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SHOULD ROLLING FORECASTS REPLACE BUDGETS IN UNCERTAIN ENVIRONMENTS?

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ABSTRACT

Budgeting process has been largely criticized in the recent accounting literature. The responsiveness of budgets to fast-moving environments is now questioned. The purpose of this paper is to address this issue by suggesting that companies use rolling forecasts as an interactive and flexible tool to cope with turbulence.

We designed a web-based survey directed to Spanish companies operating in an uncertain environment. Statistical results of the survey reveal that more than 60% of the respondents consider that changes in the environment makes it very difficult to establish accurate budgets. Respondents also mentioned that with the economic down cycle the establishment of reliable financial forecasts is requiring a great effort. At the same time, qualitative interviews have been conducted with companies already using rolling forecasts to test and further develop the use of this interactive tool.

We found that the rolling forecasts are considered to be a dynamic strategic planning tool, very useful for cash management and day-to-day decision-making process, but that they cannot replace budget for evaluation and motivation purposes.

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The study has its limitations as the findings rely on a small number of survey respondents and interviewed organizations. Nevertheless the results have been compared, when possible, to those of similar surveys in order to validate them.

The article supplies actualized information about budgeting practices in a turbulent environment and more specifically in the Spanish context.

INTRODUCTION

Even if traditional budgeting has been questioned in the past decades, we can observe that for many companies it is still a key element of their management control system. Due to environmental uncertainty, the budget is being subject to considerable criticism and debate (Hope & Fraser, 2000, 2003a, 2003b; Jensen, 2001, 2003; Bogsnes, 2009). In rapidly changing, unpredictable economic environments, it is difficult to set realistic objectives (Berland, 1999, 2001; Chapmann, 1997), and achieve a fair performance evaluation when results have been affected by unforeseen events. Recent budget process developments have focused on two practices: improving the budgeting system or abandoning it (Hansen, Otley, & Van der Stede, 2003, p. 95). The first type aims at maintaining the process, improving it with complementary techniques such as activity-based budgeting, balanced scorecard or rolling forecasts (Rickards, 2006). The second category is more radical and advocates for the complete elimination of the budgetary process, to enable firms to respond faster and therefore, cope better with uncertainty (Hope & Fraser, 2001, p. 23). As a matter of fact, some European companies, such as Svenska Handelsbanken, Volvo, Rhodia, Borealis, have already dismantled their budgeting process (Hope & Fraser, 2003a).

In rapidly changing and unstable environments, management control systems need to provide managers with accurate and reliable data on a regular basis so they are able to continuously adjust operations, assess resource availability and make the appropriate decisions. Rolling forecasts (RFs) provide frequently updated indicators, which contribute to making more adaptable and flexible organizations that are able to cope with new environmental scenarios (Gracia, 2008b).

The purpose of this study is to explore the implementation and the use of RFs and budgets in Spanish companies operating in uncertain environments. The study presents data collected from a web-based survey of Spanish companies and transcript information from qualitative interviews conducted with companies already using RFs. Our findings reveal that RFs are considered to be a dynamic strategic planning tool, which is action oriented and very useful for cash management and day-to-day decision-making processes, but they cannot replace budgeting for evaluation and motivation purposes.

The first section presents the literature focus, which guided the investigation and the research objectives. Section two outlines the research method employed to conduct the survey and the interviews, as well as data analysis. Section three reports and discusses web-based survey results and qualitative interviews content. The final section of the paper summarizes the investigation findings and offers some directions for future research.

LITERATURE AND RESEARCH FOCUS

Under volatile conditions, when economic forecasts change rapidly, organizations experiment difficulties in developing reliable budgetary information to coordinate business units and track performance for the entire year (Akten, Giordano, & Schieffele, 2009, p. 6). Competitive firms should continuously perceive market changes, adapt themselves to new environment conditions and be flexible to adjust and coordinate their action plans (Gahagan, 2005). In this context, budget process should be reengineered, and RFs are presented as one of the main alternatives to budget (Arterian, 1997; Ekholm & Wallin, 2000; Bunce, 2007). From the literature review (Table 1) we observe that companies are implementing RFs in order to cope with the weaknesses of traditional budgeting (data obsolescence, too long to process), to improve financial management, to get a better operational management (flexibility, innovation, productivity), to accelerate the decision-making process and to devote more time to value-added activities (data analysis, link with strategy).

RF technique permits companies to frequently revise their financial indicators, to link planning with strategy and to make appropriate decisions. Some organizations conduct projections of year-end values on a regular basis, and more advanced companies establish projections going beyond the fiscal year and covering a rolling 12- to 18-month period forecast (Hope, 2007, p. 3). The periodicity of RF strategic reviews might be on a regular basis (monthly or quarterly) or driven by some significant events such as the introduction of new products and services, or reactions to supply chain disruptions. Organizations such as Borealis and Statoil (Bogsnes, 2009) elaborate a five-quarter RFs; the last forecast of the year is used as a budget

Table 1. Reasons for Implementing Rolling Forecasts.

Reasons	Company	Reference
Budget weaknesses	Fujitsu	Banham (2000, p. 39)
	Flowserve	Player (2009)
	Sprint	Arterian (1997, p. 1)
	Borealis	Bogsnes (2009, p. 69)
	Millipore	Johnson (2007, p. 4)
Improve financial management	Borealis	Bogsnes (2009, p. 69)
	Spare Bank1	Aune (2009)
Better operational management	Park Nicollet	Hall (2007, p. 21)
	Hon	Drtina et al. (1996, p. 20)
	Sprint	Arterian (1997, p. 1)
	Statoil	Bogsnes (2009, p. 123)
	Tomkins	Bunce (2007, p. 10)
Boost the decision process	Millipore	Johnson (2007, p. 3)
	Tomkins	Bunce (2007, p. 10)
Promote value-added activities	Fujitsu	Banham (2000, p. 39)
	Sprint	Drtina et al. (1996, p. 20)
	Borealis	Bogsnes (2009, p. 69)

and transmitted to the owners of the company, who are still using a traditional budgeting system.

To be efficient, forecasts need to be prepared in a few days, which means focusing only on a few key value indicators rather than lots of detail (Bunce, 2007, p. 7). A recent investigation confirms that "keeping forecasts focused on key performance indicators and line items will allow for quicker turnaround and more value-added analysis and insight from finance" (Apanaschik, 2007, p. 42). As a matter of fact, we can say that most of the businesses only need to focus on 3–5 key indicators to measure their long-term value creation potential (Rappaport, 2006, p. 74). For instance, American Express is using three key metrics to run its core business: average card member spending, card attrition and average assets per financial clients (Chenault, 2004). Some financial ratios could also be used, such as the return on capital employed (ROCE), which is the main key performance indicator for Borealis (Bogsnes, 2009, p. 75). The ROCE summarizes all the performance of the company. To improve ROCE, budget units can activate the following levers: investing in profitable projects, optimizing working capital, controlling fixed and variable costs, and increasing volume and operating margins.

RF system gives companies the agility and ability to follow changes in market scenarios, and to cope with environment uncertainty while keeping an eye on strategic objectives. The main functions of continuous financial planning (Gracia, 2008a, p. 26):

- to constantly adjust action plans, taking into account economic and financial risks, as well as market changes;
- to take advantage of operational and financial resources needed for business development;
- to meet shareholder requirements and expectations (profitability, value creation);
- to ensure continuity and sustainable growth for the companies.

Regarding shareholder expectations we can add that three main factors affect share price: management credibility, communication with investors and strategy formulation and execution (Neely, Bourne, & Heyns, 2001, p. 14). Many financial analysts believe that corporate strategic planning and planning systems are essential to evaluate shareholder value creation. They especially pay attention to the reliability and accuracy of financial forecasts (Mikhail, Walther, & Willis, 1999, p. 185).

Overall, RFs are a "just-in-time" process that focuses on strategy, on threats and opportunities and that allows the firms to allocate or withhold resources quickly and efficiently. RFs present a vision of what will happen in the short and medium term while the budget gives a single view of the future to implement strategy and to control operational measures. A Millipore executive mentioned that "the forecast is our best guess of what the reality will be that far down the road, based on our analysis of trends and changes in the business landscape, such as potential acquisitions" (Johnson, 2007, p. 4).

Hope (2007, p. 4) affirms that forecasts based on RFs are different from budgets in that they are based on a few key drivers, they take only a few days to prepare; thus they are performed in a continuous way and are not prepared under the umbrella of fixed targets. Ekholm and Wallin (2000, p. 521) argue that RFs are more flexible than budgets and do not appear to be so mandatory nor strict.

The objective of the research is to study the implementation and use of RF technique in Spanish companies. The first part of the research intends to investigate why companies are implementing RFs. We made the assumption that the operating environment is becoming increasingly unpredictable and that in this context, budget data are difficult to predict and become rapidly obsolete. Therefore, to manage their activities organizations need more

Table 2. Traditional Budget Functions.

Function	Reference
Planning	Baudet (1941), Hopwood (1974), Barrett and Fraser (1977), Hofstede (1977), Otley (1977), Samuelson (1986), Lyne (1988), Bunce, Fraser, and Woodcok (1995), and Bouquin (2001)
Management control and resource allocation	Baudet (1941), Hofstede (1977), Otley (1977), Samuelson (1986), Lyne (1988), and Bunce et al. (1995)
Evaluation	Baudet (1941), Barrett and Fraser (1977), Otley (1977), Samuelson (1986), Lyne (1988), and Bunce et al. (1995)
Motivation	Hopwood (1974), Barrett and Fraser (1977), Otley (1977), Samuelson (1986), Lyne (1988), and Bouquin (2001)
Commitment	Samuelson (1986)
Delegation	Hopwood (1974) and Bouquin (2001)
Coordination	Baudet (1941), Hopwood (1974), Barrett and Fraser (1977), Samuelson (1986), Lyne (1988), and Bouquin (2001)
Communication	Otley (1977), Lyne (1988), Bunce et al. (1995), and Bouquin (2001)

Source: Adapted from Berland (1997, p. 7).

flexible tools such as RFs. The second part of the investigation focuses on RFs use and functions. Based on the summary of traditional budget functions (Table 2), we explore the assumption that RFs might replace budget for planning and resource allocation functions.

RFs provide an actualized vision of the business that permits to continuously maintain the link between plans and strategy, to allocate resources appropriately, to forecast accurate cash flow, to obtain useful information for the decision-making process and to react rapidly to environmental changes.

The last assumption we made is that RFs do not fulfil evaluation and motivation functions, and therefore it cannot replace budgeting. Action plans established during the budgeting process are the result of a nourished dialog and sustained coordination throughout the organization. Budgets are usually considered to be a motivation tool, as managers are committed to deliver their action-plan objectives, and are rewarded for doing so. Besides, both action plan follow-up, and the analysis of actual results versus preset objectives, provide better knowledge of the business. As they are periodically revised, RFs cannot be considered as a standard reference for control and performance measurement.

Thanks to a survey addressed to companies operating in an uncertain environment, the investigation aims to demonstrate that budget data is not reliable. Through qualitative interviews, it seeks to understand complementarities between RFs and budgeting. Finally, we aim to validate that RFs could be considered to be an interactive management system following Simons' conceptual framework.

SURVEY AND QUALITATIVE INTERVIEW METHOD

We designed a web-based survey directed to Spanish companies operating in an uncertain environment. Then, we conducted qualitative interviews addressed to companies already using RFs to test and further develop the use of this interactive tool. The survey method is presented hereafter and summarized in Table 3.

Objectives of the Survey

The objective of the study was to assess the degree to which companies think that budgeting is an inappropriate tool in an uncertain environment and to analyse the use of RFs as a flexible and interactive tool to cope with uncertainty and with frequent changes.

Table 3. Study Features.

	Questionnaire	Interviews
Respondent	45	10
Survey method	Web-based survey	Semi-structured interviews
Data analysis methodology	SPSS statistical analysis	Analysis of interviews in the light of practice and theory literature
Running period	December 2008 to January 2009	January to June 2009
Companies activity field	Companies operating in an uncertain environment	Companies operating in an uncertain environment
Objectives	Investigate: • Environment uncertainty and budget process, • Budget data accuracy, • Budget adaptability, • Changes planned in budgetary process.	Investigate: • Reasons for implementing rolling forecasts (RFs), • RF process, • RF functions, • RF implementation key success factors and barriers.

Sample Selection

The sample was drawn from the 2008 "Who is who" directory of *Actualidad Económica,* a Spanish weekly financial magazine. To be included in the sample, individuals must belong to a company operating in an uncertain environment. To be defined as such, the environment must include five external components: customers, competitors, suppliers, regulatory groups and technological requirements of industry that can be submitted to changes and discontinuities (Duncan, 1972, p. 315). Markets in which technology standards are changing, competitors are continuously entering and exiting and customers are constantly changing their preferences can be considered as belonging to a highly uncertain environment (Courtney, 2008). We have defined an uncertain environment as an economic sector where changes and unpredictable discontinuities occur frequently. For the Spanish market we have taken into account changes in external factors such as political and legal regulations (privatization, deregulation), economic factors, technology evolution and socio-cultural factors. That led us to select several economic sectors such as automobiles, distribution, energy, real estate, internet, pharmaceuticals and services.

In addition, targeted respondents were selected among those holding the position of Chief Executive Officer (CEO), Chief Financial Officer (CFO), Business Controller, Director of Planning and Budgeting, and Accounting Manager.

This selection resulted in a final sample of 395 organizations.

Survey Design and Distribution

The survey was composed of 22 questions (Appendix) about environment uncertainty and budgetary process, budget data accuracy, budget adaptability and changes on budgetary process. When possible, all the questions were designed or adapted from previously published studies (Ekholm & Wallin, 2000; Apanaschik, 2007; Libby & Lindsay, 2008). New measures were developed as required.

A preliminary version of the survey was first analysed with the marketing department of the ICADE (Facultad de Ciencias Económicas y Empresariales, Universidad Pontificia Comillas de Madrid) and then tested using five individuals with a similar profile to potential survey respondents. The pretest feedback helped us to clarify some questions or reword terminology in order to better reflect usage of some managerial terms.

The survey respondents were contacted via an e-mail, which included a description of survey objectives and invited them to contact us if they wished to participate in an in-depth interview to be conducted at a later date. The link to access the survey was included in the e-mail. The survey was anonymous, took approximately 10 to 15 min to complete, and was conducted from December 2008 to January 2009.

Sample Statistics

A total of 45 surveys were submitted through the web-based system, which represents a response rate of 11.4%. Descriptive statistics for survey respondents is shown in Table 4.

Qualitative Interviews

During first semester in 2009, we conducted semi-structured interviews, which lasted 1–2 h on average, addressed to Chief Financial Officers of

Table 4. Descriptive Statistics for Survey Respondents.

	Number	Frequency (%)
Employees:		
Less than 500 people	16	35.6
More than 500 people	29	64.4
Divisional revenues:		
Less than € 10 million	10	22.2
From € 10–500 million	18	40.0
More than € 500 million	17	37.8
Corporate structure:		
Stand-alone unit	19	42.2
Division of a larger organization	26	57.8
Economic sector:		
Uncertain environment	27	60.0
Services and other	18	40.0
Job titles:		
CEO/CFO	22	48.9
Business controller	19	42.2
Accounting manager and other	4	8.9

10 companies from the initial survey sample. We can rely on the consistency and the comparability of the data collected, since the group is homogeneous in terms of nature and level of responsibility. We prepared an interview scenario covering the following topics: the need to introduce RFs, RF functions, RF success factors and barriers to implementation. Our aim was to capture the actual experience and perception of CFOs regarding uncertainty and the need for flexible budgeting. Fully transcribed interviews provided abundant data that was analysed in the light of practice and theory literature. The interview content was also compared in order to identify similarities and patterns across companies.

RESULTS

The web survey allowed us to analyse the budget process in the light of environmental uncertainty and the in-depth interviews provide us with data about the use of RFs.

Web-Based Survey

One of the main criticisms of traditional budgeting is that it ties the company to a 12-month fixed performance contract, which can be inappropriate in an uncertain business environment (Prendergast, 2000, p. 14). In dynamic, rapidly changing markets the formulation of budgets 12 months in advance makes little or no sense (Rickards, 2006, p. 64). The aim of these web-based surveys was to examine these concerns.

Environment Uncertainty and Budget Process

In this section, we tried to determine how the organizations perceive the environment and how difficult it is to predict factors when constructing the budget.

The survey examined the assumption that the environment in which businesses operate today is extremely unpredictable.

The companies were asked to rate different factors of unpredictability, selected from Govindarajan (1984), Gul (1991), and Libby and Lindsay (2008). We asked respondents the extent to which they were able to predict (1 = highly predictable to 5 = highly unpredictable) the effects of 10 items characteristic of the external environment: changes in customer demand, evolution of customer preferences, changes in products offered by competitors, technical developments impacting design, technical developments impacting production, changes to laws and regulations, actions of labour unions, availability of suitable employees and availability and price of raw materials. The average response rate to the 10 items can be used as an index of perceived environmental uncertainty (Govindarajan, 1984, p. 130). The average of 2.8 indicates that the environment is somewhat predictable. But, 6.4% of the respondents rated their environment as very difficult to predict (Table 5). The most difficult items to predict are regulatory environment (average 3.3) and price of raw materials (average 3.0).

After having analysed the uncertainty of the environment and the difficulty in anticipating or predicting external factors, we asked the respondents to report their degree of agreement (1 = strongly disagree to 5 = strongly agree) with the following assessments: "The unpredictability of the environment doesn't allow us to establish accurate budgets" and "Once the budget is approved it becomes obsolete" (Table 6).

The mean response for the question regarding environment unpredictability was 3.1 and the median was 3, which means that 68.9% of the respondents agreed with the argument. When we asked the respondents to explain their answer, they mentioned that in the current economic down

Table 5. How Difficult is it to Predict the Following Factors.

	Mean	Highly Predictable	Somewhat Predictable	Predictable	Somewhat Unpredictable	Highly Unpredictable
How difficult is to predict budgetary factors	2.8	8.9%	32.4%	33.2%	18.9%	6.5%
Cronbach $\alpha = 0.68$						

	Mean	Median	S.D.
Changes in customer demand	2.89	3	0.97
Evolution of customer preferences	2.64	2	1.07
Changes in product offered by competitors	2.96	3	1.01
Technical developments impacting design	2.67	3	0.84
Technical developments impacting production	2.53	3	0.91
Governmental changes to law and regulations	3.29	4	1.24
Actions of labour unions	2.71	3	1.13
Availability of suitable employees	2.91	3	0.98
Availability of raw materials	2.58	3	1.02
Price of raw materials	3.00	3	1.20

Table 6. Agreement with Budget Accuracy.

	Mean	Median	S.D.
The unpredictability of the environment does not allow establishing accurate budgets	3.15	3	1.17
Once the budget is approved it becomes obsolete	2.68	2	1.20

cycle it is difficult to predict what will happen in the coming months, that historical references can no longer be used for planning, and that it is not easy to anticipate changes in customer demand and to foresee the evolution of raw material prices.

The average response rate for the obsolescence factor was 2.7 and the median was 2, which means that the respondents disagree with the argument that budget is quickly outdated. As 97% of the respondents are producing an annual budget, which is quite formalized (94.5% of the respondents) and linked to a strategic plan (75% of the respondents), we can assume that even if it is not easy to elaborate the data, a lot of work is invested in publishing reliable data. Some respondents mentioned that even though the environment is unstable, the budget should be carefully established in order to set a direction and plan of action linked to the firm's strategy. They also add that the budget can become obsolete at the level of detailed items, but the main financial targets remain reliable and companies should adapt their plans in order to cope with these high-level objectives. Besides, they mentioned that budget is not only a set of financial data but it is also a detailed action plan to reach a strategic objective.

Some respondents (60%) agreed with the fact that it is difficult to establish accurate data for budgeting and that with the economic crisis, budget data can be obsolete even before being approved. However, the unpredictability argument cannot be generalized to all the companies as 40.9% of the respondents find it relatively easy to predict their environmental factors. These results are comparable to the survey conducted by Libby and Lindsay (2008, p. 7) that led them to the conclusion that "the unpredictability argument has been over generalized in its application to the average firm".

Budget Data Accuracy

Following the first set of questions, we examined the accuracy of planning and budgeting by asking the respondents if they reached their strategic plan

Table 7. Absolute Variance between Actual Data and Budget.

	0–5%	5–10%	10–20%	More than 20%
Total budget (%)	31.1	24.4	24.4	20.1
Sales budget (%)	35.6	26.7	15.6	22.1
Costs of goods sold (%)	33.3	33.3	17.8	15.6
Administrative and general expenses (%)	40.0	44.4	8.9	6.7
Capital expenditure (%)	46.7	31.1	15.6	6.6

objectives in the past two years, and inviting them to report the previous year's variance between actual results and budget data.

Regarding strategic planning, nearly 70% of the respondents said that they met plan on very few occasions, or even never fulfilled their strategic objectives in the past two years. This reply validates the fact that in a fast-changing environment, it is not easy to anticipate competitive actions and market demand, making it difficult to set accurate plans for medium and long-term planning.

The respondents were also asked to report the variance between actual results and budget during the past year. Following the Hackett group definition: "an accurate forecast is one that falls within 5 percent of actual results" (Cummings, 2008), only one-third of the respondents are producing accurate budget forecasts (Table 7). This figure is in line with the Hackett group who reports that only one in three companies have variances between actual and budget below the 5% level.

The data collected suggest that sales and costs of goods sold are the most difficult items to predict as they depend more on external factors such as market demand and raw material prices. It seems easiest to forecast administrative expenses and capital expenditure, probably because these items can be reduced or postponed if actual results are not in line with the budget.

We also examined the causes of variances, asking the respondents to rank from 1 (of very little importance) to 5 (very important) a set of factors including lack of target clarity, weakness of action plans, poor prediction reliability, lack of environment information, unexpected events, technical problems, action of employees, customers, competitors, suppliers and government (laws and regulations). It appears that the most important factor causing variance is an unexpected event: for 62% of the respondents it is a "quite to very important" factor that could have a strong impact on actual results (Table 8). We can also highlight two other factors, lack of

Table 8. Factors Causing Variances between Actual Data and Budget.

	Mean	Median	S.D.	Not Important (%)	Important (%)	Very Important (%)
Lack of target clarity	2.1	2	1.3	73.3	6.7	20.0
Weakness of action plans	2.2	2	1.1	68.9	13.3	17.8
Poor prediction reliability	2.9	3	1.1	31.1	35.6	33.3
Lack of environment information	3.0	3	1.3	35.6	26.7	37.8
Unexpected events	3.6	4	1.3	22.2	15.6	62.2
Technical problems	2.3	2	1.2	64.4	15.6	20.0
Employees action	2.0	2	0.9	75.6	15.6	8.9
Customers action	3.2	3	1.0	22.2	33.3	44.4
Competitors action	2.9	3	1.3	37.8	28.9	33.3
Suppliers action	2.2	2	1.1	68.9	17.8	13.3
Government actions	2.3	2	1.3	68.9	11.1	20.0

environment information and the customer actions, which 44 and 38% of the respondents, respectively, classified as an important cause of variance. Reliability of predictions is somewhat important for 35.6% of the respondents, and is "quite to very important" for 33% of them.

In addition to these causes of variance, respondents mentioned the actual economic crisis, which is characterized by an unpredictable and rapidly changing environment, including market instability due to fluctuations of raw material prices and changes in customer demand.

Overall, it appears that it is rather difficult to establish accurate data for budgetary predictions, especially when unexpected events may occur and when customer preferences are changing.

Budget Adaptability

Hope and Fraser (2003a) raised the issue of adaptability, given that the budget is a fixed performance contract that is not changed until the next annual budgeting cycle. To examine this issue, we asked the respondents if they agree with the following sentences: "Once the budget is approved, the objectives cannot be changed" and "If it is not in the budget, we cannot obtain new resources to react to unexpected events".

Regarding the possibility of modifying their forecasts, 58% of the respondents indicated that once accepted no changes could be made to the budget. For the others, budget could be used in a more flexible way and changes were admitted.

Table 9. Budget Review Periodicity.

	Frequency (%)
Month	31.1
Quarter	42.2
Every four months	6.7
Semester	15.6
Never	4.4

Table 10. Relevance of Recent Management Accounting Tools.

	Strongly Agree (%)	Agree (%)	Disagree (%)
Activity-based budgeting	57.8	24.4	17.8
Rolling forecasts	84.4	6.7	8.9
Balanced scorecard	53.3	33.3	13.3
Economic value added	31.1	35.6	33.3
Relative aspirationnal goals	33.3	33.3	33.3
Beyond budgeting	28.9	22.2	48.9

Concerning the possibility of obtaining new resources outside the budgeting process, it seems that companies are more flexible, as 51% of them allow new resources to accommodate unforeseen events.

The survey reveals that, even if budgeting seems to be an inflexible tool, it is submitted to periodical reviews in 96% of the companies (Table 9). More than 40% of the companies review their budgets quarterly, and 31.1% do it on a monthly basis.

We can say that the argument about the budget process being unresponsive to changes can be validated for almost 50% of the organizations.

Changes Planned in Budgetary Process

In this section, we asked the respondents whether they find new management accounting tools relevant, and if they intend to change their budgeting approach in the near future.

The survey reveals that for more than 84% of the respondents the most up-to-date tool is the RFs (Table 10). RF is followed by activity-based budgeting and balanced scorecard, which means to be relevant for more than 50% of the respondents. As a matter of fact, beyond budgeting is not considered to be a significant tool for 49% of respondents. This could be because Spanish companies have recently invested in their budgetary

Table 11. Budgetary Process Changes Planned.

	No We Do Not Intend to Do It (%)	We Already Have Implemented this Practice (%)	Not Yet, We Are Thinking about it (%)	Yes We Intend to Do It in the Next Two Years (%)
Process automatization	22.2	37.8	26.7	13.3
Use of an ERP system	22.2	51.1	15.6	11.1
Use of key performance indicators	13.3	60.0	15.6	11.1
Changes in the information workflow	20.0	60.0	11.1	8.9
Relative objectives (external references)	37.8	33.3	24.4	4.4
Process reengineering	40.0	11.1	33.3	15.6
Use of rolling forecasts	20.0	35.6	22.2	22.2
Use of trend reports	35.6	26.7	26.7	11.1

processes and therefore would prefer to improve it rather than move away from it.

Regarding changes to budgetary process, the survey reveals that more than 50% of the respondents are already using an ERP system and that 60% of them are using key performance indicators (Table 11).

Regarding the RF practice, 35% of the respondents have already implemented it, and almost 45% of them are intending to implement it in the near future. The use of relative objectives, which is one of the beyond budgeting principles, is not envisaged by 38% of the respondents: this result reflects the lack of relevance of the beyond budgeting process as perceived by the respondents.

Qualitative Interviews

A pre-interview was conducted with an Ernst & Young manager who was running a financial management reflection workshop dealing with topics like strategic planning, RFs, and new dimensions for CFOs. This interview helped us to clarify the main objectives for the qualitative research and was very useful in establishing an interview scenario. The main idea is that RF is a vision of the future that permits the frequent review of the main financial performance indicators and the linking of short-term forecasting with strategic planning. This enables companies to deal with rapidly changing environments, and to improve the decision-making process.

Among the 10 companies interviewed, 2 were doing RFs with a rolling 12–15 months horizon, 7 hold regular quarterly reviews that focus on fiscal year-end results and 1 does not establish any RFs at all (Table 12).

All the companies visited belong to a larger organization. We can notice that all the firms from the sample are still using the traditional budgeting process, except company "H", which had gone beyond budgeting in 2000. Traditional budgeting is considered by the interviewees as very important, which is in line with the argument developed by Ekholm and Wallin (2000, p. 535) "the annual budget is needed in order to uphold internal effectiveness". The argument is also in line with that of Libby and Lindsay who assert that budgeting is value added and it continues to be used for control purposes in many firms, even though it has been modified: "while there are problems with budgeting, those organizations still using budget for control appear to be adapting the budget to account for these problems rather than abandoning budgets all together" (Libby & Lindsay, 2008, p. 15).

To ensure the confidentiality of the data collected, the name of the companies interviewed has been replaced by a letter.

Reasons for Implementing Rolling Forecasts

The interviews reveal that companies have implemented RFs for financial management reasons (stock market communication, cash-flow forecasts and fund allocation) and also for operational management motives (supply chain management, relationship with suppliers). Besides, they mentioned that RFs offer a better vision of what will happen at the year end, thus helping to keep on track towards meeting strategic objectives. Budget has been compared to a static picture while RFs are seen as a video presenting a dynamic view of the near future (company "D"). Implementing RFs has also being compared to turning on the headlights of a car (company "F"). The environment is changing faster than the budgetary process and the companies feel the need to periodically review the key performance indicators and develop action plans in order to meet the budgeted targets. Company "B" CFO insisted on the fact that the budget should be considered as an objective rather than a prediction. As an objective it should be communicated inside and outside the company, and it should be reached through any means, using different tactics than the ones that were conceived months earlier for the budget. From the interviews, we observe that organizations are implementing RFs to gain better knowledge, thanks to the regular reviews that feed a continuous learning loop.

Company "H", which had gone beyond budgeting, did it principally because budgetary process was disconnected from the strategy and was

Table 12. Interviewee Main Features.

Company	Economic Sector	2008 Divisional Sales (€ Millions)	Budget	Rolling Forecasts	Horizon
A	Renewable energy	208	Yes	Yes – quarter review	Rolling 15 months
B	Energy	5.900	Yes	Yes – quarter review	12 months ending with fiscal year
C	Energy (gas and petrol)	18.000	Yes	Yes – quarter review	12 months ending with fiscal year
D	Real estate	100	Yes	Yes – quarter review	12 months ending with fiscal year
E	Construction	160	Yes	No	–
F	Construction	2.622	Yes	Yes – quarter review	12 months ending with fiscal year
G	Services	441	Yes	Yes – quarter review	12 months ending with fiscal year
H	Chemical specialities	4.700	No	Yes – semester review	Rolling 12 months
I	Health	40	Yes	Yes – quarter review	12 months ending with fiscal year
J	Distribution	840	Yes	Yes – quarter review	12 months ending with fiscal year

characterized by incremental thinking and extrapolations from the past. The main objectives of the newly implemented management system were to focus on strategy, improve group performance, create value for the company and its stakeholders (employees, customers, shareholders) and develop a results-based culture. This culture consists in stimulating employee commitment and in reaching the objectives despite the environmental difficulties.

Company "E", which did not implement RFs, considers that its environment is quite stable – its customers are mainly from public administration – and allows for the preparation of accurate budgets. As a matter of fact, the variance between actual and budget is lower than 5% and therefore can be considered to be accurate (see section Budget Data Accuracy). In this context, the CFO argued that the cost of implementing RFs and the workload produced would not be justified.

In an uncertain environment, organizations are integrating RFs in their management processes in order to improve visibility, to keep on track towards meeting the budget objectives and to respond rapidly to new environmental configurations.

Rolling Forecasts process

The nine companies, that have implemented RFs, have a quite similar process that integrates forecasts in the planning cycle (Fig. 1). The budget is considered to be a simple stage in the planning loop, and the RFs as a stage that goes beyond the budget providing an outlook for the year-end results and feedback for the strategic thinking process. Forecasts generally cover the entire planning cycle, but the time horizon and the level of details vary at each stage.

In general, the organizations interviewed are doing quarterly reviews (Table 12). The first review, made usually in February/March, allows the budget to be reassessed in the light of the previous exercise's year-end results, and the balance sheet to be updated in order to validate the cash-flow figures. The second review is normally carried out in June, and it permits a forecast for the second part of the year, which assists in developing action plans in order to meet budget objectives. The last review is held in September/October, and it is used as a basis for the elaboration of the next year's budget.

When we asked this group of companies why they were not considering a rolling horizon, they argued that they find it rather difficult to predict their short-term financial indicators and they prefer to focus on delivering year-end budgetary objectives.

Companies "A" and "H", which produce RFs based on a rolling horizon are periodically looking four quarters ahead. Company "H" was doing a

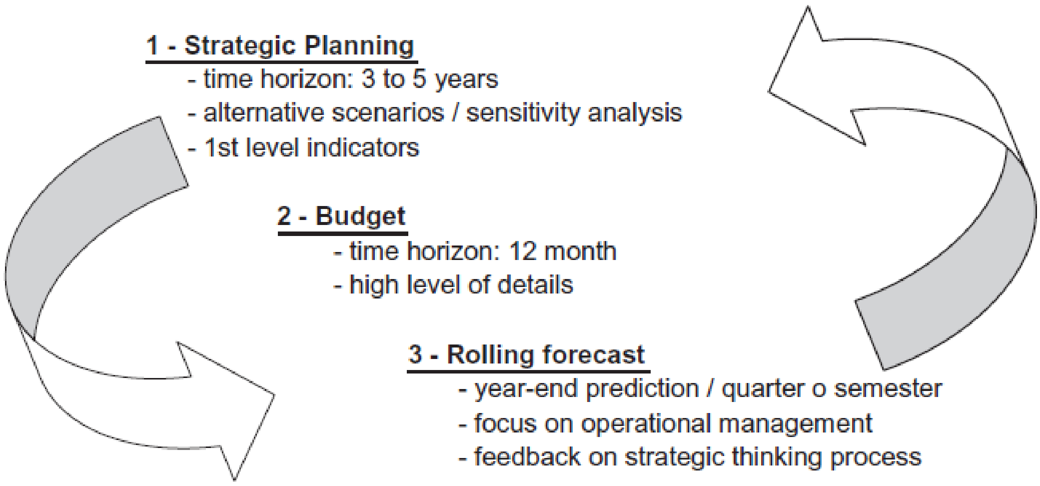

Fig. 1. Forecasts and Planning Cycle.

five-quarter forecast, at the beginning of the beyond budgeting project, but has come down to a 12-month horizon and a frequency of two reviews per year in order to reduce time spent and administrative costs.

Six out of ten interviewees ("A", "D", "E", "G", "I", "J") depend on excel spreadsheets for their financial projections. The level of automation can be compared to the 70% dependency on spreadsheets, which was reported in a recent study on budgeting and forecasting (Apanaschik, 2007, p. 18). Spreadsheets seem to be a key component in the process because they are extremely flexible, easy to use and adaptable to different business situations. The other companies are using enterprise resource planning ("H"), software such as SAP ("F") or in-house customize planning systems ("B"). They believe that technology makes their process less risky and complex. They also report that eliminating data re-entry allows for delivery of better reporting, and frees up more time for data analysis.

Most of the interviewees ("A", "F", "G", "H", "I", "J") rely on key performance indicators or critical success factors for their forecasts. The emphasis is made on a set of key value drivers (KVD), usually coupled with an exception-based monitoring system. The main indicators of P&L are sales, operating expenses, general expenses, operating margin and EBITDA. The balance sheet, cash-flow and working capital are also updated with capital expenditures, inventories, debtors and accounts receivable. Company "F" is using seven to eight KVD adapted to each business line. In order to define its KVDs, company "H" uses a methodology based on the four perspectives of the balanced scorecard (i.e. financial, customers, internal business processes and learning and growth). KVDs are linked to the business unit's strategy and represent the main development axes to meet value creation targets and assure long-term profitability for the organization.

For all the interviewees, except company "H", the budget remains the unique reference for variance analysis and incentive reward. They all insisted on the fact that there is no confusion between the two references, the budget and the RFs. The actual figures are always compared to budget data and last year's performance. The RF is used in a more active way and helps the operational decision-making process (resource allocation, supply chain management, production planning). Regarding variance analysis and forecasts, company "J" has a more flexible approach and uses a special rule: if business unit's sales are more than 10% above the objective, then they are authorized to spend up to 30% additional operating costs (salaries, general expenses), but if the sales are 10% below the objective, then they have to cut operating costs by 30%.

We have observed that the processes of budgeting and forecasting are always linked to strategic planning. The companies interviewed develop a three- to five-year plan that is revised every year in the light of RF trends (Fig. 1). RFs are not as detailed as the budget, and data is usually expressed with a mere 8–10 indicators.

What appears to be the more relevant fact is that for all the interviewees, except company "H", the budget is a reference that cannot be changed. The budget gives short-term strategy orientation in terms of product ranges, customer relationship and management operations. RFs are used to foresee the year-end financial results, to take operational decisions and to develop action plans in order to reach the budget target.

Rolling Forecasts Functions

Through RFs, companies intend to improve their performances and to adapt themselves to the environmental changes. The main functions listed by the interviewees are planning, financial management, operational management and learning (Table 13).

Most of the interviewees mentioned that the RF planning function allows the company to continuously coordinate and integrate its activities with its strategy. The periodical review of operations brings up questions like: Why did the forecast change? – Why is the result different from what was forecasted last quarter? – Have any of the assumptions changed? – What actions can we take? This analysis permits managers to rapidly take the right decisions, ones that are aligned with strategy, to develop new products and services, to organize the company and to improve productivity and customer service. Besides, quarterly reassessment reveals the financial gaps

Table 13. Rolling Forecasts Main Functions.

Function	Objective	Listed by Companies
Planning	Link operations to company strategy Reach budget targets Development of new products and services	B, C, D, J, H
Financial management	Continuous cash-flow update Shareholders communication Financial communication	A, B, C, F, G, I, J
Operational management	Resource allocation or freeze Operational planning (production capacity) Supply chain coordination Providers relationship Cost control	B, C, F, G, H, I, J
Learning and knowledge	Better visibility Environment understanding Faster decision cycle Results-based culture Internal communication and discussion	B, D, H

before they happen and gives a longer view into the future. Therefore, managers can react and adapt their action plans in order to reach the budget targets they committed to deliver. Interviewees have insisted on the importance of the financial management function and especially on the cash-flow updates. RFs provide accurate cash-flow projections allowing for effective debt management, the assessment of resource funding and the validation of capital expenditures. Furthermore, companies need reliable forecasts for high level financial communication and tax planning. Organizations "B", "C", "F", "G", "H" and "I" must report accurate financial perspectives to their shareholders every quarter. They all mentioned that they support strong pressure from the stock market in order to deliver the forecasted results.

RFs help to render organizations more dynamic, allow their leaders to focus on executing strategy and to deal with threat and opportunities as they arise. Therefore, RFs represent a powerful tool for operational management. With RFs, organizations are continuously monitoring and controlling operating costs and general expenses, and allocating or freezing resources when needed. For manufacturing companies ("C", "F", "G", "I", "J"), RFs have an important role to play because managers have to ensure that they will have sufficient capacity for an expected level of sales. They also have to manage and coordinate the supply chain and to revise agreements with the suppliers. Company "J" develops long-term contracts with its suppliers in order to reduce production costs. If customer demand is not meeting established targets, they need to quickly inform suppliers so they can adjust production levels. The ability to act rapidly is essential to preserve operational efficiency.

Learning and knowledge is also a dimension covered by RFs. RFs offer better visibility and provide continuous feedback for reviews, allowing for the adjustment of long-term strategy. Company "H" mentioned that the RF system is a tool to strengthen a results-based culture by being more explicit about individual delivery expectations, the ultimate purpose being to improve the performance of the company. This argument can be compared to the appreciation made by the Hon company that RFs contribute to developing a "committed corporate culture, corporate vision, empowering employees to act on vision and targeting and tracking shot-term wins" (Drtina, Hoeger, & Schaub, 1996, p. 24).

The interviewees think that RFs allow the decision cycle to be shortened from once a year (budget cycle) to the interval between forecasts (monthly, quarterly, every six months). The process helps them to respond much more quickly to whatever comes up.

Continuous planning allows businesses to be flexible and innovative, to improve efficiency and to rapidly adapt themselves to new operating conditions. RFs are a vision of the future, which constitutes the basis for communication inside and outside the company.

Some of the RF functions, such as planning, management control, communication and coordination are similar to the traditional budget functions (Table 2).

If we compare Tables 2 and 13, we can observe that RFs are not covering the delegation, motivation and evaluation functions. As a matter of fact, all the respondents mentioned that performance evaluation and incentive rewards are based on the comparison between actual results and budgets. RFs are seen more as an action-oriented management tool that allows a company to keep on budget and to communicate financial information to shareholders. Budget process encourages commitment and gives a reference to which to hold managers accountable.

Rolling Forecasts Key Success Factors and Barriers to Implementation

The main success factors mentioned by the interviewees are managers' involvement, communication of objectives, links to strategy and IT support.

Barriers deal with schedules, costs, complexity and pressure from shareholders.

Top management involvement and strong support from both the CEO and the CFO are key to successful implementation of the RF management tool (company "H" and "A"). Also, the integration and involvement of frontline units contributes to deliver more reliable projections. Business units have a better knowledge of the activities they are running and deeply understand their own environment. Communication and dialog are also reported as crucial factors. They permit one to understand what drives the business and provide a better vision of what will happen in the near future. Company "B" mentioned that it has a highly integrated process: the planning department prepares scenarios, analyses alternative plans and continuously dialogs with business lines to validate final strategic targets.

The information flow needs to be extremely fluid (company "A", "G", "H", "I"). Top management should communicate very clear, concrete and transparent strategic objectives based on a very few indicators. Frontline units should also transmit concise information that is aligned with strategic objectives. The reports of business units must be delivered on time to allow company financial data to be consolidated on schedule. To meet targeted schedules IT support is essential. The RF process must be highly integrated (company "A", "B", "F") to save time in the elaboration phase ("less number crunching") and therefore free up more time for value-added activities such as data analysis, business knowledge, the understanding of strategic product lines and action plan implementation. Respondents defined standardized and automated tools such as ERP or data warehousing as key elements to shortening cycle times, allowing greater flexibility and the delivery of an efficient and value-added RF process.

One of the main criticisms of RF process is that it can be costly and time consuming if it is not completely automated. The company "A" CFO declared that financial departments were spending a lot of time producing RFs (up to three weeks workload), and devoting very little time to analysis, even though they were improving their forecasting skills. This comment is aligned with recent research that reveals that only 44% of the budgeting and forecasting process is spent on analysis, strategy development and setting target figures; most of the business resources are consumed by non-strategic tasks such as data collection and consolidation, review and approval, and report preparation (Apanaschik, 2007, p. 15). For cost reasons, company "H" simplified its RF process by reducing forecast horizons from 5 to 4 quarters, and by conducting its reviews on a semi-annual rather than a quarterly basis.

Complexity has also been mentioned as a barrier to successful implementation. To simplify the process, a few KVDs should be selected and the supporting software should be easy to use.

Interviewees ("A", "C", "F", "G", "I") considered that the biggest barrier to RFs was the expectation on behalf of shareholders, that unrealistic objectives could be reached. Company "A" revealed that in the end the forecasts presented by the business units were changed by the board of directors to be aligned with the objectives of the shareholders. Company "C" mentioned that in the past, this high level of pressure led managers to adopt unethical and gaming behaviours.

To be effective RFs should be prepared honestly, and without number gaming, taking into account actual trends, and not on the basis of giving senior managers "what they want to see" (Hope, 2007, p. 14). RF process must encourage dialog, debate and learning throughout the organization. RFs should be automated to quickly assemble and consolidate forecasts from different units to enable managers to analyse the current situation and make the appropriate decisions. Data process must be simple, standardized, capable of supporting the changes on the environment, and flexible enough to accommodate changes in organizational structure such as realignments, divestures and acquisition activities.

DISCUSSION AND CONCLUSION

Overall the survey reveals that the accuracy of planning and budgeting still have to be improved. Even if 41% of the respondents find it relatively easy to predict their environmental factors, only 30% of them produce accurate data (less than 5% variance). It appears to be rather difficult to establish reliable predictions, as market changes are not that easy to anticipate and the evolution of raw material prices is difficult to estimate. The traditional budgeting approach also lacks flexibility. No changes could be made to the budget once it is approved for 58% of the respondents. In this context, respondents are very interested in RFs: more than 80% find it to be a relevant practice and almost 45% intend to implement it in the near future. As a conclusion, we can affirm that RFs will play a bigger role in the future.

Besides, the analysis suggests that a fast-changing and competitive environment is driving the implementation of RFs. RFs offer a vision of the future whereas budget is a more static, less flexible tool. Respondent organizations have implemented RFs in order to cope with the changing environment. Through regular monitoring of financial indicators and KVDs companies can continuously check to see if they are on the right track or not, follow cash flow and investment levels, and validate resource availability. RFs are considered to be action oriented; they play a steering mechanism role and contribute to operational decision-making processes. For all the interviewees, budgeting still plays an important role for performance evaluation, motivation and business control. In a fast-moving environment it is considered as a reference, actual results are compared against budget and incentive policies are tightly linked to the achievement of budgetary targets. Therefore, from the qualitative interviews we can deduct that RFs are a good complement to the traditional budgeting process, but they cannot replace it. RF functions do not cover the evaluation and motivation functions, which are essential for management effectiveness. The use of RFs should be considered as an adaptation of the budget practice in order to bring more flexibility to the process.

The analysis of the technique used by the interviewees – i.e. the annual budget coupled with RFs – led us to consider that the respondent organizations are running interactive management control systems based on Simons' conceptual framework (Simons, 1990, 1991, 1995). According to Simons, some management control processes can be used as interactive control systems, and enhance manager's abilities to anticipate and effectively manage strategic uncertainties. Simons classifies a management control process as interactive when the information provided by the system constitutes an important and recurring agenda addressed to top level management, when data are interpreted and discussed in meetings with different hierarchical levels (superiors, subordinates and peers) and when the process relies on continuous challenge and debate of actual data, assumptions and action plans (Simons, 1991, p. 50). Through regular monthly or quarterly reviews, RF system constitutes a platform for continuous dialog and debate between top-level management and frontline units, and for ongoing monitoring of performance trends, tactical decisions and action plans (new marketing ideas, new products introduction). Besides, RFs cover the three functions cited by Simons (Simons, 1990, p. 136): "signalling" which means the use of information to reveal top managers values and preferences; "surveillance" which is the analysis of new alternatives, new possible preferences or new significant environmental changes; "decision ratification" which is necessary when strategic decisions commit the organization and its resources. RF system facilitates organizational learning, which is essential for interactive management. In sum, budget and its complementary technique RFs are used as a management interactive device to collect information about strategic uncertainties, and to help ongoing dialog and debate through the organization.

The study has its limitations, as the findings rely on a small number of survey respondents and interviewed organizations. The reasons underlying the relatively low response rate was the difficulty in obtaining the e-mail address of financial managers in the companies selected, because of the data protection law. Given the response rate, we cannot be sure that the findings are representative. Nevertheless the results have been compared, when possible, to similar surveys in order to validate them.

Our survey and field analysis contributes to the literature in two main ways. First, we collect and analyse information related to environment and budgeting practices in Spanish companies and subsequently, we examine the way RFs are implemented and used in the Spanish context. We find out that the budget is still at the centre of the management process, and that companies are adapting it through the use of complementary techniques. More research should be made on how to adapt the budget to the use of complementary techniques such as balanced scorecard or activity-based budgeting. It will be interesting to explore to what extent companies combine complementary techniques to improve their budgeting process, and then test, which could be the best combination in function of environment stability and business complexity.

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APPENDIX

Surveyed questions about environment uncertainty and budgetary process.
Q1 – What type of financial management tool do you use in your company?
Response: Yes or No

- Analytical accountancy
- Cost analysis
- Balanced scorecard
- Annual budgeting
- Strategic planning (2–5 years)
- Rolling forecasts

Q2 – Define how you perceive your environment:
Scale: 1 (very stable), 2 (somewhat stable), 3 (stable), 4 (somewhat unstable), 5 (very unstable)

Please specify why you think so.

Q3 – How difficult is to predict the following factors:
Scale: 1 (highly predictable), 2 (somewhat predictable), 3 (predictable), 4 (somewhat unpredictable), 5 (highly unpredictable)
- Changes in customer demand
- Evolution of customer preferences
- Changes in product offered by competitors
- Technical developments impacting design
- Technical developments impacting production
- Governmental changes to laws and regulations
- Actions of labour unions
- Availability of suitable employees
- Availability of raw materials
- Price of raw materials

Q4 – Please specify if you agree with the following assessments:
Scale: 1 (strongly disagree), 2 (somewhat disagree), 3 (agree), 4 (highly agree), 5 (strongly agree)
- The unpredictability of the environment doesn't allow to establish accurate budgets.
- Once the budget is approved it becomes obsolete.

Please specify why you think so.

Q5 – Define the level of formalization of your budget and strategic planning
Scale: 1 (highly formalized), 2 (somewhat formalized), 3 (not very formalized), 4 (not formalized at all).

- Strategic planning
- Budget

Q6 – When do you establish your action plans?
- Before the annual budget
- After the annual budget
- We do not have any formalized action plan.

Q7 – The budgetary process is closely linked to the strategic planning:
- Always
- Never
- In some occasion

Q8 – Do you reached your strategic planning in the past two years?
- Always
- Never
- In some occasion

Q9 – During the last year the variance between actual results and budget was
Scale: 1 (0–5%), 2 (5–10%), 3 (10–20%), 4 (20–30%), 5 (+30%)
- Total budget
- Sales budget
- Costs of goods sold
- Administrative and general expenses
- Capital expenditure

Q10 – The factors causing variances between actual and budget are
Scale: 1 (very little importance), 2 (little importance), 3 (average importance), 4 (high importance), 5 (extreme importance)
- Lack of target clarity
- Weakness of action plans
- Poor prediction reliability
- Lack of environment information
- Unexpected events
- Technical problems
- Employees actions
- Customers actions
- Competitors actions
- Suppliers actions
- Government actions

Q11 – If variances are caused by other factors, please list them below
Q12 – In your company:
Response: Yes or No
- Once the budget is approved, the objectives cannot be changed.

Q13 – In your company:
Response: Yes or No
- If it is not in the budget, we cannot obtain new resources to react to unexpected events.

Q14 – The frequency of the budgetary reviews is
- Monthly
- Quarterly
- Twice a year

- Never
- Other, please specify

Q15 – In your opinion, the most relevant management accounting tools are
Scale: 1 (strongly agree), 2 (agree), 3 (disagree).
- Activity-based budgeting
- Rolling forecast
- Balanced scorecard
- Relative aspirational goals
- Beyond budgeting

Q16 – What changes to your budgetary process do you intend to implement?
Scale: 1 (no we do not intend to do it), 2 (we already have implemented it), 3 (not yet, but we are thinking about it), 4 (yes we intend to do it in the next two years)
- Process automatization
- Use of an ERP system
- Use of key performance indicators
- Changes in the workflow information, for instance bottom-up
- Relative objectives with external references (market, competitors)
- Reengineer the process to gain time in the elaboration
- Use of rolling forecasts
- Use of trends reports

Q17 – Please specify if you intend to implement some other modification to your budgetary process
Questions Q18 to Q22 were related to description of survey respondent characteristics: corporate structure, number of employees, divisional revenues, economic sector and respondent's Job title.