Design of Budget Controls: A Study for Croatian Manufacturing Companies

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Abstract: - This study was aimed to investigate the degree of development of budget controls as a part of management controls systems in manufacturing companies from Croatia. Budget controls were conceptualized in terms of two dimensions: usage of different parts of master budget and the usage of budgets for different purposes. Taken together two dimensions form composite measure of budget controls. For the purpose of research each individual item of budget control was measured by 5 points Likert scale. The methodology comprises an analysis of 48 responses to a postal questionnaire survey carried out among the small, medium and large manufacturing companies in Croatia. Our results indicate that almost all companies use budgeting controls, while larger public limited companies in Croatia use more budget controls in regard to smaller private limited companies.

Key-Words: - budget controls, master budget, budgetary slack, Croatia, manufacturing companies.

1 Introduction

Every company should have business objectives and strategy how to achieve these objectives in the long run. But for the operationalization of business strategy it is necessary to develop operational plans and control its execution during the short run. As a tool for control of operations and financial performance many companies use budgetary control. Many studies in developed countries have explored the extent of budgets use and factors that influence budgeting practice among companies. Thus for example, Merchant [12] has found that managers in larger, more diverse and decentralized companies use budgets on formal level, with fewer interpersonal interactions with subordinates.

Since in Croatia there was only a few studies that have explored the issue of budgeting there was opportunity for more comprehensive research and contribution to the literature. In order to conduct the research authors developed the model of measurement of budgeting control that consists of two dimensions with 13 elements in total. Taken altogether both dimensions and all 13 individual variables developed model should give comprehensive insight into the budgeting practice of sampled Croatian manufacturing companies. The specific targets of this research were the following:

- Measuring the frequency of use of certain parts of the master budget,
- Measuring the frequency of use of the budget for a specific purpose,
- Analysis of relationship between master budget elements usage and budgeted information usage,
- Influence of company size on budgeting controls practice.

The paper is organized as follows. The next section provides review of budgeting theory and the

prior research of budget controls. In the section 3, research sample and results are provided. Finally, Section 4 summarizes the empirical findings and provides a brief outlook for further research.

2 Budget control theory and research

2.1 Budget controls as management tool

Budgeting represents one of commonly used tools for management control and decision making. In the literature it is often pointed out that budgeting is used for [5], [6], [16]:

- Planning of future business activities,
- Formalization of business plans,
- Resource allocation,
- Control of operational and financial performances,
- Communication and coordination among different company functions,
- Evaluation of managerial performance.

Theoretical model of the budget if often represented in the terms of master budget with the following elements [9]:

- Operational budget
  - Sales budget
  - Production plan
  - Production costs budget
  - Administrative, sales and general costs budget.
- Cash flow budget,
- Capital budget,
- Budgeted financial statements
  - Balance sheet,
  - Income statement,
  - Cash flow statement.

Although, at first one may think that preparing of budget is very technical job since it is all about numbers employees' behavior if very important in the budgeting process. When company prepares the budget it can use top-down approach, bottom-up approach or combined approach. The major advantage of top-down approach is the fact that company goals will be consistent and set at very high level. But it the same time if lower levels of management and organization are not involved into the budgeting process the budgeted goals may be unrealistic. If budgeted goals are set to high and employees can not meet the goals it is frustrating, produces too high pressure and according to Rayburn [15] may result with negative effects in the long run. In order to deal with this issue authors suggest participative budgeting [6], [8], [15]. When managers and employees on lower levels of organization are involved in setting the budget they will become better acquainted with the budgeted goals. Budget should not be pressure device, contrary to that it should be pressure reducing device providing members of organization information on actions necessary to achieve goals which are controlled by their superiors [8]. But participative budgeting and use of bottom-up approach also has some problems which are often expressed as budgetary slack. Namely, if targets are set on lower levels of organization there is possibility that members of organization will intentionally provide distorted projections on costs or revenues. Thus for example, sales managers may understate projected revenues in order to easier achieve targeted number and receive bonus payments. In order to reduce budgetary slack companies should use combined model involving both bottom-up and top-down approach. Namely, after initial bottom-up flow of information superior managers must be critical and negotiate with subordinates in order to achieve realistic numbers.

2.2 Previous research on budget control

Budgeting practices are explored in different countries, organizations and settings. Thus for example, Abernethy & Brownell in 1999 [1] studied role of interactive budgets in hospitals in relation with strategic change and performance. Authors conclude that top managers use budget in interactive mode when strategic change is underway.

Comparative study from 1998 was conducted for manufacturing companies from New Zealand (85 companies) and UK (303 companies). In the segment of budget participation there was no significant differences since in both countries in the preparation of budgets participate senior managers, budget holders and department managers. Excessive budgeted costs in both samples were managed primarily trough negotiations between manager and its supervisor [7]. Another comparative study of budgeting practices in Australia and Japan has revealed that in both countries budgeting was frequently used and equally important in business practice. Companies from both countries used almost all elements of master budget, while surprisingly Australian companies more frequently

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used budgets beyond one year in comparison with Japanese companies [17].

Study revealing budgeting practice among Bahrain companies was conducted on the sample of 54 companies from different industries. Research findings indicated that majority of companies used budgeting as tool for the long range planning; all companies produced annual operating budgets, while the vast majority of companies (94%) had developed guidelines for preparing the budget. As main purposes of budgeting Bahrain companies have pointed out: forecasting the future, profit maximization and management communication [10].

De With and Dijkman [4] explored the budgeting practice among Duch listed companies (from Amsterdam Stock Exchange). Findings indicate that budgeting was widely accepted management tool. Namely, 63.6% companies claimed that their current operational budget supports business strategy to the considerable extent, while 25% said that even supports their business strategy to a very great extent. Majority of companies (81.8%) prepared annual budget divided into months, while 90.9% used cyclical budgeting with revised forecasts. Bottom-up approach in preparing the budgets was more frequently used (by 59.1% companies), than top-down with consultations (40.9% companies) or top-down without consultations (2.3% companies).

In the paper of Besson et al. [2] from 2008 the focus was on use of budgets in situations of perceived environmental uncertainty (PEU situations). Qualitative research among sales and marketing managers has revealed that budget was used for interactive debate and dialog in the organization in PEU situations. Along with the budget companies used non financial and more subjective performance evaluations. But beside interactive use of budgets it still remained as important tool for short-term decision making in PEU situations.

Research for the sample of Indian companies' from 2009 has revealed that operating and capital budgets were the most frequently used management accounting tools [3]. Namely, 97.67% of companies used operation budget, while 95.35% of companies used capital budget. Additional testing did not confirm any significant differences among manufacturing and non-manufacturing companies. King et al. in 2010 [11] investigated budgeting practice among small healthcare businesses in Australia. In their research the budgeting variable was dichotomous, i.e. company used (1) or not used (0) written budgets. Sample consisted of 144 companies, while 65 respondents used written budgets. Study provided the evidence that adoption of written budgets was related with size and structure. Empirical research on the issue of budgeting in Croatia was very limited. Thus for example, Pervan [13] in 2005 explored usage of budgeting among Croatian SME from Split-Dalmatia County. Research revealed that 87% companies produced operational budget, 83% companies produced budgeted income statement, while 78% companies were preparing budgeted balance sheet.

In the study from 2012 Pervan [14] constructed BAI Index (Budgeted Accounting Information Index), index variable (scale from 16-80 points) aimed to measure usage of budget and budgetary control among Croatian companies. Average value of the BAI Index was 26.85, while its value was significantly higher for companies with own accounting function (BAI Index – 12.66) in comparison with companies that outsourced accounting function (BAI Index – 49.72).

3 Research of budgeting controls in Croatian manufacturing companies

3.1 Research sample

The study was based on data collected in first quarter of 2013 using questionnaire that was sent to the financial managers of companies from Croatian manufacturing industry. Only companies, with at least 100 employees, were included in the target sample. It is expected that companies with less of 100 employees are less likely to have a real need for complex budget controls.

Each participant was sent a questionnaire together with a cover letter and a prepaid self-addressed envelope for the questionnaire to be returned. Each questionnaire consists of two sections. The first section required general information’s about company and manager. The second section required information about practice of budgetary control. Data about company size were collected from database of Croatian Chamber of Economy.

There were 164 questionnaires distributed to the respondents based on the predetermined sample number and selection procedure. Of 164 questionnaires sent out, a total of 48 questionnaires were returned. Thus, the 48 responses were used in

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the data analysis of this study, making a usable response rate of 29.3%. It was decided that the response rate reached was adequate for conducting statistical analyses.

3.2 Research findings

In the questionnaire, 6 questions were used to measure the use of different parts of master budget, while 7 questions were used for measurement of budget control for different purposes. Respondents were asked, on a five-point Likert-type scale ranging from 1 (never used) to 5 (always used), to indicate the use of budget controls on the basis of above mentioned 13 questions.

Table 1 presents the statistics on respondents in terms of size (small, medium and large) and legal type of company (public limited company and private limited company).

Table 1 - Profile of the respondents

Type of company/size	Small	Medium	Large	Total (% of total)
Public limited company	0	13	7	20 (41.7%)
Private limited company	5	17	6	28 (58.3%)
Total	5 (10.4%)	30 (62.5%)	13 (27.1%)	48 (100%)

Source: Research results

Descriptive statistics for the use of different parts of master budget are presented in table 2 for the overall sample of 48 respondents.

Table 2 – Descriptive statistic for the use of different parts of master budget

Parts of master budget	N	Mean	Std. deviation
Operational budget	46	4.54	0.861
Cash budget	47	3.91	1.230
Budgeted balance sheet	47	3.89	1.183
Budgeted income statement	47	4.14	1.021
Budgeted statement of cash flows (IAS 7)	47	3.89	1.202
Capital budget	47	3.38	1.171

Source: Research results

Table 2 indicates that most frequently produced budget is operational budget, budgeted income statement and budgeted balance sheet.

Descriptive statistics for the use of budgets for different business purposes are presented in table 3 for the overall sample of 48 respondents.

Table 3 – Descriptive statistic for the use of budgets for different purposes

Use of budgets for different purposes	N	Mean	Std. deviation
Planning annual operations	47	4.36	1.009
Coordinating activities of the various parts of organization	47	3.80	1.135
Communicating plans to managers	47	3.59	1.076
A mechanism for evaluating performance of organization	47	3.72	1.136
A mechanism for evaluating performance of the various parts of organization	45	3.42	1.196
A mechanism for evaluating managerial performance	46	3.10	1.058
A mechanism for determining the amount of managerial bonuses	45	2.53	1.272

Source: Research results

Table 3 indicates that budgeted information is most frequently used for annual planning of business operations, followed by coordination and communication. Findings also indicate that the budgeted information is rarely used as a mechanism for evaluation of managers' performance and determining the bonuses.

Validity test is conducted for all 13 variables in order to determine the appropriateness of used research instrument. The result of test has indicated that budgeting control variable, consisting of 13 individual variables is valid (significant at 5%). Based on the reliability test, the budgeting control variable has a Cronbach's alpha of 0.910 (0.868 for 7 questions which measure the use of budgets for different purposes and 0.878 for 6 questions which measure the use of different parts of master budget)

Table 4 displays a Pearson correlation matrix for all variables in model, classified into two groups.

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Table 4 – Pearson correlation matrix

Variables		1. group The use of different parts of master budget	2. group The use of budgets for different purposes
1. group	Pearson Correlation	1	0.587**
	Sig. (2-tailed)		0.0001
	N	47	47

Source: Research results

As tested by Pearson's Paired Sample *t*-Test, the correlation coefficient 0.587** between the two groups of budget controls demonstrates a very strong positive and significant correlation between the two groups of budget controls. Namely, companies that more frequently use elements of master budget also more frequently use budgeted information for different business purposes.

Table 5 – Paired Samples Statistic

	Mean	N	Std. deviation	Std. Error Mean
1. group	3.95	47	0.879	0.128
2. group	3.52	47	0.853	0.124

Source: Research results

Because of a positive mean difference, 0.43 points, to the advantage of 1. group (The use of different parts of master budget) ($t = 3.805$ and $p = 0.001$, $p < 0.01$), it may be stated that manufacturing companies in Croatia are perceived to display 1. group of budget controls to a greater degree than 2. group of budget controls (table 6).

Table 6 – Paired Samples Test

	Mean	Std. Devi.	Std. Error Mean	t	df	Sig
1. group – 2. group	0.43	0.78	0.11	3.8	46	0.001

Source: Research results

Table 7 presents the descriptive statistics for budget controls variable (for all 13 individual variables) according to type of company (public limited company and private limited company).

Table 7 – Descriptive statistics for budget controls according to type of company

Type of company	N	Mean	Std. Devi.	Std. Error Mean
Public limited company	20	4.081	0.602	0.134
Private limited company	27	3.463	0.786	0.151

Source: Research results

According to results of Independent Samples Test ($t = 3.049$ and $p = 0.004$, $p < 0.01$), public limited company in Croatia use budget controls more frequently compared to private limited company.

Table 8 presents the descriptive statistics for budget controls variable (for all 13 individual variables) according to size of company (small, medium and large company). As only 5 companies classified as small companies, categories small and medium size companies were combined into a single category (SME). Thus, only two groups (SME and large) were analyzed.

Table 8 – Descriptive statistics for budget controls according to size of company

Size of company	N	Mean	Std. Devi.	Std. Error Mean
SME	34	3.541	0.752	0.129
Large	13	4.211	0.608	0.168

Source: Research results

According to the previous research findings and expectations results of Independent Samples Test ($t = 3.153$ and $p = 0.004$, $p < 0.01$), confirmed that large companies in Croatia use budget controls more frequently in regard to SME.

4 Conclusion

The purpose of this paper was to provide insight into the budgeting control practice of Croatian manufacturing companies. Research findings indicate that almost all sampled companies use budgeting. In order to measure budgeting controls author developed model with 13 individual variables that was confirmed as statistically relevant. Findings indicated that companies which more frequently produce individual budgets also more frequently use

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budgeted information for different business purposes. Also, statistical tests confirmed that size was significant variable for usage of budget controls.

The study is subject to a few potential limitations. First, this study examines issues related to the definition and elements of budget controls with no attempt to assess the meaning and measurement of contextual factors and their impact on budget controls. Second, the model is tested using survey data and thus is subject to the usual limitations associated with such data. Therefore, future research should take into account contextual factors and more complex statistical modeling.

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