LBO acquisition and its players. We believe many theoretical books (and much more didactic) are devoted to this purpose.

## Part I. The sources of value creation in LBOs: how can Private Equity funds intervene in their target to create value?

The first part of this paper aims at identifying and analysing, from a qualitative point of view, the main drivers of value creation that can be employed by Private Equity funds in LBO acquisitions. While the common thinking, when speaking about LBO value creation comes up with the classical three levels of value creation for the Internal Rate of Return – IRR ([i] pricing multiple, [ii] operational improvement and [iii] use of financial leverage), we prefer in this part to adopt Kaplan & Strömberg value drivers classification: we will therefore study the changes in governance on one side, and the contribution in terms of operational and financial engineering, on the other hand. It enables us to look at the value creation for the entire firm, and not only from the shareholder point of view (when looking only at the IRR). After the analyse of those value creation drivers, as being, either financial changes, governance improvement or operational engineering, we will then focus on the sources of potential conflict between the PE fund and its target objectives in terms of value creation.

#### I.1. The LBO governance and the "discipline effect of the debt"

First of all, an LBO acquisition is always accompanied by a drastic change in its governance structure. The new installed governance mode is characterized by three drivers: a significant portion of debt put in the capital structure; a management that usually has personal investment in the company under LBO; and, a specific involvement of the PE sponsor in the day-to-day management of the LBO company.

The significant indebtedness of the LBO target is a first and crucial key component in the value creation. Kaplan (2008) explains that "leverage creates pressure on managers not to waste money, because they must make interest and principal payments." Vernimmen authors speak about a "carrot and stick policy", the stick designing a high debt level that put bankruptcy pressure on the management, who will try to generate a maximum of cash flows. Therefore, analysing the value creation in an LBO requires looking in detail at the cash-flow generation of the firm, and the sources of potential changes (improvement of sales, gross margin, administrative costs, working capital improvements).

The "carrot" designs a system in which the management has usually a significant interest in the sharing of the profit of the holding company, aligning the interests of the managers with those of the PE investors. As mentioned by Kaplan (2008), not only does the management has "a significant upside, but also a downside", due to direct individual

investment in the firm and on top of traditional stock options granted by the company. As such, referring to a survey conducted by Accuracy in 2008 towards French CEOs (listed and non-listed companies), Peter Harbula (2008) underlines that 98% of the CEOs believe that PE sponsors know better than industrials how to motivate and remunerate the managers, and most importantly, how to set up an efficient governance system.

The third governance tool used by PE funds is a closer accompaniment of the company, in terms of day-to-day management. As such, we can distinguish between two types of behaviour employed by the fund: either a fund can be deeply involved in the target management, or it can choose to be less participative and only present during the key transaction phases (entry, exit and key decisions in-between for the company): co-investors will typically that kind of management posture. Be it a light accompaniment model or, on the contrary, a very close and day-to-day backing of the company, there is no denying that the LBO structure supposes a closer involvement by the fund in the target management, compared with traditional shareholding. This allows both an advisory activity and a strong surveillance tool for deeply involved shareholders, reducing the usual information asymmetry. The advisory work of the fund will be further discussed in the operational engineering sub-part of this section (I.3.). Meanwhile, we will keep in mind, for our case study analysis, to look at the way the fund decides to manage its participation, and in particular, to take care about the weight of the participation in the overall funds portfolio.

Such changes in the governance mode can be viewed as a remedy to the traditional agency costs issue that arises from a classic capital structure. Thus, increasing the debt level and involving deeply the shareholders in the management help the company to reduce the agency costs: first, and already discussed, between the shareholders and the management (alignment of interests thanks to both incentives and a more efficient governance tool), and, second, between the debtholders and the management. Indeed, not only are the bank debtholders now the owners of the company (as being structurally placed shareholders at the holding level), but the high proportion of the debt and the resulting new covenant structure of a LBO lead to a closer monitoring by banks (e.g. more frequent and accurate reporting), helping to reduce the agency costs between the debtholders and the management. Four types of agency costs are explained by Herst & Hommelberg (2003): the *contracting costs* (arising from supervising the management of the company by the shareholders), the *bonding costs* (arising from the efforts made by the management to convince their shareholders they act in their interest). The *residual losses* are the fourth cost

category, explained by all the other decisions taken by the management, not in line with the interest of the shareholders. LBO structures help to reduce the principal-agent problem between the shareholders and the agent. The example taken by the authors is the management of the cash flows, which has to be well supervised in LBOs, since the fund remuneration only comes from the cash-flow generation of the company. Hence the managers have to be well incentivized to invest in only positive NPV projects and to return the cash in all other cases.

The consequence of such a new type of governance is the important choice of the management team, that not only has to know how to deal with a "carrot and stick policy", but who must also be able to manage the company, from an operational point of view, must be cash-oriented and finally, that can afford to be individually involved in the company investments and returns. There is no denying that a highly motivated management team is therefore necessary, but it does not seem that the management is necessarily a new one, as we will see in the case study. Still, Acharya and Kehoe (2009) reported that one third of the CEOs in a LBO was replaced within the first 100 days, and two thirds within a 4-year period. As a consequence, in our case study analysis, as part of value creation analyse, it will be primordial to look at the management structure and its evolution over the LBO period.

As a conclusion about the governance value drivers in LBOs, one can mention the importance of the covenant structure, which we consider as the final agreement for the entire firm governance scheme, aiming at managing the rules between the firm and its stakeholders. Interestingly, Chen LIU (2013) reported that tighter covenants increase the firm's value. The paper also explains that the recent poor performance observed in LBOs (since 2007) is partly the result of less restrictive covenants, as opposed to recent covenant-lite structure.

#### I.2. Operational & financial engineering

We group in this section two other drivers used by PE sponsors, to increase their target value. While operating engineering refers most specifically to the management of capital employed (Fixed Assets + WCR), the financial engineering refers to the added value that a fund can bring in providing, optimizing and managing the invested capital (improving the capital structure, providing liquidity, financing or enabling the company to access to Debt and Equity Capital Markets).

#### I.2.1. Operational engineering

It is first worth mentioning that there has been over the last two decades a huge debate

on the question whether LBO contribute to operating improvement at the firm level. Kaplan (2008) concludes positively to this question, showing for example that for LBOs in the 1980s, ratios of operating income to sales improved between 10 and 20%. He also shows that cashflow ratios increase by c.40% in average for LBOs, and overall there is a significant increase in the firm value for LBO. For more recent and French LBOs, Thesmar (2011) concludes about a significant operating improvement, proving for French SME LBOs that they "have experienced very strong growth in sales, assets and employment, after the deal, in particular when they were previously more likely to be credit constrained." On the contrary, Guo and al (2007) found no significant increase in operating improvement, but only an increase in investor returns, for US Public-to-Private LBO transactions over the 1990-2006 period. Having a pragmatic and case study approach in this paper, we will try to investigate about all the drivers that help PE funds to increase the operational performance of their target. Basically, the operating improvement is done through: (i) the top line growth; (ii) the improvement of the cost structure and the margins, that has to translate into cash in the specific case of a LBO; and (iii) the improvement in the management of Capital Expenditures (Capex) and Working Capital Requirements (WCR).

First, the top line improvement can be conducted either internally or externally. The PE fund expertise will be helpful for the company on two key sides: first, the company will benefit from advices of the investment team (that often includes ex-consultants from advisory firms) to improve its top-line, be it internally or externally. Second, growing externally will be facilitated by both the extensive network of the PE firm (industrial coverage provided by the PE sponsor), but also easier access to financing and liquidity for potential acquisitions (thanks to the banking connections of the PE firm), and potential combinations with existing companies of the PE fund portfolio. Indeed the build-up strategy has been a recent trend since 2008, in response to reluctant financial markets, post crisis, and viewed as a new way to create long-term value, compete with industrial acquirers, and combine financial and industrial expertise, as underlined by Emmanuel Harle (2011).

The intervention of the fund can also be done via an improvement in the cost structure, be it at the gross margin level, the EBITDA improvement (SG&A, personnel costs, etc.) and the optimization in taxes and financial interests to pay. Here as well, it is interesting to notice that the build-up strategy appears as a good tool for the cost improvement strategy led by the fund: not only does it enable to gain on cost synergies by combining two participation of the same PE fund, but you can also increase the negotiation capabilities with the suppliers, as mentioned by Arthur Millard (2014). It will therefore be important for us to deeply investigate at which level the fund tries to improve the cost structure of the company under LBO, and what are the consequences in terms of value creation, for both the company and the fund. But, we have to keep in mind that, because the fund is interested in the cash-flows transfer from the target to the holding company, it will only focus and prioritize the cost-cuttings that can directly be translated into cash-flow generation improvement.

Eventually, the operating improvement may also be achieved via the improvement in the use of capital employed: the Capex expenses and the optimization of the WCR needs. When evaluating the impact of LBO on operating performance (48 LBOs for the 1980-86 period), Kaplan (1989a) found a decrease of 26% in the Capex-to-sales ratio, during the LBO period. Indeed, it seems straightforward that the fund will focus on reducing useless Capex expenses, by first excluding the Capex of non-positive NPV projects, and second delaying the Capex needs after the fund exit date. This last point can be the source of potential value destruction and will be further discussed in the next section (I.4.). The WCR improvement is also a standard and well-known leverage that funds can use to improve their target operating performance, and is particularly interesting in a LBO situation, since it concerns directly the management of cash flows. Many levers can be activated for the WCR improvement: optimization of reporting systems, improvement of inventory turnover days, account payables/receivable turnover ratios, not withstanding the fact that banks and PE also provide tailored financing solutions for the WCR needs (RCF facilities). Again, a build-up strategy turns also to be a relevant way to improve the WCR needs of the companies under LBO, with for example the use of cash-pooling systems, as described by Arthur Millard (2014).

On top of all the previous operational improvement opportunities for the PE fund, we want to mention, at last, an additional lever, as much important as than the others, but undoubtedly far more difficult to capture and analyse on a stand alone basis: the fund can significantly help the company to enhance its visibility and reputation, towards both its suppliers, customers and fund providers. It can comes from both the access to the network of the PE sponsor (be it at a financial or operational network level), a developed marketing strategy or the simple benefit for the company to be accompanied by a well-know PE fund (more credit vis-à-vis the suppliers or the customers). Although it can be materialized by the goodwill part when selling the company at the LBO exit, we still think this added value may be difficult to extract from the pricing or negotiation capabilities of the fund at the time of the exit and the market conditions, that undeniably play a crucial role in the entry/exit prices.

#### I.2.2. Financial engineering

In this section, we design by financial engineering, all the possible levers the fund can employ at a financial level only: the leverage effect (and resulting tax shield), the access to financing and liquidities for the company, and the optimization of the capital structure or cost of capital. On the leverage effect (i.e. benefit from the tax shield), it seems largely agreed in the literature that the tax incentives in LBOs must not be underestimated, but that they are not the strongest driver of LBOs, as argued by Lowenstein (1985). Kaplan & Stromberg (2008) found that the tax shield has decreased when comparing the LBOs of the 1980s period with the more recent ones, due to a decline in leverage used. Still, they argue it should account for a 10-20% to the total firm value. Indeed, Vernimmen authors precise that leverage effect benefits are reduced by the bankruptcy costs (increasing with the leverage), and therefore that savings from tax gains are not enough to explain the success of LBOs. Therefore, both from the fund and the firm perspective, the use of leverage is at some point threatened by the risk of bankruptcy: Nikoskelainen et Wright (2005) conclude that the leverage level is not linearly correlated with the value creation (at the fund level), explaining that the IRR is lowered for LBOs too much levered. It is therefore of prime importance for us to analyse the leverage of the company for our case study, as compared to the industry average and to measure the contribution of leverage to the total IRR at the fund level.

More interestingly and less obvious, the financial help brought by the fund is not limited to the computation and definition of an optimal debt level: the fund is, first and foremost, a capital provider and a financial advisor. It helps designing and contributes to provide often tailored financing solutions, specifically adapted to LBO needs: RCF facilities and Capex lines, multi-tranches debts, access to liquidity through the fund bank network, additional funds to inject during the LBO life (if necessary with an ambitious external growth strategy for example...). As such, Thesmar (2011), studying a sample of 830 French LBO deals, concluded that LBOs serve as "substitute for weak capital markets", by alleviating capital constraints in France. We can therefore notice that the LBO structure enable the company to access new and other financing and capital markets, especially where the traditional financial markets are not efficient, like in France over the last couple of years, noticed by Thesmar. In our case study analysis, it will thus be interesting to look in detail at the financing structure (equity, hybrid and debt-related products) of the LBOs, and to understand such financial solutions brought by the funds, in view of the strategic/operational needs of the company.

#### I.3. Market mispricing, cyclicality and negotiation capabilities?

The following part deals with another prime driver helping the funds to generate returns through LBO acquisitions: the gain generated from the acquisition at a low price and the sale at a higher price, independently from the operational improvement contribution (that typically also contribute to sell at a higher multiple) and from the contribution of the leverage effect. In our view, it comes from 2 distinct drivers: (i) the fund abilities to identify mispricing opportunities and to take advantage, or on the contrary, to suffer from the market environment, and; (ii) the negotiation capabilities of the fund to buy low and sell high (especially if the exit is an IPO or a sale to an industrial). On the specific SBO segment, Bonini (2010) and Wang (2010) both come to the conclusion that one of the main drivers for SBOs turns out to be the favourable financing and market conditions, i.e. the low cost of debt, strong appetite from the equity capital market, and the need for the seller to get cash back. As such, the Legrand case will be a good illustration of that, since the funds managed to buy the company at a significant discount, following the merger refusal by anti-trust authorities. From a more general point of view, Kaplan & Strömberg (2008) conclude that PE investors are "taking advantage of market timing (and market mispricing) between debt and equity markets particularly in the public-to-private transactions of the last 15 years." As part of those market mispricing opportunities, we can also add one other LBO driving reason and explained by Brealey & Myers (2003): the fact that LBOs can be a financial response to the conglomerate discounts.

### I.4. Potential conflict of interests between the Private Equity fund and the company objectives

While the literature is flourishing in exploring the drivers for value creation, described previously, it turns out to be more difficult to find the sources for potential conflict of interests between the fund and the LBO target's objectives. As part of the analysis of the value creation (and also destruction), it is important in our view to spend a section identifying and analysing all the divergence between the goals of company and the fund. It will help us in particular to answer the question: for who does a LBO deal create value? The company? The fund? Both? We have identified 3 categories of theoretical potential conflicts, between funds and LBO targets: (i) The leverage effect, boosting the ROE, from the ROCE, but at the expense of an increased risk for the company; (ii) The time horizon of the investments that can be significantly shorter than the necessary horizon for the firm's strategic decisions,

combined with the cash-flow generation objective of the PE fund, sometimes in contradiction with long term objectives of the firm; (iii) The agency costs remaining issues.

#### I.4.1. The leverage effect: the fund incentivized for risk shifting?

As already mentioned in a previous section (I.2.), the leverage effect is used by PE funds to boost their Return On Equity (ROE), at the expense of the increased financial risk of the company. As such, the leverage effect formula shows how you can artificially boost the ROE through increased financial debt, despite a constant Return on Capital Employed (ROCE), providing that the ROCE remains above the cost of debt after taxes:

$$ROE = ROCE + \frac{D}{E} \times (ROCE - cost of debt after taxes)$$

Nevertheless, other key factors have to be taken into account when considering the leverage. First, even at the fund level, there is no interest in increasing the leverage too much: undeniably, the fund also bears the increased risk of financial distress induced by more leverage. The reputation of the PE fund is also another argument, preventing the fund from adopting a position of a too risky shareholder. All the more so that the fund works in close relationship with its network of banks for the financing of the deal, that will not accept a too high leverage. The structure of the shareholder loans, provided by the funds (despite their first and main objective to allow cash access for the shareholders without having to wait for dividends) enables to align the interest of the shareholders and debtholders, and prevent the funds to take too much risk. A key question is therefore: does the chosen leverage really maximize the value of the firm, by choosing a leverage in line with a minimum WACC, or on the contrary, is the chosen leverage significantly higher than the optimal one, so that the PE fund can maximize its ROE, and eventually its IRR? Indeed, it is very difficult to precisely answer this question, as knowing the optimal WACC level (or equivalently the optimal indebtedness level) is almost impossible. All the more so that, as we have seen in the previous section, the virtue of the debt in a LBO deal is far more than boosting ROE, but has a major role in being a motivation tool and "stick" for the management of the target. Still, in our case study, it will be interesting to evaluate the leverage of the LBO, compare it to sectorial benchmark levels, and analyse the IRR part explained by this leverage booster.

#### I.4.2. The timing horizon issue, the liquidity needs and the strong cash flows focus

Because most of the PE funds have limited investment time horizon, and with the LBO investment periods that have become shorter and shorter in the recent years (due to more secondary buy-outs, as explained by Kaplan (2008)), usually the funds keep their participation during a three to five years period. There no denying that the "strategic horizon" for a company depends on many factors (sector, maturity of the company in its sector, strategy of the company itself...), and therefore it is difficult to come up with an accurate and optimal timing horizon for the accompaniment of the firm by the fund, which should be done case by case. Meanwhile, recent critics about Private Equity have argued that the funds are being too much focused on short term returns and should, on the contrary, extend their detention period to a sustained time, adapted to the strategic and long term needs of the target, as underlined by Sousa (2010). There are two main reasons explaining why the funds tend to have short-term investment periods: their liquidity needs (they have to return cash to their investors) and their return that turn out to be better for short-term deals. As such, Lloyd (1997) emphasizes that "on averaged, buy-out firms performed better over the medium term (up to three years), but over the longer term (four to seven years) financial performance is worse than the industry average".

In addition to the pure liquidity needs at the exit of the investment, the funds are also strongly focused on cash flow generation by firm. In many cases, improving the cash-flow generation of the company can be in line with the company's profitability improvement objective and therefore create value for both the fund and the company: e.g. improving the WCR, negotiating better raw-material conditions with suppliers, improving the supply chain with a build-up strategy, reducing the fixed and administrative costs, etc. But looking only at the cash-flow generation level can hamper the long-term company's profitability, especially when you consider the recent short investment periods of the PE funds. The big threat is to temporary reduce the asset base (e.g. Capex, R&D, WCR), non necessarily crucial for the short-term sustainability of the company but still key for the long-term profitability and competitiveness of the firm. Kaplan (1989) found that the ratio of cash- lows to sales increase by c.40%, while the ratio of Capex to sales decline, for US public to private deals in the 1980s. On the contrary, Thesmar (2011) statistically proved, on his French LBO sample (1994-2004), that the underlying asset growth was positive, equals to 11%.

Eventually, although it is more related to social value (rather than purely financial value), we can ask ourselves whether the LBO contribute to employment growth or, on the

contrary, results in workforce destruction. In the UK, from 1999 to 2004, Wright (2007) finds that LBO experience employment growth (similar vs. industry average) but slower wage growth. In France, over the 1994-2004 period, Thesmar (2011) finds an excess job growth of roughly 13% for LBO companies vs. peers (both employment and wage excess growth). Overall, as concluded by Kaplan & Strömberg (2008), those findings "are not consistent with concerns over job destruction, but neither are they consistent with the opposite position that firms owned by private industry experience especially strong employment growth (except, perhaps, in France)."

Be it to address the timing horizon, the cash-flow focus or the employment issues, it will be important in our case study, to evaluate the post-buyout performance (in particular for the ROCE evolution), so as to assess if the intervention of the PE fund is temporary or more long term oriented.

#### I.4.3. The remaining agency costs

We have discussed in the previous section about the positive implication of the debt to reduce the agency costs, i.e. align interests between the shareholders, the managers and the debtholders. However, as emphasized by Herst & Hommelberg (2003), the MBO (and more generally the LBO) may result in other agency costs, between employees and managers. Surely the managers have more aligned interests with the shareholders, but the employees have to be all the more convinced by the management to work accordingly to the LBO objective, not an easy thing especially if they do not have any potential upside (participation scheme for the employees) and are not used to work under pressure.

As a summary of this first section, we have seen the importance of a new governance mode induced by the high financial leverage inherent to LBO structures: the new debt on the one hand, and the participation given to the management, helping to reduce the agency costs thanks to "a carrot and stick policy". The operational and financial engineering brought by the PE sponsor are two other important levers in the value creation of LBOs, resulting in the optimization of the financial management (capital structure, access to tailored financial products) and the improvement of the profitability of the firm. In the last sub-section, we have also identified reasons why objectives for the PE firm and the company may differ. First, the leverage effect that can excessively and only serves at boosting the ROE, at the expense of a higher risk. Second, the divergence in both the timing horizon and the cash flow focus, that

arises between the PE firm and the company itself. Finally, the risk of translating the agency costs to employees-managers, rather than managers-shareholders.

To conclude this part, we choose to reproduce<sup>1</sup> the results of a study extracted from an article published by Peter Harbula (2008), summarizing the different sources of value creation and their rank of importance for European LBO transactions from 2000-2008, with a specific focus on 2005-2007 transactions. We conclude that, overall, the most important drivers appear to be the free cash flow effect induced by a discipline effect of the debt, the alignment of interests with the managers, the under-valuation of the target at the acquisition date and, to a slightly lesser extent, a closer monitoring and the operational improvement. During the 2005-2007 period, the drivers seem to move to a better WCR and Capex management, and a favourable market environment, allowing to sell at a higher price at exit. Eventually, for IPO exits in particular, the value creation is then mainly explained by an operating improvement and a successful build-up strategy.

Value creation decomposition for	Weak signifi	cance	Strong significance		
Germany), initiated by LBO funds between 2000 and 2008	Global sample	Transactions between 2005 and 2007	IPO	Control sample	
Fiscal leverage advantage					
Free-cash flow theory (indebtdness)	J	•	J	$\bigcirc$	
Governance structure	J				
Management participation	•				
Relative under-valuation	•				
WCR improvement		•	•	nc	
Investment decrease	Ŏ	Ŏ	C	nc	
Profitability improvement (above sector)	Ĩ	Ŏ	Ŭ	nc	
Competitor acquisitions			J	nc	
M&A market price changes		•		nc	
Number of transactions	100	31	29	100	
Adjusted R <sup>2</sup>	medium (45%)	significative (55%)	medium (45%)	weak (33%)	

Figure 1: Value creation drivers for LBO transactions between 2000 and 2008

Source: Peter Harbula (2008)

<sup>&</sup>lt;sup>1</sup> Extracted and translated from "Fonds d'investissement : bulle financière ? Leviers de création de valeur, endettement et gouvernement d'entreprise", by Peter Harbula (2008)

As a second conclusion of this first section, and since we can not spend another whole section reviewing in details those criteria, the following diagram summarizes the key criteria to assess the quality of a future LBO company. We have decided to structure it into four different categories: the company itself, the industrial market in which the company evolves, the governance quality and the influence of other external financial factors. Not exhaustive, this chart is a summary of different paper of our bibliography, and can be completed on a case-by-case basis. It will help us in our case study analysis, when assessing about the quality of our LBO case study





Source: own contribution

#### Part II. Measuring the value creation in LBOs for the different stakeholders

In the previous section, we focused on reviewing the driver sources for LBO value creation. The following part will be devoted to set up a measuring toolbox, in order to answer one of the main issue raised in this paper: how can we measure, and quantify as much as possible, the value creation in LBO deals for the different stakeholders involved? Consequently we will divide our analysis into three distinct parts, evaluating the value creation for the firm on its whole first; then for the shareholders, i.e. the PE sponsor; and will try at the end to address the measure of value creation at the debt holding level. For each level, we will remind how one can define the financial value creation, and which metrics can be used to approach at best the value created for the different parties. The goal is to define a practical analysis framework, present in detail the metrics that will be further used in the case study, their advantages and limits.

There is no denying that there is no perfect metric to capture accurately the value creation. That is why our approach will be, as much as possible, to explore different measures and come up with a multi-criteria analysis, rather than electing only one way of measuring the value created for a LBO deal.

#### II.1. The firm

#### II.1.1. The total value creation at the firm's level: ROCE - WACC

At the entire firm level, the total value created is defined by the spread between the Return on Capital Employed (ROCE) and the cost of capital (WACC) for the company. Basic finance rules tell that the firm only creates value when its return on invested capital is greater than its cost of capital, and destroy value otherwise. Hence, such a definition for the value creation at the company level. We choose to measure this spread by computing the ROCE and the WACC with:

$$ROCE = \frac{NOPAT}{Capital \ Employed \ (Fixed \ Assets \ + \ WCR)}$$

$$WACC = k_e \frac{E}{D+E} + k_d (1-t) \frac{D}{D+E}$$

-  $k_e$  is the cost of equity, estimated with the CAPM model:  $k_e = r_f + \beta(r_m - r_f)$ , with the Equity Risk Premium  $(r_m - r_f)$  calculated for our case study as the difference between the CAC40 return and the risk-free rate  $(r_f)$ , since our company is part of this index. The  $r_f$  is estimated by the interest rate of the French government bonds, with a maturity closer to the duration of the LBO (5-y bonds will be preferred to 10-y bonds). A detailed discussion about the way we try to estimate the  $\beta$  in our case study will be provided in the section II.4.

-  $k_d$  is the cost of debt and will be taken as the effective net cost of debt, calculated for each year, ex-post, over the entire LBO period. Another way of determining the cost of debt, exante, would be to calculate it as the average of cost of debt, resulting from the debt package of the initial LBO, and accounting for the evolution of the cost of debt over the duration of the LBO (due to the debt amortization and debt restructuring). Unfortunately, the lack of public information about this cost of debt prevents us from having such an approach, which would be a good way to confront results.

- t is the effective tax rate owed by the company each year

- E and D are respectively the economic value of equity and of debt. Usually, because a LBO is a privately owned company, we are only able to have access to the nominal value of debt and equity. Nevertheless, we will detail in the precise situation of our case study, how to address this issue, and take into account proxy for market values.

In line with our multi-criteria analysis, and after having computed the WACC as explained before, it will be important nevertheless in our case study analysis to compare the WACC found with that of the listed peers, and if possible, with the WACC computed by equity brokers for the company, over a period as long as possible.

In our approach, we choose to measure the value creation at the firm level by the spread ROCE-WACC. Actually, when measuring the value created in a company, the literature often comes up with the EVA (Economic Value Added), with:

EVA = (ROIC - WACC). Capital Employed and  $ROIC = \frac{NOPAT}{Capital Employed}$ 

Evaluating the spread ROCE-WACC is obviously the same as computing the firm's economic profit, by computing the EVA, the only difference lying in the choice to multiply or not by the Capital Employed.

We must remain careful about using the ROCE as a fully trustable value creation indicator: actually, as an accounting indicator, the ROCE can be artificially boosted. First, a decrease in the Capital Employed would mechanically result in an increase for the ROCE, that is not necessarily synonym of long-term value creation. As such, computing the evolution of the EVA for the company is a way to address this issue. Second, a decrease in the tax paid<sup>2</sup> or a decrease in D&A would also result in the mechanical increase of the ROCE: we can not deny those two levers contribute to value creation at the firm level, but an accurate analysis requires to look at the post-buyout performance and see if those two levers are sustainable, i.e. if the value created is not only limited at the LBO period.

#### II.1.2. The underlying operating improvement for the firm

Computing the ROCE – WACC to assess the value creation at the firm's level is necessary but not sufficient. Actually, the improvement of the ROCE may come from different drivers, which need to be analysed (pre-LBO level, during the detention period and post-buyout performance):

First, as seen previously, we will particularly pay attention to the evolution of the Capital Employed. On the one hand, the Fixed Assets need to be analysed with the Capex evolution (as % of sales). Understanding the Capex policy of the company must also be done by looking at the external growth / acquisitions made by the company. Looking at the number of patents, as explained by Strömberg (2008), filed by a company would be an additional interesting way of investigating the Capex policy but is not necessarily adapted to all of the companies under LBO (especially when considering that LBO targets are typically cash-cows in mature markets...Hence, not prone to file many patents like typical R&D companies). On the other hand, as the second component of the Fixed Assets, we will monitor the WCR evolution: in

<sup>&</sup>lt;sup>2</sup> In our case study analysis, we will also take a normative tax rate, so that we can separate the tax effect in the ROCE.

particular, we will look at the ratios of days of turnover, days of payables and receivables to see how the WCR needs of the company are managed and to evaluate the sustainability of such WCR-cuttings.

Second, on the profitability side, i.e. looking more into details at the numerator of the ROCE, analysing the value creation requires to understand the evolution of the EBIT. Then, it will be interesting for us to separate the top-line effect from the cost-cutting improvements. On the top-line side, we propose to analyse the revenue growth (relatively to the sector, over the same period), and split it between internal growth and external growth. It allows us to have information about the degree of build-up strategy of the LBO. In our view, the cost improvement must also be split between the fixed costs and the variable costs. Here as well, it will be interesting to compare the EBITDA margin evolution of the company under LBO with its peers benchmark. Eventually, within the cost structure analysis, we will also pay attention to the employment (number of FTEs, as % of sales), to evaluate in what extent the cost-cutting does affect the employment, the total payroll or, on the contrary, if the LBO fosters employment and wage growth, as concluded by Thesmar (2011).

Overall, as it will be illustrated in the case study, we can decompose the ROCE improvement, between a EBIT effect and a Capital Employed effect, so that we may evaluate the contributions of those two drivers. Because the ROCE is a ratio, and we want to measure the contribution of the numerator on the one hand, and the denominator, on the other, we propose to use the logarithm function, and decompose it, as explained followed. Since the LN function is not linear, there is no denying that such a transformation will distort the initial contributions we want to measure, but this simple transformation can still give us a rough idea of how much the EBIT and the Capital Employed changes contribute relatively to each other. We notice that the Capital Employed contribution is mechanically negative as it represents the denominator of the ROCE (in the Figure 2, -25% contribution for a total change in the ROCE normalized at 100%):

Figure 3: LN(ROCE)	) decomposition -	<ul> <li>methodology</li> </ul>
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ROCE change - EBIT and CE contributions	Value	-Normalized-			_	
LN(ROCE-initial)	-3,00			(76)	%	
LN(ROCE-final)	-1,00					
(0) ∆LN(ROCE)	2,00	100%	176%			
(1) EBIT contr. = ∆LN(EBIT-final / EBIT-initial)	2,50	125,0%				
(2) CE contr. = ∆LN(CE-initial / CE-final)	-0,50	-25,0%				100%
(1)+(2)	2,00					
Check(0) = (1)+(2)	Ok					

Source: own contribution

#### **II.2.** The shareholders

#### II.2.1. The total value creation at the fund's level: ROE - COE

From a shareholder perspective, the fund creates value when its return on invested equity is greater than its cost of equity, and destroys value otherwise. Like we did for the firm, we choose here to measure the spread in return by computing the ROE (the Return on Equity at the firm level that will be a proxy for the return on equity invested by the fund) and the  $k_e$  (Cost of Equity, computed with the CAPM – defined in the previous section), with:

$$ROE = \frac{Net \ Profit}{Equity}$$

As already mentioned in a previous section (I.3.), it is important at this point to remind the leverage effect formula, showing the relation between the ROE and the ROCE: again, this formula shows how you can boost the ROE, by increasing financial debt, despite a constant Return on Capital Employed (ROCE), and considering that ROCE > cost of debt:

$$ROE = ROCE + \frac{D}{E} \times (ROCE - cost of debt after taxes)$$

#### II.2.2. Two additional indicators: the IRR and Cash-on-Cash multiples

An usual way to assess the attractiveness of an investment opportunity, or the performance of investment, ex-post, for a PE fund is by computing the Internal Rate of Return (IRR) and the Cash-on-Cash multiple (C/C). At the opposite of the ROE, which is an accounting ratio, those two metrics are cash flow focused: the IRR is the rate of return that equals the NPV of the total cash flows (inflows + outflows) to zero. The C/C multiple, that does not take into account the time-value of the investment simply evaluates the ratio of total inflows / outflows, from the fund perspective. For that reason, the C/C multiple cannot be retained as an indicator of value creation. The main reasons that exclude the IRR to be retained as an indicator of value creation, are: (i) the IRR may have different values and can result in conflicting results with the NPV criteria; (ii) the IRR does not take into account the cost of capital, and can not compare two projects with different durations; (iii) last but not least, the IRR implicitly assumes a unique discount rate for the project evaluated, which is not the case for a traditional LBO project: on the contrary, evaluating each year the spread (ROE

– COE) allows a time varying discount rate (consequently: time varying WACC, already discussed in the previous section). Nevertheless, as a supplementary criteria in our analysis, computing the IRR and the C/C multiple will be interesting for two reasons:

- Because they are widespread indicators and usually advertised by the fund or the bank, in any LBO deal. Therefore, finding an IRR significantly higher than the ROCE will suggest conflicting signals between the company's value creation and the value creation at the fund level.
- Secondly, although we do not retain the IRR as a true value creation indicator, it is a good and easy way to analyse in detail the cash-flow generation by the PE fund. Therefore, the IRR decomposition can be helpful when understanding where the cash generation comes from.

#### II.2.3.Methodologies to decompose the IRR

Digging further into the analysis of the IRR, we choose two ways of decomposing the IRR: the "traditional method" and the "LN method". Both methods will be illustrated in our case study section.

#### The "traditional method":

This methodology is inspired by the method proposed by Engel (2012). We decompose the IRR into 3 factors: the leverage effect, the Free Cash Flow (FCF) effect, the EBITDA enhancement effect, and the EBITDA multiple effect:

- Leverage effect: it consists in separating the levered IRR and the unlevered IRR, as for any leveraged investment, according to the following formula (Acharya & Kehoe (2009)):

$$IRR^{l} = IRR^{u} + (IRR^{u} - r_{D}) \times \frac{D}{E}$$

- FCF effect: it is measured by the adding all the FCF available for dividend payments and debt reimbursement. In our understanding, the sum of the FCF effect and the leverage effect must be equal to the so-called deleveraging of the "LN method".

- EBITDA effect: it measures the contribution to the IRR, due to the earning enhancement. It is measured by the change in EBITDA multiplied by the entry EBITDA multiple. The EBITDA effect can be split into a sales growth effect and a pure margin enhancement effect (see LN method). - Multiple effect: eventually, the multiple effect extracts the contribution of the EBITDA multiple increase (or decrease) in the total IRR. It is measured by the change in multiple multiplied by the entry EBITDA.

This multiple effect is partly referring to the section I.3., dealing with the ability of the fund (or, on the contrary difficulty...) to buy low and sell high its participation: it can be attributed to the market mispricing capabilities of the fund, favourable credit and market conditions (e.g. favourable demand at the exit time) or simply good negotiation capabilities for the fund. Nevertheless, the multiple effect is not only related to the previous factors, external to the firm. On the contrary, the fund capability of selling at a higher multiple than the entry multiple may be explained by numerous factors, inherent to the firm's potential, such as an improved governance at the firm, better growth perspectives for the future, or a better recognition and reputation towards suppliers or customers (goodwill that could have been added by the fund, discussed in our section I). Therefore, in our view, the multiple effect is kind of a grey matter, encompassing many factors, that can be related to the firm's growth perspectives, its reputation and quality of management or other external factors, not necessarily related to future or past value creation at the firm level. Nevertheless, one factor, contributing to the change in the multiple, can be monitored quite easily: the market multiple evolution. In fact, by looking at the competitors of the company, we can analyse the EV/EBITDA multiple of the sector, and its evolution over our LBO case study. It will then help us to extract from this multiple grey matter one specific factor that can be attributed to the market improvement or deterioration.

#### The "LN method":

Another way to decompose the IRR is proposed by Loos  $(2005)^3$ : his "Value attribution" methodology is not so far from the approach we proposed to decompose the ROCE change and basically consists in splitting the logarithm of the capital gain between 4 factors: the deleveraging effect (or debt-repayment effect, but called by Loos (2005) the "leverage effect") the revenue effect, the margin effect and the multiple effect:

- Deleveraging effect: measured by the following ratio:

<sup>&</sup>lt;sup>3</sup> Detailed methodology: Loos (2005)

$$\frac{Capital\ gain}{EV-multiple} = \frac{Cash-exit/Cash-entry}{EV-exit/EV-entry}$$

- Revenue effect: measured by the following ratio:

$$\frac{Sales - exit}{Sales - entry}$$

- Margin effect: measured by the following ratio:

 $\frac{EBITDA margin - exit}{EBITDA margin - entry}$ 

- Multiple effect: measured by the following ratio:

EBITDA multiple – exit EBITDA multiple – entry

The final IRR decomposition consists in computing the logarithm of the total (levered) capital gain and splitting it into the sum of the logarithm of the leverage effect, the revenue effect, the margin effect and the multiple effect.

II.2.3. Digging into the value creation at the fund's level: the drivers of the ROE improvement

$$ROE = \frac{Net \ Profit}{Equity} = \frac{Net \ Profit}{Revenues} \times \frac{Revenues}{Total \ Assets} \times \frac{Total \ Assets}{Equity}$$

The previous formula (DuPont formula) divides the ROE between 3 different parts, helping us to understand exactly where the value creation comes from:

- *Net profit / Revenues* = net profit margin, measuring the operating efficiency.
- *Revenues / Total Assets* = total asset turnover, measuring the asset use efficiency.
- *Total Assets / Equity* = equity multiplier, measuring the financial leverage.

Then, we can illustrate the ROE decomposition with the same method used in the ROCE decomposition, i.e. by relying on the logarithm function for studying the changes of each component. We notice that the leverage effect is expected to have a negative contribution, since it measures the deleveraging of the company over the LBO period. It is different from the leverage contribution we mentioned when previously analysing the IRR, that represents the part of the IRR, explained by the leverage. An illustration of this decomposition is given in the case study of this paper.

#### II.3. The debtholders: ROD - COD

Evaluating the valuation created at the debt level will be far more straightforward than for the two previous sections. Here as well, the value creation can be defined at the debt level by the difference between the return on the debt and the cost of debt, provided by the financiers of the deal.

First, the return on the debt (ROD) for the bank is actually equal to the cost of debt for the company, which is taken as the effective cost of gross debt, i.e. the financial expenses of the company over its gross debt.

Second, the cost of debt (COD) will be computed as the sum of the risk-free rate and the Credit Default Spread (CDS) of the sector of the company under LBO.

#### **II.4. Measuring the risk of the firm**

We will end up this section by discussing how to evaluate the risk of the target company. Undoubtedly, computing the spread (ROCE – WACC) of the company to assess its value creation appears for us to be only a partial view of the analysis, since we do not take into account the additional risk induced by the LBO structure. We propose a three-factor approach in evaluating the risk of a LBO: (i) the financial leverage; (ii) the operating leverage; (iii) the evaluation of the Beta of the company.

The first and direct consequence of a LBO is the increase in the financial leverage and the financial charges additional burden. Usual coverage ratios to monitor and analyse the leverage effect and sustainability of a LBO, in particular scrutinized by Leveraged Finance departments in investment banks are the following ones: (i) the Debt / Equity ratio; (ii) the Net Debt / EBITDA multiples (and Senior Debt / EBITDA multiples); (iii) the (EBITDA –

Capex) / Cash Interest ratio (iv) the DSCR ratio, i.e. the ratio of cash available for the debt service – principal, interests and lease payments. It is measured by:

$$DSCR = \frac{Net \ Operating \ Income}{Debt \ Principal \ + \ Interests \ + \ Lease \ payments}$$

In our case study analysis, we will try to dig out those ratios as far as possible, when having sufficient financial data for it.

Nevertheless, analysing the risk of a LBO does not only encompass the financial risk, and it appears crucial for us not to forget the operating risk evaluation. We propose two simple and traditional ways to measure it: (i) first, by measuring the fixed charges over the total charges, which will be an indicator of how much the break-even point has been increased; (ii) another way of measuring the operational risk is by computing the Degree of Operating Leverage (DOL – Brigham (1995)), as given below:

$$DOL = \frac{\% \ change \ in \ EBIT}{\% \ change \ in \ Sales}$$

It measures the effect of a given change in EBIT relatively to the Sales change. The higher the fixed costs are, the higher the DOL will be and then the riskier the company will be.

Eventually, to complete our LBO target risk assessment, we propose to compute both the unlevered Beta (i.e. asset Beta, or Beta of the company) and the levered Beta (i.e. Beta of the Equity). The first one can be obtained from the second thanks to the following formula (with the usual notations):

$$Beta_{Unlevered} = \frac{Beta_{Levered}}{1 + (1 - t) \times \frac{D}{E}}$$

The equity Beta will be used to compute the cost of equity  $k_e$  as described in the section II.1. and the company Beta, as it reflects the asset volatility, will be used as one of our criteria when evaluating the risk of the company under LBO. Usually, it is inferred from a peers comparison analysis (average of quoted peers from which we will extract the unlevered Beta).

To conclude this second section, we summarize in the following table, the framework developed to measure the value creation for the different stakeholders of the firm:

LT strategy & potential risks for the company	Objective conflicts between the Fund & the co.?	Time sustainability:	<ul> <li>Evolution before LBO, over the LBO period <u>and</u> post LBO</li> </ul>	<ul> <li>FCF vs. LT profitability:</li> <li>Capex + R&amp;D expenses</li> </ul>	- FCF: Cash conversion - WCR improvement	• FTEs evolution		Assessing the other risks for the company	<ul> <li>Operational leverage:         <ul> <li>Fixed costs/Variable costs</li> <li>Fixed costs/Variable costs</li> <li>Pazzet-mileveral evolution</li> <li>DOL evolution</li> </ul> </li> </ul>	• Financial leverage: $\beta_{aquity-leverad}$	<ul> <li>Financial leverage: Net Debt / EBITD; Net Debt / Equity; DSCR;</li> </ul>	
ation for the different shareholders Digging into the value creation	ROCE decomposition:	- EBIT improvement - Capital Employed evolution	<ul> <li>Sales growth analysis:</li> <li>Peers/Sector benchmark</li> </ul>	<ul> <li>External growth contribution: build- up strategy?</li> </ul>	EBITDA margin improvement:         Fixed cost vs. variable costs	ROE decomposition:     The DuPont formula	- The Leverage formula	• IRR analysis: Solve officer	<ul> <li>Jates agrect</li> <li>Margin contribution</li> <li>Margin contribution</li> <li>Market environment</li> <li>Market environment</li> <li>Fund's negotiation abilities</li> <li>FCF effect: Cash conversion</li> <li>Leverage effect</li> </ul>	Debt ratings evolution	• <b>Debt structure details</b> : pricing, maturity and characteristics of the different tranches	
Measuring the value cre Measuring the total value created		ROCE – WACC		<ul> <li>KOCE =NOPAI / Capital Employed</li> <li>WACC: estimated by the CAPM model</li> </ul>			ROE – COE		<ul> <li>ROE = Net Income / Equity</li> <li>COE: Cost of equity, estimated by the CAPM model</li> </ul>	ROD - COD	<ul> <li>ROD =effective financial expense of the company</li> <li>Company</li> <li>COD = Risk-free rate, adjusted by the company CNC</li> </ul>	Sector CLUS
			WYI.	ł		(an	±Ω	l) SS	<i>SHAREHOLDEN</i>	SAE	BTHOLDI	DE

Figure 4: Measuring the value creation - Framework

Source: own contribution

#### Part III. The Legrand case study

The third part of this paper will be devoted to working on the Legrand case study and analysing the value creation for this specific LBO development: studying what the main value creation drivers are, as discussed in our first section and applying the quantitative framework of the second section, to measure the value creation for the different stakeholders. We decided to choose that specific case study for several reasons. First, we wanted to analyse a major and well-known French LBO case study. Furthermore, since the company has been delisted at the acquisition and relisted at the exit, the Legrand case study allows us to have access to public information, at the opposite of many private LBO situations that do not display sufficient financial data for analysis. We nevertheless regret not to have enough time to study another case, in particular an example of a well-known LBO "failure" (at the opposite of Legrand), that could have been complementary to our analysis. Our approach will be, as far as possible, a comprehensive analysis of the deal, covering the pre-LBO assessment, the analysis of the main financial events during the LBO, and the assessment of the value creation, ex-post LBO. We choose to adopt a question and answer approach, as a practical way to address this case study.

#### **III.1. Preliminary and pre-LBO analysis**

#### Preliminary question: company presentation

Founded in 1926 and based in Limoges, Legrand manufactures a wide range of lowvoltage electrical final products and systems, designed for homes, commercial and industrial buildings. They are used for electrical installations and communication networks. Still today, it is the global market leader for switches and sockets. As of 2002, the company mainly operates in France and Italy (combined 50% of sales) but is also present in other European countries and in the US (notably, with the Wiremold acquisition in 2000). It employs c.25k FTEs and Mr François Grappotte, CEO since 1983, manages it. Listed since 1970, Legrand is acquired by Schneider in 2000. Following the refusal of the EC about such a merger, Legrand is finally taken private by a consortium led by Wendel and KKR, through a LBO development between Dec-2002 and May-2006, then re-listed in May-2006.



Figure 5: Legrand sales (€m) and EBIT margin: evolution and breakdown

Source: company information, own research

Legrand's products are distributed through a network of specialized wholesalers, selling themselves to a large and fragmented electrician customer base, as displayed in the Figure 5:



Figure 6: Distribution network

Source: Société Générale and Credit Suisse broker reports (initiation of coverage - Jun-2006)

The market of the company, explicitly comprised by "products and systems for low voltage electrical installations and data networks" has a global estimated size of 50bn€ (c.6% market share for Legrand). Legrand is the only global pure player, focused in low-voltage electrical equipment. As such, Legrand's competitors are either international large players (that only have a specific division devoted to low-voltage electrical equipment), or small local players, more specialized. While the first ones have financial strength and often strong R&D capabilities, the second ones benefit from a good knowledge of the market and a flexible organisational structure.

## 1. After having conducted a strategic and a short financial analysis, over the 2000-2002 period, does Legrand appear to be a good candidate for an LBO acquisition?<sup>4</sup>

#### Strategic analysis

The market of low-voltage electrical installations benefits from many advantages, when considering an LBO acquisition:

- First, it is a mature market with a limited end-market cyclicality, resulting in robust and predictable cash flows for Legrand. It is firstly due to the specific end-market demand: a fragmented customer base of electricians that often are very loyal to the brand, due to habits and reliability reasons. Furthermore, the demand is characterized by "a regular flow of low ticket items": indeed, the low-voltage electricity installation costs often represent a very small proportion of the total building costs and a major part of Legrand revenues comes from the renovation segment (60% as of 2005), that is undoubtedly less sensitive to deflationary economic cycles. This "flow nature of business" contributes to make the WCR less fluctuant, which is a key criteria in a LBO acquisition. On top of that, over the 1990-2000 period, Legrand has always managed to sustain an historical growth rate of c.5%, including annual price increases of 1-2%. This comes from low price-demand elasticity for the electricians, who can easily pass on price increases to the final customers and do not pay as much attention to the price as to the product reliability, its ease of installation or its availability.

- Second, Legrand's market has high barriers to entry, all the more so that the competitive position of Legrand is a specific one - only global pure player, specialized in low-voltage electrical equipment. The most important barriers to entry of Legrand's market and position are: (i) the strong relationship the company has with its distributors and electricians, and the resulting brand loyalty, towards products that have to be reliable, safe (security is a key selection criteria) and easily installable; (ii) the national regulations, specific to each country in which Legrand is implanted and that require, for a potential entrant, a deep market knowledge; (iii) the R&D capabilities: Legrand historically used to spend significant R&D expenses, as compared to its competitors (see question 13).

- Third, it is a "globally fragmented and locally concentrated" market, meaning that, on the one hand, the local competition is often less fierce; on the other, it gives a

<sup>&</sup>lt;sup>4</sup> The information provided in this question, as well as for the previous company presentation, largely refers to two broker reports: Credit Suisse & Société Générale initiation of coverage broker reports (June 2006)

significant scope for acquisitive growth. As such, external growth has been historically a clear strategy to sustain Legrand's growth. As such, in 2000, Legrand acquired Wiremold (US cable manufacturer) for c.770m\$, strongly supporting its US growth.

#### Financial analysis

The main financials of the company are displayed in the Figure 7. The top-line growth over the 1997-2002 period proves to be sustained and resilient, notably thanks to an acquisitive growth strategy followed by the company, regular price increases (c.1-2% p.a.). Hence, the resulting CAGR over the 6-year period is above 8%, significantly outperforming the sectorial underlying growth rate of c.4%. Although Legrand used to be one of the most profitable company in its sector before 2000, the operating margin has been strongly deteriorated, notably due to the Wiremold acquisition in 2000, which worsened the group EBITDA and EBIT margins. As such, at the LBO acquisition, François Grappotte told in an interview<sup>5</sup> that the return to a 15% margin level was expected, after having "absorbed" the acquisition of Wiremold. Hence, leaving out the negative impact of this acquisition, we can conclude about the high profitability of the company and, most importantly, about its stability. Likewise, the normalized cash-flow generation of the company is quite stable, at an historical level of c.50%, excluding the Wiremold impact.

On the investment side, in our view, the needs in terms of WCR and Fixed Assets seem to be both significant, as compared to the EBIT generation and to the sectorial comparison (see question 13). As such, there is definitely a significant scope for improvement in the asset turn for the LBO and, not surprisingly, we will find in our coming analysis, that the WCR and asset turn improvements largely contributed to the operating performance enhancement. Although significant (c.20% of sales), we also notice that the WCR needs are relatively stable and therefore predictable, in the context of an LBO acquisition.

As a result of both a deteriorating operating margin and a poor asset turn management, it is not surprising to find a low ROCE, even slightly below the cost of capital. Per se, over the 2000-2002 period, the company keeps destroying value. Nevertheless, it does not seem alarming in our view, since: (i) as explained in the question 6, our ROCE computation, for accounting reasons, may slightly underestimate the real profitability of the company; (ii) the ROCE deterioration is the direct consequence of the Wiremold acquisition, and should be improved after 2002. Again, it gives scope for improvement during the LBO.

<sup>&</sup>lt;sup>5</sup> Source: Reuters – 12/11/2002 – Legrand organise son avenir avec le consortium Wendel

On the debt side, the leverage and gearing levels are reasonable, as of 2002, giving here as well, a possibility for an LBO acquisition.

(€ millions)			ACT	UAL		
Normative tax rate = $\tau$ = 30%	1997A	1998A	1999A	2000A	2001A	2002A
Revenues	1 985	2 177	2 300	2 800	3 096	2 970
% growth		9,7%	5,6%	21,7%	10,6%	-4,1%
Gross margin	862	972	1 035	1 260	1 346	1 320
% margin	43,4%	44,6%	45,0%	45,0%	43,5%	44,4%
EBITDA	455	500	525	592	583	574
% margin	22,9%	23,0%	22,8%	21,1%	18,8%	19,3%
D&A (2)	142	149	158	194	235	249
% margin	7,2%	6,8%	6,9%	6,9%	7,6%	8,4%
EBIT (1)	313	351	367	398	348	325
% margin	15,8%	16,1%	16,0%	14,2%	11,2%	10,9%
Capex (3)	151	191	213	234	189	154
% sales	7,6%	8,8%	9,3%	8,4%	6,1%	5,2%
Normative FCF = (1)*(1-τ) + (2) - (3)	210	204	202	239	290	323
% Cash conversion	46,2%	40,7%	38,5%	40,3%	49,7%	56,2%
Fixed Assets (4)	-N/A-	-N/A-	-N/A-	2 531	2 794	2 283
WCR (5)	-N/A-	-N/A-	-N/A-	586	594	558
% sales				20,9%	19,2%	18,8%
Capital Employed = (4) + (5)	-N/A-	-N/A-	-N/A-	3 117	3 388	2 841
Net Financial Debt	-N/A-	-N/A-	-N/A-	1 531	1 392	855
Gearing [= Net Debt / Equity]	-N/A-	-N/A-	-N/A-	1,1x	0,8x	0,5x
Leverage [= Net Debt / EBITDA]	-NI/A-	-N/A-	-N/A-	2.6x	2 4 v	1 5v
	-1 1//7-	-1 11/71-	-1N/ <i>I</i> -1-	2,07	2,٦٨	1,57
ROCE [= EBIT*(1-τ) / Capital Empl.]	-N/A-	-N/A-	-N/A-	8,9%	7,2%	8,0%
ROCE - WACC	-N/A-	-N/A-	-N/A-	-0,4%	-2,1%	-1,1%

Figure 7	1:	Pre-LBO	financial	network
	•			

Source: company information, own research

#### **Risks & Mitigants**

The risks of Legrand, specifically from a LBO perspective, are more strategic than financial (considered the high profitability of the company and potential cash-flow generation). The only significant financial risks we can notice are that of currency translation (hedged) and price inflation for raw materials (representing a significant portion of the COGS, i.e. nearly 30% of sales). Meanwhile, historically, it has not posed a real threat for the company, which has always managed to pass through price increases on to final customers.

Strategically the risks are twofold: competitive and related to the high dependence of Legrand's top line. On a competitive side, there is a risk of growing competition, notably from large players (Schneider and Siemens), keeping on gaining market shares on the particular low-voltage segment. As opposed to smaller players, those players benefit from much more financial capacity, giving them room for external growth and eventual pricing war, therefore hampering the top-line key advantage of Legrand. In our view, the risk of substitutes mainly comes from the technological threat for Legrand's products (without any particular technological content). Still, it is a long-term market risk, and mitigated by the high R&D capabilities of the company. From a top-line perspective, Legrand turns out to be highly dependent to France and Italy (respectively 31% and 19%, as of 2002), and less exposed to emerging countries than competitors (below 20% compared vs. c.30% for Schneider). As opposed to more mature market, emerging countries present higher growth opportunities (since building construction and renovation are mainly driven by GDP growth and consumption). Relying on mature markets prevents Legrand from fuelling its growth with such a potential. Last but not least, Legrand also largely relies, in terms of sales, to two large distributors (Sonepar and Rexel<sup>6</sup>), representing a significant operational risk for the company, in case of difficulties with those clients.

#### III.2. The delisting and the acquisition by Wendel and KKR (Dec-2002)

## 2. Comment about the Schneider's merger failure. Look in detail at the different steps that led to "a divorce of a just-married couple". What lesson can you draw?<sup>7</sup>

- At the end of the year 2000, Schneider announces a friendly takeover of Legrand, followed by a public tender offer in January 2001, gathering c.98% of the total capital of Legrand. At this time, François Grappotte is the CEO of Legrand and Henri Lachman the CEO of Schneider.
- In November 2001, surprisingly for the two CEOs, the European Commission (EC, Mario Monti) does not approve the merger of Schneider and Legrand, concluding that the market shares of the combined entity would vary between 40% and 90% for certain segments in some countries. The surprise of the CEOs comes from their actual willingness to divest their participations in countries where they would have a clear dominant position, which they believe would not be the case of the entire Europe, but

<sup>&</sup>lt;sup>6</sup> No information for 2002, but accounting for 26% of sales, as of 2005

<sup>&</sup>lt;sup>7</sup> Inspired from the article: "Schneider-Legrand, l'impossible fusion entre ego" (La Tribune, December 2002)

only for France and Italy. Undoubtedly, they reproach the EC not to have assessed the competitive position at a whole European level.

- In December 2001, they decide to file an appeal to the European Court of Justice (ECJ), decision which is strongly advocated by Henri Lachman but not really by François Grappotte, who knows that the merger will now never happen and intends to pursue the strategy of Legrand on a stand-alone basis, from this point. This date definitely sets up the beginning of two different strategies and points of view between Legrand and Schneider: the first one wanting to get back its independence; the second, having acquired Legrand shares (including the control premium) and struggling for the acceptance of the merger by the EC.
- At the same time, responding to the EC who has asked about which participation Schneider would intend to divest (in order to comply with anti-trust authorities), Schneider comes up with the names of Wiremold, Ortronics and Arnould. Legrand categorically disagrees with such a break-up of the group. It continues to advocate for a comeback to independence and public listing.
- Eventually, as a last major point of contention, Legrand learns that Schneider is, alternatively, exploring the option of a cession to potential PE funds, including one consortium led by Carlyle and Permira, with the help of Patrick Puy, the former CEO of Legrand (1994-2000). Many PE funds would be interested and are rumoured to look at the deal for several years. KKR would have been interested for three years...Nevertheless, such an exit would mean an eviction for the current management of Legrand.
- On the 22<sup>nd</sup> of October 2002, the ECJ decides that the merger can be conducted, despite the EC decision one year before. Nevertheless, the EC still asks for many restrictions and disposals in the new entity Schneider-Legrand. Legrand asks Schneider for a return to the 2001 situation, while Schneider refuses to give up the control of Legrand.
- At the end of November 2002, Legrand decides to sue Schneider at the commercial court, finally proving Legrand right about its willingness to "divorce" with Schneider.
- On the 10<sup>th</sup> of December 2002, the "KKR-Wendel consortium" acquires c.98% of its capital, finally sold by Schneider. The remaining shares will be acquired through a guaranteed share price offer, followed by a squeeze-out offer. The shares are delisted on the 2<sup>nd</sup> of October, 2003.

On top of the interesting episodes of this merger failure case study, confirming the importance of the "human equation" in M&A and that longer M&A processes are always riskier, it is worth noticing one crucial point for our case study: the "divorce" situation appears to be an ideal situation for the funds, interested by Legrand for many years, to comeup and buy the assets at a discount price. Indeed, the Legrand case study is a good example of a "buy-low" strategy, thanks notably to an acquisition price that was significantly lower than the required price, for Schneider's acquisition, one-year before. As such, press-releases reported that Schneider, nearly forced to "fire-sell" Legrand, had to report a write-down of  $\in$ 2.7bn and Merger Market reported a 20% discount acquisition vs. the trading of Legrand shares over the past 10 years. Looking at the EV/EBITDA multiples of Legrand's peers at that time also confirms the absence of premium in the acquisition price:

Figure 8: Acquisition multiples - peers comparison

EV/EBITDA Multiple	Dec-2002
Legrand	7,4x
Schneider	4,9x
Siemens	7,3x
ABB	10,4x
General Electric	18,5x
Peers average (excl. GE)	7,5x

Source: company information, own research

# 3. From the $\notin$ 3.63bn price proposed, compute the EV and detail the acquisition package (Equity + Debt). In particular, what are the leverage and the debt structure? On the equity side, what is the amount invested by the Wendel consortium (i.e. Wendel + KKR + minority investors)?

The acquisition price for 98.1% of the equity was set to  $\notin$ 3,630m, which is tantamount to a  $\notin$ 3,700m value for 100% of the equity. We present below the detailed financial structure for the acquisition, in a *Sources and Uses table:* 

			Sources 8	Uses table				
EBITDA2002 = 574								
Sc	ources of Fu	nd		Uses of Fund				
(fm)	Value	0/		(fm)	Value			
Term Loan A	700	70 16%		(em)	value			
Term Loan B	566	13%	1,2X 1 Ox	Equity Value (100%)	3 700			
Term Loan C	566	13%	1,0x	Debt to refinance	530			
Total Senior Debt	1 832	42%	3.2x	Fees	11.3			
		-12 /0	0,21	Implied fees % (as % of Total EV)	2.7%			
Vendor Ioan	150		0.3x	Enterprise Value	4 230			
Mezzanine Facility	600	14%	1,0x					
Total Acquisition Debt	2 582	59%	4,5x					
Total Equity	1 761	41%	3.1x					
-o/w Wendel	659	37%						
-o/w KKR	659	37%						
-o/w West LB	200	11%	% of Total Eq	uity				
-o/w HSBC	115	7%						
-o/w GS Cap	100	6%						
-o/w Legrand founders	29	2%						
Total Sources	4 343	100%	7,6x	Total uses	4 343			
RCF facility	250		0,4x					
Capex facility	100		0,2x					
Total Debt (Holding + Op.)	3 082		5,4x					

#### Figure 9: LBO acquisition: Sources & Uses table

Source: press releases, own research

The total implied EV is equal to €4,230m representing a 7.4x EBITDA<sub>2002</sub>. From a consolidated point of view, this EV is financed through a total of €1,761m Equity and €2,469m of debt (Senior + Subordinated), such as presented in the Figure 10. The total leverage is therefore 4.5x, with a senior leverage equal to 3.2x.

#### Figure 10: Consolidated Balance Sheet and Leverage at acquisition



Source: press releases, own research

- The shareholding structure is led by the two major funds: Wendel and KKR, that have invested each a total of €659m in this LBO. Each fund holds therefore a 37% participation in the holding company. In addition to that, the other main minority shareholders are WestLB, HSBC and Goldman Sachs Capital Partners. We can eventually notice that the participation proposed/required for the founders and the management of Legrand is nearly €30m, giving them a 2% control in the company.

## 4. Quasi-equity financing instruments: detail and comment about the Mezzanine debt and the Vendor loan.

- Mezzanine facility (€600m): actually, this subordinated loan was a bridge facility that was refinanced 3 months after the acquisition, by the issuance of High Yield Bonds (HYB). Issued at the beginning of February, those new bonds have a maturity of 10 years, a pricing guidance of 10% (\$ denominated tranche) and 10.5% (€ denominated tranche) and a highly speculative rating: B+ for S&P and B1 for Moody's. Those HYB are subordinated to the existent senior debt.
- Vendor loan (€150m): as explained by Pindur (2007), vendor loans can be considered as quasi-equity products, such as HYB discussed previously. They are provided by the vendor (in our case, by Schneider) and usually work like traditional earn-out schemes: the repayment of the loan is conditional to the achievement of a predetermined performance level (e.g. EBITDA threshold). They allow to align interests between the seller and the buyer and to reduce the information asymmetry between those two parties. Hence, it may enable the seller to negotiate a higher price, by taking part to the financing of the deal.

#### **III.3.** The overall value creation during the LBO period (2003-2006)

#### 5. Detail the WACC estimation for each year of the LBO period.

#### 1/ Risk-free rate and Equity Risk Premium:

- As explained in the second part, the risk-free rate is estimated with the 5-y French government bond. In our view, ex-ante, a 10-y government bond would be too long for an usual LBO investment, and we can not be sure that the funds could have, as of their entry in Dec-2002, anticipated an actual 10 year duration period for the Legrand investment. Nevertheless, because of the actual the long-term engagement of the two funds, we choose to add to the 5-y government bond interest rate an arbitrary spread of 15bps (as of comparison, the average spread between a 10-y and 5-y government bond over the 2003-2014 period was c.30bps). Anyway, selecting 10-y or 5-y government bond interest rates does not change our result significantly.

- Because of difficulties to find accurate data on forward Equity Risk Premium (ERP), it has been taken at 6% for each year of the LBO period. As such, we prefer to resort to a sensitivity table (cf. Figure 11), instead of guessing any time-varying ERP.

#### 2/ Beta computation (levered and unlevered):

- For the years 2003-2006, i.e. during the non-listed LBO period, we imply the equity beta from: (i) a sectorial unlevered beta of 0.80\*<sup>8</sup>, considered fixed for this 3-year period; (ii) a 3,700m€ estimated market capitalization (price paid at acquisition); and (iii) the effective tax rate of the corresponding year. The formula linking the unlevered and levered beta is given in the second section of this paper.
- For the years after (2006-2014), we estimate a statistical equity beta, by applying the CAPM formula, i.e. calculating the beta from the following ratio:

$$\beta_{equity} = \frac{COVARIANCE(r_{LEGRAND, r_{ERP}})}{VARIANCE(r_{ERP})}$$

where  $r_{LEGRAND}$  and  $r_{ERP}$  are respectively the daily return on the stock of our company, and the effective ERP, i.e. the actual excess returns of the CAC40 index over the riskfree rate (chosen as the 5-y government bond interest rate)<sup>9</sup>. Then, we imply the unlevered beta from this equity beta for the years 2006-2014. It allows us to compare the resulting asset betas (or unlevered betas) for the years 2006-2014 with the 0.80 assumption taken for the period before, and to adjust it necessary<sup>7</sup>.

3/ Effective tax rate and market capitalization :

- We remind that the tax rate used in the WACC formula is the effective tax rate, and not a normalized or theoretical one.
- Eventually, to account for accurate ratios D/(D+E) and E/(D+E) in the weights of the WACC formula, we choose to take a market value for the equity over the 2003-2014

<sup>&</sup>lt;sup>8</sup> We actually started with a 0.85 value for the sectorial beta (Source: brokers' reports). Our resulting average for the sectorial betas calculated over the 2006-2014 period turned out to be 0.73, with no special pattern over the period. We therefore lowered the initial 0.85 beta to 0.80 for the first years, accounting for an additional operational risk, due to the LBO period

<sup>&</sup>lt;sup>9</sup> Initially given on an annual basis, the interest rates of the government bonds are pre-transformed on a daily basis, with the usual compounding formula, so that they can be compared to the CAC40 daily returns.

period: there is no issue for the 2006-2014 period, since the company is listed over this period. Before, we choose to take the pure-equity investment of the consortium (equal to 3,700m), as a proxy of the market capitalization. On the debt side, having no more accurate data, we take the accounting value of the financial debt (end of the year).

In the Figure 11, we can have a brief look at the WACC evolution over the years and, most importantly, be cautious about its sensitivity (only on the average over the period): hence, it can be now easily determined that the average WACC is, with a high confidence interval, located between 7.1% and 8.7% (corresponding to the extreme boundaries of the two uncertain inputs, in our view: the chosen sectorial or unleveraged beta and the Market Risk Premium). Doing the same analysis for the COE leads us a confidence interval of [6.8%-8.5%]. Such a sensitivity analysis is crucial for the next questions, to assess in which extent our value creation measures can be sensitive to our chosen assumptions.



#### Figure 11: WACC estimation and sensitivity of WACC & COE

## 6. Value creation for the firm: compute the ROCE and the WACC over the LBO period. In the ROCE improvement, what are the Capital Employed contribution and the EBIT improvement contribution?

Having estimated the WACC in the way described before, we now want to monitor the spread ROCE-WACC, measuring the value creation at the firm level. Since the ROCE is an accounting indicator, it can be misleading and results in estimations subject to accounting classification. For this reason, we choose to do three distinct ROCE estimations:

1/ <u>The effective ROCE</u>, derived from the ratio of the EBIT (non-retreated, multiplied by the effective tax rate) over the Capital Employed. The Capital Employed is estimated by the invested capital, equal to the sum of the Net Debt and the shareholder's equity. 0.90

7,3%

7,6%

8.0%

0.90

2/ The normative ROCE: only, the normative tax rate changes.

3/ The normative<sup>2</sup> ROCE: it includes the normative tax rate, and is also derived from a 'normative Capital Employed' aggregate, excluding the intangible asset re-evaluation, due to the LBO acquisition (and strongly increasing the Fixed Assets from 2002 to 2003).

As displayed in the Figure 12, the difference in estimation between the effective ROCE and the normative<sup>2</sup> ROCE is significant (+6% on average). Meanwhile, in our view, it is more important to look at the evolution of the ROCE, during the LBO, more than trying to come-up with an exact accurate value. We notice that this evolution is similar: for both spreads, the company keeps destroying value over the 2000-2004 (or 2006) period; afterwards, the spread ROCE-WACC keeps on increasing. We can therefore interestingly conclude that, not only did the LBO contribute to create value at the firm level, but it was also done over the long term, even after the IPO of the company.







Source: company information, own research

In the ROCE improvement, we can distinguish between two contributions: the EBIT improvement and the Capital Employed increase (mechanically deteriorating the ROCE ratio). Not surprisingly, the EBIT increase more than compensates the Capital Employed increase (otherwise, we would not have any ROCE enhancement). Even more, using the LN(ROCE) method to decompose the ROCE (as presented in the section II.3.), it turns out that the ROCE enhancement, over the 2004-2013 period, is largely due to the EBIT enhancement, more than a real asset turn optimization. In the following of this case study, we will further investigate this EBIT improvement, breaking the contribution between the sales and the cost evolution.

Figure 13: Normative ROCE decomposition



7. Value creation for the shareholders: compute the ROE and the COE over the LBO period. By using the DuPont formula and the leverage formula, decompose the ROE.

In the same way we monitored the value creation for the firm, we can monitor the quantity ROE-COE over the years of the LBO. For more clarity, we have excluded the first year of the LBO (2003), for which the accounting ROE is equal to -43%, due to a -125.8m€ one-off item strongly deteriorating the Net Income (inventory re-evaluation, after the acquisition, with no cash impact). The average spread over the 2004-2013 period is 6.6%. We notice that, thanks to the leverage effect, the ROE is on average 4.5% above the ROCE (c.30% of leverage contribution, as percentage of the total ROE, over the 2004-2013 period).





Source: company information, own research

Decomposing the ROE with the DuPont formula allows us to further analyse the ROE change and extract the three components: the operating efficiency, the asset use and the leverage contribution. We conclude that the operating efficiency has been the main driver of the ROE improvement, which largely out-compensated the deleveraging of the company over the years.



Figure 15: ROE decomposition

Operating efficiency Asset use contribution Leverage contribution Iotal Change in ROE contribution



ROE DuPont formula decomposition: ROE = Financial leverage x Operating efficiency x Asset use efficiency

#### 8. Estimate the spread between the ROD and the COD

We recall that the ROD is calculated by the effective annual cost of gross debt for Legrand (i.e. financial expenses / gross debt, for each year) and the COD is estimated in our model by the 5-y Credit Default Spread (CDS) of Schneider, added to the French government bond interest rate (same tenor). This maturity matches the two credit agreement (2004 and 2006) average maturity of 5 years. There may be a slight underestimation of the real cost of

Source: company information, own research

debt, since other tranches of debt have higher maturities for the Legrand case study. Furthermore, we choose to focus on the Schneider CDS spread, rather than on the whole peers sample, since Schneider is the closest competitor and the only French company in our sample. Nevertheless, we also have monitored Siemens CDS, and found that CDS values between Siemens and Schneider were very close over the 2004-2014 period. Therefore, the choice of Schneider in the CDS is not restrictive at all and remains, in our view the most appropriate for the study of Legrand's COD.

Figure 16: ROD - COD evolution



Source: company information, own research

Despite our graph presenting an evolution year per year, we think it is difficult to come up with any precise conclusion on the evolution year after year, since we did not study the LBO debt amortization: for example, one year can be strongly affected by a large chunk of debt re-imbursement, resulting in a strong decrease in the financial net debt, or equivalently a strong increase in the ROD, but without being related with any change in the risk of the company.

It is nevertheless interesting to notice that the spread keeps always positive over the 2003-2014 period, and relatively constant between 3-4%. The progressive spread reduction between 2006 and 2008 is both due to an increasing COD, certainly explained by the credit crisis of 2007, and on the Legrand side, the decrease in ROD, probably following the IPO (and therefore a lower cost of debt of a less risky company).

#### III.4. Digging into the value creation drivers

In the following questions, we try to analyse the evolution of the operating metrics as far as possible, especially as compared to the peers benchmark and over the pre and post LBO periods, so that we can be able to have a control sample (peers) and get rid of the intrinsic characteristics of the company, not due to the LBO development. The peers included in our control sample are Schneider, Siemens, ABB and General Electric<sup>10</sup> (Schneider being by far the closest competitor of Legrand).

#### A boosted top-line during the LBO, thanks to a continuing build-up strategy

## 9. Comment on the sales evolution over the LBO period and compare it with peers. Extract the external growth contribution, by listing the number of acquisitions of Legrand. Comment.

Prior to digging into the Legrand specific case study, understanding the importance of sales growth at the company requires to discuss about the key determinant in terms of profitability for Legrand's business, that turns out to be the size of the market share. As such, in France and Italy, where Legrand has dominant market shares, the company enjoys operating margins above 20%, whereas it only has single digit margins in the US and in the rest of Europe.

Over the 2003-2013 period, Legrand has known a sustained sales growth, with an overall growth of c.5%. The peers comparison turns out to be difficult, since there is a large heterogeneity amongst the different competitors. The peers average, helped by Schneider's revenue growth over this period, is around 4.4%, suggesting that Legrand has not significantly outperformed its competitors. Nevertheless, one of the main LBO initiatives is the acceleration of the growth, be it organic, or via external acquisitions. First, organically, the new organisation brought by the LBO clearly aims at focusing on: (i) a renewed marketing strategy (with much more employees devoted to front office positions); (ii) new product launches (as the result of maintained high levels of R&D expenses, see question 13); and (iii) the expansion into emerging markets (through both an increasing percentage of sales and more headcounts located in developing countries).

<sup>&</sup>lt;sup>10</sup> Large international competitors, selected as per broker reports. Some smaller companies are closer competitors in terms of business model, size, geography and margins but we choose to work with a sample of large companies not to lack financial data. Schneider is the closest competitor of Legrand.

2003-2013 Sales CAGR	∆2003-13A
Legrand	4,9%
Schneider	10,3%
Siemens	0,5%
ABB	4,0%
GE	2,6%
Peers average	4,4%

Source: company information, own research

The striking thing with the sales growth of Legrand, during its LBO development is the key contribution of external growth. Over the cumulative 2003-2013 period, we find a 60% external contribution, even if year after year, the contribution is indeed much lower, but still significant. At the IPO, brokers report that the historical external growth contribution for the group has been around 50%, confirming that acquisitions are a key component in the group's top line strategy. As such, counting all the major acquisitions over the 2001-2013 period<sup>11</sup>, we find a total of 30 acquisitions, over 2004-2013 (no acquisition during the 2001-2003 period), for a total amount of c.1bn€. It is nevertheless difficult to conclude that the LBO development triggered this build-up strategy, since it has been historically a traditional way of expansion for the company. Nevertheless, we believe that such a build-up strategy has strongly been helped by the LBO development: first, thanks to the liquidity provided by the bank (and the IPO, from 2006); second, because the PE sponsor actually helped Legrand to boost its gross margin and maintain its EBITDA margin, while continuing to integrate other companies. Historically, for Legrand, the build-up strategy used to be detrimental to the margin improvement (as proved by the Wiremold acquisition).

From a strategic point of view, the external growth in the low-voltage equipment sector is justified by several factors, linked to the high barriers to entry of the market. As already mentioned, those factors are the nature of the customer base (electricians often committed, even stuck, to specific brands / products) and the brand loyalty, the importance of product security and the required national regulations. Furthermore, the fragmented global market structure (brokers estimate that, as of 2005, half of the market was made up of small and mid size companies) fosters the model of acquisitive growth, making it much easier than in a more consolidated market.

<sup>&</sup>lt;sup>11</sup> Source : Merger Market



Source: company information, own research

#### Cost structure analysis

## 10. Analyse the improvement in the gross margin and in the EBITDA margin. Compare it with the sectorial benchmark. Comment about the cost structure evolution, explaining the EBITDA margin improvement.

The EBITDA margin improvement during Legrand's LBO is, first and foremost, due to a strong improvement in its gross margin. As such, the gross margin goes from 43.2% in 2003 to 51.6% in 2013, and consequently, the EBITDA margin increases from 14.8% to 22.8% during the same period. As for comparison, over the same period, the sectorial gross margin decrease is -0.8% (vs. +8.5% increase for Legrand) and the EBITDA margin increase is +2.3% (vs. +8.0% for Legrand). For both margins, the increase has been more important over the private LBO period, but was also largely pursued after the listing of the company.



Figure 19: Gross margin and EBITDA margin - evolution and benchmark

Source: company information, own research

Analysing the cost-structure in the Figure 20, we can conclude that the LBO development helped to strongly increase the gross margin, more than the EBITDA margin (actually turned back at its level before 2000, as explained and expected by Mr Grappotte).

The gross margin improvement, significant from 2003, and that has been pursued until the year 2010, can be explained by two drivers. From 2003, Legrand decided to implement a centralised purchasing structure, consisting in purchasing for all the divisions of the group and trying to maximize the purchases of raw materials in low-cost countries. We believe that it was also conducted in line with the build-up strategy of the company, that contributed to reduce and amortize the unitary variable costs (better negotiation capabilities for the firm for example). Furthermore, a bulk of the manufacturing capabilities of the firm was moved to low-cost regions (part of the headcounts located in emerging countries increased from 33% to 47% over the 2003- 2005 period), explaining also gains in the gross margin.

On the SG&A expense side, a change in the accounting formats between the pre-LBO period and afterwards makes comparisons difficult. Still, from 2003, the SG&A expenses seem to have been improved after the LBO acquisition, leaving out the 2009 year (in our view, direct consequence of the crisis on Legrand cost structure). First, Legrand launched in 2001 organisational and operational initiatives, including restructuring plans and, amongst other things, plant rationalisation and specialisation (16 plants closed between 2001 and 2006). It was partly mitigated, at least at the early LBO stages, by the restructuring charges, capitalised in the SG&A costs and linked to early retirement schemes and plant rationalisation or specialisation. As such, the Figure 20 analyses the evolution in the restructuring charges, as percentage of sales, revealing, unsurprisingly, higher restructuring charge levels, during the private LBO period (2003-2005):



#### Figure 20: Cost structure restructuring charges evolution

Source: company information, own research





## 11. Looking at the FTEs evolution, can we conclude about an increase in the employment or, on the contrary, job destruction?

Overall, the number of employees increases from 2004<sup>12</sup> to 2013, from c.25,300 to c.33,300. From this point of view, the LBO acquisition has not directly resulted in absolute job destruction for Legrand. But it is unsurprising after the conclusions previously drawn about the build-up strategy. Looking at the relative FTE number (as % of sales) is in our view much more relevant: we notice then a significant and progressive reduction (from 8.6% to 7.5%) over the LBO period. We can therefore conclude that the LBO development has been accompanied by job cost cutting. In fact, as mentioned, the organisational and operational initiatives, launched in 2001 by Legrand, and the LBO initiatives, explicitly included restructuring plans, as well as plant rationalisation and specialisation. Moreover, the company also opted for headcounts delocalisation, towards emerging countries (from 33% to 47% over the 2003-2005 period).





Source: company information, own research

#### **Cash-flow prioritization?**

## 12. Overall, what can you say about the evolution of the operating cash flows, the cash flows from investing activities and the Free Cash Flows (FCF)?

Overall, it is difficult to extract a pattern or any particular evolution for the FCF analysis. Over the years, as presented in the Figure 22, the FCF are rather volatile: admittedly, on the one hand, the operating cash-flow conversion (i.e. measured as percentage of EBIT) is relatively constant, varying around 90% and 120% between the years. But, as displayed in the graph, the cash flows from investing activities do not seem to have been specifically reduced,

<sup>&</sup>lt;sup>12</sup> No accurate figure before 2004

over the LBO development. Actually, the investing cash flows turn out to be the source of volatility for the whole cash-flow generation. Hence, we can conclude that, over the LBO period, the PE sponsor, while maintaining a strong operating cash-flow generation, did not specifically aim at reducing the cash-flow needs for the investing activities (which is indeed consistent with the acquisitive growth strategy led by the company). As for a comparison with Legrand's competitors, because usual very volatile FCF conversion, it is, here as well very difficult to compare the situation between Legrand and its sectorial benchmark.



#### Figure 22: Cash-flow analysis

## 13. Evaluate the Capital Expenditure policy of the company during the LBO period and compare it with peers. What about the R&D policy of the company?

As compared to its peers, the Capital Expenditure<sup>13</sup> policy of Legrand is clearly distinguishable, as displayed in the Figure 23. The pre-LBO level (above 5%), above the sectorial average, has been lowered with the LBO development to a 2% level (then below Legrand peers average). Hence, it appears quite clear that the Capital Expenses have been closely monitored with the LBO. But, as seen in the previous question, we insist on the fact that it does not mean that cash flows from investing activities (also including investments in acquired entities - consolidated and non-consolidated) have been reduced in the same way (on the contrary turned out to be very volatile, in line with the build-up strategy of the firm). As a direct consequence, on the Fixed Asset side, the asset turn improvement has been conducted

Source: company information, own research

<sup>&</sup>lt;sup>13</sup> Measured by (Capital Expenditures – Net Asset Disposals)

through a significant tangible asset reduction (from a 33% level to a 13% level, as percentage of sales, over the 2003-2013 period).



Figure 23: Capital expenditures reduction vs. sustained R&D investments

Interestingly, the analysis of the R&D expenses (Figure 23) shows that Legrand has not relied on R&D expense savings to generate higher cash flows, during its LBO period. Actually, in this sector, the R&D capabilities use to play a key role when defending the company's market share (and consequently the company's profitability). Historically, Legrand has always kept maintaining a high R&D ratio compared to its competitors. During its LBO period, it has even slightly increased its R&D expenses (from 4.4% to 4.8%), in line with a strategy focused on maintaining a strong market share.

#### 14. Same question for the Working Capital Requirements.

Our WCR analysis will be split in two analysis, driven by two different WCR definitions. The first one is the <u>operating WCR</u>, simply defined by the operating aggregate (inventories + accounts receivables – accounts payables). It enables to do a peers comparison analysis. Secondly, we monitor the <u>total cash WCR</u>, also including other current non-operating needs, to approach at best the management and the optimization of the total cash WCR during the LBO period.

#### **Operating WCR**

As for the Capex management, the WCR expenses, over the LBO period of Legrand, has been closely monitored and the reduction in WCR, compared to Legrand's sectorial benchmark is clearly differentiable. Hence, from 2003 to 2013, the WCR has been reduced

Source: company information, own research

from c.23% to c.14%, in total opposition with the sectorial trend (increase of +12% over the same period). It is additionally interesting to notice that the WCR reduction is not limited to the LBO period but has continued after the IPO, quite significantly (from 19.5% to 14.0% over the 2006-2013 period). Digging into the components of the operating WCR reveals that the Working Capital optimization mainly comes from an improvement in the receivables management, although we can also notice improvements in the management of payables and inventories, through streamline inventory management for example.



#### Figure 24: Operating Working Capital improvement

Source: company information, own research

#### Total Cash-WCR

During the LBO period, the total WCR has been reduced from c.19% to c.12%, mainly due to the improvement in the operating WCR. At the IPO time, the management indicates that a sustainable ratio would be around 14%. Unexpectedly but interestingly, one can notice that the total WCR keeps on being reduced, even after the IPO, and not turned back to the 14% indicated level. It supports that, as opposed to what the market could believe at the IPO time, after the private LBO development, Legrand actually had further scope for working capital improvement. Having no real hindsight since the definitive exit of Wendel (2013), it is difficult to conclude about: either the fact that the 7-8% WCR level is a sustainable one for the company in the future, or the long-term accompaniment of the two funds has actively contributed to maintain this level.





Source: company information, own research

#### III.5. Analysis of the risk of the company

## 15. Following the framework proposed in the second section, comment on the evolution of the risk of the company.

In line with the risk analysis framework proposed in the section II.4. of this paper, we can have a few comments on the risk evolution of the company. In our view, to have an accurate approach about the risk, it is important to separate the operational risk from the financial risk. Then, looking at the leveraged and unleveraged beta can be view as sort of a synthesis, since the spread between the two betas is essentially due to the financial leverage of the company (cf. beta formula in the section II.4).

Before going into the details of the analysis, we recall that the beta computation has been done as described in detail in the question 5. For the financial leverage analysis, we were not able to compute the DSCR, since the lack of information available on the detailed debt package over the LBO years. On the operational leverage side, we calculated the DOL, which unfortunately turned out to be erratic, thus without providing any interesting information on the operational leverage. Fortunately, the other indicators, and the sectorial comparison displayed in the Figure 26 are informative enough to give us a conclusive idea about the risk evolution of the company.



Source: company information, own research

We can first notice that both the operational risk and the financial risk have been increased during the LBO period. First, concerning the financial risk, the three indicators all show the very high risk put on the company at the entry of the funds (for 2003: Net Debt / EBITDA ratio of nearly 10x and (EBITDA – Capex) / Debt interests ratio of 1.0x), and the decreasing risk over the private LBO period, i.e. until 2006, followed by a second significant decrease afterwards, i.e. once the company was listed. The sectorial comparison (Net Debt / EBITDA) emphasizes again a very high risk at the LBO entry, and a progressive convergence towards the same ratio in 2014. As a conclusion, from a financial point of view, if we can not deny the high risk undertaken by the company at the entry of the LBO, it is worth underlying the progressive deleveraging and thus financial risk decreasing afterwards, a successful debt re-imbursement and capital structure change (notably thanks to the IPO).

More interestingly, the (fixed costs / variable costs) indicator<sup>14</sup> significantly remains above the sectorial average over the 2003-2014 period, but with a slight and parallel decline

<sup>&</sup>lt;sup>14</sup> The graph displayed in this paper include the D&A in the fixed costs. Results would be the same without including them.

for both the sectorial average and the Legrand specific indicator. We can therefore conclude that the LBO development contributed, on top of increasing the financial risk, to induce a considerable additional operational risk, which has not faded out after the listing of the company. More precisely, as previously analysed in the cost structure analysis, such an evolution is due to a gross margin increase (grossly +8% between the pre-LBO period and the 2011-14 period) much higher than the EBITDA margin (c.+2% for the same interval).

The last graph displays the statistical levered (computed from equity returns) beta and the corresponding unlevered beta. Therefore the delta between the two betas, fading out over the years, is mainly due to the decrease in the financial leverage<sup>15</sup>. For crosschecking purposes (cf. details about our computation of the betas, question 5), it is reassuring to conclude about the overall constancy of the asset beta (comprised between 0.7 and 0.8 over the years). The equity beta is much more volatile over the years due to a varying leverage.

Overall, we can conclude that both the financial and the operational risk have been significantly increased under the LBO development of Legrand. Interestingly, the change in the cost structure explaining the operational risk turns out to be permanent (maintained after the IPO) and mainly explained by a stronger improvement in the gross margin than in the EBITDA margin. Over the 2003-2014 period, the spread with the sector is higher than 100%, underlying a drastic difference in the cost management of Legrand, as compared to its sectorial peers. On the contrary, the financial risk, reaching its highest level, at the acquisition time in 2002, has been carefully managed afterwards and progressively reduced through both debt reduction and EBITDA improvement.

#### III.6. The IPO and the progressive exit by the consortium

#### 16. Describe the IPO in detail.

As done for the LBO acquisition table, we propose a Sources & Uses table to summarize the main points of the IPO, presented in the Figure 27:

<sup>&</sup>lt;sup>15</sup> For homogeneity with other questions, we took the effective tax rate. Results are not changed with a normative tax rate.

Figure 27: IP	O: Sources	& Uses	table
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	Sources of Fund	Uses of Fund	
IPO main characteristics	Value	Comments	
Price range =	-[17€;19.75€]-		
Price - public (€)	19,75		
Price - employees (€)	15,80		
Nominal value: existing share	es 4,00		
Existing shares	189 837 725		
New shares issued	43 689 298	30x initial offer	
Reserved shares issued	33 862 914		
Employees res. shares issue	d 2 303 439	subscription of 42% (€m)	Value
Overallotment option	6 553 395		
Total number of shares	<b>*</b> 86 409 046	Shareholder loans re-imb New and employees shares	504
		Shareholder loans re-imb Reserved shares - GP Fin NS	669
Capital increase (€m)	1 532	Bridge loan re-imbursement - 2006 refinancing	340
- New shares	863	Financial + administrative fees	36
- New reserved shares	669	New funds available for the company	(18)
- Employees	36		
- Greenshoe	129		
Total Sources	1 532	Total uses	1 532

Source: company information, press releases, own research

The capital issue is composed of three main pillars:

1/ 43 689 298 new shares issued ("Actions Nouvelles"), finally amounting to 863m of capital raised (@19.75€). Those shares were available through both a public offering (minimum of 10%) and a private placement, i.e. a placement reserved to institutional shareholders (maximum of 90%). This new share issue could have been extended by 15%, with an extension clause, which was finally not exercised.

2/ 33 862 914 new shares reserved ("Actions Nouvelles Réservées") to GP Financière New Sub. This holding company is owned by the Consortium and the proceeds of this capital issue (669m€, @19.75€) are specifically dedicated to partly reimburse the shareholder loans (represented by subordinated bonds and amounting to 1,335m€, excluding accrued interests, right before the IPO). The remaining part of the shareholder loans reimbursement was done by the 2006 new refinancing, for an amount of 178m€, and a portion reimbursed by the new shares and shares reserved to the employees (502m€)

3/ 2 303 439 new shares reserved to employees ("Actions Nouvelles Réservées aux Salariés"). An initial total amount of 5 537 975 shares has been proposed to the employees. Therefore the subscription finally amounted to 42% of the total shares

available to employees. For this specific tranche, the issuance was done with a 20% discount compared to the public 19.75€ share price issuance, i.e. at 15.80€.

On top of that initially expected issuance, an overallotment option has been exercised, to stabilize the price rise (and good demand by the market), corresponding to 6 553 395 shares, i.e. an additional amount of 129m€. Actually, 7 536 404 shares have been available for the so-called Greenshoe option, i.e. exactly 15% of the total shares to be issued to the public (excluding the shares reserved – employees and GP Financière NS). Hence, nearly 87% of the stabilization Greenshoe measure has been exercised.

Overall, it is interesting to notice in the "Uses" column of the table, that the issuance is totally allocated to debt-reimbursement. It is not really surprising, if we remind that the IPO exit for an LBO (on the contrary of a Public-to-Private operation) can be viewed as a switch from debt to equity for a constant capital structure. As such, a press release from Les Echos<sup>16</sup> mentioned at the time, that c.400m€ of the capital issuance was to be allocated for debt reimbursement. In our case, we estimated that nearly 1,200m€ of the total capital raised were actually allocated to the re-imbursement of the shareholder loans, while 340m€ were allocated to the bridge loan reimbursement (as part of the 2006 refinancing package). The total financing and administrative fees of  $36m€^{17}$  indicated in the table is an estimate, coming from different press releases. Hence, the totality of the funds raised serve at the debt-reimbursement, giving as a result a much more flexible capital structure for the company.

Each share issued, independently of its beneficiary, had the same nominal value (4 $\in$ ) and was attributed 1 voting right. The prospectus also mentioned that all the shares could be attributed a double voting right, conditional to a period of detention of at least 2 years. After its relisting, it actually allowed Wendel and KKR to benefit from a double voting rights, and hence being majority shareholders until March 2011, despite a progressive capital disengagement (see question 19, concerning the progressive exit of the two funds).

Last but not least, another crucial point accompanying the capital issue: the shareholding agreement between KKR and Wendel. On top of a traditional lock-up period of

<sup>&</sup>lt;sup>16</sup> Les Echos, Legrand fait un retour en fanfare sur le marché boursier (07/04/06)

<sup>&</sup>lt;sup>17</sup> As for comparison, before the operation, the IPO prospectus estimated a total amount of  $c.40m\epsilon$  for the total advisory and financing fees.

180 days that was agreed by both the company and the key majority shareholders, the two funds (KKR + Wendel), acting in concert, also agreed not to sell any share within a period of 18 months.

The following two charts summarize the repartition of the shares (existing shares and new issued ones) and the capital structure (same as the voting rights repartition) of Legrand, right after the IPO:





Source: company information, own research

#### 17. Was the IPO a success? Why?

Despite the non-exercise of the extension clause, we can conclude that the IPO was a success overall, for two main reasons: (i) first, the offer has been over-subscribed 30x and finally launched at the upper limit of the price range, i.e. 19.75; (ii) second, the share price increase of the first few days has resulted in the activation of the Greenshoe option, so that the banks have been able to stabilize the share price.

Such a success for an IPO can be attributed to different factors, both linked to Legrand specific case and favourable market conditions: (i) the amount to be raised for the IPO was quite limited as compared to the total EV of the company; (ii) at this time, the financial market conditions were very favourable and the company certainly decided to seize this issuance window; (iii) the experimented and well-known management contributed to reassure the markets for the IPO; (iv) the debt re-imbursement purpose of the IPO also contributed to reassure the market, knowing that it would give enough financial flexibility for the firm to

expand in the future; (v) by signing a 18 months shareholding agreement, Wendel and KKR proved to act in concert and with a long term view for the company, certainly giving a clear view to the markets on the governance strategy for the company in the years to come (on top of the proven quality of the management already mentioned).

Thanks to the deleveraging, the IPO also resulted in the upgrade of the debt-rating by both Moody's and S&P: BB+ from BBB- for S&P and Ba1 from Baa3 for Moody's, thus helping the company to come back to an investment grade level, after its LBO development period.

# 18. Assuming the Consortium (Wendel + KKR + all the minority shareholders present at the LBO acquisition in 2002) would have sold all of their shares at the IPO exit, at the actual IPO price (19.75 $\in$ ), calculate the corresponding IRR, and decompose it (multiple effect, earnings enhancement, leverage effect).

Before answering this question, we precise that such a scenario is undoubtedly unrealistic, as the complete exit of the consortium at the IPO time, would have been interpreted by the markets as a strong negative signal, and certainly not resulting in the success we presented in the previous question (especially not the same equity valuation). Nevertheless, computing a fictive IRR in this question allows us to estimate a fictive gain for the sponsor within a 3.3 year period, and decompose it between the different drivers, to study the value creation for this period. The effective and actually realized IRR will be computed in the question 20 for Wendel.

At the IPO date (i.e. as of Mar-2006), we find that the IRR is 42% and the C/C multiple is 3.1x. Those values are computed from an entry investment of 1,761m (total pure equity value at entry for the consortium), and an hypothetic exit value of 5,447m, exactly equal to the implied market capitalisation, as a direct result of the IPO (number of shares multiplied by the price of share for each type of share). At the entry, the total net debt used for the EV computation is equal to the consolidated debt at the LBO entry (holding + operating debt). At the exit, the net debt is around 2bn, information taken from the IPO prospectus, indicating what would be the net debt, right after the IPO.

The IRR (42%) and the C/C multiple (3.1x) turn out to be high values for an usual LBO. Indeed, the short detention period is one of the main explanation for the high IRR. Furthermore, the IPO exit, chosen by the fund, also explains a high valuation at the exit.

More interestingly, we can decompose the IRR, as presented in the second section of this paper: two methods are displayed, the "traditional" one and the "LN method", as per Loos (2005) method. Let's recall that, in the LN method, the so-called "Deleveraging effect" actually encompasses both the leverage contribution to the IRR, and the pure deleveraging effect, i.e. the gain from the cash-flow generation, helping to reduce the debt ratio in the EV, between the entry and the LBO exit. Hence, it includes both the "Leverage effect" and the "FCF effect", used in the traditional method. It is therefore not surprising that the sum of the leverage effect and the FCF effect" of the LN method (50%). In the same way, the so-called "Margin effect" contribution in the traditional method can be split into a sales growth effect and a margin improvement effect, done in the second method.



#### Figure 29: IRR decomposition: Dec-2002 - Mar-2006

Traditional method

Source: company information, own research

Overall, it is interesting to notice that the major effect is the pure leverage effect (37%). It is not surprising when looking at the high cost of debt (9% over the period concerned) and average high indebtedness (quasi 50% / 50% average Debt / Equity ratio). Then comes the high contribution of the multiple effect (33%-34%), discussed in the next paragraph. Interestingly, the FCF effect and the margin effect contribution are also significant (both equal to c.15%). As previously seen in the cash-flow analysis, we do come to the conclusion that the PE sponsor has not tried to focus only on the cash-flow generation of Legrand (but on the contrary, accorded a large part of the available cash-flows to acquisitions and sustained R&D investment levels). Nevertheless, as seen in the introduction, Legrand was originally a highly generative cash-flow company (making it a good LBO candidate), and without particularly improving its cash-flow generation, we can conclude that the PE sponsor benefited from this FCF effect, to boost its IRR. The earnings enhancement, accounting for c.15% of the IRR, is mostly explained by the sales growth (11%), and in a lesser extent by the margin improvement (5%). This result certainly underestimates the margin improvement conducted by the PE sponsor, that historically came progressively, and even after the IPO, as previously seen in the question 10. Hence, it is not reflected when computing the IRR at the IPO time.

As the multiple effect contribution turns out to be significant, it is interesting for us to dig out about this multiple improvement, and to understand in which extent this multiple increase is due to the sponsor negotiation capabilities or a multiple improvement in the general market. That is why we choose to monitor the EV/EBITDA<sup>18</sup> multiple of Legrand's competitors, as displayed in the Figure 30. As such, it is interesting to notice that: (i) first, as explained in the question 2, Legrand was clearly not acquired at a premium compared to the peers trading at the time; (ii) second, the company does not seem to have been publicly introduced at a premium. On the contrary, as of Mar-2006, the company trades at the sector average if we exclude General Electric (even below, if included). Hence, we can conclude that the gain in the multiple (accounting for 33-34% of the total IRR), is mainly due to a low acquisition multiple, in the context of the Schneider de-merger, but not specifically good selling capabilities of the fund at the time of the IPO. As for the period post-IPO, it is striking to see how the multiples of Legrand and its competitors (excluding GE) are close and move in

<sup>&</sup>lt;sup>18</sup> Average EV/LTM-EBITDA over rolling-periods of 3-months / Source : Capital IQ

the same way. Hence, we cannot conclude to particular good timings or significant negotiation capabilities at the different exit times of the two funds.





Entreprise Value / LTM-EBITDA

Summary table

EV/EBITDA Multiple	Dec-2002	Jun-2006	Delta-02-06	Jun-2006	May-2013	Delta-06-13
Legrand	7,4x	10,8x	3,4	10,8x	10,6x	-0,2
Schneider	4,9x	9,8x	4,8	9,8x	9,2x	-0,5
Siemens	7,3x	10,4x	3,0	10,4x	8,5x	-1,8
ABB	10,4x	10,0x	-0,3	10,0x	10,1x	0,1
General Electric	18,5x	23,2x	4,7	23,2x	21,0x	-2,2
Peers average (excl. GE)	7,5x	10,1x	3,1	10,1x	9,3x	-1,1

Source: company information, own research

We can do the same IRR decomposition, during the second investment phase of the consortium, i.e. from the IPO (Mar-2006) to the final exit of Wendel (May-2013). It enables to see the drivers of the IRR for this second period, and compare it with the IRR for the 2003-2006 period. For this second period, to account for the payments of the dividends, we add them as if there were part of the equity value at the exit date, in the LN method. In the traditional method, we do not double count them, since the "FCF effect" takes into account all the FCF available for the payment of the debt and the dividends.

For this second period, it is interesting to notice that now the multiple effect is null and the leverage effect is much less significant than for the first period (5% of contribution to IRR). Again, the FCF effect accounts for a major proportion of the IRR (40%). The first contribution to the IRR turns out to be the earnings improvement (56%), again mostly explained by a strong sales growth (41%). The margin improvement, although less important than the sales growth contribution, is much higher than in the first phase of the LBO, due to an improvement of c.2% in the EBITDA margin between Mar-2006 and May-2013.





Traditional method

## 19. What was the exit strategy for the two funds, Wendel and KKR? How did it materialize? Why such an exit?

Thanks to a shareholder agreement between Wendel and KKR (lock-up period of 18 months), and the concert action, the exit strategy for the two funds has been well known from the beginning and has clearly been a long-term exit strategy. Hence, Wendel and KKR managed to exit the company through 6 Private Placements over the 2009-2013 period (cf. question 20 for the detailed timeline). Undoubtedly, even such a progressive and expected exit strategy would usually have raised liquidity issues, and negative signals for each Private Placement (especially, when considering the important average Private Placement ticket of  $416m\in$ ). Nevertheless, several factors actually helped to mitigate such negative signals: (i) each time, accelerated book buildings were used for the Private Placements, helping doing

Source: company information, own research

them quickly and with institutional investors; (ii) during the whole progressive disengagement of the two funds, numerous and well-known financial investors, owning a significant stake in Legrand, kept their stake, despite the exit of Wendel and KKR; (iii) a key communication led by the funds, consisting in explaining to the market their need of cash, to justify the exit, that would not have to be interpreted as a negative signal for the company itself.

At the end, the LBO period lasted 10.5 years for Wendel and slightly more than 9 years for KKR. In both cases, those detention periods turn out to be very long for a LBO, and were in line with the long-term strategy conducted by the funds for this specific portfolio company. It is also important to notice the "dual-path exit" for the funds, who benefited from double voting rights, right after their 2-year investment period (i.e. from Mar-2008). Hence, the two funds, acting in concert, have managed to keep a majority voting share until March 2011, despite a progressive and significant capital disengagement: as of March 2011, they still had a 52% voting share despite a 36% capital participation.

# 20. As of June 2013, i.e. at the time of Wendel exit, Wendel is rumoured to have earned a 3.9x Cash-on-Cash multiple and a 19% IRR, for an initial investment of $\notin 659m^{19}$ . Taking into account the different "cash-ins" and "cash-outs" for Wendel over the LBO period, can you find those values?

Taking into account the different cash flows (initial investment, dividends and the 5 Private Placements composing the Wendel exit) from the investment date (Dec-2002) to the exit date (Jun-2013), as presented in the Figure 32, we find a final IRR of 16% and a multiple of 3.3x. As of comparison, we notice that this value is much lower than the IRR found in the question 18 (42%), supporting literature findings, about the correlation between high IRR and short investment periods. Again, one must remain cautious with such a comparison, since the complete exit of Wendel at the IPO would have been impossible, in our view. But, there is no denying that the long-term investment horizon of the fund in the company has been done at the expense of the IRR optimization.

We precise that the received dividends are estimated as the dividends paid by the company (as of June for each year, accounting for the previous financial year), multiplied by the capital share of Wendel at this time: having no more precise information on the dividends paid to Wendel, we think such an estimation may be one of the sources for the error found

<sup>&</sup>lt;sup>19</sup> Source: Agefi: "Wendel a récupéré près de 4 fois son investissement chez Legrand" (11/06/13)

with the press articles<sup>18</sup> (all the proceeds from the placements have been checked with the corresponding Wendel press releases).

Date	Initial investment	Dividends	Sale of shares
10/12/02	(659)		
01/06/06		34	
01/06/07		40	
01/06/08		56	
01/06/09		56	
23/11/09			278
01/06/10		46	
21/09/10			346
01/06/11		36	
03/11/11			627
09/11/11			313
01/06/12		11	
10/06/13			517
Total	(659)	278	2 081
Cash-on-cash	3,6x		
IRR	16%		

Figure 32: Wendel realized IRR and Cash-on-Cash multiple

Source: company information, own research

#### **III.7.** Governance

## 21. In terms of governance during the LBO, what can you say about the involvement of the fund, the change of the CEO and the "incentivization" of the management?

As explained in the first section of this paper (I.1.), the LBO governance can be analysed through three distinct drivers: the specific involvement of the fund, the CEO change (or maintenance), and the "incentivization" of the top management.

As opposed to certain more recent LBOs, it is interesting to insist in our case about the specific involvement of the two funds in Legrand. As such, not only did they have a particular long-term investment period, but they also proved to be particular active shareholders, involved in the management of the company. Many annual reports mention multiple board meetings, outnumbering the required limit. From 2003 to 2010, 11 members, of which, 3 KKR members, 3 executives directors and 2 independent directors, have composed the Board. Each director has had a mandate of 6 years, renewed in 2008 (total of 12 years). From 2010 to 2013, following the progressive disengagement of the two funds, Wendel and KKR progressively reduced their representation, leaving it to independent board directors: as of 2014, there are 10 board members, of which 7 independent and the 3 same remaining executives, since 2000 - i.e. Mrs Schnepp, Grappotte and Bazil. As of comparison, KPMG reports in a study<sup>20</sup> about governance for CAC40 companies, that the average number of

<sup>&</sup>lt;sup>20</sup> La lettre de la Gouvernance, Etude de la Gouvernance des sociétés du CAC 40, KPMG & Image Sept (2012)

directors in board is 13.9 and the average statutory term is 3.9 years (therefore much lower from the 6 year mandate, renewable). Consequently, we can affirm that the participation of the two funds has clearly been a long term and active involvement. This argument is also supported by the double voting rights structure, resulting from the IPO legal structure. Eventually, it is interesting to notice the importance of the Legrand investment for Wendel: as such, during the LBO period, this investment has represented for Wendel c.20% of its total portfolio. On the KKR side, it is also worth noticing that the investment in Legrand was the first LBO operation of KKR in France. Hence, from a reverse point of view, not only was the involvement of the two funds extensive in Legrand, but it also turns out that Legrand was a key investment for the two funds. Per se, this symmetrical dependence has certainly played a key role in the close management of the funds by the firm.

In line with the argument of Acharya and Kehoe (2009), reporting that one third of the CEOs in an usual LBO was replaced within the first 100 days, and two thirds within a 4-year period, Legrand's CEO (and Chairman), Mr François Grappotte was replaced at the end of 2003, by Mr Gilles Schnepp. Starting his career as an investment banker at Merrill Lynch France, he joined Legrand in 1989, and was appointed in 2000 as CFO. As of Mr François Grappotte, also a former investment banker (Rothschild), he started his career in 1983 and became CEO in 1988. It is therefore interesting to underline that those two Legrand executives had financial career before joining Legrand and that, they proved to be experimented Legrand's managers before committing in the LBO. They also personally have accompanied the company on the long term (still the three main executives board members).

Eventually, despite the lack of details we have about the specific remuneration schemes and involvement of the managers, there is no denying that the top managers have been largely incentivized, both at the LBO acquisition date and at the IPO. As such, the total investment (including the founders and managers of Legrand) at the LBO was of 29m€ and we estimate the managers' participation in the IPO at c.4% of the total capital, supporting a significant involvement of the management team since 2002. In our knowledge, there were no stock-options set up during the LBO period (nevertheless, existing stock-option plans had already been established in 2000 and 2001). On top of those incentive measures, brokers reported at the IPO that "one hundred of senior managers lower down the organisation had

performance-based related bonus schemes"<sup>21</sup>. More specifically, they were based on top growth line, the EBIT improvement and the reduction in the capital employed.

<sup>&</sup>lt;sup>21</sup> Source: Credit Suisse & Société Générale initiation of coverage broker reports (June 2006)

#### Conclusion

The first conclusion we can draw with the Legrand case study is the progressive and durable value creation, for the different stakeholders. As such, the ROCE-WACC spread has been turned back and increased to positive levels throughout the years of the LBO, not only during its private period, but also after the re-listing. From an operating point of view, it is supported by maintained high levels of R&D expenditures for the firm, a sustained acquisitive growth throughout the years and a significant cost and WCR optimization, certainly not turned back after the re-listing of the company, in 2006. It has clearly resulted in new installed management practices (e.g. centralised purchasing structures), notably bringing about a new cost structure and higher operational risks.

Meanwhile, at the fund level, this operational value creation has also been enhanced by two significant factors: the leverage effect and the multiple effect. Hence, in our ROE estimation, the accounting leverage effect contributed c.30% in the total ROE. After being relisted, the leverage contribution was much smaller and replaced by the "deleveraging effect", i.e. the payment of dividends to the shareholders. Secondly, the multiple effect conclusion is dual: if we cannot deny that the acquisition of Legrand has been executed at a discount, in the context of the Schneider's demerger, evidence suggests that the exit of the funds has not been particularly done at a premium: neither did it benefit from specific fund negotiation capabilities, nor by a right timing (several exits).

As a last outstanding aspect of this case study, the governance analysis finally suggests that it played a key role in the success of Legrand LBO development. Not only had the two successive CEOs of the company previous financial experience (and therefore certainly aware of the implications of a LBO management), but they also proved having been involved in the long term management of the company. Likewise, the PE sponsor management turned out to be particularly active, from 2002 to the final exit of Wendel in 2013, hence for a long period of time.

Still, it is important to remind that the pre-LBO assessment suggested Legrand was a very relevant LBO candidate, evolving in a mature and niche market, with high barriers to entry, and benefitting from a strong cash-flow generation capability.

In the first two sections, after having identified value creation drivers, we addressed the issue of how to measure value creation for the different stakeholders of the firm, and most interestingly, about the potential conflict of interests between the firm and the PE sponsor. The Legrand case study reveals that, on the contrary, value was created, both at the company and at the fund's level, on a long-term basis and that there was no specific evidence for cashflow prioritization, at the expense of the long-term sustainability of Legrand. Yet, our case study analysis did not cover the problem of remaining agency costs between the managers and the employees (which could represent further scope for analysis).

From a methodological point of view, working on the Legrand case study confirmed that a need for a multivariate analysis, to assess the value creation, is of prime importance. As such, neither the study of accounting ratios such as ROCE and ROE, nor the IRR are self-sufficient to provide an accurate value creation analysis. On the contrary, comparing the results from different approaches is crucial. Likewise, having a control sample (competitors) and taking into account the temporal aspect of the LBO (pre-LBO, during LBO and post-LBO analysis) help us to extract the pure LBO effect.

Finally, since the addressed topic in this thesis is quite general, we think different complementary studies could be done. From a practical point of view, first, we regret not to have time to investigate about a "failure" LBO case study, i.e. for which the return on investment for the fund turned out to be significantly below expectations. It would allow to investigate further about the conflict of interests when "things go wrong" for the fund. Then, from a methodological point of view, we believe there could be further scope for development concerning the multiple effect analysis. This paper actually mentions that the multiple effect certainly encompasses several drivers, and as such, is kind of a grey matter. Digging into this parameter, and examining how to split it (e.g. market contribution, fund negotiation capabilities and inherent company operating enhancement) could constitute a another interesting study work.

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