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EVA AND THE CONTROLLABILITY-CONGRUENCE TRADE-OFF: AN EMPIRICAL INVESTIGATION

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EVA AND THE CONTROLLABILITY-CONGRUENCE TRADE-OFF: AN EMPIRICAL INVESTIGATION

Abstract

Incentives theory suggests that compensation schemes should be analyzed along two dimensions: controllability and congruence. Most schemes cannot satisfy both criteria at once. EVA bonus schemes, a major managerial innovation of the 90's, favor the congruence criterion. This paper questions ist properties along the controllability dimension. The question is addressed through an in-depth case study: after three years in operation the actual bonuses paid by the system, as well as qualitative feedback from the managers involved, are analyzed. It is argued that EVA bonus schemes may have a major controllability problem.

JEL Code: D8, J33, M52.

Keywords: EVA management compensation, controllability-congruence trade-off, compensation standards.

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1. Introduction

This paper is concerned with the design of compensation systems at the profit center level. The trade-off between congruence and controllability is an important issue. Incentives theory suggests that optimal schemes should exhibit both a high level of congruence between the selected performance measure and the objectives of the firm and a high degree of control of the manager on that performance measure. Ordinarily, the feasible set of performance measures is limited to either high congruence and low control or vice-versa (Baker, 2001).

Traditional schemes favor controllability: they eliminate most of "out of control" impacts on the performance measure either through *ex-ante* or *ex-post* adjustments (Merchant, 1989). The use of budget as standards also facilitate the degree of control of managers. Such schemes have been criticized for a number of reasons: the incentives are too weak, the lack of congruence may generate perverse effects, managers are encouraged to lie in the budget process which negatively affects its coordination objective (Jensen, 2001).

In the early 90's a radically new compensation scheme appeared in the managerial literature: the EVA® bonus scheme – a name given by the consultancy firm Stern Stewart to the performance measurement indicator used (Stewart, 1991; Stern *et al*., 1995). Emphasis is on congruence. The standard is no longer related to budget but to an external target of value creation related to the stock market. Bonus banks and various economic adjustments are introduced to encourage a long term perspective for the managers, rather than an annual one. EVA bonus schemes have been adopted by a significant number of companies all over the world (Ross, 1998 and special issues of the Journal of Applied Corporate Finance; for recent data on France and Germany see Hossfeld and Lee, 2003).

An interesting question is whether or not the EVA bonus scheme significantly enlarges the set of feasible performance measures. If it does, it should be considered as a major innovation: the traditional congruence-controllability trade-off would be by-passed. If it does not, the gains in congruence might be achieved through a loss in controllability which is worth analyzing.

This paper provides an answer to this question through an in-depth case study. It reviews the operation of an EVA bonus scheme in a large international company over a three-year period following its introduction in 1999. The case study suggests that EVA bonus schemes may have a controllability issue. This result offers a theoretic background to interpret previous findings: EVA bonus schemes are an essential tool to change the management culture of a company (Haspeslagh *et al*., 2001) but the approach is often considered as complex (Mottis and Ponssard, 2001-2002, Riceman *et al*., 2002) and quite a few managers reject it, some firms have even reduced or given up their use of such schemes (Ittner and Larcker, 1998).

When congruence is explicitly introduced as an issue in traditional schemes, ways are found to improve them. The introduction of a controllability issue may help to design better EVA schemes. Some hints are discussed on how to improve the degree of control without reducing too much the degree of congruence.

This paper is organized as follows. Section 1 recalls the main characteristics of EVA bonus schemes. In section 2, the prior literature is reviewed. The research question and the methodology are discussed in sections 3 and 4. Section 5 provides all the details of the case study. Section 6 concludes.

2. EVA bonus schemes

This compensation system was first described in details in Stewart (1991) and then slightly evolved over time. In 1999, the system had the following characteristics:

2.1. A specific performance indicator : Var EVA

The performance indicator, called Var EVA (variation of economic value added from one year to the next one[i]), is calculated as follows for year *n:*

$$\text{Var EVA}_n = \text{EVA}_n - \text{EVA}_{n-1}$$

where: $\text{EVA}_n = \text{Nopat}_n - r.\text{CE}_{n-1}$ (Nopat = net operating profit after tax, r = weighted average cost of capital, CE = capital employed).

2.2. An external standard

By construction, for any given year *n*, the discounted value of future EVAs is equal to the total market value added of the firm (MVA is the total of market value plus debt value minus capital employed). For year 0:

$$\text{MVA}_0 = \Sigma_n \text{EVA}_n /(1+r)^n$$

An external standard can be built: variations of EVA in future years should be consistent with current MVA. In the terminology of S&S, these variations of EVA are referred to as EIs (expected improvement).

To identify the EIs one could simply assume a stationary increment for a number of years, and then posit an infinite leveling off towards zero. The corresponding EI would be the standard for the next three years and then the whole evaluation process would be started again.

This method was in use in the early 90'S and it seemed to apply quite well to medium size companies operating in stable environments, such as Briggs&Stratton, a primer on EVA.

Later on, S&S developed more elaborate econometric methods based on longitudinal analyses at industry level. In this case they talk of "industry curve". For a given year k in the past and for a given firm in the industry the respective EI_k is determined. A regression is tested between EI_k and EVA_{k-1} over a period of several years and for a number of quoted firms in the industry. In the future, each year n, the EI_n will be determined from the observed EVA_{n-1} using the regression line. This method seems more appropriate for firms in cyclical environments.

2.3. Decentralization in the firm

Unlike a stock option system, which is also based on an external standard, the EVA system can be decentralized in the firm. This decentralization consists partly in breaking down the performance indicator (EVA) and partly in breaking down the standard, i.e. the EI.

We thus have an indicator and a standard down to a fairly decentralized level in the firm, for example the profit center level, provided that the invested capital is actually broken down at this level.

This possibility of defining a performance indicator at a local level while retaining an outside standard is a major theoretical advantage of the system. It can be used to mobilize managers around indicators for which they feel directly responsible.

2.4. A bonus bank

A bonus bank is fed each year either positively or negatively, depending on the observed gap between the variation of the EVA and the corresponding EI, and managers are paid a fraction of the capital accumulated in the bank as long as it is positive other wise they get nothing.

2.5. Economic adjustments

A series of adjustments on certain accounting aggregates are made to limit short term effects. S&S propose over 150 possible adjustments. The principle of these adjustments is always the same. The idea is to transform flows into capital stock or vice-versa to improve the economic interpretation of the performance measure.

For example, given that certain major investments in the firm can have deferred returns, and in order not to discourage this type of investment, it is suggested to capitalize the negative EVA of the first years (e.g. for three years) and to transfer the capital load uniformly over time. Capitalization is made on the basis of the business plan. Over the next three years, only the gap between the observed EVA and the expected EVA in the business plan will impact on the year's current performance.

3. Prior research

Reduced to a basic element of financial theory, EVA contributes nothing substantial and is simply the old concept of residual benefit in a new wrapping (Bromwich and Walker, 1998, O'Hanlon and Peasnell, 1998). Debate does exist on empirical relations between EVA and stock prices, and the presumed advantage of this indicator compared to other internal financial indicators such as net earnings per share (Ohlson, 1995). For its protagonists, the advantage of the indicator relates above all to its use in a system of incentives, where managers' interests are aligned with those of shareholders (see also Zimmerman, 1997, and Wallace, 1998, for academic authors who stress this essential feature of the EVA system).

Despite the large diffusion of the EVA system in management spheres, little research has been carried out on use of the indicator in compensation schemes. Wallace (1997) analyses the impact of EVA implementation on firms' financial results. If, and only if, EVA is used in compensation stock prices increase and capital employed is reduced. But EVA implementation is not an independent change. Qualitative studies emphasize that adoptions may vary widely (the internal standard may be kept, the cascading down may remain limited, bonus banks are rarely used except for top managers), it is often adopted in conjunction with a change in strategy and in CEO (Mottis and Ponssard, 2001), then the involvement of top management is required to truly generate a cultural change (Haspeslagh *et al*., 2001). A direct analysis which associates financial performance and EVA implementation is difficult to interpret.

Lovata and Costigan (2002) show that the EVA adoption rate is higher in firms with high agency problems (high institutional ownership and low insider ownership). They also show that the rate of adoption is lower in firms with a high R&D ratio, which they relate to the difficulty to construct economic meaningful adjustments.

Riceman *et al*., (2002) evaluated the comparative efficiency of managers in relation to the incentive schemes set up within a firm that had selectively adopted EVA. This study is based on questionnaires in which managers are asked to evaluate the relationship between the compensatory scheme that applied to them (EVA or not) and their own performance. Findings showed that, in terms of efficiency, the level of congruence is more important than the performance measure as such. In this study, congruence is defined as the alignment of objectives within the organization between superiors and subordinates. The choice of a single indicator along hierarchical lines facilitates this congruence, but indicators others than EVA may do as well in this respect. The study also showed that a significant number of managers failed to understand the EVA system. Managers far from the core business of the firm or in charge of functional activities (such as HR) seemed particularly unhappy with the system.

A number of firms have reduced or given up EVA because of its complexity. Ittner and Larker (1998) mention the case of ATT. This firm introduced EVA in 1992, later on introduced customer and employee satisfactions as additional performance measures. The firm encountered problems to properly handle acquisitions, spin-offs, sales of units, restructuring. In 1997, bonus were high but the stock price had fallen, the CEO was changed, the EVA system was dropped to return to the more traditional EPS system.

This article completes this discussion of EVA bonus schemes by adding the control dimension. It will be showed that this greatly increases the understanding of these observations.

4. The research question

Baker (1992, 2001) combines the simple economics of moral hazard with feasibility constraints on performance measures to obtain the congruence controllability trade-off.

Define:

- the degree of congruence as the level of coherence between the objective of the firm and the performance measures serving as a basis for calculating the variable bonus;
- the degree of control as the level of managers' control over those same measures.

Principal agent models emphasize the control dimension in conjunction with the principle of informativity (Holmstrom, 1979): additional information which reduces the noise of the performance measure should be introduced. The congruence dimension may be associated to the multiple task literature (Holmstrom and Milgrom, 1991): suppose both cost and quality are important to the firm, both should be aggregated in the performance measure for better congruence. Control and congruence interact to set the intensity of the incentive scheme: suppose the quality indicator is very noisy compared to the cost indicator, incentives should be weakened otherwise the manager would allocate all of his or her effort to cost reduction.

Consequently, theoretic efficient contracts exhibit a high degree of both congruence and control, with calibration being fine-tuned accordingly. As emphasized by Baker, it however is an empirical observation that feasible performance measures with much congruence have little control and vice-versa. The congruence controllability trade-off points out this issue. The implementation of the proper balance between the two dimensions (and the actual calibration of the scheme) is a tricky one and may lead to perverse effects (for a primer of the subject see Kerr, 1975, see also Jensen, 1991).

The question addressed in this paper is the following: does the EVA bonus scheme significantly enlarges the set of feasible performance measures ? If it does it should be considered as a major innovation, the trade-off associated with traditional performance measures would be by-passed. If it does not, the gains in congruence might be achieved through a loss in controllability which should be analyzed.

5. Methodology

This case study consisted of two phases. One of the author was initially requested by the firm, in 1998, to accompany the implementation of the system. In 2002 the two authors were asked to participate in its evaluation, and to suggest improvements. We thus had access to internal reports and were able to carry out additional interviews, primarily with a number of divisional financial managers and human resource managers. In their respective divisions, these executives had to transmit knowledge about the system to the managers directly concerned, to administer the system after its implementation, to review it after three years, and to centralize any requests for changes. Our mission was steered directly by the corporate chief executive in charge of the EVA implementation for the entire company. This "research-action" position enabled us to familiarize ourselves with the implementation of the system. The information reported in this paper has been reviewed for accuracy by several company managers and cleared for outside publication by the corporate chief executive. We are solely responsible for our interpretations.

Such a methodology allows to identify the details of the incentive mechanisms implemented, the motives behind trade-offs made, the quantitative bonus actually paid over the period and the qualitative assessments of the managers involved. It also has drawbacks, the very detailed knowledge of this EVA system can lead to conclusions that cannot necessarily be generalized. It will therefore be important to adjust these particular conclusions in light of more general observations obtained by means of different approaches such as the ones described above.

6. Case study: the company XYZ

6.1. The context

This international firm operates in over 75 countries. In 2001 it had a 14 billion dollar turnover and 80,000 employees. It is structured into four divisions, largely independent from an industrial and commercial point of view. A division consists of profit centers, from around ten to around forty depending on its size, a profit center corresponds to the intersection between a product line and a country.

The different divisions of XYZ are characterized by high capital intensity, due to high costs of new plants and of maintenance on industrial equipment. Because of the nature of the business, the EBIT is strongly affected by the specific economic situation of each country.

During the 1990s several initiatives were taken to introduce the concept of "value creation". Reports on investment choices had to show value created more explicitly. Analyses of net discounted value had to be quantified in relation to different levers. Acquisitions had to explain the corresponding synergies and economies. But most of these cases involved only a handful of senior executives in each division, and most of the capital expenditures were still determined by organizational routines. At operational level attention remained focused on the EBIT.

Another way had to be found to mobilize all members of the executive committees of all profit centers, i.e. about 1,000 to 1,200 managers, around the notion of value creation. This mobilization probably had to be based on a specific indicator and on the revision of the reward system.

The EVA approach matched these objectives and the decision to adopt it was taken in 1998. In 2000 a new compensation system had been established and gradually applied throughout the firm. The system was to be revised during the third year before being renewed.

6.2. The variable compensation system before 2000

Before the year 2000 several variable compensation schemes existed in the XYZ Group. Most of them could be characterized as follows:

- the performance indicator on which the bonus was calculated was the EBITDA or the EBIT, or exceptionally the ROCE ;
- the standard[ii] was determined, profit center by profit center, on the basis of the current year's budget;
- this determination of the standard consisted in a negotiation between the head of the profit center and her/his immediate superior (area manager), that took into account the previous year's result;
- theoretically the bonus varied on a scale of 0 to 200, depending on the observed result, but in reality it was usually established between 130 and 170.

6.3. The variable bonus system introduced in 2000

The EVA bonus scheme implemented by the firm XYZ included the strategic investment adjustment, a constant EI over the next three years, a yearly bonus and a three year bonus instead of a bonus bank, moreover caps and floors were introduced in both bonuses.

The company also introduced another type of adjustment concerning the capital invested. It decided not to apply the accounting values of assets directly to the calculation of the EVA, but to apply an economic adjustment in order to bring them closer to the market value. Absolute EVA would be more meaningful for economic analysis. This type of adjustment has no impact on Var EVA. No adjustment was provided for in the event of local devaluation.

The size of the variable annual bonus (roughly between 12% and 30% of the basic salary, depending on the level of responsibility) was harmonized throughout the group. Half of this annual bonus was to depend automatically on the EVA. The other half was determined in relation to quantified personal objectives. This break-down, valid at all levels of the hierarchy, reflected the general management's wish to avoid excessive focus on the annual EVA at the expense of long-term goals. The three-year bonus depended solely on the EVA. Moreover, for the sake of solidarity, two-thirds of the bonus was calculated on the results of the profit center and one-third on the results of the entity to which it was affiliated.

The process that was applied to set the EIs was roughly as follows:

- the EI level for the entire group was determined from the industry curve as recommended by S&S ;
- this EI level for the group was then first broken down on each division, then within each division on each profit center, so that the sum of EIs for all the profit centers remained at all times equal to the group's EI. In this cascading down process two considerations were used. First, the estimated industry curve was applied mechanically

at each disaggregated level. Second, these initial EI proposals were submitted to local managers and compared to the results forecast by the profit center in its strategic five-year plan. Since most of these EIs were lower than the internal forecast, they were seldom challenged.

The intervals that set the caps and floors for maximal and zero bonus respectively were taken as symmetric around the EI. These intervals were considered to be the responsibility of the divisions, they were determined by taking into account the profit centers' projected results and their subjective appreciation of volatility.

The EI and the Interval (noted as Int) peculiar to each profit center were expected to remain constant for each of the three years 2000, 2001 and 2002, contrary to S&S recommendation of an annual adjustment of EI through the industry curve formula.

Then the adopted annual bonus formula is linear from EI-Int to EI+Int, while the three-year bonus is linear from 3EI to 3EI+3Int, making it more challenging that the annual one. This approach was preferred to a bonus bank approach to allow managers to obtain a positive yearly bonus whatever their past results would be.

From the point of view of the top management, this system reflected a balance between active promotion of value creation in terms of results – "Creating value, rewarding results" –, and more traditional remuneration in relation to efforts. This system was supposed to apply uniformly throughout the firm.

6.4. Quantitative results.

In order to perform comparison between units, their performances have been normalized. Let

$$ROCE_n = r + EVA_n / CE_{n-1}$$

$$ROCEtarget_n = r + (EVA_{n-1} + EI_n)/CE_{n-1}$$

Define the normalized *unit's performance indicator* as follows :

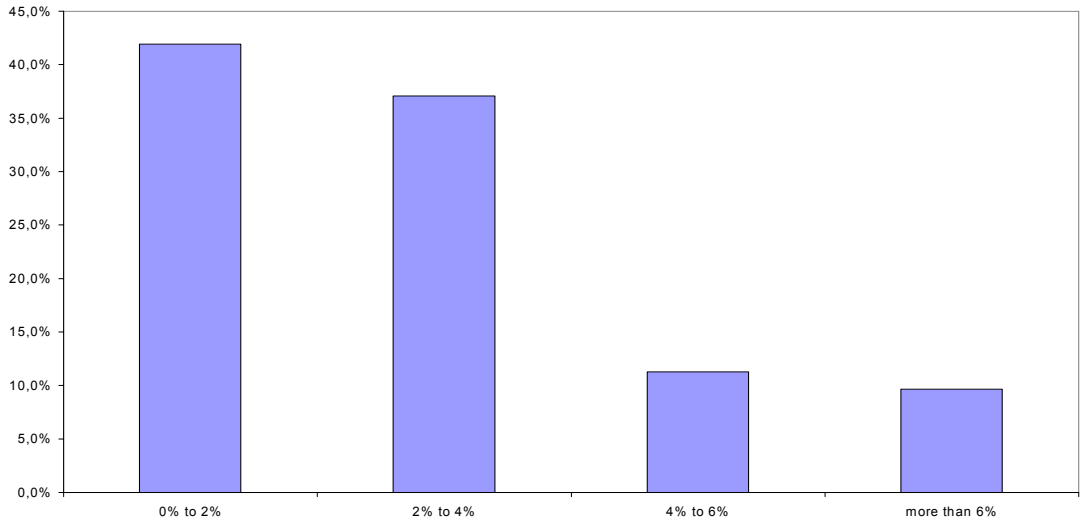
$$(Var\ EVA - EI) / CE = EVA_n / CE_{n-1} - (EVA_{n-1} + EI_n)/CE_{n-1}$$

$$= ROCE_n - ROCEtarget_n$$

Thus, the normalized *unit's performance (*from now on *unit's performance)* measures the difference between the observed ROCE and a target ROCE that integrates the EI requirement. Volatility of EVA is defined as the volatility of this *units' performance indicator.*

Graph 1 gives the standard deviation of this indicator as observed ex post given the actual outcomes of years 2000, 2001 and 2002.

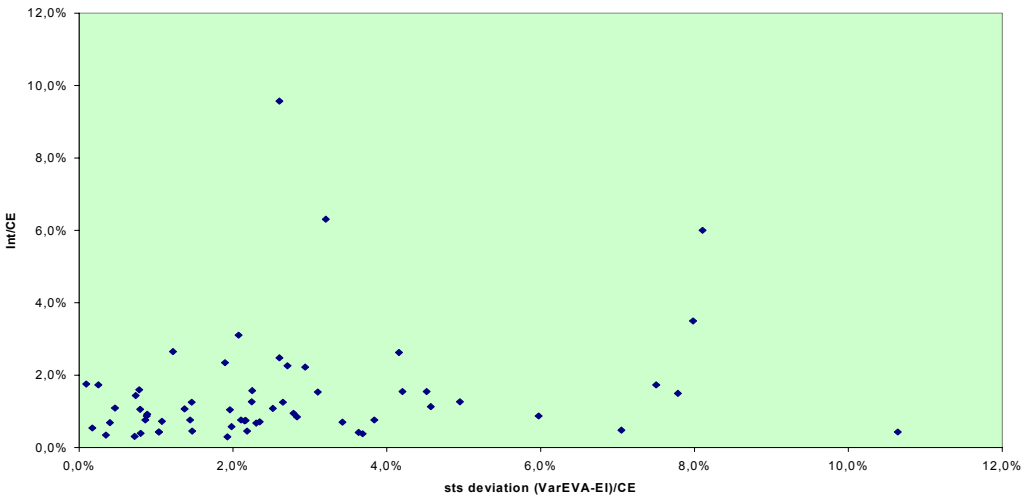
Graph 1: standard deviation (varEVA - EI)/CE



It is seen that more than 50% of units exhibit a standard variation higher than 2% (and close to 20% higher than 4%) which is quite high. With a traditional bonus scheme, suppose that the target ROCE is 10%, to be almost sure to achieve a bonus one would take as an interval twice the standard deviation that is a cap at 14% and a floor at 6% ! But the volatility in a traditional bonus scheme is much lower because of the internal standard and adjustments for control.

The fact that volatility is high suggests that the slope of the bonus scheme should be low that is, intervals should be large. Graph 2 shows that such is not the case.

Graph 2: Relationship between volatility and size of the interval

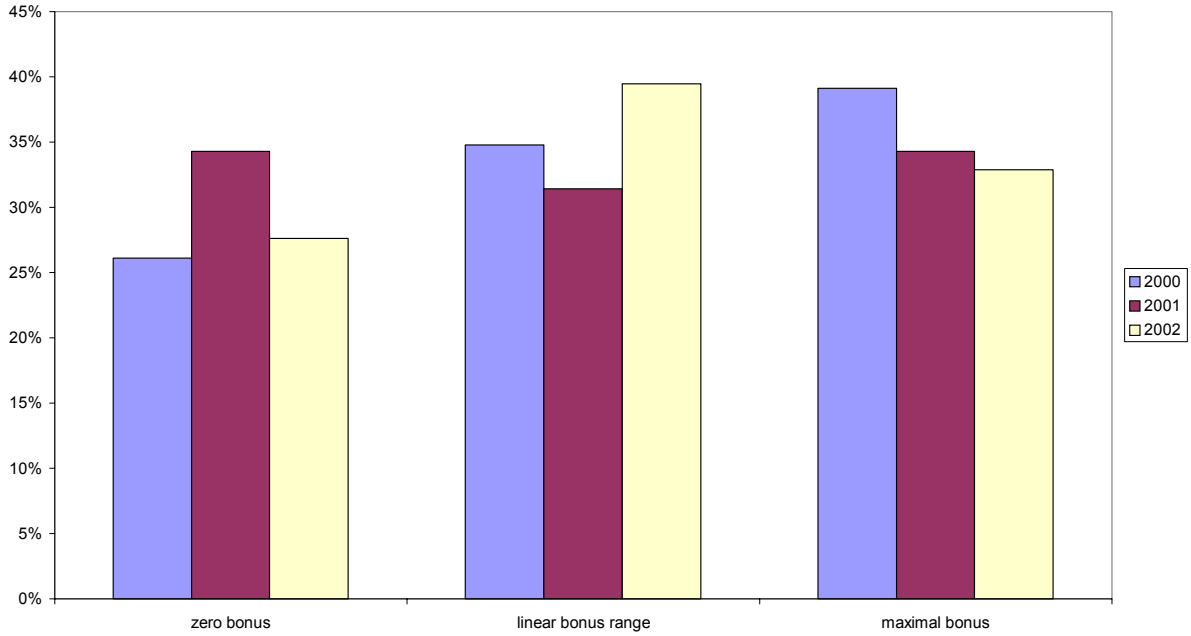


There is no correlation between the standard deviation of the unit's performance and the unit's interval as a percentage of capital employed. One should have a slope of 1 between these two indicators to have 2/3 of chances to be in the linear portion of the bonus formula. The main reason for such low intervals seems to be the natural optimistic tendency of managers: once they know what their EI is, EI+Int appears as stretch goal triggering the maximal bonus. A small interval means a high probability of obtaining that bonus. The decentralized process used by the company to assess the intervals reinforced that tendency.

The obvious consequence of small intervals is that many units will get either zero or maximal bonuses. Graph 3 confirms this view. It shows a rather uniform distribution among

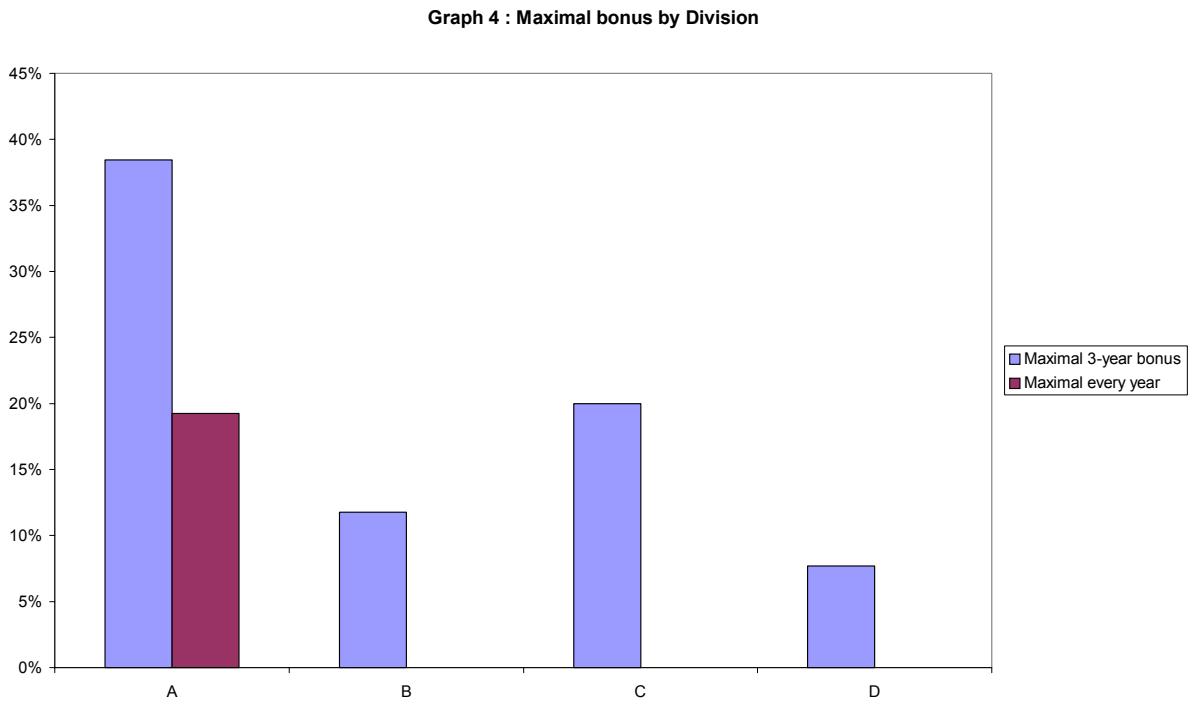
zero bonus, linear bonus and maximal bonus. Consequently, 2/3 of units lied on zones in which the incentive scheme was not operating. Though many units could not know it in advance, they could certainly infer it along the year and eventually adapt their behavior accordingly.

Graph 3 : Yearly bonus



Graph 3 gives the wrong feeling that the EIs are well set. This is misleading, quite a few units actually obtained three times there maximal bonus. There, the question is not so much the high volatility of the measure but the inadequacy of the standard.

Graph 4 details the maximal bonus by Divisions. It can be observed that in one division, which happens to be the core business of the company, almost 40% units obtained their maximal three-year bonus, of which 50% obtained their maximal bonus every year. These percentages are much lower on the other three divisions. It is worth noting that the biases would have been even more pronounced if the industry curve had been used. Cycles in this business seem go over several years.



6.5. Managers' qualitative assessments of the EVA bonus scheme

A number of comments made by managers during internal audits and interviews provided further information, in addition to the statistics presented above. We noted that:

- the EVA indicator as such was perceived positively, as easy to understand and useful for decision analysis; the objective of diffusing the concept of value creation based on an operational indicator was largely achieved;
- profit center managers got into the habit of analyzing their balance sheet and no longer only their income statement, and managed their assets more efficiently, at least the part over which they had real decision-making powers. In fact this enhanced analytical capability applied mainly to strategic reviews and budgets. For monthly control, on the other hand, EVA calculations required precise accounting data that were available too late, so that control continued to be based on EBIT.

Interviews also highlighted several difficulties regarding the bonus scheme associated with EVA:

- Precise figures for a year's EVA were not available until March of the following year. It was therefore difficult to use the EI as a precise incentive until the accounts had been finalized, especially since the profit centers always found it difficult to clearly understand the details of rules determined at Group level for calculating the capital employed;
- Unlike the former system, the high level of volatility of bonuses granted was imputed primarily to external economic conditions (simple variance analysis made on a sample of units confirmed this view). The system thus seemed to reward results more than managers' efforts, so that in certain extreme cases managers felt that it was simply a question of the luck of the draw. This observation covered two points: doubts as to the relevance of standards defined externally, and criticism of the intervals used, which experience suggested were far too short;

- From the second and third year of application of the system, several units complained that even before the beginning of the year, all hope of a bonus seemed inaccessible when they compared their budget with the "standard" fixed one or two years earlier. In their opinion the bonus system had lost much of its relevance due to the change of context. They considered that certain profit centers were simply "carried" by their environment, something that seemed unfair and caused them to question the rationale of the system[iii]. To remedy this situation, management made a few ad hoc changes to the EIs and intervals and, in extreme cases it was even decided to "neutralize" the bonus system of certain profit centers[iv];
- In some instances managers would be reluctant to accept internal mobility proposals in the perspective of losing high predictable bonus;
- Many managers wanted to revert to an internal standard system in which the EI would be set with reference to the budget, but the top management was against this.

7. Discussion and concluding comments

This case study provides ample evidence that the EVA bonus scheme implemented in company XYZ suffers from a severe control problem and that this problem generate a congruence problem as well.

Do these problems arise due to the specificity of the system implemented or because of the EVA schemes in general ? Three points are worth discussion:

- it does not seem reasonable to have a constant EI in a cyclical business; still the company adopted one for the sake of simplicity but also because the notion of industry curve as suggested by Stern and Stewart is difficult to grasp for the middle manager, and hardly applies to unlisted entities situated in geographic environments in which the notion of peers is not easy to apply. It was therefore more an act of authority that was at the origin of the initial EIs, and it was inconceivable for the general management to have to revert to this issue every year.
- caps and floors are quite common in bonus schemes; they were kept mostly for fairness reasons[v].
- Intervals are too small; but large intervals would go with low incentives, a contradiction with the idea that incentives should be stronger than what they used to be.

To the extent that these considerations are not specific to the company XYZ but to many companies, the consequences observed would certainly have been similar even if the adopted schemes would be slightly different.

The ATT story can be interpreted in this perspective. A commitment to a “pure” EVA scheme, quickly followed by the introduction of customer and employee satisfaction to enhance controllability. Technical difficulties appear: the fact that EI and Int are absolute numbers make updating tedious in case of numerous structural changes. This reduces the adhesion of managers to an indicator which is complex to follow. If on top of that a disconnection appears between EVA and MVA, the all construction becomes questionable.

In 2002, the top management of company XYZ faced a question similar to the one faced by ATT in 1997. It was decided to amend the EVA system rather reverting to the traditional one. The main benefit of EVA was seen as educational: “managers should feel like owners” through their EVA bonus irrespectively of the effort made. Internal communication then focused on the other part of the bonus (50%), meant to be more controllable and more explicitly related to efforts. Still the EVA bonus scheme as such was amended: EIs would be determined according to the observed EVA of the preceding year according to some

simple formula which could be slightly accommodated to cover special situations, intervals would be determined by the division controller using objective volatility analysis, no adjustments related to uncontrollable events were introduced.

As a conclusion, it is interesting to draw a parallel between EVA system and a system of stock options. This latter is sometimes presented as combining strong congruence with a some degree of control, at least at the top management level. In reality, much criticism has been leveled at it. Several authors have considered that the degree of control was quite low and that top managers benefited from wind fall profits with soaring stock prices in the 1990s (Abowd and Kaplan, 1999). Despite this criticism, the system has survived and attempts to introduce more control seem to have been of little effect. Abowd and Kaplan note, for example, that there are few option plans that use comparative references (e.g. within the same sector). They impute this resistance to managers' ability to maintain a system that is favorable to them during a period of increasing prices. This interpretation is supported by managers' ability to renegotiate option plans during periods of stock price decreases, as in the 1970s, an example of a long stock market slump, which amounted to canceling their incentive nature. In both cases, stock options and EVA, there are fairly strong reasons not to naïvely believe in an alignment between stockholders' and managers' objectives. It seems preferable to ex-ante lower such incentives.

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[i] Whether Var EVA or EVA is used as the indicator is pointless, as long as the standard is defined accordingly. This standard is easier to construct when Var EVA is used, see following section.

[ii] This level corresponds to a bonus of 100.

[iii] Interestingly, the extent of difficulties differed substantially, depending on whether the profit centers belonged to the core of the firm or to entities that had recently been acquired as part of a diversification strategy.

[iv] This neutralization was twofold: either ex post re-evaluation of the bonus parameters so that the unit obtained the mean bonus, or the elimination of the unit in the calculations of the division concerned, so that the managers affected by the bonus division but not directly responsible for the management of that unit would not be penalized by a unit whose results were too bad.

[v] Among the reasons given by firms (Merchant, pp. 145-148), we note: 1) the fact that exceptionally good performance is the result of an unexpected event, of a badly designed plan or of a short-term behavior by the manager; 2) showing that the firm rewards a regular performance; 3) guaranteeing vertical equity of remuneration within the firm.

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