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ABSTRACT

The scope of this article is an inter-industry study of the Swedish Wood Manufacturing Sector (WMS), examined from the perspective of the Structure-Conduct-Performance (SCP) paradigm in the theoretical field of Industrial Organization. The four research questions are: (1) identify the industries within the sector, (2) construct a contextually adapted SCP model and form the basis for hypotheses of relationships between the different variables in the model, (3) establish quantitative correlations between the variables, and finally (4) present a basically qualitative, explanatory interpretive analysis.

The empirical investigation is a total population study of 311 firms. Nine industries are identified, and an SCP model is presented including four explanatory variables – exposure to international competition, value-added scope, domestic demand growth potential and (domestic industry) seller concentration – and two performance variables – industry profitability (ROA) and industry growth.

The combined qualitative and quantitative explanatory analysis identifies some important relationships in the SCP model. The most prominent findings are the strong negative relationships between exposure to international competition and industry profitability and industry growth. Another finding is that strong positive relationships are found between the degree of value-added scope and industry profitability and industry growth.

Introduction

The question of how to explain performance differences between industries is at the forefront of this article. With its roots in micro-economics and policies related to American antitrust legislation, Industrial Organization (IO) theory has tried to shed light on this issue since the middle of the last century (cf. Bain 1959, Scherer 1970). Over the years, the Structure-Conduct-Performance (SCP) paradigm has been applied in numerous studies of specific industries (Cool and Schendel 1987, McGee 2003). The SCP paradigm can be characterized as a basically deterministic theory, where in its original form, a specific market structure leads to specific market conduct, which in turn leads to specific industry performance. The deterministic logic is somewhat loosened up by acknowledging the feed-back loops between performance, conduct, structure (and basic conditions). This basically one-way-cause–effect logic has been questioned and has over the years been made more two-way interactive (Setiawan *et al.* 2013). Despite its more than 70-year history, the IO approach is still relevant within the research community and is often used when addressing micro-economic-related research issues at industry and inter-industry levels (cf. Setiawan *et al.* 2013, Mirzaei and Moore 2014). However, the strategic management-oriented branch of IO has, since the 90s, been succeeded by the more firm-level-oriented, resource-based paradigm, addressing more firm-specific strategic issues regarding sustainable competitive advantage (cf. McGee 2003, Leask and Parker 2006).

The empirical context of this article is the Swedish Wood Manufacturing Sector (WMS), a heterogeneous sector including about ten industries that are both different from each other and at the same time similar, for instance, they share the same end-customer sectors, the same supply and value chains, and the same domestic construction regulations. Most so called second-order wooden products from Swedish WMS end up in the construction industry (Nord and Brege 2014). Products range from comparatively low value-added products, such as cross-laminated timber and panels, to high value-added products, such as prefabricated elements for housing construction and kitchen and bathroom interiors.

Aim of the study

The overall aim of this study was to conduct an SCP analysis of the different industries within Swedish WMS. Choosing Swedish WMS as an empirical context was motivated by three issues. Firstly, Swedish WMS is interesting from a theoretical perspective because of similarities among industries

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within the same sector, which implies that some variables within the SCP paradigm can be held constant, which in turn enables the analysis to focus on those comparatively fewer variables that make up the differences. Secondly, Swedish WMS is of interest for the sawmill industry and policymakers from a more industrial viewpoint since the sector includes many of the most important, so called secondary wood industries (cf. Buehlmann and Schuler 2013, Pahkasalo *et al.* 2013). Thirdly, the study of Swedish WMS spans a 20-year period, which meets the theoretical demand for covering longer time periods (cf. Khan and Hanif 2019) when conducting SCP studies.

The overall aim of the study can be broken down into four research questions:

(1) What industries are identified in the break-down of Swedish WMS?
(2) What are the most empirically and theoretically appropriate variables to be included in an SCP model adapted to the Swedish WMS context? What theoretically grounded hypotheses on correlations between different variables can be formulated?
(3) Are there any differences in performance among industries, and if so, how do these differences quantitatively correlate with the structure, conduct, and basic conditions variables in the model?
(4) What cause–effect relationships between structure, conduct, and basic conditions on the one hand and performance on the other stand out?

The SCP paradigm – a brief theoretical framing

Scherer and Ross (1990) present an extended SCP model with five conceptual cornerstones – basic conditions, market structure, market conduct and performance, and public policy. Basic conditions with different characteristics from the demand and supply sides form the starting point of this fundamentally cause–effect model, e.g. price elasticity, substitutes, and demand growth rate from the demand side and raw material, technology, and product durability from the supply side. Basic conditions directly affect market structure, which in turn is built on variables, such as the number of sellers and buyers, product differentiation, barriers to entry, cost structures, vertical integration, and diversification. Market structure, in a next step, affects conduct in the market, such as pricing behaviour, product strategy and advertising, research and innovation, plant investments, and legal tactics. Conduct, in another step, affects industry performance both in financial and in societal welfare terms, such as production and allocative efficiency, full employment, and also profitability (return on assets, ROA, or return on equity, ROE). Public policy is the fifth conceptual cornerstone of the extended framework that directly affects market structure and conduct via taxes and subsidies, international trade rules, price controls, antitrust legislation and information provision (cf. Boyer *et al.* 2017). The model also includes feedback loops between performance, conduct, structure, and basic conditions. The one-way deterministic nature of the

original model has been continuously questioned over the years (Setiawan *et al.* 2013), and more advanced statistical models have paved the way for more complex, two-way quantitative analysis.

SCP research covers a broad number of studies that theoretically explore the relationships between different types of explanatory variables and different types of performance variables. A very broad empirical context has also been covered. Examples of structure and conduct variables not mentioned above are the number of patents, the minimum efficient scale (MES), the Lerner index (difference between market price and marginal cost), seller concentration (e.g. the Hirschman-Herfindahl index, the m-firm concentration ratio), and price rigidity (cf. Caves and Porter 1980, Caves *et al.* 1991, Panagiotou 2006, Darmon *et al.* 2013, Setiawan *et al.* 2013, Mirzaei and Moore 2014).

Matererials and method

The research design chosen was, at the core, a traditional, quantitative IO approach to identifying variables and quantitatively analysing relationships between those variables. Two variables selected were not ´main stream´ variables; one was revenue growth, which in this study was classified as a performance variable instead of a basic conditions variable, and the other was the use of the concept of value-added scope, a theoretical construct most often found in customer-focused value-creation research (cf. Grönroos 2008, 2011).

To fulfil the aim of the study, the research design had to be complemented from a qualitative approach. Firstly, the choice of WMS contextually adapted explanatory variables was primarily qualitative in nature. The selection process was built on a re-analysis of numerous case studies and two surveys of which variables drive performance (growth and profitability). Secondly, the identification of the variable 'value-added scope' started with a qualitative description and analysis and was put through a quantifying process. The final step in quantifying the two other explanatory variables was also the result of a process of weighting quantitative sub-variables into one figure, a process partly based on qualitative reasoning (see Appendix C). Thirdly, the explanatory analysis was built on the results from the correlation analysis and was qualitative in nature (cf. Yin 1994). In summary, this type of research design belongs to the category of mixed methodology designs and more specifically to that sort of research design that Creswell and Creswell (2018) call the 'explanatory sequential mixed method'. This type of design starts with a quantitative study and increases the explanatory power of a cause–effect reasoning with complementing qualitative description and analysis.

At the centre of the empirical dataset is a quantitative database of financial data collected from annual reports during the time period 2004–2017. The database covers all domestic (Swedish) wood manufacturing firms that deliver to the construction sector together with wood packaging firms that deliver to a broader customer base. Excluded from the population are three categories: (1) firms in the (wooden) furniture industry, (2) firms with products labelled

as 'other wooden products' in public statistics (which is a diversified number of firms that mainly deliver to customers outside the construction industry), and (3) so called micro-firms that employ fewer than ten people.

The database consists of data from the annual reports of 311 firms (and on a handful of occasions not publicly available, disaggregated data collected directly from the firms). The time period, 2004–2017, was sufficient to cover more than one international business cycle, including the financial crisis of 2008/09. The database has been updated, on average, every second year in a process comparing firms listed in public statistics with the membership directories of the two major industry organizations, Swedish Wood and the Swedish Federation of Wood and Furniture Industry. In addition, numerous studies of firm-specific websites were carried out. This database is administered by the Department of Management and Technology at Linköping University. This study also includes one piece of quantitative empirical data from a survey conducted in 2014 (Nord and Brege 2014), which gives a clearer picture of price competition from low-cost countries (see Appendix C). The survey was sent to a population of 330 firms, and the response rate for this specific question was 14.5%.

The qualitative data used as a complement to the quantitative approach were found in case studies and two surveys that were re-analysed with a special focus on identifying variables driving or interacting with industry growth and industry profitability. A significant number of case studies of specific wood manufacturing firms have been reported in several dissertations, articles, and other reports. Over a fifteen-year period, some 45 cases involving 37 firms in the sector were published (Fransson 2005, Nordigården 2007, Nord 2005, 2008, Brege and Kollberg 2008, Collin and Eckerby 2008, Elmhester 2008, Bildsten 2011, Guan 2013, Höök et al. 2015, Lessing and Brege 2015, 2018, Semnani Kenlind 2020). Nine industries in the WMS were identified and all industries except one are represented among the case studies. The industry missing, the packaging industry, was covered by a special study including a survey (Nord and Brege 2014b). A more detailed presentation of the industry positioning of the 47 cases is presented in Appendix E. The two surveys are presented in Brege et al. (2003) and Nord and Brege (2014).

A stepwise SCP analytical process

The 'typical' IO study framed within the SCP paradigm follows a fundamentally quantitative approach starting with the identification of suitable variables to include in the study (a post-positivistic approach according to Cresswell and Cresswell 2018). The choice of variables is primarily a theoretical, deductive process. In a second step, after the SCP dataset has been established, the analysis continues with a multivariate analysis estimating correlations and cause–effect relationships (the latter mostly with regression analysis and structural equation models). IO studies are often inter-industry and include a large number of industries (Cool and Schendel 1987, Scherer and Ross 1990, Leask and Parker 2006), and SCP models focus on a few explanatory and performance variables. This was especially true in the early studies. Simultaneous relationships between a larger number of variables within the SCP framework were in focus (cf. Setiawan et al. 2013) in later studies with the use of more advanced statistical models.

This study, in line with later development, presents an extended SCP model that includes more than one or two variables for market structure, market conduct, and basic conditions (also called independent or explanatory variables). These variables were selected from among 'theoretically suitable' variables that are key to pinpointing inter-industry differences in the empirical context. Some of these variables were made quantitative through a qualitative estimation process. The explanatory phase of the SCP analysis was of a qualitative nature; the quantitative correlations were built into a broader qualitative analysis of cause and effect (cf. Yin 1994).

Two out of four explanatory variables were based on different quantitative data that were combined to give one figure per industry and variable. This weighting was partly based on qualitative reasoning. The process of quantifying followed established procedures for putting together empirical documentation of the different industries. Two or three of the authors went through the material independently and set quantitative figures and then discussed and refined these figures (see e.g. Ragin 2000, Woodside 2013, Nenonen et al. 2019).

The variables were presented along an interval scale. The quantitative analysis stopped at the level of estimating correlations. This was mainly because some of the main variables had a skewed distribution, and the analysis had to rely on Spearman's rank correlation. Spearman's rank correlation is a nonparametric measure between the rankings of two variables and describes how well the relationships between the two variables can be described as a monotonic function (Bryman and Bell 1995). Ending the quantitative analysis with Spearman's rank correlation implies that the following explanatory analysis needed to be grounded in qualitative reasoning, with the objective of giving a broader framing (interpretation) of the quantitative results (cf. Yin 1994, Bryman and Bell 1995, Cresswell and Cresswell 2018).

The overall ambition was to validate the data and empirically based analysis using methodological triangulation based on different empirical sources: from the database of 311 firms, from Statistics Sweden, from 42 case studies based on interviews and secondary data, from two surveys, and from additional secondary data not included in the case studies and surveys (cf. Bryman and Bell 1995). The issue of statistical significance of inter-industry differences in structure, conduct, and performance is a non-issue since this is a total population study (see, for instance, Aaker et al. 1995).

Results and analysis

A breakdown of Swedish WMS into industries

The definition of the concept of industry must first be explained. In line with the definition guiding the

categorization in national, public statistics, an industry comprises those firms in a country that deliver the same offering, i.e. a product or a service. This offering is called a primary product or primary production (cf. Stiles 1992). The industry categorization in Swedish WMS showed seven of the nine industries had a dominant primary product: small houses, windows, doors, etc. The other two industries, which were other joineries and components, showed a heterogeneity of products. The nine industries identified were small houses, multistorey and other buildings, doors, windows, flooring, kitchen and bath interiors, other (small-scale) joineries, components, and packaging. The breakdown process, starting with the categorization in public statistics, is described in-depth in Appendix A, and the size of Swedish WMS and its industries is described in Appendix B.

There was no competition between the industries in most cases. However, there were two exceptions. These were between firms in small houses and multistorey and other buildings industries. There was also certain competition between other joinery firms and the industrialized and more large-scale doors, windows, flooring, kitchen and bath interior firms.

Eight industries were labelled as mature. Only one industry, the multistorey and other buildings industry, was in a growth phase because building with wood in the multistorey segment was permitted only nine years before the period of analysis began. With two exceptions, the industries were labelled as 'domestic industries' – with more than 80% of revenue coming from domestic customers, and with limited imports to Sweden. The two industries most exposed to international competition were the flooring and components industries. The door industry also had comparatively high export and import figures, but when corrected for internal sales within corporations, this industry fit into the seven industries forming the domestic group.

A contextually adapted SCP model and generation of hypotheses

Four theoretically viable, explanatory variables stood out in our case studies, surveys and other secondary data as discriminating between the nine industries, and which also could be assessed qualitatively and quantitatively.

(1) Exposure to international competition in the domestic market and in export markets, with a particular emphasis on low-cost competition (see Appendix C).
(2) Value-added scope in the offerings including the present level of added value (mainly defined by the business model: the static perspective) and the value-added growth during the period (business model change: the dynamic perspective). The bigger the value-added scope, the smaller the percentage of the cost of wooden raw materials compared to the total cost (see Appendix C).
(3) Seller concentration within the industry. An industry 5-firm concentration ratio was chosen, i.e. the sum of revenue from the five biggest firms in relation to the

size of apparent consumption on the domestic market (production + import – exports) (see Appendix B).
(4) Domestic demand growth potential derived from the specific mix of customer and end-user segments for each industry. This comparison was made between the seven industries that were labelled as domestic industries (see Appendix C).

A fifth explanatory variable was considered, but it was rejected after some discussion. The variable up for discussion was the average firm size per industry (based on revenue or number of employees). The reason for this rejection was that the industries differed in terms of which business models were dominant, and consequently, the relationship between firm size and specific business model differed among the industries, e.g. a comparison of business models and size of industrialized small house producers and suppliers of glulam. There was also an overall inconclusiveness among the SCP studies, i.e. whether there was a stable and significant relationship between firm size and industry performance (Scherer and Ross 1990)

The performance variables chosen were industry growth and industry profitability (return on assets, ROA). Profitability is an oft-used variable in SCP studies (Keeton and Matsumaga 1985), while industry growth is considered to be a basic condition. The reason to choose growth as a performance variable (a dependent variable) is its widespread use within the field of entrepreneurship and SME growth-related research (start-ups) (cf. Storey and Greene 2010, Uddenberg 2015).

Hypotheses
Exposure to international competition vs industry performance. There is a vast amount of research on international business and marketing linking internationalization to performance (see Bausch and Krist 2007, for a meta-analysis). There is no consensus on the form and direction of the relationship between export shares versus growth and profitability (Bausch and Krist 2007, Elango and Sethi 2007, Hosseini *et al*. 2018). As a consequence of this lack of universal relationships, researchers have been forced to look for other more contextually adapted answers, for example, in terms of specific industry and domestic origins. In our case, studying Swedish WMS, which among most of its industries is a sheltered, domestic market, we could rely on a study that proved a negative correlation between internationalization and industry performance (Hosseini *et al*. 2018). Therefore, the following hypotheses were formulated:

> H1a. There is a strong negative correlation between exposure to international competition and industry growth.

> H1b. There is a strong negative correlation between exposure to international competition and industry profitability.

Value-added scope vs industry performance. The relationship between value-added strategies and value creation and firm and industry performance is a hot topic that has been addressed from many theoretical and contextual perspectives. Research on servitization, i.e. moving from products towards

'service-embedded' offerings (Levitt 1980, Anderson and Narus 1995, Oliva and Kallenberg 2003, Reinartz and Ulaga 2008, Kowalkowski and Ulaga 2017) points in different directions regarding the relationship between increased value added versus profitability. In several cases increased servitization is not reaching its profitability targets and are even unprofitable. This is known as the 'service paradox' (Gebauer *et al.* 2005, Fang *et al.* 2008, Visnijic Kastalli and Van Looy 2013, Lee *et al.* 2016). But increased servitization, properly executed, can also lead to increased profitability (Kowalkowski and Ulaga 2017). With an IO-perspective, an industry with a higher value-added scope meets more opportunities for product differentiation (Scherer and Ross 1990) and as consequence a potential for higher profitability.

What about the relationship between value-added strategies and growth? This relationship should be more straightforward; in most cases, greater added value means higher revenues (cf. Sawhney *et al.* 2004, Kowalkowski and Ulaga 2017). If we look at development over a longer time period, e.g. the fourteen years of our study, there is a good chance that in some industries an increase in the value-added scope during this period will account for a fairly large portion of revenue growth. This pros-and-cons reasoning led to the following two hypotheses:

> H2a. There is a strong positive correlation between value-added scope and industry growth.

> H2b. There is a strong positive correlation between value-added scope and industry profitability.

Seller concentration vs industry performance.

The question of the relationship between seller concentration and performance is a classical one (cf. Bain 1951) with roots in oligopoly theory (cf. Stiegler 1964, Peltzman 1977). There are numerous ways to measure market concentration. Perhaps the most widely used is the m-firm concentration ratio where the combined turnover of dominant firms is compared with the total turnover of an industry (cf. Caves and Porter 1980, Delorme *et al.* 2002). Classical oligopoly theories predict that a market structure with few dominant competitors drives towards higher price and profit levels and maybe also lower levels of supply (cf. Scherer and Ross 1990, Sathye and Sathye 2004). Seller concentration can be positive for sellers but not so positive or even negative for customers and society at large. However, there are some researchers who view an oligopoly situation with few and strong competitors as positive. This type of situation would occur in a more dynamic setting that would promote innovation and industry growth (cf. Galbraith 1967). Therefore, we propose the following two hypotheses:

> H3a. There is a strong positive correlation between seller concentration and industry growth among domestic industries.

> H3b. There is a strong positive correlation between seller concentration and industry profitability among domestic industries.

Domestic demand growth potential vs industry performance.

From the perspective of Porter's Five Forces framework (Porter 1980), deductive theoretical reasoning indicates that high demand growth potential is positively related to high performance in terms of growth and profitability when all other factors are equal. However, this is seldom the case in 'real life'; there can be numerous obstacles that obscure this relationship, e.g. fierce competition from new entrants or substitutes, or increased bargaining power from customers that primarily affects profitability levels. One specific obstacle we found could be that domestic demand growth potential does not explain much when industries with large export shares are examined. Therefore, only domestic industries were considered in our study when the following two hypotheses were formulated:

> H4a. There is a strong positive correlation between domestic demand growth potential and industry growth among domestic industries.

> H4b. There is a strong positive correlation between domestic demand growth potential and industry profitability among domestic industries.

Growth vs profitability.

Strategic management theory – not the least regarding SMEs – indicates the potential conflict between firm growth and firm profitability and the need for balance (Storey and Green 2010). In some contexts, this conflict is more intense, e.g. in start-up situations or in problematic downturns in the business cycle. Should we aim for growth or profitability (Delmar *et al.* 2003)? Sometimes, or very often, this question boils down to the risk propensity of owners and management. However, it is also important to remember that growth and profitability go hand in hand; growth can help profitability and vice versa. Empirical studies of SMEs are inconclusive on whether there is a significant correlation or not between growth and profitability (Storey and Green 2010, Brännback *et al.* 2014). Nevertheless, since Swedish WMS is a mature and mainly domestic sector, the hypothesis predicts a positive and significant correlation.

> H5. There is a strong positive correlation between industry growth and industry profitability

Quantitative correlation analysis

Spearmańs rank-correlation analysis (see Table 1 below) supported all hypotheses except one.

Hypothesis H1a about a strong negative correlation between exposure to international competition and industry growth was significant, −.826**(.006), and hypothesis H1b about a strong negative correlation between exposure to international competition and industry profitability was also significant, −.707*(.033).

Hypothesis H2a about a strong positive correlation between value-added scope and industry growth was significant, .821**(.007), and hypothesis H2b about a strong positive correlation between value-added scope and profitability was also significant, .718*(.029).

Hypothesis H3a about a strong positive correlation between seller concentration on the domestic market and industry growth was significant for the seven domestic

Table 1. Spearmańs rank correlations (the bold figures represent a population of the seven domestic industries).

	Profitability	Growth	International competition	Value-added scope	Seller concentration	Domestic demand growth potential
Profitability	1					
Growth	.917** (.001)	1				
International competition	−.707* (.033)	−.826** (.006)	1			
Value-added scope	.718* (.029)	.821** (.007)	−.830** (.006)	1		
Seller concentration	**.929**** **(.003)**	**.821*** **(.023)**		.519** (.000)	1	
Domestic demand growth potential		**.815*** **(.025)**				1

industries, .821*(.023), and hypothesis H3b about a strong positive correlation between seller concentration on the domestic market and industry profitability was also significant for the seven domestic industries, .929**(.003).

Hypothesis H4a about a strong positive correlation between domestic demand growth potential and industry growth was significant for the seven domestic industries, .815*(.025), but hypothesis H4b about a strong positive correlation between domestic (end-user) demand growth potential and industry profitability was not significant for the seven domestic industries.

Hypothesis H5 about a strong positive correlation between industry growth and industry profitability was significant .917**(.001).

Outside the scope of the hypotheses derived from our empirical and theoretical setting, one interesting strong negative correlation appeared between two explanatory variables. This was between exposure to international competition and value-added scope, −.830**(.006). Another correlation, in this case a positive one, was found between value-added scope and seller concentration on the domestic market (among all nine industries), .519**(000).

Qualitatively oriented cause–effect interpretations

The final analytical step was to go from quantitative correlations to a qualitative discussion of cause–effect relationships using the SCP model. The major question is whether or not a high and significant correlation score is an indicator of an underlying cause–effect relationship.

Cause–effect relationship interpretations related to industry profitability

The Spearman's rank correlation between exposure to international competition (especially low-cost competition) and industry profitability (ROA) was −.707*, which is a strong correlation. The analysis of case studies and the two surveys especially showed that firms from the most internationally exposed industries – the flooring industry and component industry – suffered from a tougher competition. It is clear that price competition directly affected profitability in these industries. Another conclusion is that the seven domestic industries lacked this type of widespread international low-cost competition, which would be devastating if spread to the entire market, even for strong market leaders. A third conclusion is

that exports to foreign markets was the biggest strain on profitability among the most internationally exposed industries.

The Spearman's rank correlation between value-added scope and industry profitability was .718*, which is a strong correlation. Two parallel potential paths explained this relationship between the individual industries in the case studies. One path is that increased value-added scope is vital to erecting barriers to entry for low-price competition to prevent the type of strong competition that permeates the entire market (Spearman's rank correlation between value-added scope and exposure to international competition was −.830**). Exposure to international competition is an intermediate variable in the first path. The second path is the direct cause–effect relationship between value-added scope and industry profitability, where a bigger scope leads to higher profitability. Especially for the domestic industries struggling with domestic competition, this path to increased profitability finds support from our case studies. With a higher degree of value-added scope comes an increase in the potential for differentiation from competitors and value creation together with customers.

The Spearman's rank correlation between seller concentration (among domestic industries) and industry profitability was .929**, which is a very strong correlation. Support for the cause–effect connection was found in the individual industries in the case studies. A high seller-concentration ratio can be of importance for strong bargaining power and maintaining profitability for domestic industries with tough price negotiations with large retail chains as customers, such as the door and window and, partly, kitchen and bath interiors industries. High seller concentration has also been positive for profitability in the multistorey and other buildings industry.

The Spearman's rank correlation between domestic growth potential among the domestic industries and industry profitability was low and non-significant. Going to the case studies and looking at the industries individually, there are some indications that a cause–effect relationship may exist. Industries that blurred this relationship were those with low demand growth potential and high profitability: the small houses industry, the joinery industry, and the packaging industry.

Cause–effect relationship interpretations related to industry growth

The Spearman's rank correlation between domestic demand potential for the seven domestic industries and industry

growth was .815*, which is a strong correlation. Going to the case studies and looking at the industries individually, there is support for the existence of a cause–effect relationship. The 'winners' in Swedish WMS are those industries that are domestic and can rely on the new-construction markets and the rebuild and repair market.

The Spearman's rank correlation between exposure to international competition (especially low-cost competition) and industry growth was −.826**, which is a strong correlation. The case studies verify that a cause–effect relationship is involved. Exports to foreign markets in particular have held back growth, as most clearly seen in the flooring and components industries.

The Spearman's rank correlation between value-added scope and industry growth was .821**, which is a strong correlation. Going to the case studies and looking at the industries individually, there is support for the existence of a cause–effect relationship. But this conclusion should be interpreted with some caution. Having a high value-added scope is not in itself a guarantee of high growth, but our case studies indicate that a high value-added scope also has the potential for a greater increase in value added (this statement could be debated on a more general level).

The Spearman's rank correlation between seller concentration among the seven domestic industries and industry growth was .821*, which is a strong correlation. Going to the case studies and looking at the domestic industries individually, there is support that a cause–effect relationship exists. Large domestic firms with higher bargaining power can, for example, more efficiently hold back imports and be more successful in competition with substitutes.

The Spearman's rank correlation between domestic demand growth potential among the seven domestic industries and industry growth was .815*, which is a strong correlation. Going to the case studies and looking at the domestic industries individually, there is support that a cause–effect relationship exists. Especially those industries with large shares of repair and rebuild and new construction of multistorey houses and other buildings in their customer/end-user segment mix were at an advantage.

Industry profitability vs industry growth

In this study of, with one exception, mature businesses, the overall conclusion is that there is a positive relationship between industry profitability and industry growth. The

Spearman's rank correlation between industry profitability and industry growth was .917**, which is very strong. The case studies and examination of the industries individually support this conclusion.

Final comments

Empirical findings at the individual industry level

A summing up of the SCP model industry by industry could give a more holistic picture and add to the analysis and interpretation of cause–effect relationships.

The industry with by far the highest industry growth was the multistorey and other buildings industry, 288% growth from 2004 up to 2017. The profitability level of this industry was also among the highest of the nine industries, 11.0% ROA. The multistorey and other buildings industry showed the highest domestic demand growth potential, 128% during the period of analysis; the greatest value-added scope, the score 10; the lowest exposure to international competition, the score 1, and a comparatively high seller concentration, 61% of the revenues from the five largest firms in comparison with apparent consumption Table 2.

The kitchen and bathroom interiors industry and the window industry were the most successful in performance of the mature industries. They had the highest profitability, 11.0% and 12.3% ROA respectively, and the highest industry growth, 100% and 81% respectively. These industries were also similar in terms of large value-added scope, the score 8 for both industries; low exposure to international competition, the score 2 for both industries; relatively high domestic demand potential growth, 67% for both industries; and high seller concentration, 69% and 64% respectively.

The small houses industry also scored high on industry profitability and industry growth, 9,7% and 76% respectively. The value-added scope was the highest for this industry, the score 10; exposure to international competition was the lowest, the score 1; domestic demand growth potential was the second lowest, 22%,; and seller concentration was lower than the multistorey and other buildings industry, 44%.

The door industry was close to the small houses industry in performance. Profitability was in the lower area of 10 percent, 9.5% ROA; and industry growth was also lower, 60%, in comparison with the small houses industry. The value-added scope of the door industry was lower than the industries with better performance, the score 5; and exposure to

Table 2. A descriptive presentation of Swedish WMS at the industry level.

Industry	Profitability (ROA average 2004–2017)	Growth (%; 2017/2004)	International competition (quantified variable, see Appendix)	Value-added Scope (quantified variable, see Appendix)	Domestic demand pot. growth (%, mix of end-user segments, see Appendix)	Seller concentration (%; 5 largest firms/apparent consumption)
Small houses	9.7	76	1	10	22	44
Multistorey	11.0	288	1	10	128	61
Doors	9.5	60	5	5	67	47
Windows	12.3	81	2	8	67	64
Flooring	−2.3	8	10	5		60
Kitchen/bath	11.4	100	2	8	67	69
Joinery	8.0	42	2	5	52	18
Components	2.7	30	8	2		44
Packaging	9.0	38	3	4	−4	36

international competition was higher, the score 5. Seller concentration was lower, 47%, than the industries with higher performance, the small houses industry excluded. The domestic demand growth potential of this industry, 67%, was equal to the kitchen and bathroom interiors industry and the windows industry.

Two industries – the joinery industry and the packaging industry – showed relatively strong profitability, 8.0% and 9.0% ROA respectively; but weaker industry growth, 42% and 38% respectively. Value-added scope was in the middle, the scores 5 and 4 respectively; exposure to international competition was low, the scores 2 and 3 respectively; domestic demand growth potential was at the lower end, 52% and −4%; and seller concentration was also comparatively low, 18% and 36% respectively.

The components industry and the flooring industry were at the bottom in terms of performance. Both profitability, 2.7% and −2.3% respectively and industry growth, 30% and 8% respectively, were low comparatively and in absolute terms. The value-added scope of these industries differed; components had the lowest figure among the industries, the score 2, and the flooring industry was in the middle, the score 5. These industries share the highest exposure to international competition, the scores 8 and 10 respectively.

Concluding remarks

The importance of competition to hold back extraordinary profit levels is at the very core of IO. The degree of competition in the second-order wooden industry is perhaps the most important factor to explain differences in performance among industries and strategic groups within industries (cf. Wan and Bullard 2008, 2009, Ziaie *et al*. 2011).

Higher levels of value-added scope open up for higher industry profitability along two very connected trajectories. Higher levels of value-added scope increase the potential to differentiate a firm from competitors, which is the traditional SCP viewpoint (cf. Scherer and Ross 1990). However, higher levels of value-added scope also open up for greater customer co-creation and, in the end, greater customer value-in-use (cf. Grönroos 2011), an aspect not, or seldom, included in the SCP paradigm. Research in the second-order wooden industry indicates that strategies of differentiation and innovation perform better than cost leadership strategies (Nybakk *et al*. 2011, Ziaie *et al*. 2011, Buelman and Schuler 2013).

Finally, a word about empirical research design and need for further studies within the SCP paradigm. Many of the studies were, on one hand, very advanced, using, quantitative multivariate analysis, but on the other hand, they seemed to lack deeper qualitative knowledge at the individual firm level (even among the most dominant firms). Therefore, one strategy for future research would be to combine a quantitative and qualitative approach under the theoretical SCP umbrella, to expand the methodology perspective to a mixed methods research design. This increase in qualitative knowledge would help in the interpretation of intricate quantitative cause–effect analyses (cf. Yin 1994, Bryman and Bell 1995, Cresswell and Cresswell 2018).

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