

# In which direction is budgeting moving? A report in large firms of Spain

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## **Abstract**

In this paper we provide evidence on the budgetary practice of 135 large firms located in Spain. The results have allowed us to evaluate a wide range of weakness attributed to the traditional budgeting approach, still called into question, as well as to discern towards what emerging paradigm budget is aligned the practice analyzed. Evidence shows that the budgetary approach used by the firms have managed to resolve many of the weakness imputed to the traditional budgeting. At the same time, we note that in the most of the cases studied these procedures are in line with the conceptual ideas defended by the *Better Budgeting*.

Keywords: budget system, budgeting procedure constraints, evidence on budgeting practices in Spain.

## ¿Hacia dónde se dirige la práctica presupuestaria? Un estudio en empresas españolas

### Resumen

En este trabajo se ofrecen evidencias de la práctica presupuestaria de 135 empresas de gran tamaño localizadas en España. Los datos obtenidos nos han permitido evaluar un amplio abanico de deficiencias atribuidas al procedimiento presupuestario tradicional, aún hoy puestas en entredicho, así como vislumbrar hacia qué paradigma presupuestario emergente se alinea la práctica analizada. Los resultados obtenidos ponen de manifiesto que los procedimientos presupuestarios empleados por las empresas estudiadas solventan gran parte de las limitaciones atribuidas a la gestión presupuestaria tradicional. Al mismo tiempo observamos que en la mayor parte de los casos estudiados dichos procedimientos se encuentran en línea con la propuesta conceptual del *Better Budgeting*.

Palabras clave: sistema presupuestario, limitaciones del procedimiento presupuestario, evidencias de la práctica presupuestaria en España.

### Introduction

Since mid twentieth century, the budgetary procedure traditionally held in the firms has been strongly questioned because of the numerous limitations attributed to it (Fernández & Rodríguez, 2011). This has led to part of the research to devote a great effort in proposing a new budgetary framework more in line with the productive context of the last decade, formed of an intense dialogue between research and practice (e.g., Hope & Fraser, 2004; Hansen & Torok, 2004; Gleich & Hofmann, 2005; Creelman, 2006; Horváth & Partners, 2007; Bognes, 2009; Morlidge & Player, 2009; Hope *et al.*, 2011).

This innovative budgetary framework is located at the Consortium for Advanced Manufacturing International (CAM-I). Began to settle in the 90's from two schools of thought clearly positioned, led by academics and business professionals, known as moderate school and renewal school (Rodríguez, 2010). But they have the same starting point; they share the premise that the traditional budget model is so outdated and inefficient.

Specifically, the moderate school comes from American research group -*The US-based CAM-I Activity-Based Budgeting (ABB-gropup)*- . This group defends the

idea of evolution of the budgetary procedure based on: the development of new methodologies, the use of improved technical tools, and the application of principles of management. They suggest two lines of action: *better budgeting* and *advanced budgeting*.

The second, renewal school, formulated within the European research group -*The European-based CAM-I Beyond Budgeting (BB-group)*-, advocates for absolve to the firms of the budgetary procedure and replace it with a corporate culture based on flexible, adaptive and decentralized procedures. It has created a line of research, mainly raised from the professional field and from the Beyond Budgeting Round Table (BBRT), founded on the idea of conducting the business management free of budgeting, which is technically defined as *beyond budgeting*.

Although these management alternatives are accepted and recognized by the greater part of the business world, and the remarkable efforts being undertaken consultancies and organizations such as *Horvath & Partners* and the *Beyond Budgeting Round Table (BBRT)* for development and implementation, recent studies (e.g., Dugdale & Lyne, 2010; Libby & Lindsay, 2010) show that companies are still using a traditional budgeting, albeit with significant changes, and that some of the deficiencies attributed to has not been able to overcome.

From Umpaphaty (1987) to Dugdale & Lyne (2010) and Libby & Lindsay (2010), the results achieved by research on the budgetary practice (e.g., Ekholm & Wallin, 2000; Ahmad *et al.*, 2003; Greiner, 2003; KPMG, 2004; CIMA-ICAEW, 2004; Durfee, 2006; Marginson *et al.*, 2006) have shown homogeneity in recognizing the weaknesses of the traditional budget process, and that at most, from the direction of the companies are committed to an improved budgetary practices. However, heterogeneity has also been exhibited at the time to analyze the weaknesses reported in the literature.

In this study we carry out an exploratory analysis of the budgetary practice in 135 large companies located in Spain. By doing so and departing from previous literature, we provide evidence concerning the weaknesses attributed to the traditional budgetary procedure. Its implementation involved the preparation of a working framework structured on the basis of foregoing studies on: the conceptual status of budgeting research and the controversy of the traditional budgeting practices concerning the limitations of which it is accused and the conceptual alternatives to conventional budget management.

Results indicate that budgetary procedures implemented by the surveyed companies solve most of the limitations attributed to the traditional budgeting. They also reveal that a high percentage of cases studied betting on the *better budgeting* idea.

The rest of the paper is structured as follows: the next section deals with the theoretical framework. The methodology used is provided in the third section. The fourth section sets out the results. Finally, the paper draws to a close with the main derivations.

### **Theoretical framework**

The discontent of the business world with the traditional budgeting approach has led to senior executives and business leaders to accept a change in budgetary philosophy whose conceptual choices are oscillating from the development and implementation of innovative budgetary alternative to leave them without conditions (Creelman, 2006).

This change of philosophy requires to a new budgetary framework capable to ensuring the success of the different emerging ideological alternatives. The parameters on which it sits are precisely those critical factors that traditional budgetary framework has failed to overcome. We refer to:

- Promote the business plans from company's strategic coherence.
- Link resource consumption to production volumes.
- Support continuous improvement and innovation.
- Develop and maintain a consistent behavior.
- Add value to the company while planning and budgeting.

Gleich & Hofmann (2005) state that this new budgetary framework is underpinned in the follows both ideological and methodological approaches:

1. Simplify planning and budgeting.
2. Guide both planning and budgeting to the output.
3. Integrate and align both strategic and operational planning.
4. Extend the planning and budgeting with nonmonetary magnitudes.

Reinvent budgeting, and therefore provide a framework according to the current management necessities involves the necessary migration of business towards a more adaptive and decentralized approach (Brander Brown & Atkinson, 2001; Daum, 2002; Hope & Fraser, 2004; Kaplan, 2009), and towards the adoption of budget practices and procedures redesigned, remodeled or reconstructed. In sum, the point is to build a theoretical and practical context that allows us to develop innovative dimensions of budget management.

Research has taken different courses of action that have derived in two schools of thought clearly defined, moderate school and renewal school, both linked to the Consortium for Advanced Manufacturing International (CAM -I), and the research groups Activity Based Budgeting -(ABB) group- and Beyond Budgeting -(BB) group-.

Under the moderate school, we can check for two lines of action as alternatives to the traditional budgetary management:

- *Better budgeting.* Initiative confined to a more flexible thinking than the traditional and submitted to the implementation of a set of autonomous and independent techniques with the aim of correcting the major number of deficiencies attributed to the conventional budgeting.
- *Advanced budgeting.* Advanced budgetary approach that streamlines the traditional budget functions, and at the same time supports the execution of business strategy according to a set of scientifically established management principles.

On the other hand, renewal school maintains that improvements or remodeling business budget process is not a final and comprehensive solution to the problems posed by the traditional budgeting approach, given that it enables the development of fixed performance contracts and the prevalence of centralized control. From this point of view, is firmly committed to the empowerment. As a solution it is proposed to manage without budgets applying the Beyond Budgeting approach, which focuses its interest in developing a holistic management model based on twelve managerial principles where coexists processes and innovative tools with the configuration of a new management style.

## **Method**

The present study is in the line of research set out in the work of Umapathy (1987), Ekholm & Wallin (2000), Ahmad *et al.* (2003), Greiner (2003), KPMG (2004), CI-MA-ICAEW (2004), Marginson *et al.* (2006), Dugdale & Lyne (2010) and Libby & Lindsay (2010), whose objectives were oriented to describing the state of the art and the extent to which budgeting practices have evolved to meet the demands of the new context of production.

We took a four-phase methodological approach:

- 1) Survey design.
- 2) Population selection.
- 3) Sample collection.
- 4) Frequency analysis and clustering.

### *Survey design*

Published field work on the status of business budgeting practices (Umapathy, 1987; Ekholm & Wallin, 2000; Ahmad *et al.*, 2003; Greiner, 2003; KPMG, 2004; CIMA-ICAEW, 2004; Durfee, 2006; Marginson *et al.*, 2006) formed the basis for our data collection instrument, which we decided to organize into the following three conceptual layers:

- Issues relating to the firm's strategy and to its relationship with budgeting procedures.
- Instrumental and situational issues relating to the budgeting system applied by the firm.
- Questions of management styles that represent alternatives to that of traditional budgeting.

Given the large number of indicators that we included initially to ensure completeness, we subjected them to a Delphi selection technique whereby we were able to reduce the number of errors, redundancies, and inconsistencies. The resulting pared down measurement instrument consisted of a 45-items questionnaire. Most of these items had closed responses on a 7-point Likert scale, with 1 corresponding to "Strongly Disagree" and 7 to "Strongly Agree", some had dichotomous respon-

ses, and some had responses on a nominal scale. The questionnaire was organized according to the conceptual strata defined above (see Appendix A).

### *Population*

Following Umapathy (1987), Ekholm & Wallin (2000), Greiner (2003), and KPMG (2004), we decided to analyze the status of budgeting practices in companies categorized as large firms. In particular, we applied the size criteria set out in the fourth corporate directive of the European Union (see the Official Journal of the European Union L-124, 20.5.2003), whereby a firm is considered large if it satisfies the following conditions:

- The number of employees exceeds 250.
- Billing exceeds 50 million euros.
- Total assets exceed 43 million euros.

We used the SABI database<sup>1</sup> (Sistema de Análisis de Balances Ibéricos-System of Analysis of Balance Sheets of Iberia) to retrieve firms whose characteristics conformed to the above size stratum. Of the discriminating criteria available in this database, we decided to use the following:

- Firms whose productive activity takes place in Spain. SABI specifically includes around 1.1 million of such firms.
- Firms included in “La Clasificación Nacional de Actividades Económicas (The National Classification of Economic Activities) CNAE-93 Rev”.
- Firms with consolidated annual accounts.
- Firms with data on the number of employees, operating revenue, net sales, and total assets.

With the above selection criteria, and after adjusting the observation units initially retrieved from the database to account for such factors as the extinction of the firm, lack of contact details, entry into stages of bankruptcy proceedings, etc., the number of firms forming the study population amounted to 1176.

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<sup>1</sup>An economic and financial database that includes more than one million Spanish and more than three hundred thousand Portuguese firms.

### *Sample*

The special characteristics of the business world forced us to change our initially planned methodological strategy, which was to be one of stratified random sampling, to one of non-random sampling. This change of plans implied that an extra effort had to be made to contact all the firms constituting the study population, and to obtain a sample of firms based on the expectation of their greatest number of responses.

In particular, the questionnaire was e-mailed to the entire sample population after making telephone contact with the recipients. This involved a total of 1176 firms, with the respondents being mainly their Chief Financial Officers, Planning and Control Managers, or Controllers involved in their firm's budgeting procedures. The data collection period was from October 2008 to February 2010.

In line with the methodological pattern of the study conducted by KPMG (2004) and Fortune FAQ Definitions and Explanations<sup>2</sup>, we considered it opportune to classify our population into strata based on annual operating income (table 1).

**Table 1**  
**Population strata**

STRATUM	OPERATING REVENUE (million €/yr)
1	50-250
2	251-500
3	501-1000
4	1001-2000
5	2001-5000
6	>5000

By the end of the data collection period, we had obtained 135 duly completed questionnaires for a response rate of 11.48% of the study population. The responses were organized into the strata defined in table 2. The survey's technical data sheet is given in Appendix B.

<sup>2</sup>See <http://money.cnn.com/magazines/fortune/>

**Table 2**  
**Sample obtained\***

STRATUM operating revenue million €/yr)	POPULATION		SAMPLE		n / N (%)
	N	%	n	%	
50-250	717	60.97	38	28.15	<b>5.30</b>
251-500	206	17.52	17	12.59	<b>8.52</b>
501-1000	122	10.37	38	28.15	<b>31.15</b>
1001-2000	74	6.29	23	17.04	<b>31.08</b>
2001-5000	32	2.72	7	5.18	<b>21.87</b>
>5000	25	2.12	12	8.88	<b>48.00</b>
TOTAL	1176	100.0	135	100.0	<b>100.0</b>

*\*Stratified by annual operating revenue*

*Frequency analysis and clustering.*

The statistical techniques applied to data, using the statistics program SPSS v. 19, were a frequency analysis and clustering. Frequency analysis were used to provide a means to know the distribution of the issues under study (see Appendix C). Hierarchical and k-means clustering were applied as a pairwise statistical tool that is appropriate to organize objects into groups whose members are similar in some way. Hierarchical method was performed to define the number of clusters.

## **Results**

The obtained data from the firms comprising the sample were analyzed according to:

- Content relating to the firm's strategy and to the relationship between this strategy and the firm's budgeting procedures.
- Instrumental and situational issues regarding the budgeting system that the firm applies.
- Questions relating to alternative management styles.

*Analysis of the relationship between corporate strategy and budgeting procedures.*

First off, we must begin by saying that the main types of strategy that the firms used (table 3) were found to be product leadership (with just over 52% of the cases), proximity to clients (44.6%), excellence in the production process (40.8%), and differentiation and competitive advantage (40%).

**Table 3**  
**Categorization of the strategy type**

STRATEGY	Answers		% accumulated*
	Nº Strategy	% Strategy	
Cost leadership	25	8.7	19.2
Market focus or segmentation	32	11.1	24.6
Differentiation and competitive advantage	52	18.1	40.0
Excellence of the production process	53	18.4	40.8
Proximity to clients	58	20.1	44.6
Product leadership	68	23.6	52.3
<b>TOTAL</b>	<b>288</b>	<b>100.0</b>	<b>221.5</b>

\* Multiple responses grouped dichotomously.

A contingency analysis of these strategies provided a disaggregated vision of the weight that each of them had on the others (table 4). By way of example, of all the firms which primarily employ a product leadership strategy, 44.12% of them complement this action with the implementation of a strategy of proximity to clients, just over 42% with one of excellence in the production process, and nearly 40% with one of differentiation and competitive advantage. In this case as in the others, the principal strategies were accompanied by little complementary support from the strategies of cost leadership or of market focus and segmentation, reflecting the firms' relative lack of confidence in these actions.

**Tabla 4**  
**Contingency relationships of the strategies**  
**implemented by the firms of the sample\***

STRATEGY	Prod. Lead.	Cost. Lead.	Diff. Adv.	Excell.	Prox.	Segment.
<b>Prod. Lead.</b>	68	9	27	29	30	18
%	<b>100.00</b>	13.24	<b>39.71</b>	<b>42.65</b>	<b>44.12</b>	26.47
<b>Cost. Lead.</b>	9	25	7	10	4	5
%	36	100	28	<b>40</b>	16	20
<b>Diff. Adv..</b>	27	7	52	19	25	9
%	51.92	13.46	<b>100.00</b>	<b>36.54</b>	<b>48.08</b>	17.31
<b>Execell.</b>	29	10	19	53	28	10
%	<b>54.72</b>	18.87	<b>35.85</b>	100.00	52.83	18.87
<b>Prox.</b>	30	4	25	28	58	12
%	<b>51.72</b>	6.90	<b>43.10</b>	<b>48.28</b>	<b>100.00</b>	20.69
<b>Segment.</b>	18	5	9	10	12	32
%	<b>56.25</b>	15.63	28.13	31.25	37.50	100.00

\*Data expressed in percentages.

Frequency analysis results attained to examine the reciprocal relationship between strategy and the budgeting processes are displayed below:

- Most of the firms studied, the formulation of corporate strategy is to a greater or lesser extent linked to its budgeting system. This is reflected in an aggregate 79.7% agreement.
- By the same token, around 85% of firms surveyed agree, although to varying degrees, with the idea that budgets are instituted as an essential instrument for achieving the strategic objectives identified by management.
- In a clear consistency with previous result, 79.4% of the firms surveyed agreed with the idea that achieving strategic objectives has priority over any other goals. However, one notes that only 8.4% of the cases express this agreement categorically.
- One cannot generalize that the allocation of resources to departments is done solely and exclusively at the beginning of the budget period, much less that it remains constant throughout. Just 6% of the firms declare strong agreement with this idea, and 4.5% declare strong disagreement. There is a marked concentration of moderate and inconclusive responses around the central position, with 22.6% expressing complete neutrality on the question, and a certain balance between the non-extreme positions of agreement (36.8%) and disagreement (30%).
- Most firms surveyed (88.6%) reported carrying out regular reviews of their strategies, which leads us to think that they practice a process of continuous planning.
- The firms' productive activity, as well as most of its executive and administrative actions, is aimed at the pursuit of strategic success. Although with varying degrees of intensity, 91% of the firms said that productive activity, together with the rest of the firm's activities, has to be involved in attaining the established strategic objectives.

K-means analysis supports the results, as table 5 shows.

**Table 5**  
**K-means clustering for items CS2-CS7 and relative size**

Item	Cluster			
	1	2	3	4
CS2	4.33	6.11	4.59	5.33
CS3	3.75	6.33	4.86	5.50
CS4	4.67	5.62	4.64	5.19
CS5	5.42	5.33	4.05	2.79
CS6	5.50	6.33	4.41	5.83
CS7	5.50	6.36	4.45	5.83
N (firms)	<b>12</b>	<b>45</b>	<b>22</b>	<b>52</b>
Relative Size (%)	<b>9.16</b>	<b>34.35</b>	<b>16.80</b>	<b>39.70</b>

The ANOVA performed on the indicators in four clusters, supports the heterogeneity of the average values in each segment (table 6).

**Table 6**  
**Relationship between corporate strategy**  
**and the budgeting processes**  
**(ANOVA)**

Item	Sum of Squares	Mean Square	F	Sig
CS2	17.015	.519	32.804	.000
CS3	26.620	.739	34.674	.000
CS4	6.142	.869	7.065	.000
CS5	59.579	.949	62.770	.000
CS6	18.629	.754	24.707	.000
CS7	18.160	.663	27.388	.000

*Analysis of the instrumental and situational aspects of the budgeting procedures*

To analyze the instrumental and situational aspects of the firms' budgeting systems, we first needed to know the kind of budgeting procedures the responding firms relied on (table 7). As one observes in the table, the better budgeting system was by far the commonest alternative implemented (63.7%).

**Table 7**  
**The budgeting systems applied by the respondent firms**

BUDGETING PROCESS	FIRMS	(%)
Better budgeting	86	63.7
Traditional budgeting	30	22.2
Activity based budgeting	16	11.9
Beyond budgeting	3	2.2
<b>TOTAL</b>	<b>135</b>	<b>100.0</b>

In contrast with the work of Ekholm & Wallin (2000), Ahmad *et al.* (2003), KPMG (2004), Lyne & Dugdale (2004), and Marginson *et al.* (2006) who found the traditional budgeting system to continue being the alternative that firms most commonly use, most of the firms in the present study reported taking as referent for their budgeting management the traditional approach but improved through the implementation of procedures designed to meet the demands of the competitive environment in which they operate.

It is also noteworthy in this regard that few firms (11.9%) applied Activity Based Budgeting systems. This is consistent with the findings of KPMG (2004) in which only 19% of the surveyed firms practiced this alternative system of budgeting. Very few of the firms surveyed (2.2%) implemented adaptive, decentralized, process-based budgeting (Beyond Budgeting).

Findings about the instrumental and situational aspects of the firms' budgeting systems are as follows:

- Numerous international studies have revealed a degree of dissatisfaction of close to 80% of businesses with respect to their budgeting systems (e.g. Charan & Colvin, 1999; Economist Intelligence Unit Ltd., 2000; Neely *et al.*, 2001; Hunt, 2006; American Productivity & Quality Center, 2006). But for the firms of the present study, the pattern of responses was quite different, so much so that there was not a single case of strong dissatisfaction with their budgeting system, and only about 11% expressed moderate or slight dissatisfaction, while 69.7% responded with some degree of satisfaction.
- This is significantly different from one of the conclusions reached by KPMG (2004) in which 35% of the firms studied with billing exceeding five million

dollars showed some level of dissatisfaction with their budgeting processes. Since our study was performed with firms with billing volumes well above the range used by KPMG as a discriminating criterion for their sample, the result is even more striking.

- We concur with Libby & Lindsay (2010) in that it is impossible to draw a reliable conclusion about whether or not changes in the firms environment may invalidate established budgets. Only 3% of the firms studied considered categorically that budgets remain effective when faced with actual or potential changes in the environment, compared with 3.7% who took the opposite position.
- Coinciding with Greiner (2003) who found that 71% of the surveyed firms reported the budgeting process to be an important management tool, most of the firms in the present study (83.7%) see the budget as a management tool which has become more important in recent years. In particular, 60% responded with moderate or total agreement.
- Although a significant proportion of the respondent firms (21.5%) did not take a definite position one way or the other regarding the predominance of budgets over other management tools, 68.9% of them did agree to some degree with this statement.
- Linked to the importance of the budgeting process for a firm's system of corporate governance, a significant number of respondents (83.8%) expressed agreement that the budgeting system practiced in their firm contributed value to its management.
- Given that most of the firms were applying better budgeting practices and the aforementioned increasing preponderance of budgeting processes over other instruments of corporate management, it was completely coherent to find that 62.7% of the respondents did not see their budgeting systems as obsolete, with another 23.1% not declaring either way on the question.
- The data showed that budget objectives were not always met (6.8%). although by far most of the firms (73.7%) said, with different degrees of emphasis. that in general they were achieved.
- With respect to the process of budgeting, the firms presented a considerable division of opinions. While 40.3% agreed with the statement of the item that their budgets were constructed by extrapolating from previous years, 41% expressed the contrary opinion. We conclude therefore that there are two opposing perceptions of the construction of budgets. While some years ago the commonest inclination in this regard was towards the preparation of budgets based on historical data (e.g. Umapathy, 1987), one might say now

that perhaps the evolution that has taken place in budgeting has changed the way that many firms deal with this process.

- As in Greiner (2003), our results show that the management of most of the firms surveyed (68.9%) are to some degree in agreement about using the budget as a mechanism of control of the performance of the firm's personnel.
- For a high proportion of the respondent firms (78.5%), the incentive system is to a greater or lesser extent conditioned by meeting budgeted targets.
- Most of the respondents, essentially from a moderate and strong perspective, agreed that management is not only actively engaged in the elaboration of budgets, but also in monitoring the corresponding actions and following up the ultimate attainment of the goals.
- Usually, various revisions and updates are made to budgets during the fiscal year. Specifically, with moderate (30.6%) and categorical (26.1%) positions prevailing, 74.6% of the firm state that they adjust their budgets several times a year. This is consistent with the findings of Umapathy (1987), KPMG (2004), American Productivity & Quality Center (2006) and Player (2009) of a clear tendency for firms to perform regular reviews of budgeted goals, and make periodic changes to the budgets themselves when presumed necessary.
- There was a marked difference of opinion regarding the time spent in budgeting and its possible implications in terms of bureaucracy and costs. Unlike the results reported by Ekholm & Wallin (2000) and KPMG (2004) that approximately 90% or 84%. Respectively, of firms required on average more than two months to prepare budgets, just over 41% of the firms of the present survey were not in agreement with the statement that budgeting consumes excessive time and is tediously bureaucratic and costly. In contrast, only 15% of them were in moderate to full agreement with the statement.
- For most of the respondents (75.6%), budgeting does not encourage negotiating practices or unethical conduct among the firm's managers, nor among its different areas of activity. It is noteworthy that not a single respondent expressed strong agreement with the statement, although there was some milder degree of agreement (14.1%), suggesting that in these relatively few cases the budgeting process may give rise to negotiations and unethical behavior among their firm's managers and the departments they run.
- Coherent with the previous finding, too more than 65% of the firms surveyed expressed a greater or lesser extent of disagreement with the statement that

budgeting systematically favors a vertical hierarchy management style, which would hinder knowledge sharing and the active participation of staff. It is noteworthy that 19.3% of the cases took a neutral stance on the item.

- Mainly expressing an opinion of moderate disagreement, most of the firms surveyed (67.4%) did not find that budgets induce the creation of departmental barriers. Instead, their approach is one of shared knowledge that allows rapid reaction to the constantly changing environment. Indeed, only 4.4% of the respondents expressed moderate or complete agreement with the statement.
- Only 3% of the firms declared their budgeting to be unquestionably oriented to minimizing costs, and at the other end of the scale only 4.5% expressed strong disagreement with this notion. The dispersion of responses among moderately positive and moderately negative positions suggests that most of the firms surveyed take, together with cost reduction, other objectives into account in budgeting.

Again, K-means analysis supports the findings, as table 8 demonstrates.

**Table 8**  
**K-means clustering for items BP15-BP31 and relative size**

Item	Cluster			
	1	2	3	4
BP15	5.77	5.29	4.56	3.50
BP16	5.00	4.86	3.92	2.70
BP17	5.77	5.48	5.65	4.50
BP18	5.31	5.10	5.06	3.40
BP19	6.11	5.81	5.29	3.80
BP20	2.00	2.14	3.66	4.60
BP21	5.60	4.90	4.92	4.50
BP22	4.34	2.95	3.89	4.60
BP23	5.74	3.38	5.02	3.40
BP24	6.06	4.38	5.61	3.10
BP25	6.69	5.86	6.03	4.30
BP26	4.31	6.24	5.56	4.30
BP27	2.74	2.62	4.79	3.90
BP28	2.20	1.90	2.94	3.80
BP29	2.66	2.24	3.56	3.10
BP30	2.20	2.05	3.56	3.20
BP31	3.80	3.19	4.13	3.40
<b>N (firms)</b>	<b>35</b>	<b>21</b>	<b>62</b>	<b>10</b>
<b>Relative Size (%)</b>	<b>27.35</b>	<b>16.41</b>	<b>48.4</b>	<b>7.8</b>

The ANOVA performed on the indicators in this conceptual section showed the heterogeneity of the average values in each segment except in the case which analyzes whether the implementation of the budgets are primarily intended to reduce costs (see table 9).

**Table 9**  
**Instrumental and situational aspects of**  
**the firms' budgeting systems**  
**(ANOVA)**

<b>Item</b>	<b>Sum Squares</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig</b>
BP15	18.723	.856	21.861	.000
BP16	19.387	1.655	11.712	.000
BP17	4.466	1.033	4.323	.006
BP18	9.833	1.173	8.380	.000
BP19	15.605	.687	22.723	.000
BP20	34.339	1.313	26.145	.000
BP21	5.020	.865	5.801	.001
BP22	10.202	2.173	4.695	.004
BP23	31.948	.992	32.202	.000
BP24	30.702	1.455	21.098	.000
BP25	15.190	.533	28.474	.000
BP26	22.091	2.619	8.437	.000
BP27	43.102	1.442	29.889	.000
BP28	12.330	1.538	8.015	.000
BP29	11.888	1.579	7.527	.000
BP30	20.220	1.495	13.524	.000
<b>BP31</b>	<b>5.338</b>	<b>2.098</b>	<b>2.544</b>	<b>.059</b>

*Analysis of the repercussions of management style in the budgeting process*

The third and last layer of concepts that we examined to complete the study was aimed at determining the different management styles that the firms tacitly or explicitly employ, and their relationship with budgeting practices. Findings are showed as follow.

- The prevalent responses reflected that the setting of fixed corporate goals which are negotiated internally, rather than setting budget targets based on benchmarking. Percentagewise, 63.7% of the respondent firms set their targets by means of a process of negotiation, and maintain them unchanged

throughout the fiscal year. At the other ends of the scale, of the 18.5% of the firms who agree with the statement that they use relative goals in budgeting, only 5.2% express this agreement moderately or strongly.

- The incentive scheme that the surveyed firms implement is not determined by relative success, as is reflected by the responses expressing disagreement (56.4%). The data reflect an emphasis on the use of incentive systems based on reaching pre-set targets that have been negotiated internally. There was a major proportion of responses (22.6%) expressing uncertainty on this issue, and a small proportion (6%), again similar to the previous finding, expressing either moderate or strong agreement that their incentives are based on relative success.
- Information showed that the style of management of 66.2% of the firms studied includes a practical approach to planning. This involves granting certain powers to lower-level corporate officers. Nonetheless, only 4.5% of the firms strongly agreed that they followed this approach, and 21.1% took a neutral position on the question.
- Although not entirely conclusive, on aggregate most of the firms declared that they allocate resources according to demand. In particular, except in the proportion of responses (20.7%) expressing a neutral position on how resources are allocated to the subunits of the firm. 63.7% of the respondent state that resources are assigned as they are needed. In contrast, only few of the firms surveyed (15.6%) practice a rigid form of allocation, although even then this is with a certain qualification since no response expressed this opinion strongly.
- Another aspect that emerged from the data was the clear predominance of the practical exercise of a management style based on the dynamic coordination of the firm's actions aimed at better satisfying customer demand. Disaggregating the data, one observes that 72.7% of the firms offer their clients to a greater or lesser extent customized solutions and the capacity for timely attention and response.

Moreover, the fact that no firm expressed strong disagreement with the statement and that somewhat fewer than 14% did so only moderately or slightly leads one to conclude that the trend, not just for these firms, but also possibly for others of similar characteristics on this issue is to apply a style of management that takes the client as the prime referent.

- Stand out both the major proportion of firms (29.3%) taking an indeterminate position regarding the exercise of budget control based on effective

governance<sup>3</sup> and the small proportion who say they follow this approach in its entirety. Given this scenario and the dispersion of opinions on the issue, we conclude that either the true sense of the content of the question was not understood, or there is still a long way to go in developing the field of self-management.

- Data showed a noticeable impulse towards a management style based on training and support. It has been demonstrated in experiences in other business contexts (e.g., Hope & Fraser, 2004; Hope, 2006; Bogsnes, 2009) that employees of such firms gain competences in the concepts of collaboration and shared values.
- One notes a clear commitment by the practice of a culture of responsibility that involves all the personnel of the firm. The recognition of a high-performance climate based on relative success and constant challenges for employees implies the delegation of authority to all corporate levels, in which the transfer of information between agents with responsibility and the centers of activity has to be a key.

Proof of this is that, while 26.1% of the respondents do not come down on one side or the other of the question, and 12.7% express disagreement, the majority (61.2%) stated either strongly (6.7%) or at least moderately and slightly (54.6%) that their firms promote a climate of high performance that has the capacity to develop employees' skills. Nevertheless, one must bear in mind that this circumstance was not found to hold for the implementation of incentive systems based on relative targets, so that one might deduce that this trend towards a climate of high performance based on relative success is still in its infancy.

- Linked to the above, we observed that 66.7% of the firms involve their personnel in the implementation of the firm's strategy, conferring to a greater or lesser extent authority on all levels of responsibility (empowerment). There stands out the fact that no firm expressed strong reluctance to promote a culture of responsibility under which its personnel would be able to develop their skills and commitment.
- Paradoxically, it seems that in the current business context there is no generalized major empowerment of the lower corporate level managers and employees. Specifically, the data reflected a fairly equal distribution of attitudes in this regard. In particular. 32.1% were not in agreement with

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<sup>3</sup>Effective governance consists of a multi-level control through which management is kept aware of the actions in progress, to intervene only when strictly necessary.

the further empowerment of those with responsibilities at lower hierarchical levels. 19.4% took a neutral position, and 48.4% were in favour of conferring such authority, although even then most of them (32.8%) only expressed slight agreement with the idea. All this again confirms that there is still a long way to go to reach the levels required by avant-garde budgeting practices based on effective governance and a culture of responsibility.

- It is considered very similar aspects of the firms' management styles, and indeed their responses showed similar distributions. The plurality of systems and technical tools for handling information that one had traditionally been accustomed to encountering made proliferation of dishonest actions on the part of staff, such as concealment or distortion of information, more likely. Here, however, one notes that most of the firms surveyed (86.7%) promote a cooperative attitude among their employees. both individually and collectively, and most of them (81.5%) also express a clear willingness to promote and defend a single, ethical and open. system of information.
- Of the total set of firms studied, 53% formalized with more or less rigor a map of activities for each of the centers into which it is organized in order to improve its budgeting management. However, only 15.6% did so in a rigorous form. There stands out, however, that 24.2% came down on neither one side nor the other of the issue.
- While 49.2% of the respondent firms partially implement a process of analysis and elimination of activities that are not needed to add value for their clients only 5.3% strongly declare that they screen for and eliminate superfluous activities.
- Considered together these last two findings, it is observed that, even though the great majority of the firms surveyed have not implemented comprehensive Activity Based Budgeting (see Table 7), they do to some extent control certain activities they deem transcendent for the attainment of their objectives.

Once more, the K-means analysis supports these findings (see table 10).

**Table 10**  
**K-means clustering for items L32-L45 and relative size**

Item	Cluster			
	1	2	3	4
L32	3.98	3.36	2.82	2.18
L33	3.68	3.79	2.91	2.74
L34	4.76	5.71	3.82	4.82
L35	4.98	5.71	3.64	4.68
L36	5.34	5.50	3.55	5.15
L37	4.51	5.25	3.27	4.03
L38	4.83	6.36	3.55	5.41
L39	4.66	6.18	3.64	4.38
L40	4.85	6.39	3.36	4.68
L41	4.56	5.21	2.73	3.50
L42	5.24	6.43	4.23	5.50
L43	5.17	6.32	4.00	5.53
L44	3.76	5.39	3.32	5.65
L45	4.29	5.36	2.73	5.21
N (firms)	41	28	22	34
Relative Size (%)	32.80	22.4	17.6	27.2

The ANOVA for this set of items again reflects heterogeneity in the mean values of each cluster (see table 11).

**Table 11**  
**Repercussions of the management style in the budgeting process**  
**(ANOVA)**

Item	Sum Squares	Mean Square	F	Sig
L32	21.263	1.336	15.919	.000
L33	8.935	1.488	6.005	.001
L34	14.880	1.021	14.580	.000
L35	18.302	1.382	13.243	.000
L36	19.684	1.123	17.521	.000
L37	17.575	1.147	15.318	.000
L38	34.575	.793	43.614	.000
L39	29.787	.764	38.987	.000
L40	38.700	.747	51.838	.000
L41	32.391	1.402	23.099	.000
L42	20.406	.800	25.512	.000
L43	22.939	1.061	21.620	.000
L44	40.008	1.626	24.601	.000
L45	36.136	1.048	34.473	.000

### *Characterization of clusters*

In addition to the previous findings, we performed a *posteriori* characterization of the firms' composition of each cluster identified, by sector, by turnover, and by budgetary process implemented.

Among the most significant results, stand out that the sectors of activity which have greater weight when assessing the relationship between strategy and budgetary system, as well as the instrumental and situational aspects of the budgeting procedures and the repercussions of management style in the budgeting process were, in this order, manufacturing, real estate activities and trade.

On the other hand, stand out that the turnover of these companies range from one billion Euros and two thousand. Specifically, it notes that the assess of the relationship between corporate strategy and budget system, as well as about the impact of management style in the budgetary process, brings together the firms with turnover of less than one billion Euros. Similarly, the analysis of instrumental and situational aspects of the budgetary procedure in each segment brings together firms with revenues less than or equal to two billion Euros.

Finally, clustered firms reveal the predominance of better budgeting system in relation to others procedures such as Traditional Budgeting, Activity Based Budgeting or even Beyond Budgeting. Nevertheless, Traditional Budgeting still has a significant presence in the analyzed firms.

### **Summary and Conclusions**

The aim of the present study has been to analyze the status of budgeting practice in Spain, particularized to the firms of greatest strategic capacity. Taking a representative sample of firms and analyzing statistically the information they provided during the period October 2008–February 2010, we verified that in Spain, for this set of firms and as will also be the case for those of similar characteristics, budgeting practices have evolved away from the traditional conception.

Specifically, we observed that, contrary to part of the international research literature (e.g., Kaplan & Norton, 2001; Hope & Fraser, 2003; Horváth & Sauter, 2004; Pierre, 2007) which describes a general lack of alignment between plans of operational action and the corporate strategies that firms define, the firms of the

present study express an appropriate linkage between their budgeting actions and the strategy set by top management.

The main reason for this is that most of the participating firms consider budgets to be an essential management tool in achieving their strategic objectives. Indeed, this is so much so that, in their management's view, to be able to withstand the convulsions occurring in the new context of production they are facing, all the tasks their organizations carry out should be involved in achieving this mission.

To this end, they consider it necessary to transmit to those involved in the firm's processes that strategically planned targets have priority above any other goal or interest whether individual or departmental, and that it is fundamental to direct the mentality of all levels of management towards the continual updating of corporate strategy.

Empirical evidence shows that corporate strategy must be seen as the determining factor towards which budgetary management must be geared. At least for the set of firms studied and for those of similar characteristics, strategic planning and the budgeting process that derives from it must be closely linked and interconnected. In this respect we agree with Libby & Lindsay (2010) who concluded that criticisms of linkages between strategy and budgets had no basis for the firms which they analyzed, in as much as most of them made use of the budgeting procedure to foster a corporate strategy oriented attitude.

Concerning to the instrumental and situational issues involved in the budgeting process, the respondent firms were observed to have evolved towards a more advanced budgeting framework.

Our study has shown a significant level of satisfaction with current budgeting practices, as well as a degree of excellence of those practices which stands out above that of most other management tools.

The views expressed by the agents consulted in this regard refer to current budgeting procedures in their firms being dynamic and effective in character, while comprehensively contributing to creating value for management. This leads us to conclude that the budgeting systematic being practiced have the sufficient capacity to meet today's competitive and demanding business environment.

Indeed, this is so much so that, with far more intensity and confidence than just a few years ago, firms are reviewing and updating their budgeting performance. In fact even several times within the same fiscal year. This is in line with the findings of Libby & Lindsay (2010) that most of the firms they studied modify their budgets to mitigate the effects that changes in the environment might have, whether on individual or corporate performance, or on the company's results.

Also striking (even though it is true that budgets in general continue to be used as an instrument of control over staff performance, that incentives are conditioned by compliance with budgeted targets, and that management is actively involved in the preparation and monitoring of budgeting actions) was that the information revealed that the levels of negotiation and not too ethical behavior were really very low, and that there were instead high levels of participation and cooperation.

This maybe because we only had the views of one of the parts involved (senior management). It would be desirable, therefore, for future studies to gather information on these matters from all the parties involved, located throughout the corporate hierarchy.

As a general conclusion, we could state that some of the criticisms leveled at budgeting systems in recent years, pointing to their limitations or failures, have been corrected or smoothed over in the firms constituting our study, or at least they are either not perceived or those responsible for their implementation may not want to recognize them. Indeed, satisfaction with budgeting processes, the importance those firms attach to budgeting systems, the contribution of these systems to value in the firm, keeping the information contained in the budgets up-to-date, and the increase in cooperation and shared knowledge are in line with the goals expressed in some of the literature studies that we reviewed, and clearly represent an improvement over some of the scientific experiences they described.

Nonetheless, there was also confirmation of certain of the deficiencies attributed to budgeting practices. Examples were the significant proportion of firms (40.3%) still configuring their budgets by extrapolating from previous years. the high proportion of cases (78.5%) which tie their incentives to meeting the targets set out in the budgets, and the excessive level (93.3%) of management intervention in the actions carried out by the firms' personnel and in whether or not they have attained the targets set out in the budgets.

Focusing finally on the analysis of the content related to the new budgeting framework, we observed some management actions that are in line with the budgeting approach demanded by today's competitive reality. There stands out the commitment to an ever greater empowerment of the firm's different levels of responsibility, characterized by granting working teams at lower hierarchical levels the authority to initiate improvements, and by fostering a general culture of responsibility in the firm. Another aspect of management style in this sense is the orientation of the firm's functions towards the demands of its clients rather than towards internal processes, thereby encouraging more dynamic and effective customer management. There also stand out the form in which firms are allocating resources, mostly in a more rational and flexible way, and the effort being made to foster a management style that is based on training and support.

Notwithstanding these advances, one has to be wary of being too optimistic, since budgeting goals are still being set on the basis of internal negotiation, incentive systems are still being tied to those objectives, and personnel performance is still subject to overly rigorous control. These aspects clash with some of the premises underpinning the budgeting framework that current trends seem to be moving towards.

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## Appendix A. Survey

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### SURVEY OF CORPORATE BUDGET:THE SPANISH CASE

*Please complete the following blanks if you wish to receive a summary report of the research results*

Company Name		E-mail
Phone	Fax	Contact

#### SURVEY INSTRUCTIONS

The questionnaire only will take you ten minutes to fill it. All the information you provide us will be treated both **confidentially and anonymously**, as well as statistically analyzed for this research exclusively. Please answer all the questions by ticking the option that best reflects your perceptions.

Previously, please indicate the enterprise sector of your business as well as your professional status.

**THANK YOU FOR YOUR COOPERATION**

ENTERPRISE SECTOR	PROFESSIONAL POSITION
AGRICULTURA	CONTROLLER

#### Corporate Strategy

CSI	What Corporate Strategy is developed in your company?
-----	-------------------------------------------------------

<input type="checkbox"/> Product leadership	<input type="checkbox"/> Cost leadership	<input type="checkbox"/> Differentiation and competitive advantage	<input type="checkbox"/> Other
<input type="checkbox"/> Excellence of the production process	<input type="checkbox"/> Proximity to clients	<input type="checkbox"/> Market focus or segmentation	

**Rate the following statements**Strongly  
disagree...  
Strongly  
...agree

		1	2	3	4	5	6	7
<b>CS2</b>	There is a strong relationship or connection between the strategy implemented in our firm and the budgeting system.	<input type="radio"/>						
<b>CS3</b>	Budgets are essential to achieving our firm's strategic objectives.	<input type="radio"/>						
<b>CS4</b>	The achievement of strategic objectives has top priority in our organization.	<input type="radio"/>						
<b>CS5</b>	Resources are allocated to our departments at the beginning of the budget period, and remain fixed throughout that period.	<input type="radio"/>						
<b>CS6</b>	Our corporate strategy undergoes periodic reviews.	<input type="radio"/>						
<b>CS7</b>	The activities of production, and in general all tasks in our organization, participate in achieving the firm's strategic objectives.	<input type="radio"/>						

\*CS + "Nº Item" = Corporate Strategy "Item" question

**Budgetary Procedure**

<b>BP8</b>	What Budgetary Procedure are you applying in your company?		
	<input type="checkbox"/> Traditional	<input type="checkbox"/> Better Budgeting	<input type="checkbox"/> Beyond Budgeting
	<input type="checkbox"/> Activity Based Budgeting		
If you have answered Traditional or Better Budgeting:		If you have answered Beyond Budgeting or ABB:	
<b>BP9</b>	¿Do you know the Beyond Budgeting approach? Yes <input type="radio"/> No <input type="radio"/>	<b>BP10</b>	How long has your company been applying them? Less than 1 year <input type="radio"/> More than 1 year <input type="radio"/> Between 2 and 3 years <input type="radio"/> More than 3 years <input type="radio"/>
<b>BP11</b>	¿Do you know the ABB approach? Yes <input type="radio"/> No <input type="radio"/>	<b>BP12</b>	Have the implementation and operation been carried out by a consultant? Yes <input type="radio"/> No <input type="radio"/>
<b>BP13</b>	If you answered Yes in BP9 or BP11. Why doesn't your company apply them?  <input type="checkbox"/> I do not know them enough <input type="checkbox"/> They are too expensive <input type="checkbox"/> They do not represent a significant improvement over the system that we are applying <input type="checkbox"/> Other <input style="width: 100px; height: 20px; border: 1px solid black;" type="text"/>	<b>BP14</b>	¿Have the implementation and operation been carried out by CEO's and/or CFO's? Yes <input type="radio"/> No <input type="radio"/>

<b>Rate the following statements</b>		Strongly disagree...		Strongly ...agree				
		1	2	3	4	5	6	7
<b>BP15</b>	We are satisfied with our firm's budgeting system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP16</b>	The budgets of our firm are valid even when there are changes in the environment (political, social, economic, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP17</b>	Budgets have grown in importance in our firm in recent years.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP18</b>	Budgets have a predominant position relative to our firm's other management tools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP19</b>	Budgets have a predominant position relative to our firm's other management tools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP20</b>	Our budgeting system has become obsolete in the new competitive environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP21</b>	We meet the objectives set out in our organization's budgets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP22</b>	Generally, our budgets are extrapolations of past trends, with adaptations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP23</b>	The budgets of our firm are used as an instrument of control over the performance of its personnel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP24</b>	Our firm's incentive system is tied to compliance with budget targets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP25</b>	Top management gets actively involved in the preparation and monitoring of our firm's budgets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP26</b>	When necessary, our budgets are reviewed and updated several times in any given fiscal year.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP27</b>	Budgeting consumes an enormous amount of management time and resources in our firm, and hence has become bureaucratic and very costly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP28</b>	The preparation of budgets sometimes fosters negotiation and not too ethical behavior within the firm (between departments, functional areas, branches, offices, etc.).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP29</b>	The budgeting system implemented in our firm strengthens the vertical hierarchy and makes it hard for staff to participate actively.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP30</b>	Budgets reinforce departmental barriers instead of fostering knowledge sharing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>BP31</b>	The implementation of budgets in our firm is mainly targeted at reducing costs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\*BP + "Nº Item" = Budgetary Procedure "Item" question

**Leadership questions**

<b>Rate the following statements</b>		Strongly disagree... ...agree						
		1	2	3	4	5	6	7
<b>L32</b>	We base our corporate objectives on external comparisons and relative targets rather than setting fixed, internally negotiated, goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L33</b>	Our incentive system is based on team bonuses grounded in relative success rather than in attaining pre-established targets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L34</b>	Our firm's top management takes a practical approach to planning, providing improvement initiatives to front-line teams.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L35</b>	In our firm, resources (human, financial, technological, etc.) are allocated where and when they are needed. There are no fixed and immovable assignments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L36</b>	We coordinate the firm's actions dynamically in accordance with demand from our customers, providing them with personalized solutions and managing capacity in real-time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L37</b>	We base budgeting control on effective governance (participatory decision-making), which means acting in this sense only when strictly necessary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L38</b>	In our firm, we foster a training and support type of leadership style: employees are oriented towards achieving common goals and shared values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L39</b>	Those involved in decision making create a high-performance climate in the firm based on relative success and on constant challenges to the employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L40</b>	We foster a culture of responsibility, involving all the personnel of the firm, directed towards implementing the firm's overall strategy; to this end, we grant authority to all levels of responsibility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L41</b>	Sometimes we assign decision-making responsibilities to lower levels within the hierarchy, to allow effective response to specific market opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L42</b>	We encourage operational teams to share information with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L43</b>	Our philosophy is one of a single system of information (ethical and open) for the entire organization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L44</b>	In order to improve the budgeting analysis, we have elaborated an activity map for each of the centers into which our firm is divided.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>L45</b>	Consequent with the previous item, in our firm we analyze and eliminate in each fiscal year those activities which are superfluous for the satisfaction of our customers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>* L + "Nº Item" = Leadership "Nº Item" question</i>								

**THANK YOU VERY MUCH****Enviar**

## **Appendix B. The study's technical data sheet**

<b>POPULATION CHARACTERISTICS</b>	<i>Firms of major strategic capacity</i> Number of employees > 250 Operating revenue > €50 million Total Assets > €45 million
<b>POPULATION</b>	1176
<b>GEOGRAPHICAL SCOPE</b>	National
<b>DATA COLLECTION METHOD</b>	Digital survey following prior contact by telephone and e-mail
<b>SAMPLE AGENTS</b>	<i>Company managers.</i> Preferentially CFOs. Planning and Control Managers. and Controllers directly involved in the budgeting process
<b>SAMPLE SIZE</b>	135
<b>SAMPLING ERROR</b>	7.94% <sup>4</sup>
<b>CONFIDENCE LEVEL</b>	95%
<b>SAMPLING PROCEDURE</b>	The questionnaire was sent to all firms comprising the population
<b>PERIOD OF FIELD WORK</b>	October 2008 – February 2010

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<sup>4</sup>For finite populations, the sampling error is calculated from the formula  $e=k\sqrt{\{[PQ(N-n)]/[n(N-1)]\}}$  where:  $e$  is the sampling error;

$k$  takes the value 1.96 for a 95% confidence level;

$P=Q=0.5$ , i.e., it is assumed that occurrences and non-occurrences are equally likely;

$N$  is the total population (universe), which in our case was 1176 firms;

$n$  is the number of responses (duly completed questionnaires), which in our case was 135 firms.

### Appendix C. Frequency analysis (Items results)

#### Indicators measuring the relationship between corporate strategy and budgeting process\*

ITEM	SCALE								TOTAL
	Strongly disagree	Moderately disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Moderately agree	Strongly agree		
CS2	0.0	0.0	0.8	19.5	30.1	38.3	11.3	100.0	
CS3	0.0	0.8	6.8	7.5	29.3	35.3	20.3	100.0	
CS4	0.0	1.5	2.3	16.8	42.0	29.0	8.4	100.0	
CS5	4.5	10.5	19.3	22.6	24.8	12.0	6.0	100.0	
CS6	0.0	0.8	2.3	8.3	28.0	32.6	28.0	100.0	
CS7	0.0	0.8	2.3	6.0	28.6	36.1	26.3	100.0	

\* Relative frequencies (%).

#### Indicators measuring the instrumental and situational aspects of the budgeting process\*

ITEM	SCALE								TOTAL
	Strongly disagree	Moderately disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Moderately agree	Strongly agree		
BP15	0.0	3.0	8.1	19.3	35.6	28.9	5.2	100.0	
BP16	3.7	8.2	20.1	18.7	29.1	17.2	3.0	100.0	
BP17	0.0	0.7	3.7	11.9	23.7	43.0	17.0	100.0	
BP18	0.7	1.5	7.4	21.5	31.1	30.4	7.4	100.0	
BP19	0.0	0.7	2.2	13.3	30.4	39.3	14.1	100.0	
BP20	14.9	29.9	17.9	23.1	9.0	3.7	1.5	100.0	
BP21	0.0	0.0	6.8	19.5	38.3	31.6	3.8	100.0	
BP22	5.2	19.4	16.4	18.7	25.4	11.9	3.0	100.0	
BP23	1.5	3.7	11.1	14.8	33.3	28.9	6.7	100.0	
BP24	0.7	6.7	4.4	9.6	20.0	37.0	21.5	100.0	
BP25	0.0	0.0	1.5	4.4	17.0	40.7	36.3	100.0	
BP26	3.7	9.7	6.0	6.0	17.9	30.6	26.1	100.0	
BP27	5.2	21.5	14.8	21.5	22.2	11.9	3.0	100.0	
BP28	21.5	31.1	23.0	10.4	11.9	2.2	0.0	100.0	
BP29	11.9	26.7	26.7	19.3	12.6	1.5	1.5	100.0	
BP30	13.3	35.6	18.5	17.0	11.1	4.4	0.0	100.0	
BP31	4.5	17.9	21.6	23.9	18.7	10.4	3.0	100.0	

\* Relative frequencies (%).

**Indicators designed to observe the management styles  
applied in response to the new budgeting context\***

ITEM	SCALE							
	Strongly disagree	Moderately disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Moderately agree	Strongly agree	TOTAL
<b>L32</b>	8.9	29.6	25.2	17.8	13.3	3.7	1.5	100.0
<b>L33</b>	4.5	29.3	22.6	22.6	15.0	4.5	1.5	100.0
<b>L34</b>	0.0	5.3	7.5	21.1	36.1	25.6	4.5	100.0
<b>L35</b>	0.0	5.9	9.6	20.7	26.7	28.9	8.1	100.0
<b>L36</b>	0.0	3.8	9.8	13.6	30.3	33.3	9.1	100.0
<b>L37</b>	2.3	6.0	15.0	29.3	28.6	16.5	2.3	100.0
<b>L38</b>	0.0	4.4	5.9	14.1	33.3	27.4	14.8	100.0
<b>L39</b>	0.7	3.0	9.0	26.1	33.6	20.9	6.7	100.0
<b>L40</b>	0.0	3.0	13.3	17.0	30.4	25.2	11.1	100.0
<b>L41</b>	3.7	14.2	14.2	19.4	32.8	11.9	3.7	100.0
<b>L42</b>	0.0	3.0	2.2	8.1	37.0	31.9	17.8	100.0
<b>L43</b>	0.7	3.0	5.9	8.9	32.6	29.6	19.3	100.0
<b>L44</b>	3.8	9.8	9.1	24.2	20.5	24.2	8.3	100.0
<b>L45</b>	3.0	5.3	11.4	25.8	30.3	18.9	5.3	100.0

\* Relative frequencies (%).

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