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Influence of cost accounting change on performance of manufacturing firms

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ABSTRACT

The purpose is to analyze the influence of cost accounting change (CAC) on the financial performance of Finnish firms. Empirical data are based on a survey responded by 121 manufacturing firms. PLS is used to extract the influence of CAC on performance. The general expectation is that CAC should have a positive lagged effect of performance. However, prior empirical evidence is mixed and usually only a weak influence is found, if any. This study shows that CAC is closely associated with a simultaneous pricing system change (PSC). CAC and PSC are interrelated because product cost usually plays an important role in pricing. PLS shows that CAC has a weak positive lagged main effect on performance whereas PSC has a strong negative effect. The total effect of CAC is insignificant because the positive direct effect is offset by the negative mediation indirect effect through PSC. The result indicates that when assessing the influence of CAC on performance it is important also to take account of the corresponding indirect influence through PSC. The study also shows that perceived environmental uncertainty (PEU) has a strong negative moderating effect on the influence of PSC on performance. Thus, the influence of PSC on performance is more negative when PEU is high.

1. Introduction

Management accounting changes (MAC) are made for many reasons. It can be based on reasoning for efficiency-choice, forced selection, or fad and fashion (Malmi, 1999). However, as a final outcome it is usually expected that MAC leads to improvement in the performance of the firm (Arnold, 2006; Merchant & Otley, 2006). Unfortunately, the influence of MAC or any information system change (ISC) especially on financial performance is not straightforward. In fact, empirical evidence on this influence is mixed (Jänkälä & Silvola, 2012; Maiga & Jacobs, 2008; Rom & Rohde, 2007). It has been reported as positive, insignificant, or even negative. There are several reasons for mixed results. First, the positive and negative effects of MAC may offset each other making the net influence weak or non-existent (productivity paradox). Second, the effect of a specific MAC can be difficult to identify because it may be associated with broader management system change (MSC). Third, the influence of MAC is difficult to measure or recognize immediately after change because it has lagging effects for several years (Chenhall, 2004; Jänkälä & Silvola, 2012; Luft & Shields, 2003). Fourth, the relationship of MAC to performance may be bidirectional making performance part of the context variables (Jänkälä & Silvola, 2012; Rom & Rohde, 2007). This is the case especially when performance is measured in the same time period when MAC is made.

Cost accounting (CA) is one of the most important management accounting systems (MAS). In general, the expectations for the influence of cost accounting change (CAC) on performance are positive as for any MAC. It is expected that CAC helps the management to make operational improvements and redirect strategic decisions (Jänkälä & Silvola, 2012; Maiga & Jacobs, 2008). Then, financial performance related to operational improvements can be visible in the form of improved profitability and sales increase (Kaplan & Cooper, 1998). CAC can be expected to improve financial performance through cost reductions, better resource utilization, and cost avoidance. In most cases, CAC leads to changes in product cost information that may play a key role in determining selling prices (Guilding, Drury, & Tayles, 2005; Lucas & Rafferty, 2007). In general, a great majority of firms use costing techniques and practices for product pricing (Govindarajan & Anthony, 1983; Guilding et al., 2005; Shim & Sudit, 1995). Especially in larger firms cost accounting system (CAS) can be closely related to pricing system (PS). In these kinds of firms, CAS generates a report of product costs for marketing staff taking account of demand conditions and setting prices (Banker & Hughes, 1994). Even the way in which costs are here reported may affect pricing decisions (Cardinaels, 2008).

Thus, it can be expected that in most firms MAC is associated with a simultaneous pricing system change (PSC). Pricing is one of the most important decisions made by the management (Skouras, Avlonitis, & Indounas, 2005). The pricing decision may influence the demand of the product in the market, the pricing strategy of the competitors, and

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the growth and profitability of the firm having thus potentially a strong effect on financial performance. In fact, pricing is the only marketing plan variable that generates revenues and is therefore a significant factor of profitability and growth. The effect of pricing on profitability and sales has been shown in many analytical studies (Banker & Hughes, 1994) or experiments (Balakrishnan & Sivaramakrishnan, 2001) contrasting marginal and full-cost pricing. The positive effect of PSC has also been shown by management science scholars (Gallego & van Ryzin, 1997) and by consultants (Simon, Butscher, & Sebastian, 2003). In MAC studies, the simultaneous effects of CAC and PSC on financial performance have not been earlier analyzed in spite of their obvious relationship.

In conclusion, research on the link between financial performance and CAC is still a controversial issue and many questions remain. Empirical evidence on this link is mixed suggesting on the one hand a strong direct positive relationship and on the other hand no relationship (Foster & Swenson, 1997; Innes, Mitchell, & Sinclair, 2000; Maiga & Jacobs, 2008; Malmi, 1999). Many reasons have been suggested for the inconclusive results as discussed above. In addition, Chenhall and Langfield-Smith (1998) suggest potential intervening effects of organizational variables as a reason while Kennedy and Affleck-Graves (2001) suggest that CA is only correlated with the true drivers of financial performance. The objective of this research is to extend CAC research to these directions taking account of the moderating effect of perceived environmental uncertainty (PEU) on this relationship and considering PSC as a mediator. In this way, it is possible to consider both the direct effect and the indirect effect of CAC through PSC, moderated by PEU. This modeling is based on hypotheses that CAC is related to PSC, and that a large part of the total effect is mediated by PSC. It is also hypothesized that these effects are not straightforward but moderated by PEU. This moderation is based on the argument that CAC and PSC are regarded as a response to PEU to construct a buffer against the uncertainty in the market (Chenhall, 2003). It is said that in this way there is found a fit or match with the environment which is expected to lead to improved performance. Thus, it is argued here that research on the effects of CAC is too limited when only concentrating on the direct effect and paying no attention on the effects of PSC and PEU.

In this study, CAC is not specified as an implementation or an extent of use of any particular CAS (such as activity-based costing (ABC)) but as a general long-term evolutionary CAC. In this way, the study provides us with a more general framework than most previous studies. The financial performance of the firm is measured by profitability and growth one and two years after the survey period to take account of lagged effects and to avoid the bidirectional relationship between CAC and performance. It will be shown that CAC has a positive direct effect on financial performance but a strong negative indirect effect through PSC. These positive and negative effects largely offset each other leading to an existence of a productivity paradox and suggesting reasons for mixed results in previous CAC studies.

2. Research hypotheses

Fig. 1 shows the research model of the study. It is based on five research hypotheses about the influence of CAC on the financial performance of the firm. It is proposed that both CAC (H_1) and PSC (H_2) have a significant direct or main effect on performance. The research model also assumes that there is a direct link from CAC to PSC (H_3) showing that PSC as a mediator mediates the influence of CAC on performance. The research model thus emphasizes the importance of taking account of indirect effects of CAC in addition to direct effects, in order to assess the total effect of CAC. It is also assumed that the influence of both CAC (H_4) and PSC (H_5) on performance is moderated by PEU. PEU is an important variable to create a fit between MAS and environment. MAS are used as a buffer against uncertainty and therefore the influence of MAC depends on the degree of PEU. These research hypotheses are discussed in the following text in detail.

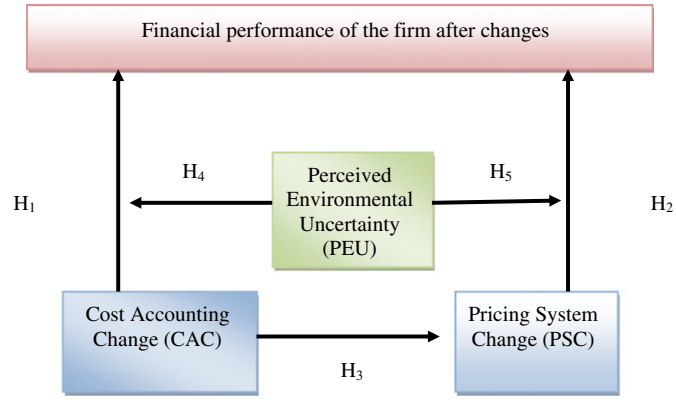

Fig. 1. The research model of the study.

2.1. Cost accounting change (CAC)

Cost is usually defined as a resource sacrificed to achieve a specific objective, usually expressed in monetary terms (Horngren, Foster, & Datar, 2000: 28). The purpose of cost accounting (CA) is to provide key cost information to managers for their decision making. It provides information for both management accounting and financial accounting. In general, the objective of CA is to act as a decision-support system for management to improve performance. In manufacturing firms, CA provides information for achieving and sustaining a competitive advantage through manufacturing excellence which requires attention to all aspects of performance (Turney, 1989). Thus, CAC is expected to result as a more efficient use of resources and better information for decision-making assisting in this way firms to achieve a better cost-efficiency, competitiveness, and overall performance in their business activities (Gosselin, 1997; Kaplan & Cooper, 1998). Especially in the context of activity-based costing (ABC), the potential influences of CAC are widely discussed and accepted (Gosselin, 1997). However, there is found an ABC paradox, since only a part of firms have adopted it, in spite of demonstrated positive influences. In addition, empirical evidence on the influence of CAC on performance is conflicting (Gosselin, 1997; Jänkälä & Silvola, 2012; Kennedy & Affleck-Graves, 2001; Maiga & Jacobs, 2008). These conflicting results may be due to the use of different measures for performance, different models and control variables, and inability to assess lagging effects. In general, the literature however suggests that CAC is expected to lead to increases in sales and decreases in cost implying improvement of performance in terms of growth and profitability (Kennedy & Affleck-Graves, 2001). Thus, the following research hypothesis will be presented:

H1. There is a positive association between CAC and financial performance.

2.2. Pricing system change (PSC)

Price is one of the four key elements of traditional product marketing mix (price, product, promotion, and place) but the only element that generates revenues (McCarthy, 1975). The four elements form a planned mix of the controllable elements of marketing plan. Pricing is one of the most important decisions made by management (Skouras et al., 2005). Pricing decisions are management decisions about what to charge for the products and services that the firm delivers. These