

## US AMERICAN VERSUS GERMAN ACTIVITY-BASED COSTING. EFFECTS ON BUSINESS DECISIONS MANAGEMENT IN THE AUTOMOTIVE INDUSTRY

### ABSTRACT

*This paper seeks to describe the role that activity-oriented cost accounting systems, i.e. US American and German activity-based costing, play in the establishment of supply-chain-networks in the modern automotive industry. These cost accounting systems are the subject of analysis for two reasons: they relatively successfully describe the causality principle between cost drivers and cost objects and represent two different approaches of cost calculation within the activity-oriented concept. Also, the paper attempts to show that the efficiency of these systems is contingent on the value chain activity to which the systems were applied. Although based on identical conceptual frameworks, these systems do not have the same cost allocation purposes in automotive industry.*

**Keywords:** *cost accounting, activity-based costing, automotive industry, supply chain network*

**JEL Classification:** *M41, M49*

### 1. INTRODUCTION

The automotive industry is an important component of the economy due to its organisation complexity. Furthermore, it is an extremely capital intensive branch of industry which employs a great number of people and represents a leader in terms of technical innovations. In the past two decades this industry has been characterised by a series of significant processes, two of which have gained great importance. Firstly, there is a strong competition for markets, which has led to a reduction in the number of stand-alone Original Equipment Manufacturers (OEMs). Secondly, due to an increasing focus on their core competences, all OEMs transfer value chain activities to suppliers. As a result of these processes, a tight cooperation between OEMs and suppliers in the form of a supply-chain network has been established. Therefore, the main tasks of OEMs consist of recognising the customers' needs and optimal coordination of the suppliers (Håkanson and Lind, 2004, p. 53). Due to their low participation in creation of value, the OEMs are forced to identify and realize potential cost reduction opportunities, in order to maintain competitive advantage. With regard to this, the OEMs often use different cost accounting systems to make basic framework of open book accounting, which requires exchange or at least disclosure of largely detailed and relevant costs and other information on the side of the suppliers (Kajüter and Kulmala, 2005, p. 187, Cooper and Slagmulder, 2004, p. 13). This concept is extremely important for an OEM in the relationship to system and module suppliers. This paper aims to explain the main areas of application and distinctions of two activity-oriented cost accounting

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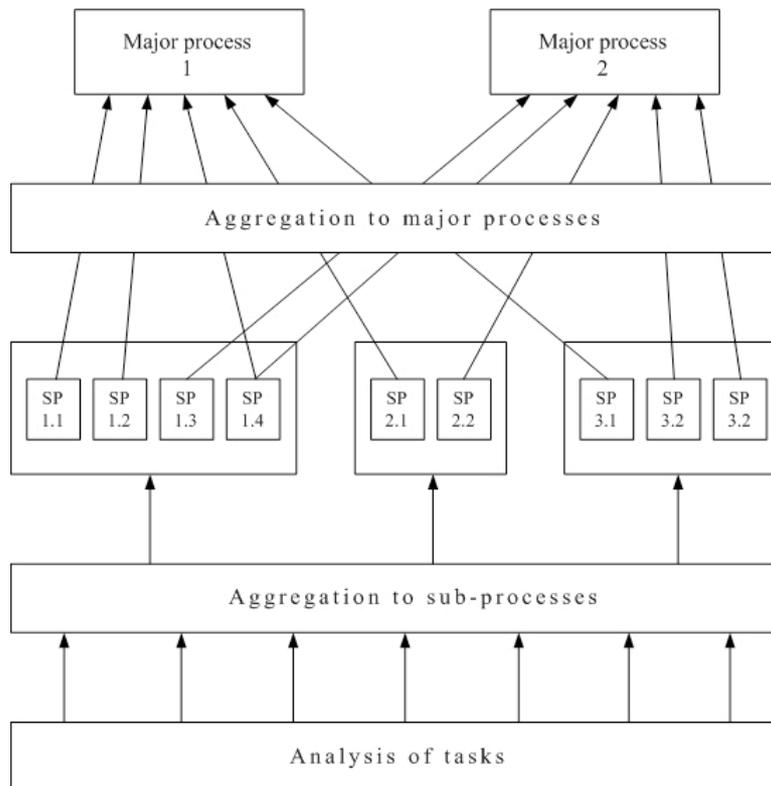
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systems in automotive industry: US American activity-based costing (hereafter US ABC) and German activity-based costing (hereafter German ABC). The paper is based on theoretical and practical research of these cost accounting systems. The main aim of the research was to provide some insight into the relationships between partners within supply chain networks and to facilitate the decision-making processes at all management levels with help of mentioned cost accounting systems. Moreover, a great deal of attention was paid to providing evidence that these cost accounting systems need to be implemented in different business areas. The paper consists of five sections. The section immediately following the introduction is devoted to the reviews of main literature on cost accounting systems which are based on activities and processes. The third section explains the proposed hypotheses and research methodology of the paper. The fourth section discusses the main results of the research on the cost accounting systems in question. The paper closes with comprehensive conclusions.

## **2. LITERATURE REVIEW**

All cost accounting systems which are based on activities and processes have one significant common feature - the overhead cost allocation is carried out with help of certain cost drivers, which represents the repetition coefficient of chosen activities that cause overhead costs (Schweitzer und Küpper, 1998, p. 333). In management business administration literature which refers to cost accounting issues, these cost accounting systems were given various titles, such as activity-based costing, activity accounting, transaction costing, cost driver accounting system, operation costing etc. (Däumler and Grabe, 1998, p. 226).

Early concepts of cost accounting systems based on activities and processes were developed in the sixties and seventies by General Electric in the USA (McConville, 1993) as well as Siemens and Schlafhorst in Germany (Ziegler, 1992; Wäscher, 1987). However, the first comprehensive and theoretically structured concept of these cost accounting systems was introduced in the eighties (Kaplan and Bruns, 1987, 204-28) through the establishment of US ABC. The underlying idea of this cost accounting system was the establishment of activities, which represent the small groups of homogeneous tasks in all departments within a factory. The activities represent mediators for cost allocation on final products and must be demarcated, so that the consumption of resources caused by one activity, could be determined through a single cost driver. Once the cost driver is determined, all activities can be classified into one of four mutually exclusive categories (Zimmerman, 2003, p. 546): unit level, batch level, product level, or production sustaining. Using specific indicators for every selected activity, a cost pool will be constituted, which consists of all costs that arise from the performance of considered activities. With help of previously specified cost drivers, all of these cost pools apart from research and development costs, will be subsequently allocated to every single product. The cost of three hierarchical categories of activities (unit level, batch level and product sustaining) are directly traceable to final products by selected cost drivers. But, for the cost allocation of facility-sustaining activities, it is necessary to find some additional value-based cost drivers. According to this overall cost allocation procedure, US ABC is regarded as an absorption cost accounting system.

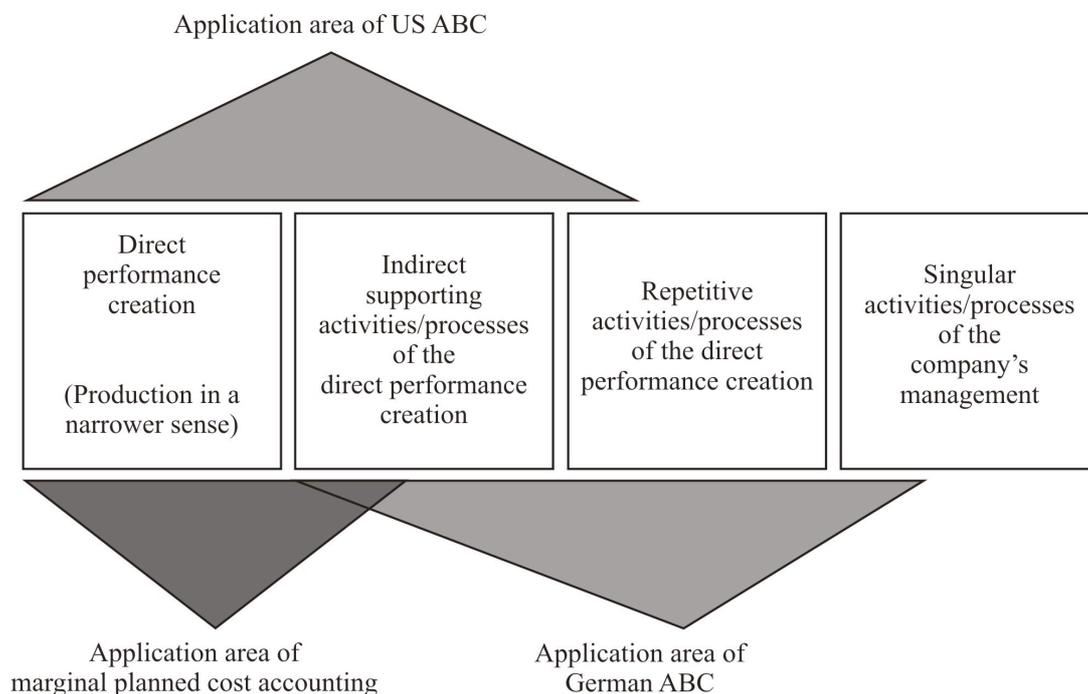


**Figure 1.** Aggregation of processes in German ABC (Horváth, 2008, p. 491)

German ABC (Ger. *Prozesskostenrechnung*) also represents a cost accounting system based on activities and processes and was introduced at the end of the eighties in Germany, by Horváth and Mayer (Horváth and Mayer, 1989). Despite the fact the term for this cost accounting system was literally translated into English as “process costing”, they have nothing in common. Process costing is not based on activities and processes and allocates cost according to equivalent units which represent the amount of work actually performed on products which are not yet completely transformed into the work required to complete an equal number of overall units (Hilton et al., 2003, p. 308). This feature makes process costing an extreme case of cost averaging (Zimmerman, 2003, p. 464). US ABC has often been criticised for failing to provide a causal relationship between cost objects and cost drivers, which had been used for overhead cost allocation. It is also emphasized that marginal planned cost accounting (Ger. *Grenzplankostenrechnung*), as the most important Germany’s cost accounting system, (Friedl et al., 2009, p. 39) provides higher causality level in cost allocation of the direct performance creation than US ABC. Marginal planned cost accounting is based on the principle of direct costing, which means that only variable costs are allocated to cost objects. The main features of marginal planned cost accounting include cost-type accounting, cost centre accounting, product cost accounting and contribution margin accounting (Friedl et al., 2009, p. 39). One of the distinct features is the separation of fixed and variable costs at the level of cost-type accounting. In contrast to that, fixed costs are used only in the profit-and-loss statement because they contain no information for short-term decision making. In this regard, the profit-and-loss statement in marginal planned cost accounting is intended to serve mainly for internal purposes and is called contribution margin accounting. German ABC deals with processes (major and sub-processes) which are aggregated from a string of activities (Figure 1). The major processes represent a chain of homogenous activities which have been the subject of the same cost factor. The activities can be regarded as homogenous if there is no substantial difference between the expenditure of work and the usage of resources. The overhead cost will be allocated to the cost objects through the cost drivers of major processes. On the other hand, the sub-processes were

defined as a chain of homogenous activities of one cost centre. They can be aggregated into one or more major processes. The main criterion for the aggregation is not the established cost drivers, but an essential belonging to one major process (Schweitzer and Küpper, 1998, p. 339). According to the repetition frequency of the cost centre performance, there is a distinction between value-added and non-value-added processes. The cost drivers will be determined just for the value-added processes because their output is a contingent on the cost centres performance. The unit rate for the cost allocation of non-value-added processes arises from their relationship to the cost of value-added processes (Coenenberg, 1999, p. 232).

The implementation of US and German ABC shows significant differences in automotive industry. They have resulted from different experiences in the development of cost accounting systems. With the increasing integration of automotive suppliers in the process of value creation, the purchase management has gained a strategic significance (Large, 2009). This has emphasized the necessity for transfer of information in the chain of value creation and the implementation of Supply Chain Controlling (Westhaus, 2007). Hence, the responsibility in terms of the purchase decisions is extended along the entire value chain. (Seuring and Koplin, 2010). This has resulted in a comprehensive understanding of the purchase and supplier management, which also takes into consideration risk management and suppliers' performance (Seuring and Müller, 2008). US and German ABC are also characterised by different areas of application in automotive industry. US ABC was mainly focused on the activities of the production and production-supporting cost centres, such as stamping press, assembly of bodywork, varnishing process and paintwork, final assembly, etc. German ABC is not concerned with these processes because they are the focus of marginal planned cost accounting, which has provided satisfactory results in cost calculation, especially in the mass production. The main differences between US and German ABC are illustrated in Figure 2.



**Figure 2.** Application areas of US and German ABC (Horváth, 2008, p. 490)

Unlike US ABC, German ABC is mainly concerned with sub-processes and processes after the production area, in which large amounts of overhead costs arise. These sub-processes and processes in modern automotive industry include tasks such as design, logistics, sale and maintenance. Recent developments in the automotive industry also showed, that almost all OEMs have shifted their attention from the direct production to the

so-called non-core competences, such as banking, insurance or retail, due to the fact that higher profits can be made in this business area. As a result of this, the OEMs transfer more and more activities related to the direct production and assembly to the suppliers in order to gain additional room for more profitable activities.

US and German ABC also show significant differences in the quality and quantity of cost information provided, although both of them use cost centres and cost drivers. There are more activities in US ABC than processes in German ABC, but significantly less than sub-processes (Kellermanns and Islam, 2004, p. 37). German ABC uses tasks which are combined with sub-processes and both are linked to just one cost centre. US ABC combines tasks with activities, which is similar to combining sub-processes with processes, but activities relate to only one larger cost centre (Gaiser, 1998). That said, the level of aggregation of sub-processes in German ABC is partway between tasks and activities of US ABC.

In addition to the different areas of application, US and German ABC have a different role in decision making processes and supply-chain management in automotive industry. For the purpose of cost allocation to the objects, US ABC excludes only research and development costs, which makes it an absorption costing system. For the same purpose, German ABC deals only with the cost of value-added processes, whereas the costs of non-value added processes are collected in a cost pool and allocated using a proportional rate. In other words, the cost allocation of non-value added processes is not activity-oriented. For that reason, German ABC is often considered a variable costing system (Küting and Lorson, 1991, p. 1426). Some authors also argue that all entities use absorption costing for external financial statements and tax purposes (Horngren et al., 1997, p. 309). However, there are two versions of US ABC related to an absorption costing system: traditional and super US ABC (Reinstein and Bayou 1997, p. 492). If used simultaneously, they would not show the same income after the calculations, because the diversity of their methods produces different inventoriable costs. This fact creates some difficulties with integration of US ABC into the external accounting report system. Therefore, it is advisable to use international financial reporting standards (IFRS) and generally accepted accounting principles (GAAP) for external accounting and inventory evaluation and to use US ABC for other purposes. In contrast to US ABC, German ABC only provides information for internal accounting. Due to its features and being a variable costing system, German ABC draws a clear distinction between relevant and irrelevant costs, which makes it more suitable for decision making processes.

As stated earlier, one of the main features of modern automotive industry is the arrangement of tight connections between OEMs and suppliers through supply chain network. Since the OEMs and suppliers have become increasingly integrated, it remains to be considered how activity-oriented cost accounting is or can be designed and used to assist in the formulation, implementation and realization of strategies for achievement of competitive advantages (Ramos, 2004, p. 134). In that sense, US and German ABC are considered to be a part of open-book accounting concept, which implies that all participants in the supply chain network show willingness to allow the access to their internal accounting data. This concept facilitates development of more trusting and harmonious relationships between OEMs and suppliers. Thus, US and German ABC can identify additional services provided by suppliers, such as product design and development, which add value to the final product and reduce internal costs such as inspection and handling (Ramos, 2004, p. 135).

### **3. HYPOTHESES AND RESEARCH METHODOLOGY**

Focus on cost centres and overhead cost types is one of the main prerequisites for the application of activity-oriented cost accounting systems. Cost centres represent a specific pool of collected homogeneous activities and processes, which play a role of mediators in overhead cost allocation. However, the quantity and structure of the cost centres have

different significance in US and German ABC. As stated earlier the process in German ABC is combined with sub-processes which are linked to single smaller cost centres, while the activity in US ABC relates to one larger cost centre. Higher number of cost centres also implies a lower average number of employees per cost centre and enhanced cost control. Therefore, the following hypotheses are proposed:

- H1: Applicability of German ABC rises as the number of cost centres rises.
- H2: Applicability of German ABC rises as the number of overhead cost types rises.

The choice between different software solutions is also an important factor in the implementation of activity-oriented cost accounting systems. SAP-System with its software solutions SAP ERP, Customer Relationship Management (SAP CRM), Product Lifecycle Management (SAP PLM) Supplier Relationship Management (SAP SRM) and Supply Chain Management (SAP SCM) offers a great deal of possibilities for cost centres control, especially through a clear demarcation between planned, actual and budget costs (Brück and Raps, 2004, p. 261), which is, to a large extent, embedded in German ABC. Moreover, SAP-System is suitable for structuring of different development projects in automotive industry (Kohlhoff, 2005). The development and design tasks are mostly placed outside direct production area, which makes German ABC eligible for allocation of their overhead costs. With regard to this, the proposed hypothesis would be:

- H3: Applicability of German ABC rises as SAP-System is implemented.

US and German ABC often practice multilayered contribution margin accounting for different purposes. German ABC is regarded as a supplement to marginal planned cost accounting which is concerned with the overhead costs calculation in the direct performance creation. It uses contribution margin accounting in the indirect performance creation area, producing information which facilitates decision-making process about additional order acceptances, make-or-buy problems, short-term price decisions etc. On the other side, US ABC is directly concerned with the cost calculation in the direct performance creation but unlike marginal planned cost accounting, its separation into fixed and variable costs, direct and indirect costs is not so clear. For that reason, US ABC's contribution margin accounting is more suitable for long-term decisions concerning product-mix, improving-business processes or managing cost structures. Following these theoretical explanations, the proposed hypotheses concerning the contribution margin accounting would be:

- H4: Applicability of German ABC rises as contribution margin accounting is used more for the purposes of short-term decision support.
- H5: Applicability of US ABC rises as contribution margin accounting is used more for the purposes of long-term decision support.

The research on applicability of US and German ABC was conducted in two separate periods. The first research was done over a nine-month period in 2006 and 2007 including 123 automotive companies in Germany (Bavaria and Baden-Wurttemberg) and Austria. In the second period from October 2009 to March 2010, the survey was supplemented with data from thirty-one Serbian companies that have directly or indirectly been involved in automotive industry. Although this research was conducted in two separate periods, it was based on the same methodology of which the original purpose was to provide some practical insight into the most frequent cost accounting systems in automotive industry. A chosen group of companies was firstly contacted by telephone and, after obtaining either a verbal or written statement for cooperation a seven-page questionnaire was sent to the cost accounting departments of the chosen companies. The questionnaire consisted of thirty-three questions including twenty-seven questions with answers offered in advance, which

considerably facilitated statistical analysis. Most of these multiple-choice questions were designed to identify the level of respondents' agreements with the offered answers on the scale from one (do not agree) to five (fully agree). Among 123 automotive companies in Germany and Austria, which represented a return rate of 19.12 percent of filled in questionnaires, 0.06 percent were OEMs, 19.63 percent system integrators, and 42.03 percent system specialists. The remaining 38.28 percent consisted of suppliers of parts and components. The structure of surveyed companies in Serbia was quite different. Thirty one analysed companies in Serbia represented a return rate of 38.81 percent of filled in questionnaires. There was one OEM (3.22 percent) involved in the survey, 6 system integrators (19.35 percent) and 24 suppliers of parts and components (77.42 percent). Eight questions were chosen from the questionnaire as the most relevant for assessing the influence on applicability of US and German ABC under specific business circumstances (Table 1). In order to assess this influence, elements of the descriptive statistics, such as statistical mean, standard deviation and correlation coefficient, covariance and mathematical expectation, were used. Furthermore, structural equation model and Pearson's coefficient were used for the testing the hypotheses.

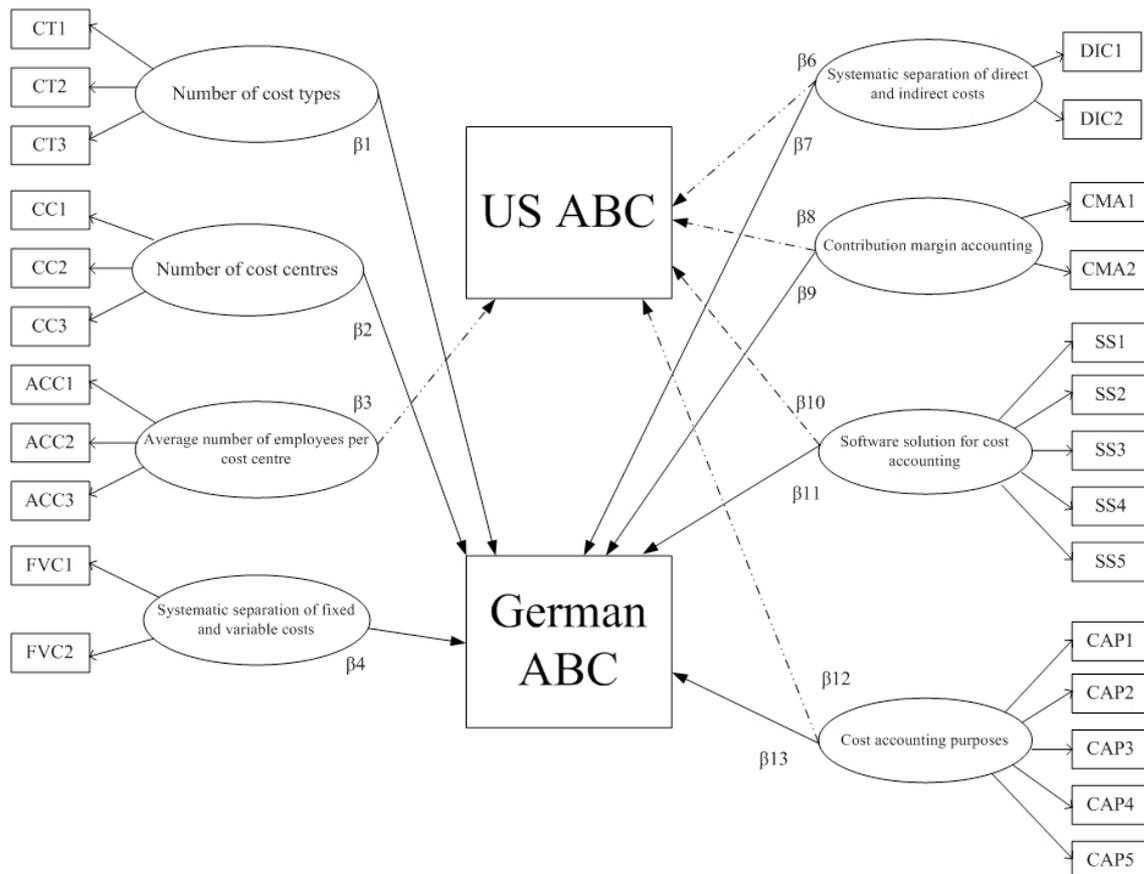
Questions	Abbreviation	Offered answers
Number of cost types (CT)	CT1	<100
	CT2	100-300
	CT3	>300
Number of cost centres (CC)	CC1	<10
	CC2	10-30
	CC3	>30
Average number of employees per cost centre (ACC)	ACC1	<5
	ACC2	5-10
	ACC3	>10
Systematic separation of fixed and variable cost (FVC)	FVC1	Yes
	FVC2	No
Systematic separation of direct and indirect costs (DIC)	DIC1	Yes
	DIC2	No
Contribution margin accounting (CMA)	CMA1	Yes
	CMA2	No
Software solution for cost accounting (SS)	SS1	SAP (R/3, BW, ERP)
	SS2	Oracle
	SS3	Peoplesoft
	SS4	SAS
	SS5	Other
Cost accounting purposes (CAP)	CAP1	More transparency of indirect costs
	CAP2	Short-term decision support
	CAP3	Long-term decision support
	CAP4	Higher level of efficiency for cost control
	CAP5	Motivating employees

**Table 1.** Questions for assessing the influence on applicability of US and German ABC

#### 4. RESEARCH RESULTS

The research has shown that 42.3 percent of all surveyed automotive companies clearly stated that they use US ABC as a stand-alone cost accounting system, while German ABC is represented with 38.2 percent. However, these cost accounting systems are used to a large extent as supplements to other related cost accounting systems. In fact, the application level of these cost accounting systems is much higher. Many of the surveyed companies which explicitly stated that they do not practice US or German ABC actually meet all

necessary conditions for their implementation. The key element for assessing the influence on applicability of US and German ABC is structural equation model. This model was used to estimate the influence ( $\beta$ ) of specific factors from the chosen questions on the above mentioned activity-oriented cost accounting systems (Figure 3). According to correlation analysis, correlation coefficients were calculated for each of variables that were considered relevant for the applicability of US and German ABC (Table 2). From the listed variables, number of cost types, number of cost centres, systematic separation of fixed and variables costs and systematic separation of direct and indirect costs were considered to have stronger influence on German ABC than on US ABC. On the other side, average number of employees per cost centre was regarded as more relevant for US ABC. All other variables had twofold effect on US and German ABC.



**Figure 3. Structural model of the effects on US and German ABC**

All of the surveyed automotive companies use cost type accounting and 84.6 percent practiced cost centre accounting. The average number of cost type accounts was 136.54 and of cost centres 36.2. With regard to this, the average number of employees per cost centre was 12.6. Moreover, fifty percent practice separation of fixed and variable costs. The results have also showed that 73.1 percent of all respondents differentiated between direct and indirect costs. If they practiced separation of direct and indirect costs to a larger extent they would fulfil more prerequisites for the implementation of German ABC ( $C=0.74$ ). Non-separation of direct and indirect costs better was better suited for US ABC ( $C=0.89$ ). The application of contribution margin accounting has almost equal influence on US ABC ( $C=0.64$ ) and German ABC ( $C=0.69$ ) but with rather different accounting purposes. Focus on long-term or strategic decisions would favour the implementation of US ABC. One of the most important factors for the application of cost accounting systems in Serbian companies is information technology support which refers to different brands of used software solutions. In fact, almost 50 percent of the surveyed companies “fully” or “largely” agree that software

was the main determinant in the adoption of their present cost accounting system. However, the results showed that only 7.7 percent of all surveyed automotive companies used SAP-System for the implementation of German ABC (C=0.12). In the case of US ABC, this brand of software was with 8.9 percent slightly more represented (C=0.14). The implementation of these activity-oriented costs accounting systems was rather supported by other software solutions.

Variables	ABC	PrKR
CT1	0.80*	0.24*
CT2	0.16*	0.36*
CT3	0.31*	0.72*
CC1	0.21*	0.09*
CC2	0.56*	0.23*
CC3	0.44*	0.51*
ACC1	0.21*	0.46*
ACC2	0.75*	0.25*
ACC3	0.85*	0.37*
FVC1	0.42*	0.56*
FVC2	0.63*	0.61*
DIC1	0.24*	0.74*
DIC2	0.89*	0.39*
CMA1	0.64**	0.69**
CMA2	0.11**	0.08**
SS1	0.14**	0.12**
SS2	0.26**	0.22**
SS3	0.10**	0.18**
SS4	0.21**	0.15**
SS5	0.29**	0.58**
CAP1	0.69**	0.84**
CAP2	0.63**	0.12**
CAP3	0.45**	0.18**
CAP4	0.27**	0.31**
CAP5	0.10**	0.05**

\* Statistically significant at the level of  $p < 0.01$

\*\* Statistically significant at the level of  $p < 0.1$

**Table 2.** Correlation coefficients (C) for variables

Cost accounting purposes also play an important role in the implementation of US and German ABC. Automotive companies who chose *more transparency of indirect costs* as the most important cost accounting purpose have reached it almost completely by implementing both US ABC (C=0.69) and German ABC (0.84). The purpose of *short-term decision support* was better satisfied by using German ABC (C=0.63) than US ABC (0.12). On the other hand, *long-term decision support* was to a larger extent achieved by US ABC (0.45) than by German ABC (0.18). German ABC was more relevant (C=0.31) for the purpose of *higher level of the efficiency for the cost control* than US ABC (0.27), while the purpose of *motivating employees* could hardly be met by either of these cost accounting systems.

Hypotheses	Coefficients	Conclusion
H1	0,18*	Supported
H2	0,34*	Supported
H3	0,03*	Not supported
H4	0,11*	Supported
H5	0,27*	Supported

Statistically significant at the level of  $p < 0.05$

**Table 3.** Pearson's coefficient for testing the hypotheses

The structural model was designed to extract all the relevant factors from the questions used for assessment the influence on applicability of US and German ABC. Eight questions with their twenty-five of variables were isolated from the whole questionnaire on the cost accounting systems in automotive industry. Six questions with eighteen variables were used for specification of five hypotheses. Pearson's two-tailed correlation coefficient was applied for the test and the calculated values are given in the Table 3. Apart from the hypothesis three, all others had been statistically supported. The main reason for proposing the hypothesis on positive relationship between SAP-System and German ABC consisted in the previously described fact that German ABC is not concerned with the direct performance creation which is threatened by marginal planned cost accounting. This system was originally embedded in SAP software solutions and that leaves plenty of room for German ABC to be engaged in the indirect performance creation area, which gradually becomes the main point of interest of modern automotive industry. However, the research results have revealed that other software solutions can significantly contribute to the application of activity-oriented cost accounting systems.

## 5. CONCLUSIONS

The purpose of this paper was to offer insights into the role and effects of US and German ABC in the decision-making processes of modern automotive industry. This industry has experienced drastic changes over the two last decades with respect to supply-chain management. As a result of the takeover actions and concentration on the core competences, the number of stand-alone OEMs has been decreasing. This new situation has resulted in new close relationships between OEMs and suppliers. The newly-formed supply chain network facilitates decision-making process at all management levels. However, the maintenance of such networks requires different information from the cost accounting systems. A great deal of required information can be provided from US and German ABC. Both of these cost accounting systems are activity-oriented and have a common purpose in the automotive industry - to improve the cost calculation and optimize the overall creation of value. But, they also have a series of differences with respect to the area of application. US ABC is primarily focused on the direct performance creation, whereas German ABC is mostly connected with the supporting area of production in a narrower sense and with the company's management. Considering the automotive industry, German ABC is more suitable for the application by the OEMs, because they have transferred to the suppliers the large part of activities related to the direct production. German ABC is also perceived to be more detailed and provides greater quantity and quality of information, from which one would expect a high perception of usefulness (Kellermanns and Islam, 2004, p. 43). Despite the provided quantity of information, German ABC has often been criticised for use of the costs of value-added processes as a base for the allocation of costs of non-value-added processes. This decreases the causality level between the cost drivers and cost objects. However, the precision of cost allocation is not a primary goal of German ABC, but the process optimisation is. US ABC was designed to avoid the problem of cost averaging by using activities for the allocation of all types of costs. Although it represents a great advantage for the practice of cost accounting, many automotive companies have been reluctant to implement US ABC, and this system has already been described as "yesterday's hope" (Thomson and Gurowka, 2005, p. 28). These cost accounting systems show a great effectiveness when combined with other systems, such as target costing for the product design or traditional and variable costing for the regulation of the inventory level. However, the biggest advantage of German ABC has been shown in the making of so-called special decisions, i.e. make or buy, sell as it was or process furthermore, drop or keep a product, accept or not a special order, etc. The underlying concept for these decisions is the application of multi-stage contribution margin accounting process, which

presupposes a gradual deduction of fixed costs. Some authors argue that US ABC is a much more widely published and discussed topic than German ABC, due to the dominance of US business literature and the English language (Kellermanns and Islam, 2004, p. 44). Instead of one-sided solution, more effort should be done to reconcile US and German ABC, since merger or acquisition cases on the automotive market may create significant potential conflicts.

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## **AMERIČKA VS NJEMAČKA ACTIVITY-BASED COSTING (ABC) METODA. UČINCI NA UPRAVLJANJE POSLOVNIM ODLUKAMA U AUTOMOBILSKOJ INDUSTRIJI**

### **SAŽETAK**

*Ovaj rad nastoji opisati ulogu koju sustavi obračuna troškova utemeljeni na aktivnostima, tj. američki i njemački sustav obračuna troškova po aktivnostima imaju u uspostavljanju mreže opskrbe u suvremenoj automobilskoj industriji. Ovi sustavi obračuna troškova su predmet analize iz dva razloga: relativno uspješno opisuju princip uzročnosti*

*između izazivača troškova i mjesta troškova i predstavljaju dva različita pristupa obračuna troškova unutar koncepta koji se temelji na aktivnostima. Teži se dokazivanju da učinkovitost ovih sistema ovisi od toga u kom području lanca stvaranja vrijednosti su primjenjeni. Iako se temelje na istom konceptualnom okviru, oni nemaju iste ciljeve obračuna troškova u automobilske industriji.*

**Ključne riječi:** *obračun troškova, activity-based costing, automobilska industrija, lanac opskrbe*

**JEL klasifikacija:** *M41, M49*