Evolving Economic Landscapes

Institutions and localized economies in time and space

Pernilla S. Rafiqui

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To Sofia

Preface

This report is the result of a research project carried out in part at the Centre of International Economics and Geography at the Economic Research Institute and in part at the Department of Economics, both at the Stockholm School of Economics.

The volume is submitted as a doctoral thesis at the Stockholm School of Economics. In line with common practice at the Economic Research Institute, the author has been free to conduct and present her research in her own way, as an expression of her own ideas.

The Institute is grateful for the financial support that has allowed the undertaking and completion of the project.

Filip Wijkström
Director of the Economic Research Institute
Stockholm School of Economics

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International Economics and
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Author preface and acknowledgements

'This, my dear ladies,' said the entrepreneur my colleague and I was interviewing, 'is how we protect our businesses interests and valuables in this country' as he was pulling out a loaded rifle from the top drawer of the desk he was sitting behind. The location was the Republic of Moldova and the year 1996. Fresh out of my undergraduate studies at Stockholm School of Economics (SSE), I was conducting a pilot study for a UNDP program in this, at the time, newly independent nation, which for decades had been part of the Soviet Union. Our task was to survey the private sector in two districts and to give advice to the local authorities on their new supporting (as opposed to controlling) role vis-à-vis small and medium scale firms in their area. Not only was the private sector a new feature in the Moldovan economic landscape, but small scale enterprises had previously been looked upon with great suspicion – if allowed to exist at all. Needless to say, these were times of big changes for all parties involved.

While conducting the study we came to learn that loaded guns, sometimes accompanied by high fences and large watchdogs, were not the only strategies used by local entrepreneurs to protect their interests. Considerable resources in terms of money and time were invested in networking and being on a good footing with representatives of the local authorities, who, after all, were the ones to grant the permits and licenses needed to run a businesses, as well as with the local mafia. And we soon came to realize that produced goods or artifacts were perhaps not the most important assets to be protected by these entrepreneurs – information was. As keen students of so-called "industrial districts" in the regions known as Third Italy, and influenced by the associated notions of flexible specialization and "coopetition", this proved to be somewhat of a challenge to our thinking.

The research we relied upon concerned geographical areas in which small firms within the same or connected industries competed successfully (at the national or international levels) by cooperating as well as competing among themselves locally (hence the expression "coopetition"). This was usually done by sharing knowledge and information – sometimes even valuable such – in a setting in which local authorities acted as something resembling brokers. Local authorities would set up organizations, networks or events that would help the flow of information among firms in the district, and also between the district and the outside world. Essentially they helped to alleviate the isolation of small firms, which was seen as their main problem (rather than size *per se*). The message was that supportive local authorities could help aspiring entrepreneurs and small firms out of this isolation trap, and the literature had ample examples to be motivated by.

But what to do in a situation where information about products, investment and production capabilities was the last thing an entrepreneur would want to state to anyone, including the local authorities? Where the trust in the local authorities ability and willingness to support rather than to control their business was non-existing, and where the threats from organizations offering "protection" for a high fee was anything but imaginary? What to advise the local authorities then? We had to completely rethink our toolbox and aim of the study to adjust to a context that was far removed from any that we had encountered so far. Given that Moldova is still ranked as the poorest nation in Europe (in terms of human development and income), I can only reckon that our assessment of the complexity of the challenges facing the budding private sector was not too far off target. And that, unfortunately, our reports, although being enthusiastically received and discussed in Moldova at the time, had only limited, if any, impact on the economic development of the districts we visited.

The fieldwork in Moldova did have at least one long lasting consequence, however, and that is my own interest in the social context within which economic transactions take place and

economic decisions are made. This interest has only been deepened by work elsewhere that I have done since. Like their counterpart in other countries, Moldovan entrepreneurs took into account a whole set of considerations that on the first instance were not obvious to us. They even made decisions that on the surface would appear as irrational until more of the context in which they operated became illuminated. These simple observations gave birth to a multitude of questions of empirical, theoretical, and methodological nature that have beckoned me over the years. What are, for example, the analytical tools that are useful for assessing the context in which a development project is planted? What are the mechanisms that make certain programs work better in some locations than others? Why do some nations, or some areas or districts within the same national context, function differently? Why do some grow faster than others? Why are some countries or regions stuck? What are the concerns that people in different geographical, social and economic contexts take into account when making decisions? How to analytically filter out the constraints or guidelines that influence people's actually behavior from those that do not? And whose concerns will take prominence – in other words, who will set the agenda of change?

These questions are to a varying degree all reflected in this dissertation, even though they are too far reaching and broad to be properly answered in a single body of work like this. In fact they resemble a (perhaps life long) research theme rather than a well defined Ph.D. project. To that extent this dissertation is part of an ongoing intellectual process as much as a result of if.

To get this point has been a long and winding road, the obstacles at times seemingly un-mountable. One fundamental challenge was the initial attempt to combine economics with economic geography in its more traditional form. On the surface this might not seem difficult. In reality it amounted to engaging with two scientific traditions with at times rather diverging views of what constitutes the essence of the scientific endeavor. Economists are skilled in pealing off the layers of a research question until only its core elements and mechanisms remains. At the risk of sounding overly simplistic, one might say that they cherish simplicity in the sense of boiling down an issue to as few variables as possible and are on the look for the 'universal'. Geographers, on the other hand, are on the quest of what differentiates one place from another and thrive on ideas of complexity, interrelatedness and multiple levels of aggregation and analysis. To make a long story short, in the end I opted for traditional economic geography. This was not only because it is close to the issues I am interested in, but also because its eclectic nature gives a considerable degree of more freedom and scope to maneuver when exploring them. This is why the dissertation looks somewhat different from those usually presented at the Department of Economics at SSE; it contains three case studies and a conceptual article, and is void of any formal modeling. Yet my training in economics shines through in all the papers, and I would like to think that this is to their benefit.

Completing the dissertation would of course not have been possible without the help of numerous people. My advisor Professor Örjan Sjöberg has been instrumental to my academic development in so many ways. Not only did he see the geographer in me before I did so myself, his steadfast support and guidance – and amazing ability to see possibilities in everything – combined with his vast knowledge of anything from the various discourses within the discipline to the tiny city of…… well, you name it and he knows it (and has probably been there). Given the small size of our research group in geography at SSE, Örjan has at times been my only compass in the world of economic geography and has devoted a significant amount of time discussing my research and going over my drafts – for this I am deeply grateful. I am also indebted to Michael Gentile for introducing me to urban geography and offering the views of a human geographer, at a time when I was in need of widening my academic perspective. That it came with the discovery of the wonders of a well-made Italian espresso was an additional

benefit! In Martin Gustafson I found someone who is not only an economic geographer but has a keen interest in economics and is a very accomplished econometrician, and with whom I have thoroughly enjoyed discussing the nature of these fields, as well as the endeavor of writing a dissertation.

That discussion of course also took place with all the interesting, smart and fun Ph.D. colleagues that I have been fortunate to meet over the years, a special thank you to Malin, Katariina, Niclas, Jon Thor, Petra, Daniel, Nina, Kaj, Ingela, AnnaMaria, Therese, Andreas, Björn, Sophie, Kasper and Palle. Warm gratitude goes to Chloé who has been a source of inspiration and support and in the process has become one of my closest friends – thanks for giving me that kick in the butt whenever needed, and for sharing tips on anything from the secrets of game theory to how to put a crying baby to sleep at night. I am also indebted to Björn Wallace who generously let me use part of his office space that final day of the dead-line when, horror of all horrors, there was no electricity in my part of the corridor! Lilian Öberg, Rita Kirviharju, Carin Blanksvärd and Pirjo Furtenbach – thank you for helping with administrative practicalities whenever needed, and for offering encouraging words along the way. Working as a consultant for Gun Eriksson Skoog at Sida (the Swedish International Development Cooperation Agency) offered me numerous breaks from the dissertation work as well as an outlet for my interest in development, and I am grateful for these challenging but rewarding opportunities. A warm thank you also goes to my new colleagues at the Secretariat for Research Cooperation at Sida who have encouraged me to continue and not stumble on the finishing line, combined with a willingness to let me take time off in order to do so. You have contributed more than you know!

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On a more personal note, warm gratitude to my "old" undergrad friends from SSE for all the fun times we have had and continue to have: Sussa, Vicky, Angela, Carina, Anna, Lotta, and Pernilla. Equally warm gratitude is extended to my West African dance teachers, musicians and friends; Anki, Jenny, Jack, Jenny, My, and each and everyone who contribute to creating that magical space where joy, energy and laughter reigns. To my Ashtanga Vinysa Yoga teachers who, without knowing it, have been instrumental in helping me focus and finally finish this work; Petri, Frank, Lotta, Viveka, Hilda, Sofia and Penny. In many ways, this dissertation is a testament to the saying of the late Sri Pattabi Jois 'do you practice and all is coming'. I am indebted to my parents Per and Gertrud and my brother Joakim who have supported me in so many ways over the years, and to my husband Asim who has remained in Stockholm despite the challenge this foreign Nordic outpost has proved to be – without you none of this would have been possible. And finally, to my beloved daughter Sofia, who enriches my every day and who, despite being so young, is so patient – thank you. Now mummy will have more time to play.

Pernilla S. Rafiqui

Stockholm, May 2010

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PAPER 4
"Evolving economic landscapes: why new institutional economics matters for economic Geography," *Journal of Economic Geography* 9:3 (2009): 329-353.

> Every writer knows that the choice of a beginning for what he will write is crucial not only because it determines much of what follows but also because a work's beginning is, practically speaking, the main entrance to what it offers.
>
> *Edward Said (1997): 3*

Introduction

Contemporary economic geography has alternately been described as quarrelsome (Scott 2000) or restless and fast-moving, characterized by a self-chosen decentring and what appears to be ever shorter conceptual product cycles (Grabher 2009). Peck (2005) ascribes this to the quest of "the economic" in economic geography, a question raised by Amin and Thrift (2000) that concerns not only to focus on when conducting research in economic geography, but, importantly, what theories, models and practices to use when doing so.

The discussion is, at least partly, a response to the emergence of the "new economic geography" (or geographical economics) within economics. The early work by Krugman (1991a, b) had an immediate impact both on economic and human geography, but the ramifications were distinctly different within the two disciplines. Thus, while economics, and in particular economists specializing in international economics, trade theory and foreign direct investment, took the new ideas and modeling techniques to heart – resulting in a rapid expansion of the literature and an attempt to incorporate various aspects of the space economy – geography saw a more mixed reaction. While endorsed by quite a few economic geographers familiar with regional science, location theory and kindred parts of the field of traditional economic geography, many more – including a not insignificant number of geographers well versed in neoclassical economics – took a critical stance. For their part, Amin and Thrift (2000) suggested that economic geography ought to turn its back on mainstream (but not heterodox) economics entirely. Others thought differently. In a response, Yeung (2001) asked whether geographers (the lambs) needed to be afraid of the economists (the lions), in the end suggesting not necessarily. Rodrígues-Pose (2001) famously suggested that Amin and Thrift went too far, "killing economic geography with a 'cultural turn' overdose." The number of articles supporting either stance has multiplied since. This does not mean, however, that the quest for "the economic" has been settled within economic geography.

Interestingly, new and traditional economic geographers would agree that both history and contemporary contexts are important for economic outcomes. The basic model within geographical economics, the core-periphery model based on increasing returns and transportation costs, is one with multiple equilibria where small initial differences produce large differences in outcomes (e.g. Fujita *et al.* 1999, Krugman 2000). This underlines the importance of initial conditions and, if one may, the context within which economic processes are set and play themselves out across space.[1]

Traditional economic geographers have approached the issue of history and context somewhat differently. Amin and Thrift raised their question in the aftermath of the so-called cultural, relational and institutional "turns" that economic geography witnessed during the 1990s. These may be perceived as a reaction to not only economists' but also economic geographers' traditional focus on the "purely economic" of their subject, leading to a tendency of leaving out

[1] See Brakman *et al.* (2009) for a recent summary of extensions and modifications of the core-periphery model, and, for example, Fowler (2007, 2009) for work on addressing some of its key assumptions.

social and cultural factors in their analysis (Manion and Flowerdew 1982, Martin 2000). What these turns share is an interest in the socio-cultural dynamics that underpin economic spatial forces. Or, put differently, the way in which the social *context* filters and shapes the economic forces that result in the spatially uneven economic development that we observe in the world – which is the focus of economic geography (Martin 2000).

There are overlaps between the three. Relational geography has, for example, been described by one if its prime advocates as a collection of work that takes an institutional approach to economic geography (Bathelt 2005). Barnes and Sheppard (2000), for their part, see the cultural turn as an umbrella approach encompassing institutionalism as well as post-Marxism, feminist theory, and economic sociology. Of these the last has been the most influential and contemporary economic geographers make ample use of sociological concepts and analytical constructs, in particular embeddedness and networks. Peck (2005: 131) goes so far as pointing to the influence of economic sociology on modern economic geography as its sole claim to "paradigmatic coherence."

That the issue of the appropriate focus and theoretical foundation of economic geography is still, if not contested then at least debated, is reflected in the fact that the field is still turning, most recently in the form of a suggested evolutionary research program for economic geography (*Journal of Economic Geography* 2007). The evolutionary turn is concerned with the *processes* by which the economic landscape (i.e. the spatial organization of economic production, distribution and consumption) is transformed over time. This includes both how evolutionary economic processes affect and in turn are affected by the economic landscape (Boschma and Martin 2007). Although spatially uneven economic development and its change is a shared interest with the preceding turns, the theoretical influences of the latter are quite different. They lie with evolutionary economics and complexity theory, evoking concepts such as variety, selection, inheritance, dissipation, self-organization and co-evolution, and the theoretical framework of Generalized Darwinism (for programmatic statements, see Boschma and Lambooy 1999, Boschma and Frenken 2006, Frenken 2007, *Journal of Economic Geography* 2007).

The crafting out of yet another turn in economic geography has, not unexpectedly, caused reactions. So far, researchers with an interest in institutional theory in one form or another have been particularly quick to respond. Hayter (2004) argues, for example, that committing fully to an application of the old institutional economics (OIE) associated with Thorstein Veblen, Wesley C. Mitchell and John R. Commons, provides embedded, evolutionary explanations as to why places are different. According to him, this renders biological metaphors like those used by evolutionary economists and geographers redundant. Maskell and Malmberg (2007) maintain that the interplay between institutional dynamics and knowledge development – crucial for innovation and technological change – is the core of an evolutionary agenda to economic geography. In a recent debate on the topic (*Economic Geography* 2009), MacKinnon *et al.* (2009) object to the tendency to separate evolutionary economic geography from institutional economic geography, arguing that recovering a sense of social agency and institutions will help to provide non-deterministic notions of evolutionary concepts like path dependence and lock-in. They too point to the OIE tradition, in particular as carried forward by Geoffrey Hodgson (e.g. 1993, 2002, 2004, 2006, 2008). In sum, they propose a focus on evolution *in* economic geography, built on the use of institutional and evolutionary concepts within a political economy framework, rather than *an* evolutionary economic geography. In his editorial, Grabher (2009) concludes that while views are divided among participants as to the merit of a political economy approach they seem to agree that there are prospects in combining institutional and evolutionary approaches in some way, and that there is a need for more empirical studies of the evolution of economic landscapes.

Based on a similar belief that the use of institutional thought has not quite yet exhausted its potential in geographic research, this is the intellectual terrain that this dissertation draws on and aims to contribute to. At a general level it does so by investigating the intersection of socio-economics and geography in time and space. More specifically, it (directly and indirectly) takes an institutional perspective to the case of furniture production in Sweden, and the evolution of this industry at varying scales over a time period of more than 100 years. Hence, in terms of the discussion above it combines the institutional turn with the subject matter of the evolutionary turn. As the dissertation draws on theories of institutions and agglomeration rather than evolutionary theory when investigating spatial patterns and processes of change in the furniture industry, it is primarily a study of evolution in economic geography and not a contribution to the program of evolutionary economic geography *per se*.

In this it comes close to Mackinnon *et al.* (2009) and others who argue that institutions should not be overlooked when investigating evolving economic landscapes, and that we need to reassess the conceptualization of institutions within institutional economic geography rather than discarding insights from this body of literature. However, in contrast to them this dissertation makes an explicit effort to engage with the approach of new institutional economic (NIE), associated with researchers such as Ronald Coase, Oliver Williamson and Douglass C. North. As will be discussed later in this introduction, the NIE has in general taken the backseat to approaches from economic sociology or OIE in influencing how economic geographers think about the link between social contexts and economic activities, and the role of place it. The work presented here is instead based on the conceptualization of institutions provided by North (e.g. 1990, 2005), that is, a definition of institutions as "rules-of-the-game" and an associated cognitive approach to the theory of institutional change. An underlying theme of the dissertation is that a critical engagement with NIE and the various analytical frameworks that it has inspired – rather than dismissing it on *a priori* grounds as being too close to neoclassical economics to be of any interest to economic geography – will contribute to the ongoing formulation of an institutional economic geography.

The dissertation, then, aims at making two main contributions. In the spirit of Peck (2005) and Grabher (2009: 120), one aim is to be a factor in maintaining "the certain degree of continuity in debates" necessary to achieve "a cumulative evolution and continuous refinement of positions and conceptions" in economic geography. This is done by subjugating the institutional concept to "subtle critique" i.e. a thoughtful investigation of concepts within one conceptual family rather than a "rhetorical competition of one conceptual family against another" (Langendijk 2003: 726), exemplified by a debate over institutional versus evolutionary concepts. Hence, one main focus of the dissertation is institutions and institutional change in the evolution of local economies, where it uses a different analytical approach (NIE) than what is customary in the field at large. In this it offers an alternative to the suggestion of MacKinnon *et al.* (2009), while sharing their concern of a continued engagement with institutionalism in evolutionary research in economic geography.

Another aim is to add to the body of empirical work on the evolution of the economic landscape (Grabher 2009). This is done by investigating a cluster in a mature industry and peripheral location, both characteristics called for by Cumbers and MacKinnon (2004). As already mentioned the empirical part of the dissertation explores the long-term spatially uneven distribution of the Swedish furniture industry with a particular focus on Virserum, a once flourishing furniture location in southern Sweden. In telling the story of the rise and decline of furniture production in Virserum, an attempt is made not to treat this cluster as an "isolated island" (Peck and Theorode 2007), but to relate it to historical developments at national and industry levels and to compare it with an alternative, still successful, center for furniture

production in Sweden. Inspired by the perspective of NIE, the studies of Virserum focuses on the micro level (i.e. firms and other actors within local economies), while seeking to maintain sensitivity to the issue of scale. This is not only in the sense of level of aggregation, but also in the recognition that the nature of local economies and their dynamic processes of change to a large extent are influenced by forces that are external to individual firms yet internal to the location or industry in question. This demands conceptual clarity and brings us back to the fundamentals of economic geography; the careful disentangling of localized economies (of scale or due to externalities) from location factors and conditions. In this way the empirical papers in the dissertation are as much devises to assess theoretical frameworks and concepts as solely driven by the empirical question of explaining the rise and fall of Virserum – or the spatially uneven distribution of the Swedish furniture industry in general.

In relation to empirical work in economic geography we should note that the subfield of regional development studies has embraced the idea of social institutions particularly warmly. The literature on industrial districts, learning regions, regional innovation systems – and in particular that on clusters – frequently assigns local social networks and informal social institutions key roles in shaping regional development and competitiveness. In fact, the so-called "new regionalism" essentially parallels the institutional turn in economic geography (Wood and Valler 2001). A partly overlapping subject area is that of industrial geography, in which greater attention is also being paid to institutional themes such as local knowledge and local context, embeddedness and networks at work at various scales (e.g. Barnes 1999, Gertler 2004). So linking institutional analysis to the issue of why some locations, regions or nations perform better than others is not new. One twist and contribution of the work presented in this dissertation is that the main focus is on those "others" – that is, not on places with favorable location conditions or that successfully manage to draw on localized economies associated with the economic activities located there, but on places that do not perform so well compared with alternative locations, or with what they once did in the past.

Purpose and focus of the dissertation

The overarching goal of this dissertation, then, is to contribute to what Martin (2000) once called an "institutional economic geography" and that Gertler (2010) recently called for a revival of. In Gerler's assessment, the core projects of a new institutional economic geography would be to understand (i) how institutions are produced, reproduced and change over time, (ii) how institutions exert their influence over economic life, (iii) how these processes unfold at different geographical scales, and (iv) the difference that geography makes to these processes. This is a research agenda of great scope and complexity, and the contribution of a limited line of work like that presented here will by necessity be rather modest. Nevertheless, the individual papers that together make up the dissertation do touch on all these projects.

Given this goal, the purpose of the dissertation is to problematize the use of institutional theory in economic geography, as applied in addressing the broader issue of dynamic change in time and space. In order to do so, it takes a rather pragmatic approach. It focuses on clusters – a research area that frequently assigns great relevance to context and where institutional theory has been used in economic geography – and on assessing a few (well known or new) frameworks from the institutional and cluster literature in terms of their capacity for capturing such change. It refrains from developing any spatial institutional concepts or frameworks of its own, but suggests that there exist both conceptualizations and analytical frameworks other than those commonly used in economic geography that might be of use in realizing the research agenda suggested by Gertler (2010) above. To the extent it might be considered innovative, the dissertation is hence a result of innovation by bricolage rather than by purely new inventions.

Research issues

Hence, the focus of the dissertation is both theoretical (the use of institutional theory in economic geography) and empirical (the spatially uneven distribution of the Swedish furniture industry, and the evolution of furniture production in Virserum). In that, the dissertation addresses the broad issue of how changing circumstances might affect economic geographical outcomes, changes in the context that is critical to economic geography as an intellectual and empirical pursuit. It does so by considering how institutions and institutional change may contribute to the evolution of economic landscapes.

To probe this issue, we need to find out how institutions are defined, identified and applied in economic geography. We also need to consider how institutions might affect economic outcomes across space at various scales, and how institutional change and variation might be integrated into the analysis of evolution in economic geography in the first place. An ideal setting for such an analysis is the perhaps most prominent of all economic geographic phenomena, the cluster. Understanding origins and developments of clusters requires a good grasp of its dynamics both with respect to its innate capabilities and the context within which its development is set.

With these issues in focus, it should be noted that the investigation done here omits some important elements of a fully revived new institutional economic geography. One such is that the issue of how economic actors in various geographical settings influence the formation and change of institutions is not addressed in the empirical papers of the dissertation. It that, the studies remain within the ramifications of the theoretical frameworks they adopt – which tend to look at how institutions influence action rather than the other way around. Another important aspect of a new institutional economic geography that is given little attention in the dissertation is the highly relevant question of how to measure institutions (in particular those of the informal kind). These omissions are not indications of a lack of importance of the issue of measurement of institutions and deeper investigations into their processes of change. On the contrary. Yet, as the work presented here unfolded, the issue of the conceptualization of institutions in terms of how they are defined and perceived to change seemed to still warrant attention. In other words, to go forward we actually need to take a step back and look at how fundamental institutional concepts are used in economic geography, incidentally an issue not specifically addressed by Gertler (2010).

Thus, even though the furniture industry is explored and appears in the title of three out of four papers in this work, the dissertation itself is not driven by empirical research questions derived from the fate of the industry in Sweden or in Virserum. The empirical dimension of the dissertation instead primarily serves as cases where analytical frameworks are put to use and explored in terms of limitations and benefits for the analysis of dynamically evolving economic landscapes. In other words, the research has not primarily been driven by the empirical question of why furniture production disappeared in Virserum, but by an interest in what institutional theory and cluster models can bring to the analysis of such cases. This distinction might be fine, but it is important. This does not hinder that we learn a substantial amount about the evolution of the Swedish furniture at national and sub-national levels in the process

A note on research designs

The approach chosen to address the rather wide range of issues at the heart of this dissertation is one marked by pragmatism. This is in line with Gertler's (2010: 7) call for "greater

methodological variety," where not least comparative methods are seen as particularly useful. The crux of the matter, he further notes, is how to "carry out institutionally informed empirical research in a systematic way."

In assuming this challenge, and the need to take context seriously as underlined previously, the dissertation adopts a dynamic view without therefore necessarily committing itself to historical narratives. Even though this is an element in several of the papers, the use of pre-defined theoretical frameworks or models is favored over linear description. At times, it makes use of a framework that explicitly lists what institutions to include in comparative investigations of cases across time and space (but within a given national setting). At others it applies a set of dimensions derived from a generalized model, in this case a life cycle model of clusters.

The combination of a case study approach with pre-defined theoretical frameworks allow us not only to reflect on the usefulness of these frameworks in explaining evolutionary patters of change, but brings considerably structure to the analysis and helps mitigating *ad hoc* theorizing and *post hoc* rationalization.

Moreover, the application of two frameworks that are as distinctly different in character as the one used here – one brings attention to the effect on clusters of institutional spheres identified at national levels and the other to local patterns of change based on variation in heterogeneity among clustered firms – has the additional benefit of providing rich historical detail of the cases that are studied. On the other hand, it also suffers the traditional weaknesses of case study based research, namely the limited possibilities for generalization and the impossibility of establishing the quantitative importance of its findings, in this case concerning the evolution of clusters over time.

Structure of the dissertation

The dissertation has two main sections. The first comprises this comprehensive summary and the second the four individual articles that make up the core of the dissertation. The remainder of this summary unfolds as follows. Next is an overview of the theoretical points of departure and central concept used in the dissertation, that is, institutionalism in economic geography and models of not merely clusters, but cluster life cycles. A brief summary of the individual articles and discussion of how they fit together comes next. This first section of the dissertation ends with a discussion of findings and conclusions, and what the main contributions of the dissertation are.

Theoretical frameworks

The purpose of this section is to give an account of institutional economic geography and work on the evolution of clusters to set the background for the research papers that follows. This could be done in one of two ways. One is to conduct bibliometric studies of publications in order to characterize and classify the fields, another to describe them based on a few influential publications that either have contributed to shaping the field or already arrived at a typology of it. Given that institutions as well as clusters are far from well defined concept and encompass an eclectic array of research, the latter of these approaches have been used in this dissertation.

Institutionalism(s) in economic geography

The turn of the century was remarkable for economic geography (Yeung 2002). In the year 2000 its first ever global conference was held in Singapore; no less than two collective volumes

summarizing the field were published (Clark *et al.* 2000, Sheppard and Barnes 2000); and, as indicated in the introduction, an intense debate about the nature and future of discipline was sparked by the suggestion of Amin and Thrift (2000) to distance it from economics proper.

In this atmosphere, a number of contributions commented on the nature and usefulness of an institutional approach to economic geography. Martin (2000) provided an overview of the institutional turn in economic geography as part of the Sheppard and Barnes (2000) collective volume *A Companion to Economic Geography*. Here he argued that the institutional turn was one key element of what he perceived to be a renaissance that economic geography was undergoing. The same year *Geoforum* published a theme issue on "institutional geographies" in human geography more broadly, which explicitly sought to explore the notion of institutions further as "dynamic, fluid achievements" rather than "prior, stable, fixed entities" (Philo and Parr 2000: 513). The following year *Environment and Planning A* published a theme issue on institutions in studies of local and regional development. There it was argued that the institutional turn "may be rather less well founded then commonly perceived," as both theoretical foundations and policy implications were hotly contested (Wood and Waller 2001: 1139). To the best of the present author's knowledge, no journal has since published a special issue on the state of the institutional turn or the use of institutional approaches in economic geography. Single articles and books have instead carried the dialogue forward.

This overview will take the outline of an institutional economic geography provided by Martin (2000) and his typology of the field – which he perceived to still be emerging at the time – as a point of departure for discussing how institutional thinking tends to be used in economic geography. To this will be added subsequent contributions that explicitly discuss the nature of an institutional economic geography, and an assessment of some of its main benefits and challenges.

Conceptualizing an institutional economic geography (IEG)

The institutional turn in economic geography stems from "the recognition that the form and evolution of the economic landscape cannot be fully understood without giving due attention to the various social institutions on which economic activity depends and through which it is shaped" (Martin 2000: 77). In Martin's assessment, this development derived partly from an increase in interest in the socio-cultural within the social sciences at large in the 1980s and 1990s. In also derived from a widespread implementation of the idea of "mode of social regulation" from French regulation theory in economic geography, that put emphasis on social frameworks such as rules, customs, norms, and conventions.[2] The process of globalization and increased internationalization of the post-Fordist era of modern business also triggered the interest, as it put the issue of geographical proximity and the role of the local and regional in relation to the national or international in the limelight.

A long line of research within economic geography has investigated ways in which the forces of capitalist economic development – competition, the drive to accumulate profit, the evolution of technology and labor processes, and the tendency toward concentration and centralization of capital – influence that landscape. To Martin, an institutional approach to economic geography does not challenge or deny any of these forces, nor does is call for a replacement of the existing theories or models in the field that address them. Rather, an institutional approach to economic geography "seeks to uncover the ways in which institutions shape these forces from place to place, and in doing so influence their outcomes in different places" (Martin 2000: 79).

[2] See Peck (2000) for an overview that indicates similarities between the approaches.

He also identified five key themes in IEG at the time. The first investigated the role of different sorts of institutions that work to shape the economic landscape. A second theme was the strong emphasis on the evolution of the space economy, and the tendency for economic development to be path dependent. Thirdly, studies tended to stress technological innovation and the role of the local institutional "milieu." A fourth theme was an emphasis on the cultural foundations and processes underlying "social structures and individual identities, consumption norms, and lifestyles" (Martin 2000: 80). And, finally, institutional economic geography put a strong focus on social regulation and governance of regional or local economies, in particular on regional and local aspects of national system (such as the welfare system or the financial system) and regulations.

At the time, Martin saw a rich and diverse field emerging, in which the economy was seen as more than a "market." This allowed geographers to extend beyond the study of particular institutions and their relation to the spatial evolution of the capitalist system to embrace a "distinctive *way of thinking* about the space economy and its evolution" (Martin 2000: 82, highlight in original). He argued that this constituted a main attraction of IEG. On the other hand, he pointed to it also being a main challenge as it raises the question of how geography should conceptualize such an institutionalist perspective.

Intellectual influences

In discussing the conceptualization of an institutional perspective for economic geography – i.e. how institutions are defined and perceived to change – Martin (2000: 82) point to three main perspectives from other social sciences that have influenced institutional thinking in economic geography: rational choice institutionalism, sociological institutionalism and historical (evolutionary) institutionalism.[3]

Rational choice institutionalism is based on the micro-foundation of neoclassical economics and puts much emphasis on the issue of efficiency. A main focus is how certain institutional environments give rise to particular organizational structures, and how institutions work to reduce transaction costs. Institutions are seen as outcomes of market behavior and to constantly change in response to shifts in relative prices. *Sociological institutionalism* centers on the notion of the economy as a socially "embedded" system. Institutions are seen as culturally based social routines and networks of trust, cooperation, and authority. They provide cognitive frameworks or "templates of meaning" that legitimize economic identities and structures, and change through a collective process of interpretation. *Historical (evolutionary) institutionalism* seeks to understand how institutional structures evolve over time, and how that impacts the capitalist economy. The general characterizations and geographical application is summarized in Table 1.

Although geographers have drawn on all three of these perspectives, the rational choice approach appears to be the one that has influences the field the least. Martin (2000: 83) did not assess this perspective directly, other than stating that it, due to its emphasis on the role of institutions in lowering transaction costs had been "used to help explain the emergence and development of successful local and regional economies." Moreover, he asserted that for the

[3] This division follows the categorization of Hall and Taylor (1996) and their discussion of what they call the "new institutionalism" in political science. Martin has summarized the approaches at a general level, and added a geographical application. Hall and Taylor discuss the three categories from the perspective of two questions: (1) how the approaches consider the relationship between institutions and behavior, and,(2) how the approaches seek to explain processes by which institutions originate or change. These are reflected also in Martin's text.

most part geographers studying local competitiveness have not bought the theoretical framework, i.e. neoclassical economics, underpinning this approach.

Instead, ideas from sociological institutionalism have taken a prominent role, particularly the concept of embeddedness proposed by Granovetter (1985, 1992). Martin was not without critique of this development. He thought the major role ascribed to the "embeddedness hypothesis" (that puts special emphasis on trust, reciprocity, and cooperation) in regional development studies problematic given that embeddedness was still an under-theorized concept and silent on the issue of institutional change (e.g. Oinas 1999).

Table 1: Approaches to institutional analysis and their application in economic geography.

	Main focus	View of institutions	Theoretical basis	Account of institutional change	Geographical applications
Rational choice	Understanding how institutions generate particular organizational forms under capitalism.	Institutions structure individual actions through constraints, information, or enforcement. Institutions judged according to whether they reduce transaction costs and increase economic efficiency.	Transaction cost economics, agency theory, contract theory, property rights.	Constantly changing as outcome of market behavior (changes in relative prices and transaction costs). Evolutionary trajectory determined by competitive selection.	Spatial agglomeration and localization of economic activity creates specialized institutions which lower transaction costs.
Sociological	Understanding the economy as a socio-institutionally embedded system.	Institutions as culturally specific social networks of trust, reflexive cooperation and obligation which underpin economic behavior and relationships.	Network theory (institutions as congealed networks), organizational theory, group theory and cultural theory.	Institutional change as process of social construction around new logics of social legitimacy or new shared cognitive maps.	The role of locally specific formal and informal networks of trust, cooperation, and knowledge transfer ("untraded interdependencies") in fostering local embeddedness of firms.
Historical (evolutionary)	Understanding the role of institutional evolution in the historical dynamics of the capitalist economy.	Institutions as systems of social, economic, and political power relations, which frame the regulation and coordination of economic activity.	Eclectic, draws on a range of heterodox frameworks, including post-Keynesian, and evolutionary economics, regulation theory, long-wave theory, and comparative politics.	Durable overlong periods, built up through slow acceleration, and subject to hysteretic path dependence and lock-in. Long-run evolution is episodic due to interaction with economic development	The nature and evolution of local institutional regimes and their role in the social regulation and governance of local economies.

Source: Martin (2000: 83).

Institutional change is, on the other hand, at the heart of the research agenda of the historical (evolutionary) approach. Even so Martin (2000: 85) raised some concerns; to his mind tended the historical approach "in its original Veblian form" to prioritize structure over human agency and attribute the existence of institutions to their history. He admitted that more recent

conceptualizations seemed to have gone beyond such fallacies, to Hodgson's (1989) writings on ossifying and sclerotic institutions that may result in major reconfigurations of institutional structures rather than slow and incremental change.

Hence, even though all perspectives have offered inspiration and contributed to the development of an institutional approach to economic geography, they are not without their built-in problems. What is more, Martin pointed out, they tend to be void of spatial content which means that new challenges may emerge when they are applied to economic geography. Martin discusses challenges facing the IEG in light of the two central themes of Table 1: how institutions and their evolution are conceptualized.

The compass of IEG – definition of institutions

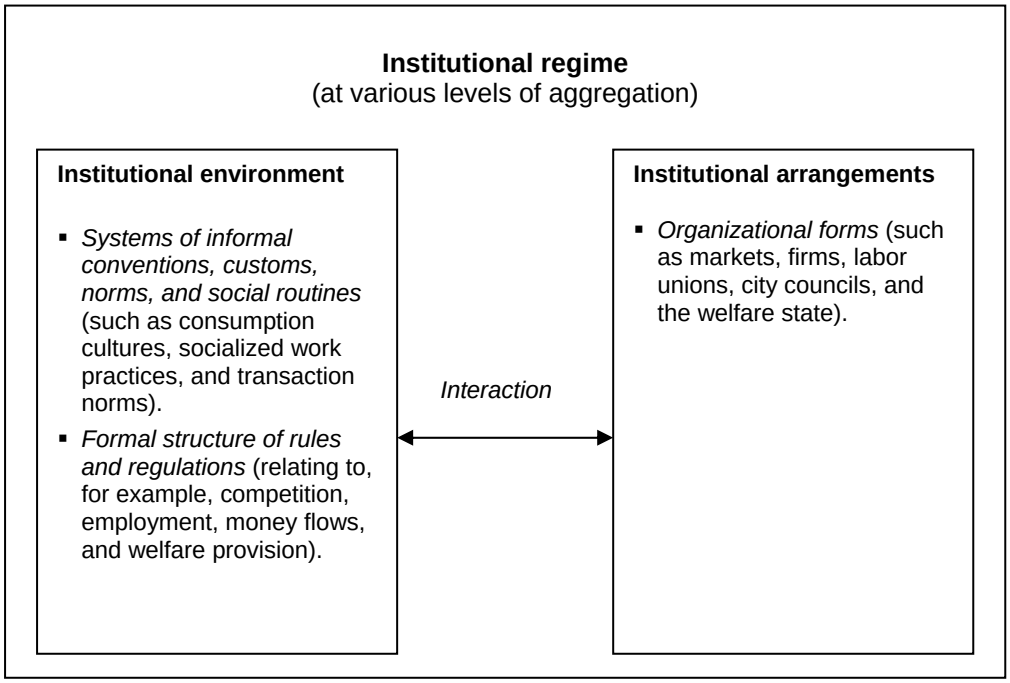
According to Martin, there was a widespread use of the notion of institutions among economic geographers at the turn of the millennium, but no agreed on definition. In fact, he did not offer an outright definition himself but instead described what is meant by it. Referring to the work of institutional economists in general and North (1990) in particular, he distinguished between the "institutional environment" (systems of informal conventions and structures of formal laws and regulation) and "institutional arrangements" (particular organizational forms). In his view, IEG has an interest in both of these aspects of the "institutional regime" of an economy., and in particular how their interaction influences local outcomes and varies across space. A simple illustration is offered in Figure 1.[4]

When applying the approaches in Table 1, geographers have sought to construct their own spatial concepts in order to add spatial sensitivity. "Institutional thickness" – a geographical location in which a strong institutional (read, organizational) presence is complemented with shared cultural norms and values that foster high levels of interaction among the institutions, and an awareness of a "common industrial purpose" (Amin and Thrift 1995: 102) – is perhaps the most widely known. Even so, Martin (2000: 88) found it lacking in theoretical and definitional precision, not least with regards to how institutional thickness emerges and what role it plays in regional economic development. This was seen as problematic given the attention it was receiving as a policy tool and a prerequisite for regional renewal.

"Institutional spaces" is another well known spatial concept. It refers to the specific geographical domain over which a give institution (in either category in the illustration) has effective reach or influence. A hierarchy of such institutional spaces may be defined ranging from supra-national to regional and local levels. Following Boyer and Hollingsworth (1997) Martin (2000: 87) explains that the combination, interaction, and configuration of these – i.e. their "nestedness" – can vary from place to place. In this way, we can speak of "local institutional regimes."

[4] North (1990) reserves the term institutions for the first of these entities only and calls the latter simply organizations. Their different roles – but also the importance of their interaction – is further underlined by the shorthand North uses: institutions (the institutional environment) are called "the rules of the game" while organizations (institutional arrangements) are labelled "players of the game." Although not a new distinction to economics, North's insistence that a division between institutions and organizations – or between the rules of the game and the strategies of the players – is fundamental to understanding economic processes of change is an analytical contribution that has influenced even current main stream economics.

Figure 1: Illustration of the institutional regime of an economy



Source: Following description by Martin (2000: 80).

Dynamics in IEG – the evolution of institutions

When it comes to the challenge of making IEG a dynamic rather than static approach, Martin (2000: 85) looks for a theory that can take into account fundamental aspects of institutional change: slow, incremental path-dependent change *and* occasional historical transformation. He pointed explicitly to the idea of "institutional hysteresis" developed by Mark Setterfield (1997).[5]

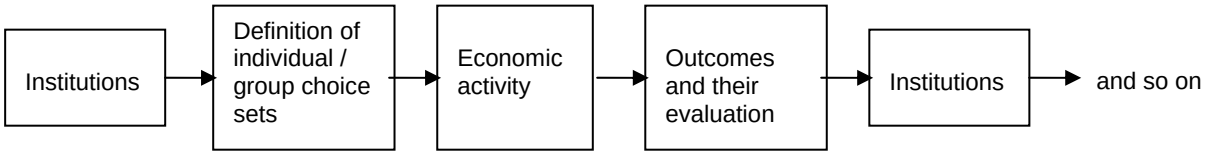
A term originating in the natural sciences, hysteresis denotes a process in which the long-run or final value of a variable depends on how its past values have influenced the system of equations that determines it. The central feature of hysteresis is, hence, that the long-run or final outcome of the process is *path dependent* in the sense that it ultimately converges to a configuration that is dependent on the actual path taken towards it. In contrast to cumulative causation, in which an initial increase in variable x will induce subsequent increases in x, hysteresis does not imply that change in a variable is positively correlated; an increase in x in the present period may lead to changes in the system that determines x in future periods in such a way that its later value declines (Setterfield 1997: 36).

Setterfield also used the notion of *lock-in*, or the possibility of a dynamic system getting stuck in a "groove" from which it becomes difficult to deviate. It occurs when current behavior

[5] Setterfield (1997) investigates how to model long-run macroeconomic dynamics in a world where capitalism is an endogenously evolving system. Taking on this task, he discusses serious and important limitations to the equilibrium concept, and provides a detailed and formalized study of the nature of adjustment paths in determining economic outcomes. He seeks to extend the model of cumulative causation in a way that links dynamics from increasing returns with those that affect technological and institutional regimes. The result is a general model of long-term growth based on the notion of "hysteresis."

is conditioned on either past events or on the behavior of others in the system, and is an outcome of decisions being taken sequentially rather than simultaneously.[6] The possibility of technological or institutional structures becoming locked-in may generate hysteretic macroeconomic outcomes. Thus, Setterfield considered the evolution of institutions as well as the possibility of the existence of inefficient institutional outcomes.

Figure 2: A model of institutional hysteresis



Source: Setterfield (1997: 92)

For this he used a conceptualization that distinguishes between institutions and organizations; incorporates conventions, norms, rules and customs into the notion of institutions; and that is collective in nature in that institutions do not originate from the actions of one isolated individual. Institutions are, thus, "social relations that frame the activities of production, consumption and exchange" and can be thought of as "a structure within which individual action in the economy takes place" (Setterfield 1997: 84). Setterfield argued that the evolution of the institutional structure itself is best understood as a hysteretic process in which current institutions influence the nature of current economic behavior, which in turn influence subsequent institutional forms. Hence, an approach that captures the dynamic interaction of institutions and activity is needed, and he suggests the one found in Figure 2.

In this model institutions are *exogenously* given and influence human action in the short run, while they are *endogenous* to the working of the economy in the long run. In other words, there is a feed-back effect in which evaluation of economic outcomes that economic agents do may build pressure for change of the institutional structure. In this setting, inefficient institutions may both be created (it being easier to create given the current context, for example) and persist over long periods of time. Martin points out that the distribution of power between actors is central to the nature and outcome of their interaction within Setterfield's model: the process of institutional transformation may be consensual but is more likely to involve conflict between groups, and old and new institutional regimes.

Martin argued that a main challenge and central task for IEG was to conceptualize the spatial dimensions of this hysteretic process. This would include determining if, and how, institutional change has different effects on regional and local economies. It would also include determining how far the process of institutional change may itself vary geographically, and for what reasons such variation it may occur. Pointing to the notion of "regional lock-in" where

[6] In fact, lock-in occurs without any manipulation of the assumption of rationality in models allowing for sequential decision making. It is a feature of conventional rational choice models with learning-by-doing or interrelatedness, either between components of the production process or between individual decision making units. Within such a setting rational agents may experience "regret" as they realize that activities they undertake are "demonstrably inferior to an available alternative" (Setterfield 1997: 39).

strong local ties to outmoded institutions render them stuck and a hindrance to regional renewal (Grabher 1993), Martin drew the conclusion that research within economic geography point to the existence of regional differences in institutional hysteresis. Institutional change may, thus, have a specific local dimension. Yet, local processes of institutional transformation remained poorly theorized.

Suggested road ahead

In his overview Martin (2000: 79) stated the basic research question that IEG seeks to answer is "*to what extent and in what ways are the processes of geographically uneven capitalist economic development shaped and mediated by the institutional structures in and through which those processes take place?*" (original highlight). He does not point to any of the three established institutionalisms – rational choice, sociological, or historical (evolutionary) – to be the right one for economic geography. Instead he discusses what is needed in order translate institutionalism in economic geography into a distinct way of thinking about the space economy and its evolution.

In doing so, he stressed that an institutional economic geography needs to take into account the spatial dimensions of not only the notion itself, but also of how institutions tend to evolve over time. That is, an institutional approach in economic geography has to allow for periods of incremental path-dependent change and periods of rapid transformation. This line of research includes investigating how institutional change may or may not produce different outcomes across geographical scales, as well as what the determinants are and what the geographical reach is of the process of institutional change.

From the summary above, we see that Martin suggested a definition of institutions built on a distinction between the environment or "milieu" and organizational forms – between structure and agency – while at the same time stressing their interaction across space. In his article, Martin does not probe into this definition further, but treats it as commonly accepted and uses it throughout his text. With respect to understanding how institutions change, we see that Martin points to a model of institutional hysteresis that allows for path dependence and lock-in, and where institutions are exogenously given in the short run while endogenous in the long run.

What has happened since? Interpretation and implications for the dissertation

Martin's (2000) contribution is now a decade old. It is therefore reasonable to ask whether the attention given to institutional issues in the lively debate about the nature of economic geography that took place around the turn of the millennium has been upheld. Indeed, has it translated into a solid research approach within economic geography?

At that time conceptual and methodological concerns received most of the attention while there was a relative shortage of empirical investigations adhering to an explicit institutional approach. Browsing more recent publications within economic and human geography, we find, on the one hand, that empirical studies with an explicit institutionalist approach have appeared (e.g. Dale 2002, Pavri and Deshmukh 2003, Greco 2004, Rutherford 2004). On the other, it appears as if the dialogue around institutional theory and methodology is by no means as lively today as it was a decade ago. Yet, as indicated in the introduction, institutions have gained renewed attention in the face of the proposed evolutionary turn of the field. Does this mean that institutional economic geography found its form and internal coherence already by the turn of the millennium and that no further dialogue about it character and research agenda was needed?

The interpretation by the present author is that this was not the case; the decline in attention to institutional issues is a sign of a general lack of vigor of IEG and not a sign of its maturity.

A similar conclusion is reached by Gertler (2010: 4) who goes so far as to state that "we are in some danger of erasing institutions almost completely from the analysis of economic processes and their geographies." He finds this problematic as "much contemporary work within economic geography could benefit from a stronger recognition of the role institutions play in helping shape local and regional economic change" (p. 12). When investigating reasons for this, Gertler mentions a lack of familiarity with related literatures outside of geography *per se*, as well as other trends that have diverted the interest away from institutional thinking (particularly post-modernism, actor-network theory, and neoliberalism). To this he adds the oversimplified view of geography expressed in some institutionalist approaches, such as that of "varieties of capitalism."

Agreeing with all of this, the dissertation at hand points to yet another reason for the limited influence of institutionalist thinking in contemporary economic geography, namely the inclination to use "expanded" and almost all-encompassing definitions of institutions that challenges analysis and comparison of research results.

To exemplify, Wood and Valler (2001) laid out five methodological developments within the institutional turn that underpin the research themes identified by Martin (2000). Their list may be summarized as "expansion and redirection of focus." Firstly, the institutional concept had been problematized and expanded from a focus on organizations to include embeddedness, regulation, norms, habits, and every-day practices. Secondly, and accordingly, the scope of research had expanded from a focus on single organizations to institutional arrangements and regulatory networks. Thirdly, there the concern for economic governance and the "manner in which institutional ensembles regulate, order, and steer economic practices and relations" (Wood and Valler 2001: 1140) had increased. Fourthly, focus has shifted from form to processes of institutionalization and workings of organizations, which the authors regarded as one of the main advantages of the emerging institutional economic geography. Finally, there was a wider recognition of the co-evolution of institutional, economic, cultural and political spheres within the studies of local and regional economies at large, in line with what used to be the domain of the regulationist tradition.

The interpretation of Wood and Valler's list done here is that all these developments are linked to the first, that is, the expansion of the institutional concept. Once such a conceptualization is adopted a refocus of the research agenda follows naturally. Behind this expansion lay not only the "embeddedness hypothesis" developed by Granovetter (1985) and discussed earlier, but also the influential definition of institutions as "routinized thought processes that are shared by a number of persons in a given society" suggested by Hodgson (1993: 125), a promoter of the historical institutionalism, or OIE, in Table 1. In this setting, evolution is marked by behavior and structure as mutually reinforcing elements in a process of cumulative causation. Wood and Waller (2001) and a few other geographers have criticized this definition on theoretical as well as empirical grounds (e.g. Storper 1997, MacLeod 2001, Cumbers *et al.* 2003). Other have argued that embracing old institutional economics is the best way for an institutional economic geography to fend of the challenge of the evolutionary turn (Hayter 2004) or to better interact with it (MacKinnon *et al.* 2009).

Taken together, this indicates that institutional economic geography has followed a somewhat different path than that perhaps envisioned by Martin in 2000. While he proposed a definition of institutions that distinguished institutional environments from institutional arrangements (or organizational forms) and the interaction between the two at varying scales, research within IEG has tended to conflate the two. And while he proposed a model of

institutional change that combines insight from old institutional economics (short-run exogeneity of institutions) with that of new institutional economics (long-run endogeneity of institutions), IEG at large has tended to favor the old school over the new. Stopping short of mere speculation about the intent of Martin, suffice to say is that the road ahead suggested by him in 2000 is potentially more open to drawing on also new institutional economics than what has been reflected in the general discussion within IEG so far. This is what this dissertation does.

Concentration, agglomeration and clusters

The dissertation deals with a second set of fuzzy concepts, namely the interrelated – yet not equivalent – concepts of concentration, agglomeration, localized economies, and clusters. As the focus of the empirical part of the dissertation is a group of firms within the same industry that co-locate in a geographically confined area, this overview will take its point of departure in the concept of clusters. Again, rather than providing a categorization or typology of this line of research, one or a few influential contributions that defines the field will be used as a point of departure.

Clusters: the spinning of a concept

Two decades in the making, the cluster concept that originated with business economist and competition strategist Michael Porter (1990, 1994, 1998a, 1998b, 2000a, 2000b) has been subjugated to a number of reviews and assessments by economic geographers (e.g. Malmberg 2002, Martin and Sunley 2003, Brenner 2004; Cumbers and MacKinnon 2004, Lorenzen 2005, Asheim *et al.* 2006, vom Hofe and Chen 2006, Santos Cruz and Teixeira 2007, Vorley 2008). Initially the notion met with resistance from geographers. They had long studied agglomeration and industry location and quickly – and rightfully – pointed to a number of difficulties and weaknesses with Porter's particular conceptualization of localized concentrations of specialized activities. Some even argued that it did not bring much more to the table than conceptual confusion and lofty promises to policy makers (Martin and Sunley 2003). Yet, perhaps due to the cluster concept providing "a synopsis of accepted agglomeration phenomenon rather new groundbreaking insights" (vom Hofe and Chen 2006: 14), it has by now become a standard term in the field (Asheim *et al.* 2006). Today cluster research constitutes one of economic geography's most lively and expansive research areas (Santos Cruz and Teixeira 2007).

A few themes emerge from these assessments and overviews. A first is that there seems to be a general agreement at the theoretical level on why firms may co-locate and concentrate in geographical areas, in other words why cluster emerge and exist. The answer is found in traditional agglomeration economies, i.e. in the external economies of scale and externalities that benefit firms within a given industry (Marshallian externalities) or all firms within a given location, usually an urban area (Jacobian externalities). With respect to concepts and methods, there are, on the other hand, vast disagreements. Yet, as argued by vom Hofe and Chen (2006: 21) there is a commonality in most cluster definitions: they refer to groups of firms and organizations that co-locate in specific geographical territories and that enjoy economic advantages from this position. It is when addressing the interdependencies and relations between these units that variation in the definition occurs (e.g. vertical vs. horizontal linkages, formal vs. informal relations). This raises the question if there is or even can be a single cluster definition applicable to all cluster studies, and, indeed, if there is such a thing as a cluster theory.

A second theme concerns policy implications of the cluster conceptualization. Porter has consistently promoted regional competitiveness based on strategic business thinking within

clusters, rather than the more abstract notion of agglomeration effects (that emphasize input cost minimization, input specialization, and closeness to markets). He explicitly addresses the role of national and local governments in creating such regional competitiveness (Porter 1998a, b, 2000a). As a result, his cluster conceptualization has attracted policy makers to the extent that something of a "cluster craze" has evolved within the polity (Asheim *et al.* 2006). Some critics argue that the widespread use of the cluster idea and its underlying notion of regional competitiveness is not backed up by an adequate understanding of the meaning of either of the concepts, or their policy implications (Martin and Sunley 2003, Martin *et al.* 2006). Others add that the cluster approach fails to recognize the pressures on bureaucrats in the "congested state," and, hence, underestimates the management aspect of local governance. Such aspects may explain common empirical outcomes (e.g. using "cluster blueprints," picking winners, or attempting to build clusters from scratch) that, on closer scrutiny, are not supported by Porter's original approach (Burfitt and MacNeill 2008).

Thirdly, a number of interrelated gaps in the cluster literature have been identified. A first and prominent one is the bias toward a focus on successful cases of cluster formation. This may be traced to Porter's initial positioning of the concept as "critical masses – in one place – of unusual competitive success in particular fields" (Porter 1998a: 78). Although there are contributions that address unsuccessful cases, i.e. clusters that are in decline (e.g. Seri 2003, Chapman *et al.* 2004, Tödling and Trippl 2004, Dalum *et al.* 2005, Giuliani 2005, Schamp 2005, Tappi 2005, Alberti 2006, Sammarra and Belussi 2006, Zucchella 2006, De Propis and Lazzeretti 2009) or that never developed (e.g. Orsenigo 2001, Atherton 2003), these studies are relatively far and few in between; the bulk of the literature has primarily focused on the functioning of successful industrial clusters. A related gap is a lack of studies that apply the cluster notion to peripheral regions and to mature industries (Cumbers and MacKinnon 2004). A third, and again related issues, is that although Porter does discuss the birth, development and possible decline of clusters (Porter 1998b: 237ff.) fairly limited research has gone into understanding the evolution of clusters over time (Lorenzen 2005). However, this is a budding field of research. A number of studies have lately emerged on the theme of cluster or regional life cycles, seen as related to, but distinguishable from, product and industry dittos (e.g. Pouder and St. John 1996, van Klink and de Lange 2001, Brenner 2004, Dalum *et al.* 2005, Maskell and Malmberg 2007, Audretsch *et al.* 2008, Menzel and Fornahl 2010).

Models of cluster life cycles

As empirical observations reveal, clusters are not static. For starters, they originate at some point. A few continue for very long periods of time, while the development of others is thwarted at some stage. In short, clusters are prone to change once they have emerged. This dissertation takes an explicit look at the evolution of clusters or, more generally, agglomeration of economic activities. After an initial focus on the functioning of clusters, the literature has in recent year started to address also the issue of the evolution of clusters more directly. Inspired by the work on product life cycles, the hypothesis that clusters also go through life cycles that are related to, but separable from, product and industry life cycles, with their own evolutionary patterns, mechanism and change processes is getting increased attention. A few examples of work on cluster life cycles will illustrate this line of work.

An example of an early empirical contribution is that of Swann *et al.* (1998) who provide a large scale econometric study of US and UK high-tech industries, a methodology otherwise rare in the field of cluster research. Although they do not give evidence of a full cycle, they suggest that such a principle exists. What is more, it is distinct from but related to the life cycles of the

technologies utilized in the cluster and to the life cycle stage of the cluster itself (Swann and Prevezer 1998). In the initial expansionary stage, positive feedback loops in the form of agglomeration economies are important, but over time congestion and ageing of technology will start working as counteracting factors. Diversity is likely to postpone this effect, while "single-technology clusters" are less able to revive themselves (Swann 1998).

An example of a case study with a full life cycle model is van Klink and de Langen (2001). They propose a cluster life cycle based on four different stylized stages and one stylized development path, which is applied to the case of ship building in northern Netherlands. Their framework takes a value chain perspective and indentifies cluster characteristics (i.e. the nature of the value chain, strategic relations between firms, entry and exit patterns, and the cooperative domain of the cluster) that are used to analyze the various cluster stages. They argue that economic interaction and exchange within a value chain is a necessary condition for cluster formation. Hence, as "hard" external economies such as supply of infrastructure or education can exist without interaction and be generated by all agglomerations, agglomeration effects alone do not imply clustering. In their stylized cluster cycle van Klink and de Langen classify the *development stage* (where firms respond to a new market opportunity) as one with above average growth of the cluster relative the industry, and unstable relations within the cluster. In the *expansion stage* (where firms expand into global markets), growth of the cluster is still above industry average, while clusters relations have become stable and internally oriented. Relations remain so in the next stage, that of *maturation* (where patterns of production and sales are stable, competition fierce among cluster firms, and the level of innovation low). By now the growth of the cluster has fallen below industry average. The final stage, *transition* (where changes in the market or in the strategies of dominating firms cause more firms to leave than to enter the cluster), involve growth below industry average, and again unstable relations within the cluster.

Other work interprets the vast body of empirical case studies and attempts to formulate theories of cluster evolution in relation to the development of industry and society at large. Pouder and St. John (1996) is an early contribution. Drawing on a wide set of theories (e.g. punctuated equilibrium and innovation, organizational ecology, industrial organization, institutional and cognitive theories, as well as agglomeration economies) they construct a model with three phases that clustered firms are likely to move through, and compare them with the performance of non-clustered firms in the same industry. In the *origination phase* clustered firms grow faster than industry average, and a "hotspot" identity emerges. Traditional location factors and spin-offs will catalyze the emergence of the cluster, after which agglomeration economies and increased legitimacy will encourage growth in numbers of clustered firms. These firms will be responsible for an increasing share of industry innovation. At the same time managers of clustered firms will tend to focus on the strategies and capabilities for innovation of their local competitors rather than non-clustered competitors.

In the *convergence phase* the agglomeration economies in the cluster erode, and firms converge to the overall industry cost structure. As managers of hotspot firms use mental models based primarily on local competitors, this will lead to too little emphasis being put on other competitors. Pouder and St. John argue that as a result, strategists within hotspot firms will be more homogenous in their perceptions about competitors and industry opportunities than others in the industry. This collective process will lead to "strategic myopia" and competitive "blind spots," which, in turn, will lead to the decline of the collective level of innovation in the cluster and a reduced ability to recognize and respond to industry wide (external) chocks. In the final phase, that of *firm reorientation*, only firms that initiate radical responses to such "industry jolts" and significantly change their organizational structure and processes of operation will survive. For the rest, cognitive inertia and entrenchment will inhibit firm level reorientation, leading the

cluster to loose out disproportionally in terms of growth and innovation relative the rest of the industry. Hence, as pointed out by Martin and Sunley (2003), the very features that were initial strengths become sources of relative inertia and inflexibility over time, making decline an inherent systemic feature of cluster dynamics in this model, with the associated risk of determinism.

Focusing on the process of knowledge creation, Maskell and Malmberg (2007) paint a similar picture and argue that clusters – in all their stages – are essentially the result of myopic behavior of entrepreneurs that reinforce standard economic incentives. Based on cognitive psychology and institutional theory, they interpret bounded rationality, the building of routines (i.e. the encoding of incentives and constraints in a given setting) and local, exploitive search (i.e. looking for answers close to already existing solutions) as three human cognitive biases that lead to functionally myopic behavior of individuals. This, in turn, has a spatial correspondence in the concept of localized learning in which geographical proximity matters for interactive knowledge creation, acquisition and exchange. In the account of Maskell and Malmberg, myopic behavior and dominant routines at the micro level combined with path dependence in institutional adjustment at the macro level will direct the process of local knowledge development. This tends to favor industrial specialization and reduce variety in routines, which is further reinforced by the creation of supportive organizations, a local culture and "branding" at the cluster level. Maskell and Malmberg point out that clusters offer one way of avoiding potential problems of corporate myopia, and may for a certain period of time be both efficient and competitive. However, the same processes will eventually lead to cluster decline – unless external "pipelines" are build that offer cluster firms access to new knowledge pools with dissimilar routines and institutional solutions.

More formalized analyses often depicts the number of firms in the cluster over time in the form of an S-curve, where initially low numbers are followed by a phase of rapid expansion and then diminishing growth, until a maximum dimension of the cluster is reached. One example is Maggioni (2006) who labels the implied stages *birth/take off*, *golden age*, and *maturity* respectively. Maggioni is careful to point out that the S-curve can be derived from numerous relationships between incumbent firms and those entering the cluster. Assuming profit maximizing and fully mobile firms he outlines how the underlying structure of location benefits and costs functions may lead to the existence of several optimal points, all smaller the maximum cluster size (when net locational benefits are zero). In particular, the optimal cluster size (where maximum average net location benefits are obtained) is below the optimal solution from a societal point of view (where instead marginal costs equal marginal benefits, and total benefits[7] are maximized). Constructing a population ecology model in a two cluster setting, he shows how the introduction of a new technology may lead to the formation of a new cluster based on this technology, and leapfrogging of the new cluster over the old one (associated with the old technology). This may ultimately lead to the extinction of the old cluster. An interesting result of Maggioni's simulations is that in a setting of market and technological turbulence, the long-run performance of clusters is determined by sustained formation rates of endogenous new firms rather than improvement of the carrying capacity of the cluster; the reverse holds true only in less turbulent surroundings. [8]

[7] Number of firms times *per capita* benefits.

[8] That is, in a setting of market and technological turbulence firm-based micro level incentives explicitly aimed at supporting agglomeration economies and knowledge spillovers (e.g. start-up incentives, business planning services, activities targeting innovation and venture capital diffusion) will outperform those aimed at the general economic environment. Hence, policy measures commonly used in Europe, such as provision of scientific, logistic, and economic infrastructure (that supports the carrying capacity of clusters) and attracting exogenous firms, are better suited for clusters in orderly surroundings.

There are also contributions that explicitly discuss the theoretical nature of the cluster life cycle literature. Maskell and Kebir (2006), for example, assess three main approaches within cluster research – those focusing on externalities and local spillovers, on competitiveness, and on the *innovative milieu* of territories – from the perspective of the degree to which they provide coherent theories of clusters. In order to move beyond mere description and mapping, a cluster theory must address not only the questions of "what" (factors) and "how" (casual links), but also that fundamental question of "why" (that provides a justification for the factors and links) in their treatment of the *existence*, *extension* and *exhaustion* arguments of clusters. Maskell and Kebir find that the competitiveness approach (illustrated by Michael Porter's work) and that of *innovative milieus* (illustrated by the GREMI approach) do this, while, over time, the first Marshallian tradition has failed to provide a coherent explanation of clusters and focused almost solely on the befits firms may accrue from co-location (the *existence* argument). Despite differences in the construction of these theories, there are striking agreements concerning policy implications for clusters in decline (the *exhaustion* argument). In sum, the main target in a cluster restructuring process ought to be "to create room for novel private sector initiatives as swiftly and effectively as possible" (Maskell and Kebir 2006: 41). This resonates well with in particular Maggioni, but also with the other examples given above.

In a recent synthesis, Bergman (2008) interprets the *existence, extension* and *exhaustion* arguments as phases and explores the concepts of the cluster life cycle literature further. He adds that the *expansion* phase can be subdivided into stages of *explorative* and *exploitative expansion*, with the first representing a regime that favors innovative entry resulting in the sudden take-off of the cluster. Expansion in the second sub-stage is instead driven by systematic exploitation of efficient firm routines, production processes and cluster scale-economies. The dividing line between the two can be thought of as the inflection point on the aforementioned S-curve. At some point this growth and regeneration will come to a halt and the cluster will pause, a pause that can be extensive and lead to complete lock-in and decline. Alternatively, the cluster experiences a renaissance, which may come after a temporary period of lock-in.

Probing the literature, Bergman discusses three assets that some clusters enjoy and that may aid a process of restructuring. First is *agent diversity,* where he warns against the "mono-vintage homogeneity trap" or "a highly specialized, homogenous cohort of agents captured in a self-constructed silo" (Bergman 2008: 14). This is mirrored in the second asset of *polyvalent technology sources*, or the ability to move away from 'silo-technologies' and skill sets. Finally, the effectiveness of the *local system of innovation*, and in particular the proximity of a science-knowledge base, is an asset that receives much theoretical and policy attention. The field lacks, however, empirical research on the potential of universities or research centers to reverse declining clusters. More generally, Bergman finds that there exist no best metric of cluster activity, or an agreed upon aggregating principle by which to create one. The "representative agent" idea is instead commonly adopted, in which the cluster is attributed not only with logic and action, but assumed to have homogenous structures and to move through each cycle phase as a "synch-ronized ensemble" (Bergman 2008: 2).

The model that is used in dissertation is developed by Menzel and Fornahl (2010). It picks up on the importance of variety and diversity for the evolution of clusters that is an underlying theme in all the work cited above. In fact, it seeks to move beyond identifying heterogeneity as a characteristic that varies over cluster life cycles, to a mechanism that drives it through these stages. Further detail is given in the third of the research papers in the dissertation.

Presentation of the papers

This thesis comprises a collection of four papers, the combined objective of which is to address the research issues identified above. They proceed on the basis of the current state of institutional analysis in economic geography as sketched in the previous section with the aim of contributing to a new institutional economic geography as outlined by Gertler (2010). The following presentation gives an overview of the individual papers and how they fit together, in effect a presentation of the entire research project.

How the papers fit together

As shown in the introduction, the focus of the dissertation is both theoretical (the use of institutional theory in economic geography) and empirical (the spatially uneven distribution of the Swedish furniture industry, and the evolution of furniture production in Virserum). The papers explore various aspects of this, each in different ways. Table 2 gives an overview of the papers.

Table 2: Articles included in the dissertation

	Title	Focus	Status
1*	Industrialisation in the periphery: dispersion and concentration in the Swedish furniture industry	The evolution of the Swedish furniture industry, its locational adjustment over time and propensity, if any, to cluster.	Submitted
2	Varieties of capitalism and local outcomes: a Swedish case study	The link between national and sub-national institutions in explaining local economic outcomes.	Forthcoming (2010): *European Urban and Regional Studies* Doi:10.1177/0969776409350792
3	Recounting a cluster life cycle: a century of furniture production in Virserum, Sweden	Cluster life cycles – an investigation into the direct and systemic dimensions of the stages of cluster evolution.	Unpublished manuscript
4	Evolving economic landscapes: why new institutional economics matters for economic geography	Conceptualization of institutions in economic geography (definition and theory of change), introduction of a model for institutional analysis.	Published (2009): *Journal of Economic Geography* 9(3): 329-353.

* Co-authored with Örjan Sjöberg

The opening paper on the evolution of the Swedish furniture industry is the one where the institutional link is least obvious, and serves, in the context of the dissertation, primarily the role of the empirical back-drop to the case studies that follow. In addition it provides a discussion of key spatial concepts that re-emerge in these papers. The second article uses an institutional comparative approach based on a predetermined set of institutions to investigate, which is applied on one failed furniture location, Virserum, in relation to a second highly successful location, Tibro. The third article focuses exclusively on Virserum and uses a modern and dynamic cluster-life-cycle approach to explore the rise and fall of furniture making there, one in

which the institutional sphere is initially excluded. Article number four, finally, takes a step back and address explicitly the conceptualization of institutions in economic geography, particularly in relation to the recently suggested evolutionary turn of the field. A brief summary of each paper follows below. The full length papers are found in Section 2 of the dissertation.

1. Industrialization in the periphery: Dispersion and concentration in the Swedish furniture industry

Cluster research and the spatial distribution of industry are two enduring themes in present-day economic geography. These two strands, however, seldom come together in a systematic fashion. In part this follows from research strategies that focus on one or the other, but also because until rather recently there has been a focus on successful cases at their height of prominence. This in turn often implies that evolution over time, if at all considered, is reduced to an issue of how success was achieved. To the extent that the fate beyond culmination is addressed, it is still the high-tech cluster or the emblematic modern industry that tends to attract attention. Lately, however, both low-tech and declining clusters and industrial districts have come more to the fore, but mature industries that tend to occupy peripheral location are yet to be integrated into this line of research.

In addition to providing important background information on the industry in focus in this dissertation, this particular paper focuses on changes in the distribution of Swedish furniture industry, from its beginnings to the present. This is done with a view to establishing whether industries that are not to be found in the main agglomerations are subject to the same forces – agglomeration or alternatively dispersal through filtering and suburbanization – as are secondary and tertiary activities that tend to agglomerate and cluster in the core. The results, as read off the changing pattern of distribution of the furniture industry over time, indicate that this is indeed the case. These results are arrived at by way of an analysis of changing location quotients from the first full industrial census in 1931 to 2005; the unit of analysis used is the county (in its post-1998 form). This is supplemented by data on the number of establishments and employees in absolute and relative terms at the beginning and at the end of the period under review.

As an effort has been made to include also one-man operations and micro-enterprises (the normal cut-off is otherwise 5 or 10 employees) the paper yields interesting results with respect to average size. During the inter-war period the main agglomerations and larger towns which were host to furniture firms typically found that these employed a larger number of workers than did their rural or small town counterparts. By the end of the period investigated, this had been reversed. This hints at specialized furniture makers catering to a local high end market and producer services firms finding large urban areas more congenial than do mass producers, who more typically search for lower cost of labor and land.

Something similar can be said of the less detailed inquiry into the nature of clustering of furniture firms at a still lower level of aggregation that supplements the main investigation on the spatial pattern of industrial distribution. Setting out to identify local clusters of furniture firms, the paper detects a pattern of considerable stability. Today, as in the past, a number of towns and smaller urban communities in the regions of Småland and Västergötland rise above average prominence. As often as not, today's clusters of furniture making also stood out more than half a century ago. While some important furniture centers of an earlier age have now all but disappeared from the map of furniture manufacturing, others remain as important as in the past – and very few new ones have been added.

This must not be understood as furniture firms being nothing but mature and peripheral. Major cities still come across as important locations, but their importance does not quite match

their demographic size or economic importance. However, those firms that are still operating out of, say, Stockholm and some of its neighboring communities, seem to focus on furniture and fixtures for public settings (not least retail units) or on made to order furniture making, no doubt catering to higher end market segments.

All in all, this study finds that also a low-tech, mature industry with relatively low entry barriers that were always well represented in peripheral regions appears to be subject to the same pressures and rationalities as are other manufacturing activities. However, the dispersal that this implies does not do away with a propensity of such firms to cluster in a smaller number of locations. Again, this implies that also an industry that has been seen as subject to "unbounded deconcentration", that is, one that does not benefit from agglomeration economies (or does not have to avail itself of any such benefits as might exist), displays the form that is typically seen to indicate an availability of such external economies of scale and positive externalities. In particular, localization economies might be of some importance in deciding the resulting pattern of location.

2. Varieties of capitalism and local outcomes: A Swedish case study

Despite the recent "institutional turn" in economic geography, relatively limited attention has been paid to the comparative political economy literature that investigates the institutional underpinnings of the different types of capitalisms that we observe across in the world. In turn, this literature has shown little interest in variety *within* national models of capitalism, an issue more often tackled by economic geographers. This paper asks if the Varieties of Capitalisms (VoC) framework of Hall and Soskice (2001), the currently most prominent of the comparative capitalisms approaches, is a useful tool for investigating institutional disparity also within national models. Of particular interest is if it can indicate deviation from national or sectoral norms that may provide insights into the success or failure of local clusters, or agglomerations of economic activities within a given industry. The "test cases" are two Swedish furniture locations – Tibro and Virserum – that together dominated the industry in the mid-1940s but that since have experienced diverging development paths. Today Tibro holds on to its leading position while Virserum has been wiped off the map in terms of furniture production, having experienced the closure of virtually all its furniture firms and loosing all but a few employment opportunities within the industry. Hence, the paper looks at one industry in two locations, within the same national context.

The article gives a brief summary of the VoC framework and its central analytical construct, the so-called "institutional spheres" where firms develop relationships to solve coordination problems around their core competences. Following North (1990), institutions are defined as formal and informal "rules of the game." They offer economic actors the capacity to exchange information, monitor behavior, sanction deviant behavior, and deliberate, and they affect the strategic interaction between firms. In the institutional sphere of *corporate governance* firms and investors coordinate their activities, while wages and working conditions are negotiated and coordinated within *industrial relations*. In *inter-firm relations* firms coordinate their needs with those of suppliers and customers, and *vocational training* concerns how firm demands of particular skills are coordinated with workers' interests in investing in those skills.[9] Two core arguments of the VoC approach is and that the political economy of nations can be compared based on the manner in which firms solve coordination problems within these spheres, and that there exist

[9] The fifth sphere of *intra-firm relation*, i.e. how firms ensure that have necessary competences and cooperate well amongst one another in order to advance firm objectives, is not addressed in the paper.

institutional complementarities, or a line of reasoning, between the spheres. Hence, national level institutions are crucial in the set-up of the incentive structure of countries.

After a short introduction to the history of furniture production in each location, the paper takes the classification of Hall and Soskice (2001) of Sweden as a Coordinated Market Economy (CME) at face value, and investigates how this description applies to the industry in general, and Tibro and Virserum in particular. Hence, the CME classification is used as an analytical reference point against which specificities at both sectoral and local levels are filtered out, as well as the development within each sphere over time.

The paper finds that applying the framework in this rather unorthodox manner is a feasible way of probing into variegation in capitalists systems (Peck and Theodore 2007). Overall, the paper finds little deviation between national, sectoral and local (formal) institutions, except for in the sphere of inter-firm relations where local governments developed differentiating policies and where there were differences in informal norms and attitudes towards cooperation and entrepreneurship between the cases. Yet, the case studies illustrates how institutions and national and sub-national levels work together with non-institutional factors (e.g. nature of the good, firm size structure, form of incorporation, market segmentation, composition of and competition over the local labor market, local demographic changes) to generate different economic outcomes across time and space. In other words, the picture that emerges is one of a relatively coherent institutional system across scales, but where there a possibilities for institutional and organizational creativity and innovation, as well as alternative industrial development paths.

Another finding is that although the application of the VoC to sub-national levels allows for a historical investigation within each institutional sphere, this amount to a somewhat static and compartmentalized analysis where the mechanisms and processes of change remain hidden. And importantly, when moving from national to local case studies we are in effect focusing on the evolution of particular "habitats" (Hägerstrand 1989) and the set of institutional and non-institutional constraints that prevail there at certain points in time – as perceived by local actors. To address such local habitats, we need theories and analytical frameworks that let local and sectoral processes play themselves out against the development at the national level. Here there might be scope for cross-fertilization between the VoC and its outlining of the national system, and the recent cluster-life-cycle literature in economic geography.

3. Recounting a cluster life cycle: a century of furniture production in Virserum, Sweden

An emerging literature in economic geography deals with so-called cluster life cycles as empirical processes distinguishable from the life cycles of products and industries. This paper tells the story of the rise and decline of the Virserum furniture cluster in southern Sweden, guided by one such framework. It investigates the size and diversity of the cluster, along with the ability of furniture firms to make use of its size and diversity. Four cluster stages are identified and explored. The paper finds that clustered firms had limited capacity for cooperation and collective action, and low utilization of its diversity. In line with the predictions of the model, a lack of diversity among Virserum furniture firms and homogeneity in its knowledge base may, hence, be deemed a main explanation of the fall of this particular cluster.

This paper takes off by noting that the literature on clusters is one of the most rapidly growing sub-fields of economic geography, but that most studies so far have looked at successful cases of cluster formation and have paid limited attention to the issue of dynamics of cluster evolution. The aim of the paper is to contribute to the literature on both these counts, by investigating the rise and fall of furniture making in Virserum with the help of a new model of cluster life cycle developed by Menzel and Fornahl (2010).

The paper describes the model and briefly introduces the general context of the parish of Virserum, and then proceeds to tell the story of furniture production in this small location, guided by the chosen framework. The narrative takes into account the quantitative and qualitative dimensions of the cluster, in order to estimate its cluster size and diversity, and it identifies cluster life cycles stages. The paper also analyzes direct and systemic dimensions of the cluster, in order to discuss how well firms in the cluster utilized its size and diversity, and the nature of its spatial and thematic boundaries.

The paper identifies a cluster size of in total some 85 furniture firms between 1880-2003, with a maximum of 32 in 1939 and 1941, employing at most some 460 people at roughly the same time. To this a handful of furniture related firms and an additional handful of service providers were found. The paper identifies four cluster stages in Virserum: *emergence* (1880-1902), *growth* (1903-1940), *sustainment* (1941-1968), and *decline* (1969-1981). The character of each of these is discussed at some length.

It was found that the emergence and initial growth of the cluster was largely associated with one particularly large scale manufacturer of classical style furniture of oak, in itself a product invention. Over time, upholstery took over as did other types of wood. The local production system that emerged was built around furniture factories with all production steps in-house and limited collaboration between firms or across steps in the value chain within the Virserum cluster. In parallel to the decline of furniture making, other manufacturing activities emerged, in particular in relation to metal working.

The paper identified some innovation among furniture firms in terms of patents, but found that for an industry like furniture and the time period in question, the evolution of business fields within the cluster gave more information. It inferred that the degree of diversity and heterogeneity was low among furniture producers in Virserum. The paper then investigated the systemic dimension and found that clustered firms had limited capacity for cooperation and collective action, and low utilization of its diversity. Given the data, the paper was not able to assess the spatial boundary of the Virserum cluster, but it was pointed out that its thematic boundary of the cluster was narrow with only incremental expansions. In line with the predictions of the model, a lack of diversity among Virserum furniture firms and homogeneity in its knowledge base may, hence, be deemed as a main explanation of the fall of this particular cluster.

The paper finds that one of the benefits of the cluster life cycle model it has adopted is that it allows for cluster renewal, which expands the investigation to include also other industries within the cluster domain. In the case of Virserum, the emergence of a strong manufacturing sector that compete over local resources could be interpreted along those lines. This, however, raises the further question of what constitutes a cluster in such models. The analysis indicates that Virserum was a "true" cluster and that proximity effects existed, but that they were not strong enough to offset the (structural) pressure of rationalization. One concern with the model is the risk of the analysis becoming too focus on the local level, at the expense of sectoral and national levels and that in order to better understand why some of the observed patterns emerged, factor that are excluded from the model need to be brought back in. This includes changes in demand, but also the formal and informal institutional context.

4. Evolving economic landscapes: why new institutional economics matters for economic geography

The final paper explores ways in which new institutional economics (NIE) matters for economic geography, in the light of the recently suggested evolutionary turn of the field. It aims at making two contributions: to give an overview of modern NIE and to point to affinities between it and an evolutionary economic geography.

As to the first, the paper shows NIE has two main investigatory branches, and that it is the one focusing on the institutional environment (rather than modes of organization) that is of interest to economic geographers interested in the evolution of the socio-economy. The paper discusses what some of the key aspects of that approach is, and indicates that such a conceptualization allows for a distinction between four conceptual spheres: (i) beliefs, or views of the world, (ii) institutions, or rules of the game, (iii) strategies, or ways the game is played, and (iv) actors, players of the game. It is argued that these are highly interrelated yet separable conceptual spheres and while the point is not that institutional analysis needs to be confined to only one, each has a different function and underlying mechanisms which means that they may involve very different processes of change. Acknowledging the varying roles and characteristics of each sphere is one way to pare the fuzzy concept of institutions down to a sharper profile, and to maintain the analytical edge of the institutional concept. The paper also point to the IAD framework developed by Elinor Ostrom as a compatible analytical tool with potential use in economic geography.

As to the second, the paper indicates that as a whole NIE constitutes a range at the interface between neoclassical economic and old institutional economics. The article outlines a number of commonalities between NIE and an evolutionary economic geography, but also differences. It suggests that there is a potential for fruitful exchange between the two in exploring these difference along their research interface. One such is the combined effects of technological and institutional path dependence on economic evolution, and how those may differ between places and scales. Another is the emphasis on certain beliefs as "focal points" that influence the trajectory of institutional and evolutionary processes, and the role and actions of individuals that hold those beliefs that is core to NIE, but less to the evolutionary approach.

Summing up

As noted, it is the belief of the present author that institutional thought has not quite yet exhausted its potential in geographic research. This is especially so in relation to the evolutionary turn in economic geography now in progress. The debate considers whether economic geography should take an evolutionary turn by incorporating analytical constructs from evolutionary economics, or if it should focus on refining its analysis of evolution in economic geography by reviving its institutional approach. At the risk of sounding overly simplistic, this concerns whether to focus on processes of dynamic change using metaphors from generalized Darwinism, or to focus on the context that shapes and is shaped by such processes informed by cognitive theories. This is the intellectual terrain that the work in this dissertation draws on and aims to contribute to.

It does so in two main ways. One is to subject the institutional concept to subtle critique by exploring a conceptualization based on new institutional economics, a line of institutional thinking that has had fairly limited impact on institutional economic geography so far. The conceptual work in the dissertation finds that there are indeed opportunities for fruitful exchange

between new institutional economics and evolutionary economic geography, and that if offers a clearer definition of institutions – that is, it is less fuzzy in that it is relatively less difficult to pare down to a sharper profile than are other, expanded definitions. The conceptual spheres identified in the dissertation may also contribute to the research agenda recently suggested for a reconstituted or new institutional economic geography. The empirical work in the dissertation indicate that distinguishing between organizations as players of the game and institutions as rules of the game does matter for the analysis. Yet, while the importance of context clearly comes across in the studies, an additional message is that this context contains institutional as well as non-institutional factors and that both matter for the spatial distribution of economic outcomes. Viewing formal and informal institutions as two out of several types of contextual constraints on the action space of individuals does not resolve all difficulties inherent in an institutional approach to economic geography, but it points to new possibilities that are unexplored within the frame of this particular work.

A second way that the dissertation seeks to contribute is by adding to the body of empirical work on the evolution of the economic landscape. The focus is on clusters in a mature industry (furniture) in two peripheral locations (Virserum and Tibro), of which one (Virserum) has ceased to exist. In that, it adds to the growing literature on unsuccessful clusters and the dynamic change of clusters over time. Taken together, the studies indicate the importance of trying to refrain from treating clusters as "isolated islands" by connecting their evolution to dynamic changes at industry and national levels, but also the ease by which such a focus is lost. The strength of comparative analysis in institutional investigations into evolving economic landscapes is also underlined by these studies.

There are of course a number of unresolved issues that this dissertation does not address but that warrant particular attention within a reconstituted institutional economic geography. This includes how to measure institutions and how to craft theoretically informed empirical studies of how institutions themselves change. The application of existing frameworks to empirical cases, as has been done in this dissertation, shows that it is possible. The question is rather how it should be done, what frameworks to use and the consequences of the choices made. Against this background it would be of more than passing interest to see how the institutional analysis development framework, the IAD, suggested as a potential way forward in the final of the four papers of this dissertation would fare. The fact that it would open up the possibility of analyzing institutions and their role in shaping collective action in a systematic fashion, and allowing a greater measure of endogeneity, is an attractive proposition, as is the possibility of linking it back to the notions pockets of local order and habitat in the guise once propagated by Hägerstrand.

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PAPER 1

Industrialisation in the Periphery

Dispersion and concentration of the Swedish furniture industry

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ABSTRACT:
Cluster research and the spatial distribution of industry are two enduring themes in present-day economic geography. These two strands, however, seldom come together in a systematic fashion. In part this follows from research strategies that focus on the one or the other, but also because until rather recently there has been a focus on successful cases at their height of prominence. Lately, both low-tech and declining clusters and industrial districts have come more to the fore, but mature industries that tend to occupy peripheral location are yet to be integrated into this line of research. Focusing on changes in the distribution of Swedish furniture industry, from its beginnings to the present, we ask whether the locational patterns of industries that are not to be found in the main agglomerations are subject to the same forces – agglomeration or dispersal through filtering and suburbanisation – as are secondary and tertiary activities that tend to agglomerate and cluster in the core. The results, as read off the changing pattern of distribution of the furniture industry over time, indicate that this is indeed the case.

KEYWORDS:
location, distribution of industry, dispersal, agglomeration, furniture manufacturing, Sweden

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Introduction

Drawing on the twin roots of location theory and regional development, it is probably fair to say that economic geography in general and industrial geography in particular have seen two major themes dominate over the past few decades. One is the study of spatial distribution of industries, the other a concern with agglomeration economies and clusters, both of which include elements of 'the static and dynamic geography of the firm' (Stafford 2003, p. 5).

While economic geographers barely need reminding about the explosive growth of studies on agglomeration, clusters and industrial districts (reviews include Czamanski and de Q. Ablas 1979; Selting *et al.* 1995; Asheim 2000; vom Hofe and Chen 2006; Karlsson 2008a, b; Motoyama 2008), the other 'persistent theme' of economic geography includes a concern with description and analysis of locational arrangement. At one level it is all about patterns from which locational strategies might be inferred, at another it is the distribution itself and its change over time which provides clues to regional development.

As for these spatial distributions of industry, or of industrial sectors, one may argue that manufacturing industries in some respects are all alike. This is so not least if seen from the vantage point of their spatial distribution within mature industrialised and, increasingly so, emerging economies. Thus, there is overwhelming empirical evidence to suggest that manufacturing activities, across most if not all industries, appear to conform to a common pattern of locational change. Once the dependence on localised raw materials and energy or local demand is no longer a major locational constraint, manufacturing as a whole can be observed to adjust its pattern of location in response to wider societal processes. In many a case, this implies a shift from larger cities and its traditional heartlands to more peripheral locations, be it down the urban hierarchy or in the form of suburbanisation. As economists would have it, changes in relative prices of factors of production induce economic activities to shift location in line with changing comparative advantages.

Whether this reflects relocation or merely differential rates of entry and exit across locations is of lesser consequence. Indeed, while from the point of view of the individual firm or cluster it might appear to be a result of some external chock or simply bad fortune – and outsiders might consider the changing fortunes of incumbent firms a result of lock-in – there is nothing particularly strange or unexpected about such changing comparative advantages. Also successful industrial regions and healthy clusters are liable to find themselves outcompeted some day.

The overall pattern has been documented in a long line of studies over the past half a century or so. Increasingly sophisticated work speak of nursery cities (Duranton and Puga 2001) or technology cycles (Lundquist *et al.* 2008) – or both (Svensson Henning 2009) – which follows on the heels of the earlier emphasis on product life cycles (Vernon 1966, 1979), including derivatives thereof such as profit cycles (e.g., Markusen 1987; Mano and Otsuka 2000) or filtering (Thompson 1968; Moriarty 1983; Karlsson 1999), that contribute to a locational dispersal or indeed 'turn around' (e.g., Zelinsky 1958, 1962; Chinitz and Vernon 1960; Norton and Rees 1979; O'Farrell 1984; Maskell 1985; Garofoli 1991; Isaksen 1992; Mack and Schaeffer 1993; Keeble and Tyler 1995; Strobl 2004; Winther and Hansen 2006). Yet the basic pattern remains the same, namely that manufacturing activities often originate in major urban areas and are subsequently moved out as increasing costs take their toll. Specifically, Polèse *et al.* (2007, p. 158) note, 'Wage-sensitive and space-extensive activities will be pushed out by what is sometimes called the "crowding-out effect" of rising wages and land prices in large metropolitan areas.' The fact that the destination might now

be across a border, or indeed across an ocean or entire continent, does little to change this basic pattern of change or its main determinants.[1]

Most observers confronted with the latter type of processes would draw the conclusion that this reflects increasing maturity, and rightly so. But does it also imply that mature industries do not enjoy the benefits of agglomeration, or that no clustering takes place in mature industries that are step by step confined to increasingly peripheral locations? Judging by the literature on clusters, this might very well be so. As Cumbers and McKinnon (2004) note, peripheral locations and mature industries are conspicuous primarily by their absence from the cluster literature.

This must not be construed as peripheral locations and mature industries having dropped out of view entirely, only that clusters are not primarily associated with the two and that this might be so for a reason. Polèse *et al.* (2007) suggest that some industries that are subject to crowding out still benefit from being in relatively close proximity to metropolitan areas and their superior supply of business services, leading to 'contained deconcentration'. Other will be less dependent on the existence of agglomeration economies and are therefore more likely to conform to a pattern described as 'unbounded deconcentration'; these latter industries are over-represented in peripheral areas. Perhaps inadvertently, but unfortunately, the term 'unbounded deconcentration' carries with it a suggestion that the industries so characterised are not in need of drawing on positive externalities and external economies of scale as might exist. Put differently, and perhaps paradoxically, urbanisation (as opposed to localisation) economies matter in deciding the locational pattern of various industries.

However, two observations should alert us to the fact that the void that Cumbers and McKinnon (2004) identify is not for lack of empirical examples to study but is in part a result of oversight. The first observation is that a good part of the literature on the clustering of industry focuses on industrial districts. These often specialise in (seemingly) mature products and production techniques, yet are seen as an example to follow. Indeed, several studies specifically address and provide empirical evidence for the role of historical factors, agglomeration economies and proximity in low-tech, labour intensive industries (e.g. Sforzi 1990; Lorenzen 1998; Maskell 1998; Burroni and Trigilia 2001; Becattini and Coltorti 2006; Scott 2006; cf. Hirsch-Kreinsen *et al.* 2005, pp. 23-25). Thus, it seems to overstate the case that mature industries have been left out of view; as for peripheral locations, however, Cumbers and McKinnon (2004) are quite possibly correct in their assessment.

The second observation is the fact that dispersal does not imply 'everywhere'. Filtering, industrial suburbanisation and other forms of dispersal, including off-shoring, are selective processes also with respect to location, some potential destinations being more attractive by virtue of the relevant set of location conditions and factors at play than others. The fact that manufacturing units in the same industry are likely to face the same general location conditions and need to take into consideration similar location factors can be a reason for these units ending up in the same location. This is especially so if there are no or few reasons, such as competition for raw materials, labour, space or local markets, to avoid sharing a location with (potential) competitors. On the contrary, if agglomeration economies can be captured, co-location might become a reason

[1] As described at some length in, e.g., the successful text book *Global Shift* (Dicken 2007). Note that in many respects these and the following arguments are not only relevant to manufacturing industries. Increasingly, also producer and consumer services are subject to the same pressures and display a similar set of responses. On the domestic relocation of services see, e.g., Richardson and Belt (2001), Nuur and Laestadius (2007, forthcoming); on service off-shoring, e.g., Wymbs (2000), Blinder (2006), Bryson (2007).

to join and stay put as competition mounts. As Scott (2006, pp. 1552) notes, '[n]o matter what the level of development may be, and no matter whether employment is increasing or decreasing, the clothing, footwear and furniture industries' – his examples of low-tech labour intensive lines of production – 'in any country tend to be heavily concentrated in specialized industrial districts.'

Against this background it seems useful to take a closer look at the locational patterns of industries that are not to be found in the main agglomerations. The purpose of this paper therefore is to chart the course of development of such an industry with a view to finding out whether it also has been subject to the locational shifts that are typical of much manufacturing activity. As we do so, we will also take a brief look at the propensity, or otherwise, of the activities in question to cluster. The object of study is the Swedish furniture industry and its development over time. Given the present day location of that industry, which frequently inhabits smaller urban localities in peripheral areas, it would be of considerable interest to see if this is the outcome of a process of deconcentration. Irrespective of whether that is the case or not, any signs of clustering – now as well as in the past – would also allow us to set earlier finding on the deconcentration and clustering of industry in perspective and perhaps allow us the privilege of exploring whether the two have anything to do with each other.

Furniture manufacturing provides an ideal case study towards this end. It is an industry that exists in most countries and for which there is demand in most settings irrespective of levels of income and tastes. Previous research from Canada, a major producer and exporter of furniture, further suggests that the industry may display patterns that either depend on ease of access to major urban markets (as is the case in Ontario) and to 'supplies of hardwood and softwood timber', the latter resulting in a more pronounced rural focus (as in Quebec) (Leslie and Reimer 2006, p. 325). Similarly, the experience of the Nordic countries suggests that, as an industry, furniture making can be both relatively concentrated or one that is dispersed (Maskell *et al.* 1998). It is also an industry that equally well can be organised along the lines of handicrafts and industrialised volume production and one that allows for both vertical and horizontal (dis)integration as needs or rationality demand. As a result, it has the added benefit of providing an example where economies of scale do not necessarily result in substantial barriers to entry.

To make our foray into the locational pattern of this mature industry still more open-ended, we set sight on a country where this industry has a long history and has developed on the basis of local resources but where localised raw materials are not a major issue. In Sweden legislation originally stipulated that production of furniture for sale in the market was to be produced only in chartered towns, yet examples exist of breeches of that legislative stipulation. It is also a country which abounds in forest resources of use to wooden furniture production, then as now the dominant part of furniture manufacturing. Indeed, for long the main constraints where rather access to energy and transportation facilities more generally, but the main raw material to all intents and purposes was as close to an ubiquity one could wish for.

The rest of the paper is organised as follows. We first outline the early developments of the Swedish furniture industry and its roots in the wider sector of forestry based economic activities. The following section looks at the modern industry, where attempts are made to cover also micro-enterprises and one-man operations in addition to those slight or substantially larger companies that dominate in terms of employment and output. This is followed by the core locational analysis of the paper, pitched at the county level. The county level is not in all respects appropriate, however, and we therefore follow this up by a more fine-grained if not equally systematic analysis (because of data availability) to see if local clustering is a feature of the industry.

Early developments

Forestry based industries are an important feature of the Swedish industrial landscape (Sölvell *et al.* 1992; Blomström and Kokko 2007; Fagerfjäll 2009). Pulp and paper alone account for almost one-tenth of Swedish exports, and sawn timber and various wooden products provide substantial further income. To this could be added related industries, such as machinery and intermediate goods, which have developed in response to local demand as the use of Sweden's plentiful forestry resources has expanded. Along with sawmills, the arguably most widely dispersed part of the forestry based industry is production of wooden furniture. It goes without saying that its rich forestry resources play a part in this and with 56 per cent of its total land area made up by productive forests (Swedish Forest Agency 2009, p. 45) in practice no part of the country should lack access to this resource. Over time, furniture manufacturers have widened the range of materials and techniques used in production and the types of furniture they release onto the market, but wood firmly remains a dominant resource to this day.

Yet, as the experience in neighbouring Finland suggests, the fact that forest resources are abundant does not in itself necessarily imply conditions conducive to the development of forest based industries such as furniture production. As Eskelinen and Kautonen (1997) note, dominant interests in forestry based industries may well ride roughshod over other users of the same basic resource by being able to influence the institutional context. Such conflicts are also part and parcel of Swedish forestry history (Eliasson and Hamilton 1999), including iron works enjoying local monopoly harvesting rights well into the 19th century and today's concern that bio-energy and more traditional uses of this resources are at cross purposes (e.g., Brege and Pihlqvist 2004). At a more general level, or so Schlüter (2007) argues, ideology – understood as 'shared mental models' (Denzau and North 1994) – may act as a determinant of institutional change in the forestry sector. Given the large number of owners and interest groups concerned and the long time horizons that follow from the nature of forests as a resource (slow growth with the uncertainties that this entails, serving a variety of needs as it grows to maturity, etc.), it is rather likely that the institutions pertaining to forestry become hostage to the past. As such it need not be rational, nor for that matter neutral and devoid of influences based on ingrained experiences or the ability to wield power.

As such, it will give rise to new incentive structures and new opportunities. Thus, it was only when the formal regulatory arrangement governing the Swedish forestry reserve underwent a number of significant changes in the mid-19th century that a process of conversion of the prevailing artisan production of furniture into proto-industrial and industrial production became possible.

Two major changes in the formal institutional context at the national level underline the importance of accessibility rather than availability of the forest resource when it comes to location of furniture firms. First, the privileges granting iron producers in wide areas of Sweden monopoly rights over the use of local forest resources were withdrawn in 1846 and 1850 (Arpi 1951). As production technologies improved and ore mining became profitable in the north, the south-eastern parts of the country shifted into producing glass and wood products of various sorts, including pulp and paper (Heckscher 1941; Stålberg 1947) and furniture (Nordström 1959). A second concerned the right to fell and use oak (found in southern Sweden), a material traditionally earmarked for the Navy and the Crown. Constituting the major exemption from full land ownership by the peasantry it took a long parliamentary struggle before the peasant estate succeeded in having this ban lifted in 1875. This paved the way for the use of oak by other industries, again including furniture (Juhlin Dannefelt 1959; Eliasson and Nilsson 2002).

At the entrepreneurial side of the equation equally important institutional changes were made. New legislation that granted freedom of enterprise was introduced in 1846 and 1864. Until then furniture had been one of Sweden's main craft guilds and hence the exclusive right of towns. This is reflected in the early dominance of towns as centres of production. Towns are of course also where demand could reasonably be expected to be the strongest. However, mechanised production was also linked to exports and access to export harbours became an important feature. Thus, early on major towns such as Stockholm, Göteborg, Malmö, Jönköping and Uddevalla were important locations of furniture production, but no later than by World War I had rural areas become dominant (Gårdlund 1941).

Even so, already prior to the demise of the guilds rural production was allowed for one's own needs and indeed the very first prominent geographical concentration of furniture producers, in Lindome, emerged outside rather than in one of the major towns in the 18th century. This took place under a putting out system of production, initiated by traders in the nearby town, Göteborg. Although not quite in line with the then legislation, in the early 1800s Lindome furniture makers secured the right, through a decision in parliament, to supply regional markets. By 1830, as many as 300 joineries were in operation at this location alone, with a not insignificant part of the production being exported to Denmark, Germany, Great Britain and the Netherlands (Ståhlberg 1942; Tärnby and Wirsin 1994; Palmqvist 2005). Within Lindome parish, villages came to specialise in specific types of furniture, chairs and chests of drawers to different styles and design in particular. Lindome was noteworthy not only on account of size but also by virtue of being an exception in at least two respects: it was not particularly rich in forest resources (the raw material had to be brought there from locations further inland) and for long periods of time it was a lone example.[2] However, following the changes in legislation in the mid-19th century, new furniture joineries and workshops, now often mechanised, sprung up more generally and they did so mainly in small locations and villages in the countryside at the expense of larger urban areas, but often catering to the demand from the latter.

The accessibility to wood as raw material and of water as a power source, combined with the fall of the craft guild system and the light and easily copied equipment used at the time, resulted in a process of local geographical concentration of the budding furniture industry to the southern parts of Sweden in the late 19th century (Gunnarsson 2000). Small towns and boroughs were favoured locations, producers often moving in from the surrounding countryside to the local centre (Stålberg 1942, p. 146). Although major cities and towns provided important markets, and saw local producers being established, there was no pronounced wave of urbanisation of production; if anything, as noted above, the dominance of major urban areas inherited from the era of the guilds had within a generation or two been made to yield to rural locations and small towns in peripheral areas. In this, it follows in part the more well-known example of pulp and paper (Lindberg 1953), another industry that by and large is found in small urban centres set in rural surroundings in rather peripheral locations.

This implies that furniture production failed to conform to the more typical pattern of manufacturing industries, where urban locations became increasingly attractive thanks to the benefits of larger populations and better transportation, provided by the railways and later on by the

[2] Another example of an old, successful, extra-urban furniture producing centre is Östervåla (110 km north of Stockholm). Its origin and early success are typically attributed to a need to find alternatives to agriculture (the main source of income) and a strong tradition in wooden handicrafts. On the Östervåla chair makers, see, e.g., Ludvigson (1986) and Haraldsson (1999a); Haraldsson (1999b) is a short note on the main markets, which included the towns Stockholm, Uppsala, Gävle and Falun, the surrounding rural areas and (at a later stage) Oslo (through the intermediation of Norwegian traders who established contact with local producers in Östervåla).

development of road transport (Schön 2000, pp. 250-256). The main exception to this is mining and forestry based manufacturing (Törnqvist 1964, pp. 85-86). For the others, the process of concentration was reversed at some point during the 20th century, when cost considerations, lack of labour and similar factors set in. This pattern, consonant with the process of filtering, was observed early on across the Swedish manufacturing sector. It pre-dates, but becomes a prominent feature of, domestic industrial change in the 1950s (Törnqvist 1963, 1964) and became potentially even more pronounced during the 1970s (Lundmark and Malmberg 1988, p. 188). As a corollary, and despite the fact that output (but not employment) increased considerably, the furniture industry did not undergo a shift under which production increasingly took place in smaller urban centres at the expense of larger urban areas in the 1950s and onwards

The reason is not far to seek: forest based industries, including the making of furniture, did not go through the process of concentration–deconcentration that marked the introduction of industrial forms of organisation of production from the late 19th century onwards. In the case of furniture, there simply was no prior period of concentration to major existing or emerging urban areas. This was so despite the fact that proximity to localised resources such as wood and water became increasingly irrelevant as decisive location factors for furniture production. Similarly, the parallel expansion of the domestic market for furniture, fuelled by rapid urbanisation, did not translate into any dramatic locational adjustment. How then did the pattern of location change over time, if at all?

The era of modern manufacturing

Leaving handicrafts based modes of production behind, by the inter-war period Swedish manufacturing industry had adopted the more rational techniques of production made available on the one hand by modern electrical engines and assembly lines and by scientific management à la Taylor on the other (Schön 2000, pp. 312-314, 329-331). Furniture making was later in warming to these new ways of organisation, but changes were made also in this industry (SOU 1947; Bohman 1997; Gunnarsson 2000). To this day, volume producers co-exist with small scale artisanal production, the latter of which today often occupies the high end of the market.

Much previous research also suggest that the degree of concentration of an industry changes over its life cycle (e.g. Vernon 1966; Swann *et al.* 1998; Menzel and Fornahl 2010). The initial stage is characterised by a low number of spatially distributed firms representing numerous product designs and technology innovations. As the industry starts to expand the number of firms as well as its spatial concentration increases. Barriers to entry are low and new entrants as well as spin-offs tend to locate close to, or form, 'focal points' (Menzel 2005), where the density of interconnections between firms that are technologically close is particularly high. During the growth stage firms benefit from positive agglomeration effects. By the end of this period products have become more standardised, innovation incremental and competition is based on price. As the industry matures the volume of output may continue to grow but the number of entrants declines, and it becomes more geographically dispersed again.

In order to investigate whether this presumed general pattern holds true also for the wooden furniture industry in Sweden, we start by looking at industrial concentration in terms of number of firms. In contrast to most furniture industry studies (e.g. SIND 1980; Larsson and Malmberg 1997; Brege *et al.* 2001; Ceccato and Persson 2002), we attempt to include all firms irrespective of size and do not restrict the focus to firms with at least five employees or some similar threshold. The reason is the importance of even very small firms for this particular industry. For example, in 2005 it consisted of some 3,000 registered firms that employed more than 15,000 people – of which a full

73 per cent were one man operations, that is, did not have any employees besides the owner. Although this number most probably to some extent exaggerates the true state of affairs,[3] most furniture firms that did hire labour that year were still very small: 48 per cent had less than five employees and 67 per cent had less than ten. The majority of those employed in the industry, or 57 per cent, were however found in medium sized firms with 50-199 employees (SCB 2006). Importantly, the smallest of firms contribute significantly to industry output. In 2004 – a year close to the bottom of the cycles to which the industry is subject – the value of production in the furniture industry amounted to SEK 21 billion (approx € 2. billion), or just below one per cent of GDP. Of this SEK 3 billion was estimated to stem from firms with less than five employees (Brege and Milewski 2004).

Table 1: Number of firms and employees in the Swedish furniture industry, 1931-2005.

	1900	1931	1945	1972	1987	2000	2005
Total number of firms	200	5,464	1,038	2,528	2,692	2,998	3,136
Total number of employees	5,000	22,790	14,950	19,114	19,527	24,680	15,429
No. of firms ≥ five employees	n.a.	906*	679*	383**	459	487	437
No. of employees in these firms	n.a.	14,613*	13,778*	16,282**	18,765	23,941	13,563

* firms with ≥ six employees; ** firms with ≥ 10 employees.

Sources: Gunnarsson (2000), Kommerskollegium (1935), SOU (1947), SCB (1976, 1988, 2001, 2006).

Table 1 shows number of firms and employees since 1900. It is based on sources that all include the smallest of firms, but differ somewhat in nature. For example, the number for 1945 omits firms without employees (and was measured at an economically difficult point in time).[4] The data, therefore, are not perfectly comparable over time. Even so, Table 1 points to the growth of

[3] Taxation is the basis for inclusion in the company register at Statistics Sweden; all juridical and physical persons that hold a company tax registration certificate (very easy to obtain) or that are eligible to pay VAT are included. Hence, the data includes non-active firms as well as firms with little activity that are run as side activities to regular employment (a phenomenon that is common in Sweden; Delmar *et al.* 2008). The extent of such low or inactive firms in the furniture industry has not been possible to estimate.

[4] The numbers for 1900 were estimated by Gunnarsson (2000) and refer to factories focused solely on production of wood furniture. This can be compared to figures supplied by Gårdlund (1941, p. 319) which, for the year 1896, included 221 carpentry shops and joineries, about 40 of which could be considered furniture manufacturers proper (total employment stood at 5,500). The year 1931 refers to a nation wide census carried out by Kommerskollegium (the National Board of Trade and includes work units (i.e. factories) with furniture production as their main focus without any lower bound in terms of size. The reported number may, hence, differ somewhat from the actual number of furniture firms that year. Data for 1945 refers to an evaluation of the furniture sector commissioned by the government (SOU 1946). It was based on industrial statistics that included firms with an annual production value above SEK 15,000 (meaning that most furniture firms with at least two employees were included). 1972 is a second census, this time including wood and metal furniture firms with an annual production value above SEK 10,000, which in practice is likely to have implied that any firm with one full time employee or more would be included as would most active firms with no or only part time employees. The years 1987, 2000 and 2005 are taken from the company register at Statistics Sweden. They include all registered firms (active and non-active) in the then SNI 361 category which included the manufacturing of chairs and seats (36110), office and retail furniture (36120), kitchen furniture (36130), other furniture (36140) and mattresses (36150).

the industry occurring during the first decades of the 20th century. More recent decades have seen the total number stabilise at about 3,000 firms, with those employing more than five hovering just above 400. After World War II, the total number employed in the industry has fluctuated between 15,000 and 20,000 with a peak at 24,000 in the year 2000. This was followed by a rather pronounced contraction until 2005 after which the industry has again registered healthy growth (above 19,000 employed in 2007).[5]

As assessed over the longer term, such fluctuations are of lesser consequence. Compared to the inter-war years the industry has experienced a decline in the number of firms, but over the past three or four decades the statistics have remained surprisingly stable and if anything seen an increase. Although the volume of output has also increased at a steady pace, it is an industry characterised by a fairly low degree of concentration, a characterisation that would sound true for most of the past century. We should note, though, that the contemporary furniture industry is significantly more concentrated in terms of turnover and profitability than the number of firms and employees appear to suggest. In 2000 an estimated 60 per cent of industry turnover came from about ten per cent of its firms, mainly large volume producers and suppliers to IKEA (Brege *et. al.* 2001). What is more, this collection of firms with close relationships to IKEA constitutes the only innovation system in the industry, although this is international rather than national in character (Brege *et al.* 2005; Ivarsson and Alvestam forthcoming).

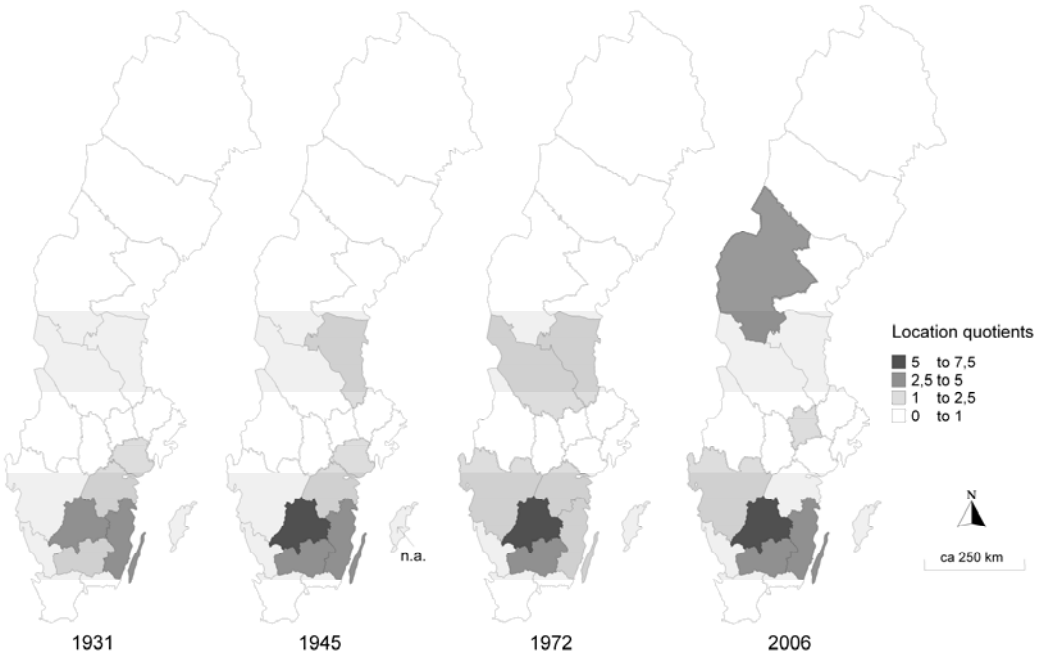
Interestingly, the low level of concentration in terms of number of firms that the Swedish furniture industry displays is combined with a high degree of spatial concentration. To illustrate this side of the coin, we calculate location quotients at the county level for selected years based on the same sources as in Table 1. Given the importance of the inter-war period for the process of industrialization of the furniture industry, 1931 has been chosen as a benchmark for the comparison. The result is shown in Figure 1. Spanning the period 1931 to 2005, the maps identify counties (following the present-day administrative subdivision of Sweden) where wooden furniture production is over-represented relative other industries as measured by employment.

The immediate conclusion one may draw from Figure 1 is the high relative concentration in the south-central and south-eastern parts of the country. This is particularly true of the three counties (*län*) of Jönköping, Kronoberg and Kalmar, which together make up the region (*landskap*) of Småland (the three with the darkest hue in the 1945 map). While this pattern holds true over time, Småland is subsequently joined by Västra Götaland immediately to the north-west, and in the final map also by Jämtland in the north. Had it been possible to use the older administrative units throughout the period[6] the impression of relative concentration had been greater still. This is so as Skaraborg (the eastern-most part of Västra Götaland) is the major contender to Jönköping in terms of both number of firms and number of employees in wooden furniture production.

[5] The new industry classification introduced in 2007 tends to yield somewhat higher employment figures than the previous ones. So far retrospective recalculations only include the period 2003-2007. It is worthy of note that while 2005 still marks the low point, the new classification yields somewhat higher figures; 15,914 employed in 3,215 firms rather than 15,429 in 3,136 firms. No other data points that those discussed in this note have been recalculated according to the new classification.

[6] Västra Götaland was formed though the amalgamation of the three counties of Skaraborg, Älvsborg and Göteborg och Bohuslän in 1998.

Figure 1: Location quotients for the furniture manufacturing industry, 1931-2005.



Sources: Kommerskollegium (1935), SOU (1947), SCB (1976, 2006).

The dominant position of the three counties in the region of Småland has of course not gone unnoticed. In an early essay on the location pattern of the furniture industry in Sweden, Stålberg (1942) showed that it had a particularly strong footing in that region. For example, in 1935, 38 per cent of the employees within the sector were found in Småland. A later piece by the same author notes that carpentry and furniture workers in Småland made up 23 per cent of the manufacturing workforce both in 1920 and 1943; over the same period the national equivalent fell from 15 to 10 per cent (Stålberg 1947, p. 244). Moreover, 44 per cent of the members of the then national furniture producers association, Sveriges Möbelindustriförbund, were located here. In 1942 the aggregated production by furniture firms in Småland accounted for 46 per cent of the total production in Sweden (Ålund 1946).

Table 2: Geographical and urban-rural distribution of firms and employees in the Swedish furniture industry by county, 1931.

County	Firms	% of which urban	% of national total	Employees	% of which urban	% of national total
Skåne	794	35.9	13.0	2,798	44.0	10.8
Blekinge	118	22.0	1.9	253	20.2	1.0
Halland	205	18.0	3.4	464	29.7	1.8
Kronoberg	202	2.5	3.3	906	1.3	3.5
Kalmar	341	8.8	5.6	2,541	4.4	9.8
Jönköping	397	24.2	6.5	3,841	32.2	14.8
Västra Götaland	1,152	26.1	18.8	3,001	33.2	11.6
Östergötland	378	39.2	6.2	2,194	47.4	8.5
Gotland	92	9.8	1.5	160	12.5	0.6
Värmland	190	24.2	3.1	858	45.1	3.3
Örebro	186	21.5	3.0	714	27.6	2.8
Södermanland	134	29.1	2.2	1,014	57.4	3.9
Västmanland	139	20.9	2.3	528	32.0	2.0
Stockholm	743	76.3	12.1	2,619	82.5	10.1
Uppsala	122	23.8	2.0	451	35.5	1.7
Dalarna	192	8.9	3.1	684	10.2	2.6
Gävleborg	177	27.1	2.9	971	18.7	3.8
Jämtland	134	11.9	2.2	222	19.8	0.9
Västernorrland	168	20.8	2.7	768	29.8	3.0
Västerbotten	133	13.5	2.2	594	10.9	2.3
Norrbotten	129	17.8	2.1	342	20.8	1.3
Sweden	**6,126**	**30.1**	**100.0**	**25,923**	**35.3**	**100.1**

NB 1: Data has been reclassified according to the present-day subdivision into counties, i.e. the city of Stockholm and Stockholm county now form one unit, Kristianstad and Malmöhus have been merged into Skåne, and Skaraborg, Älvsborg and Göteborg och Bohuslän have been merged to form Västra Götaland.

NB 2 The data in Table 2 includes units with additional activities (such as making of wooden containers, construction carpentry, and boat fixings). As a result, the numbers are higher than those in Table 1.

Source: Kommerskollegium (1935).

Ståhlberg's findings are reflected also in Table 2. There we see that the three counties of Småland were home to 15.3 per cent of all firms recorded by the census in 1931; at 28.1 per cent their share of total employment in the industry was almost twice that number. Västra Götaland accounted for another 18.8 and 11.6 per cent, respectively. Within the latter area, the then county of Skaraborg had 7.5 per cent of the national tally of firms in the industry and 4.8 per cent of total employment, the other two counties having slightly lower shares of both.

This pronounced importance of peripheral regions such as Småland must not be taken to imply that the industry was not represented in urban areas at all. As the process of turning furniture manufacturing into a modern industry picked up, slightly in excess of one-third of the firms active

in the industry were based in chartered towns, suburban areas of the largest cities and in a number of important and town-like boroughs. Urban shares are high in Stockholm and Skåne, but also in Södermanland, Östergötland and Värmland. In Västra Götaland, at just below the national average, the industry was much less urban. However, if we look at the figures for the three original constituent counties we find that in Göteborg and Bohuslän, which then as now includes the second largest city of Sweden, 55 per cent of the firms and full 71.3 per cent of employment fell to urbanareas.[7] Conversely, in the counties of Älvsborg and Skaraborg a mere 14.2 and 9.6 per cent of the firms, respectively, were based in urban areas, with a higher share (27.0%) registered for urban employment in the former of the two; in Skaraborg urban areas accounted 9.8 per cent of total country employment.

On average, in 1931 urban furniture making firms were larger than their rural counterparts. Only in four counties did rural firms on average employ more than their opposite number in urban areas. In addition to the two northern counties of Västernorrland and Gävleborg – both with a very strong tradition in forest based industries, including in rural locations – the two Småland counties of Kronoberg and Kalmar stand out. Here rural producers employed, on average, twice the number of their urban counterparts. In the third county of that region, Jönköping, the opposite was true at the time of the census. This reflects the importance of the towns of Jönköping, Tranås and above all Nässjö. At 483, the latter – a major junction on the main railway line serving southern Sweden and the location of one of the country's largest chair manufacturers, Nässjö Stolfabrik – had a furniture making workforce that in practical terms was equal to that of the much larger city of Göteborg (484).[8] The town of Jönköping (the county seat) had long been a major furniture making centre of national significance, but as Stålberg (1947, p. 180) notes it systematically lost ground already during the first half of the 20th century. Instead, as time passed surrounding rural areas and smaller towns became more prominent both with respect to employment and production value.

Table 3 displays the data from 2005 at county level. It shows that Småland more than half a century later is still an important region for the furniture industry in Sweden, as are the neighbouring areas immediately to the north-west.[9] As can be expected, counties with a sizeable population – the three most populous being Skåne in the far south, Västra Götaland and Stockholm – are also home to a large number of firms and work units. The three counties of Småland are not quite as prominent as far as the number of firms and work units are concerned, but they clearly punch above their weight. Indeed, in one respect one of them, Jönköping, is notably important despite the fact that its rather small share of national population (3.6% in 2005) and a relatively small economy (it contributed 3.2% of Sweden's GDP in 2005): alone it accounts for almost one quarter of the national employment in the industry. As such it is only beaten in absolute terms by the substantially larger Västra Götaland, which like Jönköping also contributes out of proportion to its population share (in 2005 Västra Götaland had 16.9% of the Sweden's population) and its overall contribution to the national GDP figure (16.6% in that same year).

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[7] Primarily Göteborg; the other town in that particular county identified by Gårdlund (1942) as an important centre at an earlier stage, Uddevalla, had by 1931 seen the total drop to 15 firms with a total of 29 employees.

[8] Nationally, only the city of Stockholm (1,849, excluding the suburbs which would have added another 1,300), Malmö (631) and the county seat of Södermanland, Nyköping (520), had a more numerous workforce than did Göteborg and Nässjö. The overwhelming majority of those employed in the industry in Nyköping worked for NK Verkstäder, set up in 1904 when Stockholm's most prestigious department store, Nordiska Kompaniet, decided to relocate its production from the capital.

[9] Studies conducted at intermediate points in time, such as SIND (1980, chapter 5) reports a very similar regional structure.

An additional observation worth making is that Stockholm has such a low share of total employment. While in 2005 Stockholm was home to 17.3 per cent of all firms in the industry, and has an almost equally large share of the number of work units, it only had 2.6 per cent of all employees in the furniture industry. In all likelihood, this reflects the processes of mature industries moving out, be it in the form of suburbanisation, filtering or off-shoring or any combination thereof. As such, Stockholm in part parallels the pattern of locational adjustment – relocation, decline and possible regeneration – observed in this particular industry in, for example, London (Best 1989), the greater Los Angeles region (Scott 2000, Chap. 5) or Bangkok (Scott 2008).

Yet, precisely because it is still subject to regional comparative advantages and the shifts in relative prices of factors of production that can be observed in most mature industrialised economies and many an emerging one, it is equally likely to reflect a historical trajectory where furniture making has come to serve different needs and segments of the market along the way. At the time of the guilds, not only did regulations favour urban production, but so did the structure of demand with urban households being less prone to produce furniture for their own needs than was the case in the agricultural sector. As industrialisation and urbanisation took off, demand in urban areas also increased, but quite clearly it was the lower end of the market that benefited the most. Larger scale production following an assembly line pattern rather than individually crafted pieces of furniture therefore come to dominate the urban market, with local sourcing over time being made to yield to non-local. As the practice, long established in the furniture retail trade, of engaging in upholstery and final assembly at the location of sales – often on the very premises of the retailer – was given up this shift in the geography of production should have become still more pronounced.

Time-wise, while already the 1850s and 1860s saw the first mechanised carpentry units, it is really the final decades of the 19th century that can be considered the beginnings of mechanisation (Gårdlund 1941, 1942). This was followed, during the first three to five decades of the 20th century, by a more modern form of industrialisation built upon the then new ways of organising manufacturing activities. In particular, developments during the 1920s are something of a watershed in this respect (Schön 2000, pp. 312-314). This is then followed, starting around 1950, by the era of mass production catering to an expanding mass market. However, the upper end of the market may well have seen stability or perhaps even an increase in demand, in absolute rather than relative terms. If so, one could reasonably expect those producers that depend on their ability to cater to the segment of the market that preferred hand produced furniture (and maintenance or repair of old furniture) to remain in or very close to the major cities. Indeed, it would be of more than passing interest to find out whether, perhaps, this could result in the odd producer from peripheral areas moving to Stockholm and other major cities so as to enhance their ability to cultivate this market.

Be that as it may. All in all, Map 1 provides evidence for specialisation at the sub-national level. Supported by data on the individual counties' share of all firms in the industry and their share of national employment in furniture making, we may therefore conclude that there is some truth to the claim made by Lundequist *et al.* (2008) and Fagerfjäll (2009, pp. 49-57) to the effect that there is division of labour across regions in Sweden, and that the furniture industry contributes towards such a pattern. Yet, pitching the analysis at this level of aggregation implies that we cannot immediately verify, or otherwise, a pattern that older work on the economic geography of the industry in Sweden has underlined time and again.

Table 3: Geographical distribution of firms and employees in the Swedish furniture industry by county, 2005.

County	Firms	% of national total	Work units	% of national total	Employees	% of national total
Skåne	414	13.2	498	12.7	1,911	12.4
Blekinge	33	1.1	43	1.1	14	0.1
Halland	113	3.6	136	3.5	511	3.3
Kronoberg	120	3.8	141	3.6	1,146	7.4
Kalmar	115	3.7	145	3.7	957	6.2
Jönköping	274	8.7	348	8.9	3,744	24.3
Västra Götaland	548	17.5	694	17.7	4,579	30.0
Östergötland	106	3.4	136	3.5	144	1.0
Gotland	31	1.0	37	0.9	40	0.3
Värmland	74	2.4	96	2.4	49	0.3
Örebro	74	2.4	113	2.9	131	0.8
Södermanland	86	2.7	116	3.0	175	1.1
Västmanland	92	2.9	114	2.9	379	2.5
Stockholm	542	17.3	655	16.7	405	2.6
Uppsala	74	2.4	100	2.5	37	0.2
Dalarna	90	2.7	117	3.0	190	1.2
Gävleborg	83	2.6	108	2.8	321	2.1
Jämtland	56	1.8	61	1.6	297	1.9
Västernorrland	58	1.8	74	1.9	33	0.2
Västerbotten	78	2.5	95	2.4	316	2.0
Norrbotten	75	2.4	95	2.4	50	0.3
Sweden	**3,136**	**100.0**	**3,922**	**100.0**	**15,429**	**100.0**

Source: SCB (2006).

Historically furniture production has not only been concentrated to particular regions, but that it has long had a propensity to cluster in certain localities within these regions (e.g., Stålberg 1947). Often, but not invariably, these clusters are found in small urban areas which during the late 19th or early 20th century saw the emergence of forestry based furniture manufacturing. Ålund (1946) listed Bjärnum, Bodafors, Malmbäck, Nybro, Nässjö, Tibro, Tranås, Vaggeryd, Vetlanda, Virserum and Värnamo – all but two of which (Bjärnum, Tibro) are located in Småland – as important furniture producing localities in the 1940s, and a modern version of such a list would not look much different. For instance, Brege *et al.* (2001) confirm that the location pattern has been remarkably stable despite radical changes in technology, materials and the manner in which production is organised.

Without making it into a major project in its own right – that is, by extracting the relevant information across the 3,000 odd firms classified as part of the industry from the national enterprise register – we may employ a different set of information to illustrate that such clustering is still a fact of life (a set, incidentally, which compares to the one Ålund 1946 used for the 1940s). Using the membership register for 2009/2010 of the Swedish Federation of Wood and Furniture Industry

(Trä- och möbelindustriförbundet, TMF), which has a good coverage of active firms with employees (if with a bias in favour of larger units), it becomes readily apparent that a rather high level of clustering of firms at the sub-regional level persists. As many as 87 out of 282 (i.e., 31%), while lower than the one recorded by Ålund (1946), are located in the three counties of Jönköping, Kronoberg and Kalmar. This compares to 56 plants in Västra Götaland and 40 in Skåne.

Although the number of localities that host more than the occasional member of TMF are quite numerous, there are a few that stand out. Thus, out of 282 members that are identified as furniture makers, 14 are from Tibro, 8 from Tranås and 7 from Nässjö, all three of which were also leading localities half a century ago. Other prominent locations include major or medium sized urban centres, such as Göteborg and Stockholm (5 each) and Jönköping and Nacka (4 each, the latter including Saltsjö-Boo).[10] These are being matched by the much smaller community of Rydaholm in Jönköping county (also 4) and there are further examples of small towns and centres in peripheral locations that count 3 each (Älmhult and Alvesta, both in Kronoberg; Horred in Västra Götaland; Orsa in Dalarna; Smålandsstenar in Jönköping county). Several of the other clusters identified by Ålund (1946) can be found, even though they might not stand out as precisely that, clusters: Bodafors (3), Vaggeryd and Värnamo (2 each) and Nybro and Vetlanda (1 each). There are no members at Malmbäck, Virserum or Bjärnum, although Ballingslöv, a neighbouring community of Bjärnum, is represented on the list. In part this is likely to be a result of the source used to illustrate the point about stability across the decades, as the Swedish Federation of Wood and Furniture Industry only organises firms that have a need to engage in wage negotiations and other aspects of collective bargaining.

This begs the question as to why this relative stability in location may have occurred. At the level of individual locations, there has of course been some realignment. Thus, Tibro in Västra Götaland remains the main cluster, while Bjärnum in fact has a number of furniture makers (none of whom appears to be members of TMF), but has by and large transformed into a centre of furniture wholesaling with about a dozen firms trading at the time of writing. As for the producers, Furinova and Bitc Möbel AB are the largest ones, but unlike half a dozen smaller units (without or with very few employed) these larger firms have outsourced production to Asia or Eastern Europe. The third major centre, Virserum, has all but disappeared. As Bohman (1997, pp. 35, 71) shows, at the end of Second World War, Tibro, Bjärnum and Virserum stood out as particularly important localities for furniture production. In 1945 they were the three dominant and most influential clusters in the country with 5.5, 3.3 and 2.9 per cent of national furniture output as reckoned by value respectively.[11] The very observation that these figures may at first seem low attests to the fact that furniture making is at once both widely dispersed, yet tends to cluster.

That these three are rightly seen as important agglomerations can be gauged from some additional statistics. In terms of influence on the local labour market, almost 86 per cent of the labour force in Tibro was engaged in furniture making while the corresponding number was 89 per cent in Bjärnum and 81 per cent in Virserum. Employers were, and in Tibro still are, also numerous. Using data culled from Chamber of Commerce or Statistics Sweden, as well as various official reports and evaluations, Bohman (1997, p. 71) reports that 88 furniture companies were active in Tibro in 1945 and 20 in Virserum. In 1996, the final year of his assessment, Tibro hosted

[10] Interestingly, most member firms in Stockholm (with neighbouring Nacka, Saltsjö-Boo, Skogås, Järfälla and Upplands Väsby, for a total of 12 units) and Göteborg, either belong to highly specialised made-to-order makers of furniture and fixtures targeting the well-to-do or firms that supply public or private service providers, in particular retailers or restaurants. The occasional mass producer does not change that perception.

[11] Judging by the information on market value of output provided by Stålberg (1947, pp. 153, 169, 196) referring to the same year also Nässjö should have made it onto this short list, while Värnamo and Tranås were not far behind.

24 companies and Virserum three. However, as his and similar reports tend to leave out firms with less than five employees, and for some years even less than 10, this does not quite reveal the extent to which we may speak of clustering of firms. Locally produced documentation and estimates reveal that in 1945 the actual number of active firms producing furniture was 139 in Tibro (Larsson 1989) and 30 in Virserum (Rafiqui forthcoming). The corresponding number for the late 1980s was 88 in Tibro (1986) and four in Virserum (1989).

From the perspective of the clustering of vertically or horizontally related firms, such disparities make a considerable difference. Indeed, the fact that the two sets of figures for Virserum can be observed to converge at the end of the period clearly identifies this former furniture centre as one in steep decline – as of the time of writing it no longer can claim a presence in the industry, unless the local industrial heritage site can be counted as such. As also other (former) clusters may have transformed into sites for a dominant firm or to, it would be of a more than passing interest to investigate the historical development pattern of individual furniture making localities – perhaps in terms of path dependence and lock-in or better still from a life cycle perspective – but this is beyond the scope of this contribution.

Conclusion

Setting out to investigate the location pattern of a mature, nominally low-tech manufacturing industry characterised by low entry barriers with a view to shedding light on the twin issues of relocation and agglomeration, this paper notes that dispersal and peripheral location does not necessarily preclude productive clustering. Not only is dispersal selective in the sense that some regions and localities will be favoured over others, but the localities so favoured will frequently be the home to many firms and work units. In this, it confirms the observations of prior research, both on Sweden (e.g., Ceccato and Persson 2002) and internationally (e.g., Lorenzen 1998; Maskell 1998; Burroni and Trigilia 2001; Becattini and Coltorti 2006; Scott 2006), which claims that clustering is a prominent feature also in (nominally) low-tech activities. This in turn supports the need to extend the cluster literature, as Cumbers and McKinnon (2004) suggest, to include peripheral locations and mature industries.

Indeed, the results suggest that clustering is a feature not only in instances where an overwhelmingly large part of the production is concentrated to one region (e.g., as in the Lathi region of Finland; see Eskelinen and Kautonen 1997), but also in economies where the industry is more widely dispersed. Thereby the findings also have the potential to put concepts such as 'unbounded deconcentration' (Polèse *et al.* 2007) into perspective: peripheral and rural location does not necessarily imply an inability (or lack of need) to draw on agglomeration economies. At least localisation, as opposed to urbanisation, economies come across as potentially worthwhile source of economic strength and resilience – unless, of course, the clusters identified now and in the past have merely been 'empirical clusters' as Crouch and Trigila (2001, pp. 222-223) would have it.

The study also illustrates the point that the forces behind patterns of locational readjustment observed across many manufacturing activities in mature industrialised economies can also be seen to be at work in lines of production that superficially does not display any major tendency to disperse (and then primarily because its pattern of location had its point of gravity in non-metropolitan areas already at the outset or else at a very early stage). Using the Swedish furniture industry as its empirical case, it instead notes that the original pattern of location, in part facilitated by the ease of access to its major input – good quality wood – besides labour, has proven remarkably resilient. This is true across different scales (local, regional). As such, it can be seen to

push the process of deconcentration further back in time than has been previously noted (e.g., Törnquist 1964; Lundmark och Malmberg 1988).

Demand is a factor that favours the cities, but it is not strong enough to prevent a shift in location. Early centres of production such as Uddevalla and Jönköping saw the presence of furniture making eroded and also the major cities – the pre-eminent sources of demand – also lost ground. Stockholm stands out in that it has retained a substantial number of firms in the industry, but employment has dropped quite dramatically both in absolute terms and relative to the industry as a whole. This may reflect a shift in the nature of goods produced, in that artisanal production and high-quality craftsmanship still find a ready market there – and we might hypothesis that suppliers of such furniture have stayed in the city or moved in to reduce the barrier that distance erects. Similarly, design and other specialised, high value added tasks of production can also (primarily?) be found there, while production and assembly operations are done elsewhere. If so, it would be in line with the notions of filtering and industrial deconcentration. On the other hand, mass production items, it is patently clear, have left the main cities and increasingly become the preserve of peripheral areas. To the extent, that is, that they are now not predominantly sourced abroad.

The above observation would motivate more detailed case studies across a rather wide range of issues. Just as the role of foreign trade and any specialisation as might follow from it are worthwhile topics to raise, the development of the dominant clusters and those that quite literally have gone out of business is another. Set against the context of sub-national and national location conditions, including institutions and shared mental models, such a follow-up could potentially prove helpful in determining the extent to which path dependence and lock-in have been at work. Similarly, life cycle factors – from origin, and take-off to maturity, possible decline and potential rejuvenation – as might be present in successful cases and those that have failed to survive from the inter-war period up to the present would be worthy of attention.

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Varieties of capitalism and local outcomes: A Swedish case study

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Abstract

Despite the 'institutional turn' in economic geography, relatively limited attention has been paid to the comparative political economy literature that investigates the institutional underpinnings of the different versions of capitalism that we observe in the world. In turn, this literature has shown little interest in variety *within* national models of capitalism, an issue more often tackled by economic geographers. This paper asks if the Varieties of Capitalism (VoC) framework of Hall and Soskice is a useful tool for investigating institutional disparity within national models, and if it can indicate deviation from national or sectoral norms that may provide insights into the success or failure of local clusters. It applies the framework to two Swedish furniture locations – Tibro and Virserum – that together dominated the industry in the mid-1940s. Today, Tibro maintains its leading position whereas Virserum has been wiped off the map in terms of furniture production. The paper finds that applying the framework in this rather unorthodox manner does indeed paint a more nuanced picture of a rather coherent Swedish institutional system, and that there is varying scope for local creativity among the predetermined institutional spheres of VoC. In particular, the paper illustrates how local outcomes of national systems may differ across space, depending on particular configurations of institutional and non-institutional factors at local and sectoral levels playing themselves out against national developments.

Keywords

clusters, economic geography, furniture industry, institutional theory, varieties of capitalism

Introduction

During recent decades scholars in political science, sociology and business studies have paid increasing attention to the diversity of modes of capitalism among industrialized economies in the world. A main focus has been on the role institutions play in shaping this landscape of capitalisms and how differences in institutional settings affect economic performance across nations, via their influence on economic actions. Although differing in their suggested analytical frameworks and typologies, the theoretical contributions of this comparative capitalisms (CC) literature are strong enough to define it as a group distinct from other comparative approaches (Jackson and Deeg, 2006). Today the varieties of capitalism (VoC) approach associated with Hall and Soskice (2001) is the most influential of these comparative frameworks, to the extent of having become almost hegemonic in the field (Howell, 2003). This does not mean, however, that their approach has gone uncontested. Rather it has stirred intense in-field debates over issues such as the appropriate classification and typology of capitalism, the extent of complementarities within an institutional system, the implications for patterns of change, the possibility of nations

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converging to institutional best practices, and the potential limitations of the analytical primacy given to the national level over that of other scales, in particular the global (e.g. Blyth, 2003; Goodin, 2003; Hall and Soskice, 2003; Howell, 2003; Watson, 2003; Allen, 2004; Crouch, 2005a; Crouch et al., 2005; Höpner, 2005a, 2005b; Deeg and Jackson, 2007; Amable and Palombarini, 2009; Hall and Thelen, 2009).

So far economic geographers have paid relatively little attention to the CC literature. This is despite CC's focus on the uneven distribution of economic outcomes across space – and the 'institutional turn' in economic geography during the same period. In turn, the CC literature, and VoC in particular, has shown limited interest in variety *within* national models of capitalism, an issue more often tackled by economic geographers. A similar point is made by Peck and Theodore (2007), who see comparative scholars as de facto (institutional) economic geographers, even though their findings have circulated largely outside regular economic geography channels.[1] Apart from pointing to affinities between the fields, Peck and Theodore identify 'promising zones of exploration' based on their differences. One such lies in diverging analytical norms where the VoC framework focuses on a single scale (the national) and considers multiple, usually formal, institutional domains, whereas economic geography uses multiple scales (preferably at subnational levels) to investigate single institutions, often informal. According to the authors, both fields could benefit from a more explicit engagement with processes of combined and uneven development. For economic geography this would entail reducing its preoccupation with single-location, single-industry, single-institution studies, as well as its reluctance to embed 'the local' in wider structural contexts. The VoC, in turn, ought to move from 'labelling of variety' to 'probing meaningful forms of variegation' (2007: 761), which means taking into account the 'polymorphic interdependencies of the constructive regimes of capitalisms' (2007: 733) and increasing the framework's sensitivity to scale.

This paper is an attempt at taking one step in this direction. But, rather than substituting the VoC framework with a blend of neo-Marxist, Polanyian and regulationist concepts and treatments as suggested by Peck and Theodore, it applies the framework to regional and sectoral levels within a given national context. In effect this brings the VoC in close proximity to the social systems of production approach to comparative capitalisms, which stresses regional and sectoral levels of analysis (e.g. Hollingsworth et al., 1994; Herrigel, 1996; Hollingsworth and Boyer, 1997; Amable, 2003; Crouch, 2005b; also Morgan et al., 2005), and to which VoC was partly a reaction (Hall and Soskice, 2001: 15–16).

The justification for this approach is two-fold. First, by explicitly incorporating the national and sectoral contexts, we add a macro dimension to the analysis of micro case studies. Second, by investigating if and how economic activities might be organized differently than predicted by the national model, we can reflect on the coherence of national systems and point to alternative possibilities of industrial development within them. Hence, while taking the critique of Peck and Theodore seriously, the purpose of this paper is to ask what happens if we apply the VoC framework to subnational scales. Will a movement between scales within each of the predetermined institutional spheres paint a different picture than that obtained from a sole focus on the national scale? If so, how will an application of the framework to subnational levels add to our understanding of the coherence and internal variation of national systems? Indeed, is the VoC framework a useful tool for probing into 'meaningful forms of variegation' of capitalist systems, also at subnational levels?

The empirical part of the study looks at one industry (furniture production) in two locations (Tibro and Virserum) in one national context (Sweden). In line with the rest of Europe, Swedish furniture production is a mature and agglomerated[2] industry exposed to local production regimes as well as to broader national and international forces (Larsson and Malmberg, 1997; Lorenzen, 1998; Maskell and Lorenzen, 2004). It is a light industry with relatively low entry barriers and mainly small and medium-sized firms that span craft-based production techniques as well as fully mechanized mass production. Even though globalization has allowed production to move to low-wage countries, some still exists in high-wage

settings such as Sweden. Given that Sweden's economy is dominated by large corporations in relatively high-tech industries such as mining, motor vehicles, pharmaceuticals and telecommunications, and that much of the national institutional support structure is geared towards the needs of these (Parker, 2004), the survival of the furniture industry in Sweden suggests the possibility of institutional divergence at the sectoral and/or regional levels. Moreover, despite radical changes over time in technology, materials and the manner in which production is organized, the location pattern of the Swedish furniture industry has proved remarkably stable, concentrating in the southern regions of Småland and Västergötland. In fact, it has long clustered in small urban areas (rather than major towns) within these (Stålberg, 1947). Ålund (1946) listed Bjärnum, Bodafors, Malmbäck, Nässjö, Nybro, Tibro, Tranås, Vaggeryd, Vetlanda, Värnamo and Virserum as important furniture producing localities in the 1940s. A modern version would not look much different.

This paper looks at the evolution of two localities on Ålund's list: Tibro and Virserum. In 1945, they were the first and third most important furniture locations in Sweden, with 5.5 and 2.9 percent of national production respectively. More than 80 percent of their local labour forces were engaged in furniture production, and both locations enjoyed a national as well as an international reputation. Since then, Tibro has held on to its leading position whereas Virserum has ceased to exist as a furniture cluster (Bohman, 1997; Frizell and Werner, 2003). This begs the question of why, despite seemingly similar positions in the 1940s and being exposed to similar demand and technology changes and to the same national regulatory context, Virserum declined whereas Tibro continued to thrive. The methodology adopted in this paper allows us to test if the VoC perspective applied to the local economies of Tibro and Virserum indicates deviations from national or sectoral norms that provide insights into their success or failure, and to reflect on the usefulness of VoC for such evolutionary investigations.

The rest of the paper is organized as follows. Next is a brief overview of the VoC framework and a discussion of how it is used in the study. Then we investigate furniture production in Tibro and Virserum, as seen through the VoC lens. We start with an introduction to both locations and an analysis of their respective histories based on the VoC institutional spheres. For each sphere the national and sectoral 'norms' or regimes are specified, followed by detailed descriptions of the two cases. The research is based on published materials, interviews with local actors, data from local newspapers and municipal archives, and materials from Tibro and Virserum local historical societies collected during fieldwork in 2004 and 2005. The paper ends with a concluding discussion.

The VoC framework in brief

Following Deeg and Jackson (2007), the CC literature consists of three main approaches: (i) the varieties of capitalism framework (e.g. Kitchelt et al., 1999; Iversen et al., 2000; Hall and Soskice, 2001; Hancké et al., 2007), (ii) the social systems of production or governance approach (e.g. Hollingsworth and Boyer, 1997), and (iii) the national business systems approach (e.g. Whitley, 1999). Today the first of these is the most prominent. Howell (2003) suggests that the VoC approach has reached this position owing to its theoretical sophistication and its distinct, original and ambitious analytical framework, which is neatly synthesized and presented in the introduction to Hall and Soskice (2001). As the 'most elaborative formulation in the mainstream varieties literature' this book has generated a rich body of comparative institutional research (Peck and Theodore, 2007: 748) and become the 'emblematic citation' for subsequent contributions (Crouch, 2005a).

The aim of Hall and Soskice (2001: 1) was to 'elaborate a new framework for understanding the institutional similarities and differences among developed economies', and they positioned their effort as work-in-progress. The approach seeks to link micro-level behaviour to macro-level outcomes via a focus on firms as the 'key agents of adjustment in the face of technological change or international competition whose activities aggregate into overall level of economic activities' (2001: 6). It was an attempt to move beyond existing approaches by basing the comparison on the organization of the private sector

(rather than the state), bringing the firm into the centre of the analysis (rather than focusing on the trade union movement), and focusing on national-level institutions (rather than regional or sectoral). This last point is one of the central premises of the VoC approach; namely, that the most important institutional structures – concerning corporate governance, labour market regulation, and education and training – depend on regulatory regimes governed by the nation-state. Hence, it looks for national-level differences to produce a terminology and typology that is more general than previous ones.

The VoC takes a relational view of the firm and regards firms as economic actors that aim to develop and exploit their core competences. The analytical focus is on (a) the presence of institutions that offer economic actors the capacity to exchange information, monitor behaviour, sanction deviant behaviour and deliberate; and (b) the effect of institutions on strategic interaction between firms. This is a research agenda shared with transaction costs microeconomics (Williamson, 1985) and industrial organization economics. Two things set them apart, however. First, the VoC includes institutions that facilitate deliberation and encourage actors to engage in collective discussions to reach collective agreements, a group otherwise overlooked. Second, in line with the general CC literature, the VoC approach assumes that (firm) strategy follows (institutional) structure rather than the other way around.[3] Following North (1990), institutions are defined as formal and informal 'rules of the game'.

Hall and Soskice identify five institutional spheres within which firms develop relationships to solve coordination problems around their core competences, and they underline the importance of informal rules and understandings in strategic interactions in these spheres. In the *market for corporate governance*, firms coordinate their needs for financial capital with investors' needs for assurance of returns. In *industrial relations*, firms coordinate bargaining over wages and working conditions (with own labour force, their representative organizations, and other firms). Within *inter-firm relations*, firms coordinate their needs for stable demand for products, appropriate supply of inputs, and access to technology with clients and suppliers. *Vocational training* concerns how firms coordinate their demand for a workforce with particular skills with workers' interests in investing in that skill. *Intra-firm relations*, finally, addresses how firms ensure that employees have the necessary competences and cooperate well with each other to advance firm objectives. This sphere was not included in the study.

One core argument of the VoC approach is that the political economy of nations can be compared based on the manner in which firms solve coordination problems within these spheres. It makes a basic distinction between liberal market economies (LMEs) and coordinated market economies (CMEs) and it asserts that differences in their institutional settings will generate systematic differences in firm strategies and investment. In the former, firms tend to rely on market solutions and the price mechanism to coordinate on a single equilibrium, whereas the latter is dominated by non-market solutions and strategic interaction that leads to coordination on a specific equilibrium in a multiple equilibrium. The institutional support for market or non-market coordination will influence the types of innovations that can be expected in each category – radical innovation in LMEs and incremental innovation in CMEs. Looking at the OECD countries, Hall and Soskice classify, e.g., Germany, Japan and the Nordic countries as CMEs, whereas the USA and the UK are quintessential LMEs. A few ambiguous nations, e.g. France, Spain, Italy, Greece and Turkey, indicate the possibility of a Mediterranean type of capitalism. A second core argument of the VoC is the existence of *institutional complementarities*, or a 'line of reasoning' between the institutional spheres because 'the presence (or efficiency) of one increases the returns from (or efficiency of) the other' (Hall and Soskice, 2001: 17). This reinforces differences between LMEs and CMEs and predicts an incremental pattern of institutional change.

The VoC framework has been criticized on all these counts.[4] Boyer (2005), for example, relies on regulation theory to contrast VoC's dichotomy between LMEs and CMEs with a four-brand typology of capitalisms (market led, meso-corporatist, social democratic and state led), and Amable (2003) identifies five (market-based Anglo-Saxon, social democratic, Asian, Continental European and South

European) and an extensive list of characteristics. Peck and Theodore (2007) argue that VoC's classification along a continuum of more or less market misses the *combination* of market and non-market coordination, which is essential in real life. In an early response, Hall and Soskice (2003) stress that subgroups can be distinguished within both liberal and coordinated market economies, and Hall and Gingerich (2004) add 'mid-spectrum' or mixed market economies (MMEs) and argue that these tend to underperform vis-à-vis the 'purer' CME and LME types. Taylor (2004) and Akkerman et al. (2009) reject VoC's innovation specialization claim as a general law, because results vary for different industries. Additionally, the VoC is accused of being too static, stressing institutional complementarity and path dependence to the point that only external shocks can cause the system to alter, and of lacking a theory of institutional change (e.g. Crouch and Farrell, 2004; Crouch, 2005b; Crouch et al., 2005; Höpner, 2005a, 2005b; Morgan, 2005; Deeg and Jackson, 2007; Amable and Palombarini, 2009). To this Peck and Theorode (2007) add that the monoscalarity of the analysis risks overlooking processes of change and new forms of capitalism realized at different scales, which gives an illusion of a smoothly functioning, self-adjusting, coherent and stable system at the national level. Hall and Soskice (2003) reply that the framework was never intended as a theory on the formation and persistence of institutions, but that it acknowledges that institutions that underpin coordination are subject to constant renegotiation. This has been further developed by Hall and Thelen (2009). Likewise, Hancké et al. (2007) identify complementarities and institutional change as one of four dimensions that are ripe for further development.[5] They suggest accommodating LMEs, CMEs and MMEs within dimensions of 'interests and coalitions' and 'state–economy relations'. This produces a revised typology where 'étatisme' (close state–economy relations and fragmented interest groups) and the 'compensating state' (close state–economy relations and organized interest groups) are added to the regular LMEs (arm's-length state–economy relations and fragmented interest groups) and CMEs (arm's-length state–economy relations and organized interest groups) categories.

Both Hall and Soskice (2001) and Hancké et al. (2007) classify Sweden as a CME. Table 1 lists the coordination mechanisms that dominate each institutional sphere in a CME, and that, hence, can be expected to prevail in Sweden. This paper takes this classification at face value in the sense that it does not question if Sweden qualifies as a CME, but instead use the CME as an analytical reference point against which to consider specificities at both sectoral and local levels, and their development over time.

Furthermore, the study is quasi-dynamic in that it does not focus on understanding how and why institutions change. In line with most of the CC literature, it confines itself to investigating how the institutional spheres that the VoC literature identifies have influenced the action spaces and strategies of furniture firms in Tibro and Virserum. However, as the time horizon is some 150 years, we address important institutional changes in each sphere and discuss the impact on each location. Yet no attempt is made to analyse their origin and nature, or the potential role of Tibro and Virserum firms in instigating such change.

Furniture production in Tibro and Virserum

In Sweden, mechanized furniture-making dates back to the mid-1800s, but did not become fully industrialized until roughly a century later. The 1950s and 1960s were 'the golden era' for the industry, owing to ongoing urbanization and a political determination to overcome the resulting housing shortage with the construction of new apartments and family homes. In the 1970s there was pressure for restructuring and efficiency improvements but also a rapid expansion of the public sector, which became a new and important market segment. Cost pressures made the 1980s and 1990s challenging decades for Swedish furniture producers (Gunnarsson, 2000). Beds have been the most profitable segment in the last decade, while traditional makers of home furniture as well as design furniture (public space) and suppliers of intermediate goods have lagged behind (Brege and Berglund, 2009). The 2006 production value of the industry was SEK 21.6 billion (approx €2.4 billion), or less than 1 percent of GDP (TMF, 2008).

Table 1 Expected characteristics of a CME

Institutional sphere	How are information exchange, monitoring, sanctioning and deliberation resolved?
Inter-firm relations	Firms rely on inter-firm relations and networks, rather than mobility of scientific and engineering personnel between firms, to facilitate diffusion of technology across the economy and to secure stable demand and supply of inputs. The legal structure encourages relational contracting, which is displayed in inter-firm collaboration and joint funding of research, as well as with semi-public research institutes. Industry organizations foster common standards and may be part of designing public subsidy programmes.
Market for corporate governance	Firms rely on bank credit and retained earnings rather than on the stock market to fund their activities. Relatively less dependent on the stock market for detailed public information about the financial situation of firms. Instead, dense networks, cross-shareholding, reputation, taxation, security provision and non-shareholder interests influence firm strategies.
Intra-firm relations	Top managers focus on their reputation for providing reliable information to investors and employees. They have limited scope for unilateral decision-making because agreement from the board, usually with workers' representation, and other key managers is needed. Incentives favour long-term employment contracts and investment in company-specific skills by employees.
Industrial relations	Wage-setting through industry-level bargaining between trade unions and employer associations. Works councils at firm level or regulations on worker co-determination and employment security will influence lay-offs and working conditions.
Vocational training	Demand for industry- or firm-specific, as opposed to general, skills. Firms are dependent on educational and training systems (sometimes including apprentice systems) that are often publicly supplied but supervised by industry-wide employers' associations and trade unions.

Source: Hall and Soskice (2001: 23–7).

Tibro and Virserum at a glance

Tibro is located in Västra Götaland County, in the municipality of Tibro, where it is the main urban area (Figure 1). In 2005, Tibro parish had 9000 inhabitants (the municipality about 10,000) and approximately 30 percent of its working age population were employed in manufacturing. The largest sector was furniture-making and wood-processing. Virserum is located in the heart of Småland, in Kalmar County (Figure 1). The second-largest parish in the municipality of Hultsfred (population about 14,000), it had some 2000 inhabitants in 2005. Since the peak of its furniture era, Virserum has lost most of its employment opportunities within manufacturing and half of its population.

For cluster magnitude we use data on number of firms and employees collected locally, as official statistics tend to omit firms with fewer than 5 (or 10) employees. All included firms are (or have been) located within Tibro and Virserum parishes, in most cases within their respective urban cores.

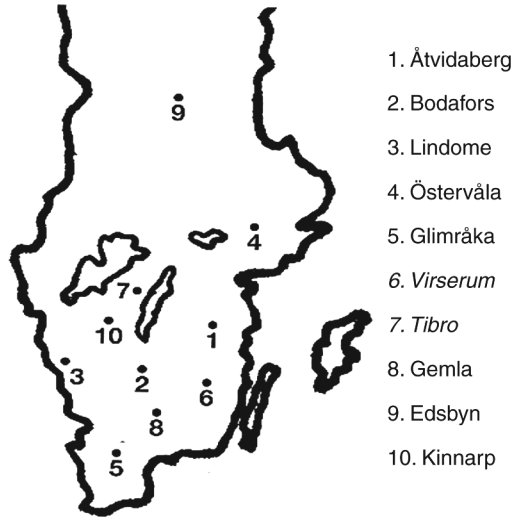

Figure 1 Some historical furniture locations in Sweden
Source: Gunnarsson (2000: 152).

Tibro had the highest number of furniture-producing firms (149) in 1939, although the number

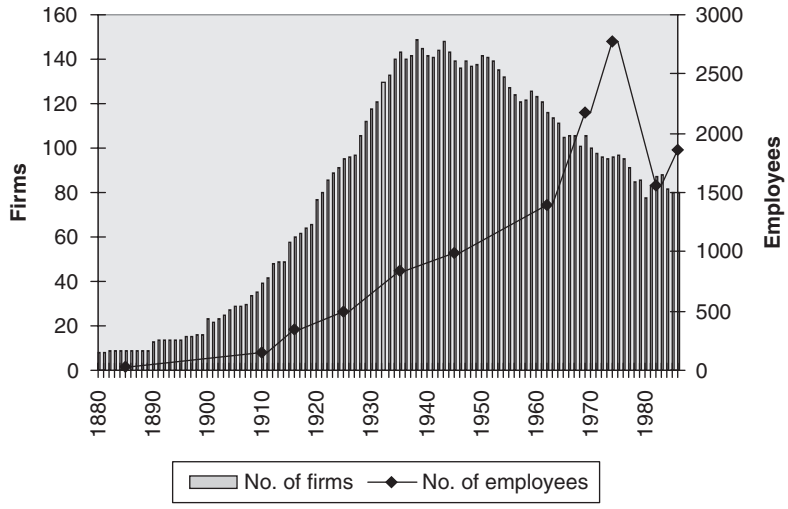

Figure 2 Tibro: Number of firms and number of employees, 1880–1986
Source: Compilation by author based on Larsson (1989: 145–156).

of employees peaked as late as 1974 when almost 2800 people worked in the industry (Figure 2). This can by and large be explained by the phenomenal growth and expansion of Ulferts Möbler AB, a family firm founded in 1943. By the time it was sold to an investment company in 1974, Ulferts had some 1100 employees in Tibro and was the largest furniture producer in Scandinavia. It struggled during the 1980s and 1990s and is currently not active. Virserum hosted at the most 31 furniture-producing companies (in 1935 and 1940) employing about 450 people (Figure 3). The 1950s and 1970s appear difficult with simultaneous firm closures and employment reductions. In the 1960s, employment levels were maintained despite firm closures, indicating ongoing consolidation or rationalization of operations.

Cluster scale and the shape of the employment curve are the main difference between the figures. Whereas in Virserum the employment trend largely mirrored that of number of firms, Tibro experienced a continued increase in sector employment well into the 1970s. Both locations reached their largest number of firms around 1940, although the peak is more pronounced in Virserum. Today there are only two furniture firms located here: one small producer of sofas for the home market segment (a restructured cluster survivor) and one newly established design company that draws inspiration from Virserum's furniture past. In addition there is one polyether producer that supplies them both. Virtually all the old furniture factory buildings have been demolished or rebuilt – were it not for a furniture industry museum, not much would tie this small community to furniture production. This is in marked contrast to Tibro, which in 2005 still hosted some 65 firms within furniture and related industries; of these, 30 percent had fewer than five employees. These included 47 furniture producers (employing 780 people, the largest unit about 255), 3 producers of veneer, 5 carpentry workshops and 3 sculpturing workshops. There were also 3 furniture agencies, 2 flooring companies, 1 kitchen producer 1 producer of machinery and equipment, and 1 firm that specialized in the maintenance of wood-cutting machines (IUC Tibro, 2005; Tibro kommun, 2005). All in all, Tibro still lives up to its slogan 'Tibro – The Furniture Centre of Sweden'. Next we look more closely at these locations through the VoC lens, starting with the inter-firm relations sphere, because it reveals more of their respective characteristics.

Inter-firm relations

Because Sweden is a CME, Swedish firms are expected to rely on inter-firm relations and networks

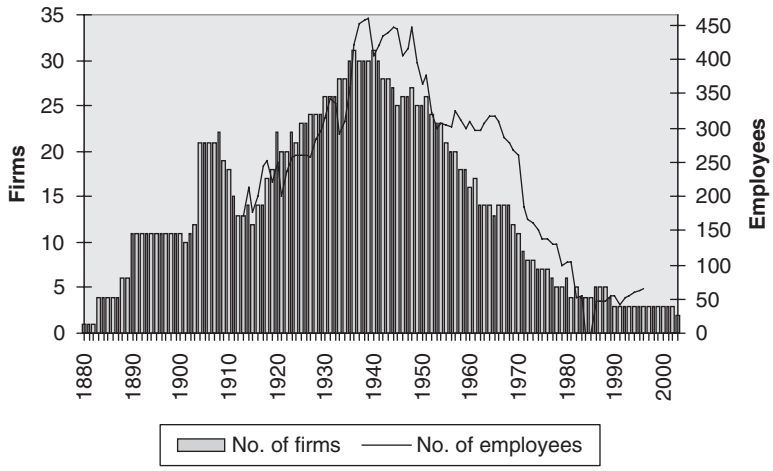

Figure 3 Virserum: Number of firms and number of employees, 1880–2003
Source: Compilation by author based on interviews and data from Virserum Furniture Museum, Virserum Local Historical Society and Kalmar County Museum, as well as Bohman (1997).

to secure stable demand and supply of inputs. The same mechanisms facilitate diffusion of technology and innovation across the economy, as long-term labour contracts imply low worker mobility between firms (Table 1). The Swedish furniture industry offers an interesting perspective on this. In its early days, innovations in design, materials and technology were almost public goods that spread quickly across the industry despite geographical distance and poorly developed infrastructures. In contrast to the CME prediction, one reason was individual mobility: carpenters changed location frequently (often seasonally), taking technical knowledge as well as designs with them. Moreover, travelling salespeople represented a number of manufacturers, thus gaining insight into the design and products of competing firms. A third reason was blueprints. Design and pattern books, e.g. the 'design folios' published by the Swedish Crafts Society, were widely available. These contained pictures, measurements and detailed descriptions of 'suitable and exemplary pieces of furniture' (Nyström, 1991: 46). This tradition of the free copying of designs and technical solutions held on well into the 20th century.

As the industry grew and became more industrialized, it entered a phase of loyal trade orders (Kjær, 1998), involving exclusive contracting at industry and firm levels combined with strong national business organizations. Between 1937 and 1945, contracts between the national producers' organization, Sveriges Möbelindustriförbund (SMI), and the national retailers' organization, Sveriges Möbelhandlares Centralförbund (SMC), stipulated that organized furniture producers could not engage in direct sales, restricting trade to SMI and SMC members (Mårtenson, 1981). The aim was not to control prices but to strengthen the power of the two associations and to limit outside influence. By the time the contracts were terminated in 1945, half of Sweden's furniture makers were organized in the SMI and 74 percent of all retailers in the SMC; for all practical purposes the contracts covered the entire furniture market. After 1945, organized retailers continued to act as if the contracts were still in place, resulting in decades of conflicts as retailers sought to block pricing activities, access to showrooms and the supply of furniture to unorganized retailers.[6] Bilateral exclusive contracting at the firm level, granting retailers the right to a particular furniture line during a specific time period, in effect making it a monopolist within a given geographical area, was the norm until the early 1990s (interview, IUC Tibro, 2005). Moreover, the SMC actively sought out anything resembling factory outlets that would violate

'fair trade' within the industry, threatening to boycott the producer in question. Today the main producer and retailer organizations have transformed into employers' associations and lobbying bodies that monitor regulatory changes affecting their members.

From a VoC perspective it appears as if these formal coordination structures focused on securing demand for and supply of inputs rather than facilitating technology diffusion across the industry. Despite efforts to construct an industry-level R&D fund in the 1970s and 1980s (Arwidson, 2006), the industry has not constituted an innovation system since its pre-industry artisan days (Brege et al., 2004).[7] Contemporary furniture firms are, nevertheless, involved in product development and 89 percent purchase design (Högberg, 2007). It is common for small- and medium-scale firms to design unique and small production series, whereas large firms tend to design for mass production (Hagström et al., 2006). Traditionally, Swedish furniture firms have not relied on designers for their product development, something that had changed significantly by the 1990s (Julander and Näär, 1979; Kjellström Attar, 1996). Until the 1970 Registered Designs Act, the law protected merely 'decorative patterns' within the metal industry, which meant that only makers of metal bed frames and fittings for drawers, etc., could patent their designs (Essén and Sterner, 1971). Now, as well as prior to 1970, the Act assigns intellectual property rights to the designer, and in order for a producing firm to own a design the rights have to be signed over. Design is often commissioned within the furniture industry, making the designer an important actor with whom to build long- or short-term relations. In the home furniture segment (traditional as well as design oriented), design is viewed either as final 'styling' or, occasionally, as an integrated part of the product development process. It is only in design-oriented firms producing for the public sector that designers cooperate with top management to create new products or reinvent the entire business concept (Högberg, 2007). In fact, the core competence of furniture firms may rest not with 'creative design' but rather with the ability to coordinate the overall design process (from the concept to the finished product) and to ensure its coherence with company values, identity and image (Kristensen and Lojacono, 2002). Hence, it is around production in a broad sense that we may expect firms to coordinate their activities, and where technology transfers and innovation may occur. In general there is a high degree of sector specialization and scope for choice of products, production techniques and sector positioning, and, hence, room for relation building (Kaplinsky and Readman, 2005).

Inter-firm relations and business associations in Tibro and Virserum. Although Tibro and Virserum share similar histories as Swedish (home) furniture centres, their industrial structures were different from the start (Ålund 1946; Stålberg 1942, 1947). Furniture units in Virserum grew rather rapidly in size and mechanized more quickly than did those in Tibro, which may partly be explained by the nature of the main raw material used there – oak. Oak is a particularly hard and difficult material to work with and requires a high degree of mechanization (Mårtenson, 1981). It may also be explained by differences in demonstration effects. In Virserum there was the early success and rapid growth of Oscar Ekelunds Snickerifabriks AB (or Bolaget – literally The Company – as it was known locally). It was established in 1899 based on the (incremental) innovation of producing classical home furniture in oak. By World War I it employed some 200 people, totally dominating the economic, social and physical landscape of Virserum. At the end of World War II the number of employees had dropped to 100, or about 23 percent of total local sector employment (Johansson, 1947). Bolaget continued to decline as market demand changed and its skills base and production techniques became outdated. In the 1940s and 1950s a few reputable sofa-bed makers with patented technical solutions became Virserum's largest furniture firms, but the location never managed to foster or attract a firm as influential as Bolaget again. In Tibro, furniture enterprises tended to be of very small scale with only a few employees, and it was not until the construction of Ulferts large-scale factory in 1946 (the first of its kind in Tibro) that the cluster experienced a dominating firm. On the other hand, it fostered a string of successful firms in new market segments that each introduced novel technologies

and products to the cluster.[8] In addition, MIO Möbler, originally the Central Procurement Organization of the Furniture Retailers Association and today a large furniture retail chain, has had its headquarters and central warehouse in Tibro since 1962. This brought coordination with substantial parts of the home market segment within 'arm's-length' distance.

If the early success of Virserum was built on internal economies of scale, Ålund (1946) explains the competitiveness of Tibro's small units during the first decades of the 20th century by two rather different factors. First, larger factories rented out their machinery and equipment to other users, a tradition that Ålund traces back to the 1890s and the establishment of Tibro's first water-powered factory with a set of machinery developed by a local carpenter. After some initial hesitation, other carpenters in the area fully embraced the idea and would pull two-wheeled carts loaded with timber to have it 'machined' into specified pieces, to finish the job later at their own premises (Larsson, 1989). As late as the mid-1940s this system was an anomaly in the landscape of Swedish furniture production (SOU, 1947). A second, and related, feature is the tradition of furniture masters working independently at rented workbenches. In Tibro, the term for this was *bänkskutt* and in most cases it entailed an ex-employee renting a workbench from a former employer and producing to his specification. Stålberg (1942: 197) claims that it 'has almost become a custom that the establishment of one's own enterprise occurs only gradually' in this way. If the new entrepreneur was not able to build a factory within a few years it would often happen that 'he ends his independent enterprise and takes up a position as employee once more'. The system could also entail an entrepreneur setting up a factory and then renting out workbenches separately rather than hiring labour, allegedly to circumvent legal obligations and to keep wages down (Ålund, 1946). The system was widely adopted: of the 87 furniture factories active in Tibro in 1937, 30 percent housed more than one firm (Stålberg, 1942). Hence, from the beginning Tibro entrepreneurs made collective use of a few factories with modern equipment and tended to specialize in particular parts of the production chain. The system also involved larger firms buying intermediate goods locally, or separate pieces of larger furniture settings. Apart from a brief interlude in the 1930s when factory owners wanted to 'go it alone' and refrained from cooperating with one another in this manner, the system has proved resilient: in 1987 some 60 percent of all furniture producers located in Tibro were suppliers of intermediate goods, mostly to firms within the cluster (Larsson, 1989).

In Virserum, on the other hand, it is fair to say that a furniture factory was a production unit in which timber was inserted at one end and finished furniture carried out at the other, with all production steps being done in-house. There are early examples of ex-employees of Bolaget who spun off by renting workbenches or building their own factories, and some examples of specialization in intermediate goods production. Yet, for some reason, the *bänkskutt* practice never became customary in Virserum.[9] Instead the 'go it alone' attitude became the norm for conducting business in Virserum; there was limited coordination across firms and no system of machine-sharing evolved in the local economy. Instead, stories of industrial espionage abound from the agglomeration's founding decades and an atmosphere of suspicion between producers developed. They did not capitalize on the Virserum 'brand' by sharing space at industry fairs or joint marketing and little effort was spent on coordinating supplies or deliveries to customers. For example, the industrial fair held in Virserum in 1947 was an initiative not of local entrepreneurs but of the local branch of Lions. Compare this with Tibro, where joint participation in fairs and marketing activities became a tool for furthering the position of the industry. Cooperation between firms in Tibro takes place within the supplier network and, starting in 1935 with the Tibro Artisan Association, within a number of local business associations. These include the Tibro Association of Carpenters, the Tibro Association of Polishing Masters and the Tibro Producers' Association – its first cooperative body for all furniture producers founded in 1950. In 1961 these efforts were formalized further by the creation of the Associated Furniture Factories of Tibro (TFM), which in 2000 evolved into the local industrial development centre, IUC Tibro. One of TFM's first actions was to combat a local labour shortage

with a national advertising campaign promising well-paid employment in attractive surroundings for individuals willing to relocate to Tibro. Activities have broadly ranged from increasing member firms' efficiency through coordination – resulting in Titrans (transportation) in 1963 and Titrade (procurement) in 1977 – to marketing and exports (Timark in 1980), as well as a number of furniture exhibitions and fairs. TFM and its successor IUC combined forces with the local authorities to assist the industry, lately by branching out into furniture retailing as well as interior design more broadly. Towards this end a combined factory outlet and showroom – Fabrik 19 – has been opened and organizations have been engaged in an effort to make the locality better known to shoppers interested in interior design (interview IUC, 2005).

In comparison, there is little or no evidence of systematic cooperation across the production chain in Virserum. There existed an informal norm of non-poaching strong enough to avoid outright rivalry over skilled labour among furniture firms, although they collectively lost out to the metal and plastics industries as they established themselves in Virserum in the 1940s and 1960s. Virserum hosted one main business association, the Virserum Industry and Crafts Association (VICA). In 1968 it set up a transportation association, which it claimed had significantly reduced transportation costs for its members. If VICA ever had a focus on the furniture industry, this was not maintained and the association became a lobbyist for the general local business community. Perhaps indicatively, it was for a long time chaired by the founder and owner of one of Virserum's most successful metal manufacturing firms.

In sum, it appears as if networks and inter-firm relations were weak coordination mechanisms in Virserum – at least locally. Few local networks existed here, the general atmosphere did not support cooperation between local firms and there was competition over the local labour pool. The production system in Tibro, on the other hand, allowed firms to develop flexible vertical, and horizontal, inter-firm relations that seem to have reinforced their competitiveness. No such system evolved in Virserum, or in any other furniture location in Sweden for that matter. Hence, we find variation between the locations, as well as within the national and sectoral system, in this sphere.

Market for corporate governance

Because Sweden is a CME, firms in Sweden are expected to rely on bank credits and retained earnings rather than on the stock market to fund their activities. Dense networks, cross-shareholding, reputation, taxation, security provision and non-shareholder interests are to influence firm strategies (Table 1). As a result of reforms in the 1980s and 1990s, the current system contains elements of both credit and equity funding, and strategic coordination in the shape of cross-shareholdings around a set of large family-dominated listed firms has reduced (Hall, 2007). Firms of larger size, active in high-tech sectors, and/or that are relatively well established have access to both credit and equity sources of funding, whereas small firms tend to have restricted access to both (Högfeldt, 2003; Reiter, 2003). The taxation system is generally not conducive to building funds through private savings or retained earnings. Because corporate taxes are much lower than income taxes (including on profits), one-person operations are subject to rules that set strict limits on how much the owner can withdraw as profits relative to income. Moreover, the national tax authorities define 'reasonable' amounts of retained earnings that can be set aside for future investments; any 'excessive' amount is made subject to personal taxation.

Hence, the size and the ownership structure of the industry influence how furniture firms solve coordination problems around corporate governance. The common characterization of the Swedish furniture industry is that it is fragmented and consists mostly of small and medium-sized family-owned firms or partnerships (SOU, 1947; Larsson and Malmberg, 1997). In 2005 there were some 3000 registered firms in the furniture industry, employing more than 15,000 people – of which a staggering 73 percent were one-man operations,[10] i.e. did not have any employees besides the owner. Although this number is most probably an overestimation,[11] most furniture firms that did hire labour that year were still very small – 48 percent had fewer than 5 employees and 67 percent had fewer than 10 (SCB, 2006). Moreover,

small firms are important to sector output, as exemplified in 2002 when firms with a maximum of five employees are estimated to have contributed 14 percent (SEK 3 billion) of total industry production (Brege and Milewski, 2004). Limited liability companies are the most common form of incorporation today, but most are not listed on the stock market and stocks are held by the original entrepreneur, his/her family, or selected business partners. Very few firms – Nobia (Europe's leading kitchen conglomerate), Lammhults Design Group (including chair-maker Lammhults) and Svedbergs (bathroom furniture and fixtures) – are registered on the stock market. Hence, most furniture firms find themselves squeezed between the financial system's tendency to privilege large firms and the disincentives of the taxation system.

Corporate governance in Tibro and Virserum. In line with the rest of the industry, small family-owned businesses have been the norm in both Tibro and Virserum. Today, most enterprises, even firms with no employees or a mere handful, are run as limited liability companies. Financial resources have typically been limited to loans from local banks and retained earnings – and to suppliers' credits. In both locations, entrepreneurs' own means or loans from family members were used to establish firms, while bills of exchange and suppliers' credits were the main sources of working capital. As a result, firms became linked to one another via an intricate system of 'cross debts' that served as a means of helping out in times of difficulty, but also gave entrepreneurs a hold on one another for future potential needs. It was in effect a system of financial reciprocity that was practised well into the 1940s at both locations; it was later overtaken by bank capital as the main source of funding.

Furniture producers in Tibro have in general low levels of retained earnings and their own capital; capital borrowed from local banks constitutes the main part of the debt side of the balance sheet. This gives heads of local banks a strong bargaining position vis-à-vis firms but it also provides an incentive for close ties between the two, and industry representatives are commonly found on local bank boards. The relatively low level of own capital combined with a low equity ratio proved harmful in the financial crisis of the 1980s, because small firms were not exempted from the rule of claiming interest losses within the same fiscal year as they occurred. Hence, an external shock and formal national institutional constraints drove many firms into, or to the brink of, bankruptcy. To avoid a large number of firm closures, local banks went out of their way to help local firms avoid bankruptcy. The Tibro local authorities, on the other hand, have tended not to get involved in issues of corporate governance. For example, as a rule firms own the property and premises they utilize. Funding originating outside of the cluster is becoming more common. In 2005, about 15 percent of furniture and related firms were owned by external capital in the form of national or international investment funds, holding companies or business groups (interview IUC Tibro, 2005).

Virserum firms also relied heavily on local banks for their capitalization. In addition, the municipality granted subsidized loans and guarantees and, beginning in the 1970s, regional and national support agencies provided financial services to firms in difficulties. Moreover, the local authorities often supplied land at discounted prices or provided factory facilities and direct support to enterprises in trouble. By the 1980s one can detect an externalization of investments in Virserum too, as its furniture firms saw a wave of restructuring efforts. Most new owners (individuals or firms) came from outside the cluster, from various parts of the country. With the exception of W-Möbler – the only firm still producing furniture here – these attempts failed.

A specific aspect of family firms relates to generational shifts. In Virserum, problems arising in connection with the handover to the next generation are often mentioned as an important reason for the decline of the industry. Partly this is blamed on the inheritance tax (abolished in 2004) and the financial burden it put on heirs and companies, often making it more profitable to sell the firm to a non-family member. But a lack of interest from the next generation is also stressed. Those who were in line to take over in the 1970s and 1980s had usually completed their education away from Virserum; some had even been encouraged to seek employment in other sectors of the economy. As a result, firm closure may be linked to generational shifts in Virserum, with the handover

from the second to the third generation being critical. Importantly, there was a parallel generational shift in the workforce, which was also reaching retirement age. By the 1970s there was a shortage of skilled furniture workers in Virserum. Although Tibro faced similar challenges from a taxation perspective, generational shifts are rarely mentioned as a problem or reason for firm closure. Instead, firms have been inherited or sold, traditionally to new local owners but recently more often to external investors.

In sum, with their reliance on bank credits, retained earnings and supplier credits, Virserum and Tibro offer no deviation from the national system of local governance, which can explain their respective demise and survival. As expected for a CME, reputation-building comes across as the main strategy used by firms to coordinate with existing and potential financiers, both locally and externally. Nevertheless, there are some instructive differences between the two. First, even though supplier credits were an important source of working capital in both locations, the resulting network of financial reciprocity was internal to the cluster in Tibro. The presence of bank loans combined with bills of exchange within a highly localized system of production ensured that all dimensions of coordination – information, monitoring, sanctioning and deliberation – were present within the Tibro furniture agglomeration, but to a lesser extent in Virserum. Second, although generational shifts offered the same legal and financial challenges to potential heirs in both locations, this did not translate into firm closures in Tibro. There is no evidence that Tibro firms have discovered and made use of loopholes in the taxation system to create deviant local institutions. Instead, explanations point to non-institutional factors such as the timing of firm needs with changes in the demographic structure and composition of the local labour market.

Industrial relations

Because Sweden is a CME, wage-setting in Sweden is anticipated to take place through industry-level bargaining between trade unions and employer associations, with a high degree of worker participation and influence at the firm level (Table 1). Indeed, collective bargaining has dominated the Swedish labour market regime since the 1930s. Between 1956 and 1983, wage negotiations were governed and restricted by industry-level and peak-level bargaining, a model that (a) imposed the same wage scales on all firms regardless of their ability to pay (in effect fostering industrial restructuring as low-productivity firms were forced to shut down), and (b) let the exporting and import-competing sectors set the upper bound on the acceptable wage increases that non-exporting firms and the public sector had to follow (Edgren et al., 1970; Iversen and Pontusson, 2000). The collective agreement process is backed up by a legal framework governing worker participation and security. The 1976 law on worker co-determination stipulates the right of employees and their representatives to be informed and to negotiate on staffing levels and working conditions. The 1982 law on security of employment sets limits on the use of temporary employment contracts, and requires a rule of strict seniority to be applied should the need to reduce the labour force arise. After the national employers' federation pulled out of government commissions of inquiry and the boards of government agencies in 1991, the system became more decentralized (Lindvall and Sebring, 2005). Some argue that the employers' offensive was a response to 'post-Fordist' production and market pressures (Swenson and Pontusson, 2000), whereas others see it as an attempt to reduce the political power of the confederation of blue-collar unions, the LO (Wallerstein and Golden, 2000).

The furniture industry follows the national system of industrial relations but, given its size and ownership structure, some regulatory exemptions apply to furniture firms. For example, small and family-owned firms with only family-member employees do not need to sign collective agreements and have no time limits on fixed-term employment contracts. For firms that have non-family employees, family members are exempt from the rule of strict seniority. Moreover, firms with a maximum of 10 employees have the right to exempt two individuals from those to be laid off in the event of excess capacity or a lack of orders. Even so, small firms in Sweden commonly perceive hiring to be risky. For furniture firms, one alternative is to contract self-employed carpenters to cover production peaks, which is legal as long as they have more than one client. Given that the

industry was rather late to engage in exports, the system of wage formation affected industry wages negatively relative to, for example, metal manufacturing (Lundh, 2003). Hence, as intended, the system helped stimulate a need for rationalization among furniture firms beyond that imposed by the new market for mass production, which emerged at roughly the same time.

Industrial relations in Tibro and Virserum. Tibro and Virserum do not deviate from the national system and industry characteristics in this sphere but, because of their different production regimes and settings the outcomes differ between the two.

More recently, rationalization pressures and import competition from low-cost countries have been common local explanations of the demise of Virserum. On closer scrutiny, the rationalization process was initially successful here: production per worker was above that of the industry average up until the late 1970s and Virserum firms held on to their national market share of some 2 percent equally long (Bohman, 1997). Yet, in Virserum rationalization was fuelled by a shortage of labour as out-migration by the young who left to attain education or jobs in larger urban areas led to a decline in the local labour pool, an additional local explanation. There is also speculation that the reduction in prestigious skill-intensive jobs reduced the industry's general attractiveness. Importantly, as furniture jobs were redefined and relative wages fell behind, local competition from firms that offered employment in alternative subsectors of manufacturing started to be felt.

Tibro too experienced rationalization pressures and import competition but its furniture firms were never, and are still not, exposed to a competing local manufacturing sector of any significant scale. In fact, local furniture entrepreneurs appear to have been hostile to the establishment of other manufacturing activities in the municipality, and at times actively lobbied against it.[12] Firms in Tibro were for a long time relatively smaller and there was a higher share of self-employed entrepreneurs compared with Virserum. Hence, even though furniture wages were falling behind, a larger share of those active in furniture production in Tibro were presumably influenced by other incentives when choosing their occupation.

Hence, industrial relations in Sweden appear to be an institutional sphere in which the national system, in this case centred on industry-level wage negotiations, offers very little room for institutional variation at subnational levels. Still, this does not imply that outcomes will be similar across space. Again, these case studies illustrate how local non-institutional factors – firm size, demographic changes, competition over the local labour pool – influence local outcomes of national institutional arrangements.

Vocational training and education

CMEs typically make use of industry- or firm-specific skills, and Swedish firms are expected to rely on a publicly supplied educational and training system, supervised by industry-wide employers' associations and trade unions (Table 1). Certainly, training was made an integral part of industrial relations negotiations as early as the 1950s as trade unions accepted pressure for restructuring in exchange for unemployment benefits and assistance in matching redundant workers with new jobs. Government agencies offered support for relocation and upgrading of skills, or complete retraining within the formal educational system. In the 1960s the education system was restructured. The existing network of vocational schools and programmes was integrated into the secondary school system, which in general was more geared towards the subjects and skills required for university entrance. In the 1990s the system was restructured again, as programmes catering to industry needs were reintroduced. There is a national programme for advanced vocational training, supervised by the Swedish Agency for Advanced Vocational Training, which was established as recently as 2003. The same year, new polytechnics, set up within existing universities and colleges, began to offer two-year diploma programmes focusing on theory and production methods.

Prior to the 1960s, specialist training within furniture was either on-the-job or on a number of national independent training programmes. Within the present system there are some 40 secondary schools across the country that offer three different furniture-related programmes: crafts, industry and design. Students

inclined towards carpentry can choose training for industrial production of wooden products (including furniture) or crafts production. There is also advanced, post-secondary vocational training in furniture production at a number of locations across the country. So far these are not included within the polytechnic system. Finally, there are independent training centres, such as the high-profile Capellagården, which was founded by one of the best-known furniture designers ever to emerge from Sweden, Carl Malmsten.

Training and education systems in Tibro and Virserum

Before the 1960s, training was typically in-house and on-the-job in both locations. There was talk of establishing a vocational furniture school in Virserum on at least two occasions, first in collaboration with some local enterprises and later within the new system of secondary schools. However, Virserum did not get a secondary school and students have to commute 30 km to Hultsfred for education above the compulsory (ninth year) school level.

In Tibro, the local secondary school, Fågelviksgymnasiet, has offered furniture-related education for some 25 years. Presently, it runs a three-year basic wood production programme, which may be complemented with an additional year focusing exclusively on wood furniture-making. This year is offered under the umbrella of the Swedish adult education programme and students may take the journeyman test on their way to earning the title of Master. The training focuses mainly on modern furniture production, but the school also collaborates with the local Artisan Centre in a special training programme for traditional and artisan-based furniture production, including upholstery, renovation of antique furniture and wood-carving. All Tibro programmes attract students nation wide.

Hence, even though modes of training were similar in the early days, the relatively smaller population of Virserum urban area meant that the impact of not only the education reforms of the late 1960s but also the administrative reforms of early 1970s was rather different here than in Tibro. Whereas Virserum became second to the main urban area of Hultsfred, and did not manage to secure a local secondary education programme of any kind, the same institutional and administrative reforms meant that Tibro could capitalize on its history as an important furniture centre in the Swedish economic landscape.

Discussion and concluding comments

This paper asked whether applying the VoC framework to the cases of Tibro and Virserum – once among Sweden's most successful furniture locations – would indicate deviations from national and sectoral institutional norms that provide insights into their respective success and failure. Recalling North's (1990) definition of institutions as 'rules of the game' and organizations as 'players of the game', we see that, overall, the paper found little deviation between national, sectoral and local levels of (formal) institutions within the spheres of corporate governance, industrial relations and education, but more deviation in inter-firm relations. It thus partly supports Hall and Soskice's (2001: 16) justification of a focus on the national level with 'the fact that so many of the institutional factors conditioning the behaviour of firms remain national specific'. Even so, the paper indicates *varying scope for creativity* for organizations and firms (players of the game) at sectoral and local levels within the national institutional context specified by VoC. Again, this was most evident in the sphere of inter-firm relations, where the case studies show how local governments developed differing policies – in effect constituting local formal rules – to support furniture firms. In addition, it seems that different informal norms and attitudes towards entrepreneurship ('going it alone') had an impact on local firms' willingness to cooperate and on the production systems (including supporting organizations) that evolved in each location.

In particular, however, the Tibro and Virserum case studies show how institutions at national and subnational levels work together with non-institutional factors – industry or local factors such as the nature of the good (e.g. issues around copying and design), firm size structure, form of incorporation, market segmentation, composition of and competition

in the local labour market, local demographic changes – to *generate different economic outcomes* across time and space. Looking at Virserum, we found that, starting in the 1950s, its furniture firms came under pressure from the new national wage-setting regime, which was exacerbated by the presence of a growing local manufacturing industry offering relatively higher wages. Hence, competition over the local labour force intensified. The combined effects of the secondary school reform in 1968, the local administration reform of 1972 and a steadily declining population base meant that hopes of establishing a vocational furniture programme in Virserum were not fulfilled. Meanwhile, the growing mass market and continued pressure for rationalization required investment not only in machinery but also in new factories, because the existing ones tended to be multi-storey buildings. In Virserum, these demands coincided with owners of furniture firms and their workforce reaching retirement age, and the prospects for recruiting new owners within the family as well as skilled labour were looking bleak. In Tibro, on the other hand, furniture firms developed flexible relations and weak ties, potentially resembling a system of flexible specialization that allowed firms to meet the demand for increased product variation at low cost and within short time horizons (Maskell and Lorenzen, 2004). This was, and still is, an anomaly in the Swedish furniture industry that never evolved in Virserum. Instead, we are left with the impression that, in the end, Virserum firms were too small to achieve internal economies of scale and to benefit from rationalization, but too large to escape the influence of new formal regulations associated with the structural change process in Sweden, and perhaps too few in number to reach a critical mass locally.

At a more general level, the paper shows that applying the VoC framework to subnational levels of investigation is a feasible way of probing forms of variegation of capitalist systems (Peck and Theodore, 2007). In this case, the picture that emerges is one of a relatively coherent institutional system across scales, but where there are possibilities for institutional and organizational creativity and innovation, as well as alternative industrial development paths. This change of focus in the application of the framework reveals interesting analytical issues, in particular concerning dynamics, focus and scale.

We see, for example, that applying the VoC framework to subnational levels offers a structured way to contextualize clusters within their national institutional setting, based on the clearly defined roles that institutions are assumed to play in relation to actors in the economy. What is more, it allows for historical investigation within each institutional sphere. On the one hand, this gives a rather good overview of events, but, on the other, it risks becoming a somewhat static and compartmentalized analysis where linkages between spheres and events remain unclear. Hence the mechanisms and processes of change remain veiled. To make it more dynamic, assumptions about the evolution of the system and its various parts need to be clarified, as do the underlying theoretical assumptions about how institutions change, which is now also recognized by VoC researchers (e.g. Deeg and Jackson, 2007; Hall and Thelen, 2009). In addition, we see that, when focusing on a particular geographical agglomeration and asking what interrupted the cumulative causation behind its growth and persistence, a detailed investigation of exogenous and endogenous factors and processes is called for. A recurrent theme in the present study is that this includes institutional (formal and informal) as well as non-institutional factors. Hence, when moving from national to local case studies, we are in effect focusing on the evolution of particular 'habitats' (Hägerstrand, 1989) and the set of institutional and non-institutional constraints that prevail there at certain points in time – as perceived by local actors.

This has implications that indicate the potential for cross-fertilization and contributions between VoC and economic geography. First, to address local habitats in a fruitful way, we need theories and analytical frameworks that let local and sectoral cluster processes play themselves out against developments at the national level. Here the recent cluster lifecycle literature (e.g. Lorenzen, 2005; Menzel and Fornahl, 2007) in economic geography, which takes an explicitly evolutionary stance on the issue of the geographical agglomeration of firms, is an alternative analytical entry point. As a complement, the VoC approach adds a much-needed outline of the national system, its nature and degree of coherence, which constitute the

general context within which clustered firms form strategies and coordinate their activities. After all, as indicated in this paper, the VoC perspective reminds us that much of what we observe 'on the ground' is in fact local response to structures decided on at higher levels of aggregation. Although not addressed in this paper, this includes attempts by industry-dominating firms or groups of firms to influence the institutional framework in which they operate. Incidentally, it is not only the VoC approach that is in need of a theory of institutional change; so is the cluster lifecycle theory (Maskell and Malmberg, 2007).

A second, and related, implication of the habitat analogy is that, for the VoC to be a truly actor-centred framework, it needs to allow for the fact that firms face several different layers of institutions and that in real terms these may differ depending on firm size, sectors and geographical location. In other words, the paper supports those VoC researchers who argue that to develop the framework further it ought to take into account the varieties of firms as well (e.g. Allen, 2004; Morgan, 2005). This paper suggests that, in doing so, careful attention ought to be paid to the issue of scale, not just in terms of varying levels of aggregation but in terms of the size of firms and of clusters. Hence, VoC scholars might find economic geography, with its tradition of single-location and single-industry case studies and a genuine understanding of the complexities of scale, a particularly fruitful source to draw on.

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Notes

1. Peck and Theodore identify a handful of studies by geographers inspired by the CC literature: Christopherson (2002), Bathelt and Gertler (2005), Dunford (2005), Clark and Wojcik (2007), to which Asheim and Herstad (2003) can be added. They also point to recent work by comparative researchers that is close to economic geography, for example: Crouch (2005b), Sorge (2005), Streeck and Thelen (2005).
2. This paper uses the terms 'agglomeration' and 'cluster' interchangeably to mean a place with an amassment of things, in this case furniture firms. Hence, neither term implies the existence of localized external economies or externalities that add 'something more' to the place that may benefit local firms.
3. For an extensive contrast between VoC and transaction costs economics, see Allen (2004).
4. For an overview of the CC literature and alternatives to VoC, see Jackson and Deeg (2006).
5. The others are conflict and coalition, the nature of mixed and emerging market economies, and the role of the state.
6. The conflict surrounding IKEA as it began expanding its operations in the late 1950s is one well-known example. IKEA became subject to a boycott proclaimed by organized retailers (threatening firms that produced for IKEA with the loss of all their business with organized retailers) and efforts to block its participation in regional and national trade fairs. This put IKEA under intense pressure and it eventually looked for suppliers elsewhere. During the early 1960s it established business relations with Polish furniture producers, and has been in the forefront of international outsourcing ever since (Mårtenson, 1981).
7. The exception is an innovation system around IKEA's production chain, though this is international rather than national (Brege et al., 2004).
8. Examples include the aforementioned Ulferts Möbelfabrik, which introduced mass production, Tuaverken, in the office furniture segment (now part of the Swedwood

group of IKEA), and OFFECT in the design segment (public spaces). More recently, Noa's Snickeri is a successful example of craft-based production for the high-end design-intensive home market segment.

9. Activities at the Nyström factory between 1904 and 1912 could potentially have evolved into a 'Tibro model'. At the time of a fire that destroyed his factory in 1904, Nyström lacked insurance and could not afford to rebuild the premises. Ten workers previously employed by him or out of work owing to a parallel labour conflict at Bolaget joined forces to restore the factory. They each worked independently, owning one or more workbenches with rights to use the common machinery. Between 1909 and 1912 these independent units merged into two larger enterprises through a series of purchases by two particularly active owners/entrepreneurs within the factory (Johansson, 1939; Strömberg, 1949).
10. With respect to furniture-making, the expression 'one-man operation' is applicable because the vast majority of these firms are run by men.
11. Taxation is the basis for inclusion in the company register at Statistics Sweden; all juridical and physical persons that hold a company tax registration certificate (very easy to obtain) or that are eligible to pay VAT are included. Hence, the data include non-active firms as well as firms that are run as a side-line to regular employment, a phenomenon now common in Sweden (Delmar et al., 2008). It has not been possible to estimate the extent of these low or inactive firms in the furniture industry.
12. An often cited, but unconfirmed, local tale is that in the late 1950s furniture factory owners in Tibro collectively lobbied against the establishment of a large-scale manufacturing plant by Volvo, which subsequently located operations in nearby Floby and Skövde. Until the current financial crisis, it employed some 2000 people there, including those commuting from Tibro. The argument used was precisely that of competition over the local labour force and the potential eradication of furniture production in Tibro.

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PAPER 3

Recounting a Cluster Life Cycle

A century of furniture production in Virserum, Sweden

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ABSTRACT:
An emerging literature in economic geography deals with so-called cluster life cycles as empirical processes distinguishable from the life cycles of products and industries. This paper tells the story of the rise and decline of the Virserum furniture cluster in southern Sweden, guided by one such framework. It investigates the size and diversity of the cluster, along with the ability of furniture firms to make use of its size and diversity. Four cluster stages are identified and explored. The paper finds that clustered firms had limited capacity for cooperation and collective action, and low utilization of its diversity. In line with the predictions of the model, a lack of diversity among Virserum furniture firms and homogeneity in its knowledge base may, hence, be deemed a main explanation of the fall of this particular cluster.

KEYWORDS:
economic geography, cluster life cycle, evolution, furniture, Sweden, Virserum

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Introduction

On January 10, 2003 wood furniture producer Forsnäs AB filed for bankruptcy with the Linköping district court in southern Sweden. The company that had started its production of pressed wood items in 1896 and that employed some 100 people in its two factories in Ydre and Virserum, was in serious financial trouble. Before long, a member of its founding family and a handful of former employees stepped in to save the Ydre branch. The factory in Virserum was not part of the deal, however, and there activities were soon phased out (DN 2003). Six year later, in January 2009, the last remaining furniture producer in Virserum, W-Möbler AB, finds the global financial crisis too difficult to cope with given an already pressured economic situation and files for bankruptcy, leaving an additional 20 people unemployed (Paulsson 2009).

The closing of Forsnäs and W-Möbler meant not only a loss of important jobs in Virserum, a community already hard hit by manufacturing downsizing and closure. It also put an end to this once flourishing furniture center, with a history stretching back to the 1880s. By the end of World War II, Virserum had been one of the most prominent localities for furniture making in Sweden, hosting an unusual high number of furniture producing firms that dominated the local economy (Ålund 1946). Today there is no furniture maker located here and virtually all former furniture factories have been demolished or converted into other uses. Were it not for a small industry and work life museum, that aims at telling the local history in its original place (af Geijerstam 2005), two producers of intermediary goods, and a newly established design company that draws inspiration from Virserum's furniture history, little would call attention to its past as one of Sweden's prime furniture locations.

Unsettling as this development has been to the people living and working in Virserum, the rise and demise of furniture production in this small locality offers the economic geographer a chance to recount a full life cycle of a once successful spatial concentration of specialized economic activity – or cluster – from its emergence and through its subsequent growth, peak and decline stages. Hence, zooming in on Virserum and the firms ones located there, and asking why it developed the way that it did gives an opportunity to contribute toward some of the issues currently on the table within cluster research, one of economic geography's most lively and expansive areas (Santos Cruz and Teixeira 2007).[1]

One such issue is the bias toward the studying of successful clusters that has been noted by several commentators (e.g. Maskell 2001, Malmberg and Maskell 2002, Martin and Sunley 2003) and the related concern of a lack of studies that apply the cluster notion to peripheral regions and mature industries (Cumbers and MacKinnon 2004). This may be associated with Porter's (1998: 78) initial positioning of the cluster concept as "critical masses – in one place – of unusual competitive success in particular fields," but most probably outdates it. Recently investigations of unsuccessful cases have become more visible in the literature, that is, studies of clusters in decline (e.g. Seri 2003, Chapman *et al.* 2004, Tödling and Trippl 2004, Dalum *et al.* 2005, Giuliani 2005, Schamp 2005, Tappi 2005, Alberti 2006, Sammarra and Belussi 2006, Zucchella 2006, De Propis and Lazzeretti 2009) or those that never developed (for practical reasons more rare, but see Orsenigo 2001 and Atherton 2003). In particular are so-called "old industrial areas" no longer seen as the opposite to clusters, as was typically the case prior to Cooke's (1995) influential *The Rise of the Rustbelt*. Instead they are viewed as agglomerations or mature clusters that, perhaps because of asset erosion and lock-in – the "trap of rigid specialization" (Grabher

[1] For assessments of the cluster concept and approach by economic geographers, see Malmberg (2002), Martin and Sunley (2003), Brenner (2004), Cumbers and MacKinnon (2004), Lorenzen (2005); Asheim *et al.* (2006), vom Hofe and Chen (2006), Vorley (2008).

1993: 256) – are headed for petrification and terminal decline unless they are able to reinvent themselves.

A second issue is the failure to take into account (let alone account for) the dynamics of cluster evolution (Lorenzen 2005). As exemplified by the literature on old industrial areas, cross-section or synchronic studies tend to be blind to larger contexts and run the risk of stumbling upon patterns that are conditioned by the particular history of the industrial agglomeration in question. One way to avoid drawing spurious conclusions is to take into account life cycles, or at least life cycle stages of clusters. Indeed, a dynamic perspective, and not merely a diachronic one where two cross sections are compared, allows for the possibility of assessing the mechanisms of cluster evolution. In addition, the risk of falling pray to *post hoc* rationalization and *ad hoc* theorizing is reduced. This is a budding field of research with an increasing number of studies on the theme of cluster or regional life cycles, seen as related to, but distinguishable from, product and industry dittos (e.g. Pouder and St. John 1996, Swann *et al.* 1998, van Klink and de Lange 2001, Brenner 2004, Dalum *et al.* 2005, Maskell and Malmberg 2007, Audretsch *et al.* 2008, Neffke *et al.* 2008, Menzel and Fornahl 2010).[2]

This paper addresses both theses issues. It does so by exploring the evolution of a geographical concentration of firms active in a mature industry located in a peripheral region in southern Sweden, namely the rise and fall of furniture making in Virserum. Importantly, using the life cycle approach will not only allow us to shed further light on this empirical case, but also to reflect on issues of principal importance in the cluster debate. A benefit of Virserum as a case study is that we can recount a full life cycle of a particular industry in one location, while an additional benefit of furniture making as an activity is that it has relatively low barriers of entry. This translates into moderate economies of scale, which means that we can assume that internal scale economies are a relatively less important factor driving agglomeration in this industry. In other words, co-location may not primarily be a result of firms letting external economies compensate for internal economies of scale. Hence, in the case of Virserum, we might have a somewhat easier task to differentiate between economies of scale (internal and external) and externalities, and to ask whether furniture making in Virserum was in fact a cluster (a geographical concentration of related industries with high proximity effects) or an agglomeration in the sense of an amassment of things within a certain spatial range (Amin 1994, Lindqvist 2009).[3]

To reduce the risk of *post hoc* rationalization and *ad hoc* theorizing, and of getting stuck with the singular and particularistic commonly associated with case studies, the stages and dimensions of clusters as outlined by Menzel and Fornahl (2010) will guide the narrative and the analysis of the paper. Not only is it among the most recent of cluster life cycle models, but it has a number of traits that seem appealing for the purpose of this study. The model indicates how to identify specific cluster stages and proposes that the degree of heterogeneity – and the utilization of this – is the mechanism that takes a cluster from one stage to another. Moreover, it explicitly includes the possibility of regeneration of a cluster by either a redirection of activities of existing firms, or the entrance of new firms in related or unrelated industries. Hence, their model compels us to investigate not only the size and diversity of the Virserum furniture cluster, but also if it managed

[2] See Maggioni and Uberti (2009) for an application of a life cycle approach to the evolution of clusters as a research object.

[3] The latter is what Crouch and Trigilia (2001: 222-223) term "an empirical cluster." The question whether or not Virserum constituted a "true" cluster (in the sense employed by e.g. Malmberg and Power 2006) or "merely" an agglomeration is an empirical one and will be addressed in the analyses and conclusions of the paper. Until then, the terms are used interchangeably.

to make use of these in order to generate cluster renewal. We may in particular ask if there are other industrial developments within Virserum that could be interpreted as signs of cluster renewal, and if so, how they have fared over time.

The rest of the paper unfolds as follows. The next section briefly discusses cluster life cycle models and lay out the fundamentals of that proposed by Menzel and Fornahl (2010). This is followed by a brief introduction to the physical and human geography of Virserum, before we take a closer look at the evolution of furniture production in this small location. The paper ends with a concluding discussion.

Cluster life cycles

As empirical observations reveal, clusters are not static. For starters, they originate at some point. A few continue for very long periods of time, while the development of others is thwarted at some stage. In short, just as clusters might be of different character depending on when they emerge (Phelps and Ozawa 2003), they are also prone to change once they have emerged. After an initial focus on the functioning of clusters, including critical evaluations of the concept itself (e.g. Martin and Sunley 2003), economic geographers and other social scientists have rather recently started to investigate also the evolution of clusters more directly (Lorenzen 2005). Reflecting an underlying interest in competitiveness and regional growth a recurrent theme is that of cluster renewal (e.g. Grabher 1993, Tappi 2005, Klepper 2007; cf. Marin and Sunley's 2006 discussion on path dependence and lock-in). Contributions that instead aim at identifying complete life cycles include those that draw on empirical work to suggest a principle (Swann *et al.* 1998) or a model (van Klink and de Langen 2001) of such cycles. Some use cognitive approaches (Pouder and S:t John 1996, Maskell and Malmberg 2007) to discuss underlying mechanism, or more formalized efforts based on location factors and cost functions (Maggioni 2006). The degree to which the cluster life cycle literature provides coherent theories of clusters, as opposed to mere description and mapping, has also been studied (Maskell and Kebir 2006), and the field has recently been synthesized (Bergman 2008). It has also been indirectly criticized for its quest for a standardized life cycle, instead of investigating multiple path dependencies across clusters (Belussi and Sedita 2009).

The model that will guide this study is that of Menzel and Fornahl (2010). This model picks up on the importance of variety and diversity in the evolution of clusters that is an underlying theme in all the work cited above. However, it seeks to move beyond identifying heterogeneity as a characteristic that varies over cluster life cycles, to a mechanism that drives it through these stages. This is beneficial as it opens up for the disentangling of structures and processes within the cluster. Although a difficult task, it helps in avoiding letting the dynamics of a single dominating segment or leading firm proxy the evolution of the cluster as a whole. It is, hence, on the whole a model very much on the research frontier within cluster life cycle research that deserves be taken to the "test" of facing an empirical case, like that of furniture production in Virserum. Before doing so, we will outline the model and discuss its use in this study.

A model of cluster life cycles

Menzel and Fornahl (2010) take a knowledge based approach in their construction of a model of cluster evolution. They find Porter's (1998) notion of clusters useful as it identifies the fundamental elements of clusters – they consist of firms and organizations, there exist an outer boundary, firms and organizations are interconnected within that boundary – and view clusters as consisting of "a critical mass of companies and institutions around a thematic and spatial focal

point" (Menzel and Fornahl 2010: 213). Their focus is solely on endogenous factors and processes that affect cluster life cycles, which leaves out exogenous variables such as globalization (that affect all firms), legislation and regional cultures (that affect all firms in given spatial contexts), and factors that influence companies within a given industry (e.g. market structure). *Variation in heterogeneity* between firms in the cluster over time is the mechanism that moves it through its life cycle, while *exploitation of heterogeneity* explains differences between clustered and non-clustered firms, i.e. the relative success of the cluster, at different points in time.

The model combines dimensions and life cycle stages. Menzel and Fornahl argue that for a dynamic analysis of clusters, they need to be analyzed in four dimensions (Table 1). Each dimension requires distinct empirical methods and data, which also differ between the four stages of the life cycle.

Table 1: Four dimensions of cluster analysis

	Quantitative	**Qualitative**
Direct	***Size*** (number of actors: firms, employees organizations)	***Diversity*** (knowledge, competences, organizational forms)
Systemic	***Utilization of size*** (perception of the cluster, capacity for collective action)	***Utilization of diversity*** (exploitation of synergies, networks and value chains)

Source: Menzel and Fornahl (2010: 221).

Firstly, clusters can be distinguished by a qualitative and a quantitative dimension. The *quantitative dimension* gives a dynamic description of the economic development of the cluster in terms of number of active companies and employees over time. The *qualitative dimension* describes the heterogeneity (technological distance) inherent in the cluster, as indicated by the ratio of diversity (the different knowledge existing in clustered firms and organizations) to its size. Secondly, a direct as well as a systemic dimension of clusters may be distinguished. The *direct dimension* concerns the size of the cluster as well as its degree of specialization, and provides the basic description of the cluster and characterization of its stages of development. It can be addressed by assessing data on company start-ups, survival rates and failures along with patent data and information on the evolution of business fields within the cluster. To address the issue of how well clustered firms do in relation to non-cluster cluster firms in the same industry, i.e. the relative success or failure of the cluster, a *systemic dimension* needs to be added. It concerns how clustered firms manage to make use of its size and heterogeneity. Here, Menzel and Fornahl are less specific about data and methods. Apart from pointing to the establishment of formal organizations as a sign of the cluster's capability to turn its size into an advantage, they confine themselves to stating that the systemic dimension only becomes apparent in in-depth case studies.

Importantly, the systemic dimension also marks the boundaries of the cluster – the mere existence of firms and knowledge do not. A *spatial boundary* can be derived from how firms utilize the size of the cluster, while a *thematic boundary* stems from how firms make use of the diversity

within the cluster.[4] Ultimately, it is the systemic dimension and in particular the dynamics of the thematic boundary that seals the fate of the cluster. *Focal points of activities* where interconnections and synergies among clustered firms are most intense are important cluster mechanisms and are related to the dynamics of the thematic boundary. Focal points are assumed to move more quickly through the cluster life cycle, while actors in the thematic periphery lag behind. This means that the internal development of clusters is not even, and that focal points will decide what stage of the cycle a cluster can be assigned to.

These dimensions, then, help to filter out four possible cluster stages (Menzel and Fornahl 2010: 218, 224-228). In the first *emerging stage*, the industry consists of a small number of firms that are geographically dispersed – it may even be difficult to detect emerging clusters within regions at this stage. Nevertheless, in emerging clusters there exist one or more companies with a vision along a new technological path, and certain local conditions that are beneficial for growth.

In the *growth stage* clustered firms experience high growth rates and a high number of start-ups, and employment soars. The thematic and spatial boundaries of the cluster become identifiable; the cluster becomes more focused due to continued convergence around one or more focal points. Shake out of fringe firms leads to a reduction in heterogeneity and the formation of a "dominant cluster design." This includes a specialized labor market, innovation networks, and customer-supplier networks (new potential network partners prevent isolation). In addition, supportive infrastructure and organizations are formed to lobby for cluster needs – at this point the cluster is influencing the region in which it is located. The stage ends when the growth of the cluster adjusts to the industry average, albeit at a higher level of productivity.

Menzel and Fornahl describe the subsequent *sustaining stage* as a state of equilibrium based on the cluster's ability to adapt. It is a phase characterized by average industry growth rates and minor decreases in employment, and cyclical rather than structural fluctuations. Firms access competences through established networks, while external contacts bring new knowledge and keep the networks open. The thematic boundary will move incrementally as new technologies are integrated into the cluster. Cluster and regional developments are equated.

In the final *declining stage* the number of firms, and especially the number of employees, falls dramatically due to rationalizations, mergers and company failures. There are few if any start-ups. A high degree of specialization in terms of the knowledge base, employee qualifications and firms operations will lead to a strong inward bias of economic activities; within strongly focused clusters, competences tend to be maintained in only a few companies. Innovation rates may still be high, but limited to the existing and largely exhausted technology path. Combined with long-existing, closed and homogenous networks, this may lead to "negative lock-in" of the cluster, a state where the ability to sustain diversity and adjust to changing conditions has been lost. Hence, in terms of the quantitative dimension of the model it predicts a stylized cluster life cycles shaped like the common bell-curve with the highest numbers of firms and/or employees found in the sustaining stage. In terms of the qualitative dimension the curve indicating heterogeneity of accessible knowledge instead increases faster and peaks earlier, already at the transition between the emergence and growth stages.

The model is non-deterministic in that it points to multiple possible outcomes in the transition between cluster stages. As to the first, it is only if synergies start to form around a

[4] The *spatial boundary* separates firms or organizations within the same thematic field (or, loosely, industry) from those located elsewhere. The *thematic boundary* separates firms and organizations within one thematic field from those in other fields, but located in the same area. The interconnection of these boundaries defines which economic sectors the cluster consists of and its geographical reach (Menzel and Fornahl 2010: 213).

thematic focal point (usually by spin-offs) and a critical mass of firms with growth rates exceeding those of non-clustered firms is reached, that the cluster will move into the *growth stage*. If not, the cluster will never take off. The growth stage is the only one with a sole endpoint, the *sustaining stage*. The length of the sustaining stage depends, however, on the cluster's ability to adapt; if this ability is low the sustaining stage becomes short and the cluster is quickly faced with the next transition. The sustaining stage might end in two ways, both often following on a period of crisis and decline. Either continued decrease in diversity within an exhausted technological trajectory lead the cluster to the decline stage, or a process of renewal starts that takes it "back" in the cluster life cycle, to a new growth phase. For this to happen, new heterogeneity and a shift in the thematic boundary are needed. Even the final stage of *decline* has multiple outcomes. The cluster might (i) fulfill the life cycle and disappear; (ii) implement new, yet related technologies (often from other locations) which may lead to an increase in heterogeneity and a renewal of the existing development path; or (iii) transition into a completely new field of business, with the integration of new actors and technologies that lead to an increase in diversity and heterogeneity. According to Menzel and Fornahl, this may move the cluster "back" to the growth stage of the life cycle.

Use of the model in the study

The model of Menzel and Fornahl will be applied to the case of furniture making in Virserum, in the sense that it will provide the framework for the presentation and analysis of the data. Due to limitation in the data, no statistical testing of hypotheses will be made. Nevertheless, a number of research questions or issues can be formulated based on the model. Was there, for example, a lack of diversity among Virserum firms, and, if so, can homogeneity in its knowledge base be judged a main explanation of the fate of this particular cluster? Where there signs of cluster renewal and the moving "back" into new growth phases in the evolution of the Virserum cluster, and, if so, what happened to these? In addition we might consider how well the model fares in identifying the various cluster stages in Virserum and, in particular, what does the lack of specification of the systemic dimension and the exclusion of exogenous factors mean for the analysis of a real world case like Virserum? Before addressing these issues, we offer a brief presentation of the empirical setting of Virserum.

Virserum and its setting

Map 1 shows a number of historically important locations for the furniture industry in Sweden, including Virserum (number 6). As implied by the map, Virserum is located at the heart of the region of Småland in southern Sweden, on the Kalmar side of the meeting point of the three counties (Kalmar, Jönköping and Kronoberg) that make up the region. Småland is characterized by deep forests, numerous lakes, intricate systems of water streams, and rocky soil conditions. The forest stock consists mainly of pine and spruce but includes also substantial areas of broad leaf trees, including oak. This general description applies also to Virserum parish, an area of roughly 155 km^2 centered on its main urban area also named Virserum. The parish is connected to some 60 lakes of varying sizes, one of the biggest being Lake Virserum, on the shores of which the main urban area is located.

Map 1: Historically important furniture locations in Sweden.

1. Åtvidaberg
2. Bodafors
3. Lindome
4. Östervåla
5. Glimråka
6. *Virserum*
7. Tibro
8. Gemla
9. Edsbyn
10. Kinnarp

Source: Gunnarsson (2000: 152).

In a famous narrative from 1917 the novelist Selma Lagerlöf (2000) assigns the creation of the most fertile and beautiful parts of Småland to the hands of the Lord, while the less fortunate and not so well endowed pieces were the responsibility of the sloppier Saint Peter. In her account, Virserum does not make the list of blessed areas in Småland. Agreeing that Virserum by no means belong to the most fertile parts of the region, Hägg (1975) argues that Lagerlöf must have been misled about the beauty of the locality – and that God made up for the low fertility of Virserum's soil by placing unusually strong and resilient women and men on its lands.

Be that as it may, it is evident from the historical records that even though the rocky terrain has constrained farming activities in the area, the people living in Virserum have indeed turned its geography and natural resources to their advantage. In addition to its vast forest reserves, the parish is located more or less on the rim of the highland area of Småland. The difference between its highest and the lowest points is roughly 130 meters, which translates into a hilly terrain and numerous rapids and small waterfalls. These constitute natural resources that have been extensively used by the local population to generate power for small mills and sawmills, and to run equipment for industrial activities. Attempts at ore mining have been few and short lived as the bedrock has not revealed deposits substantial enough for viable mining (Bringfors *et al.* 1982).

Petersson (1963) describes the settlements of this part of Småland as having been isolated for most of history, and where farming and forestry remained the main sources of income longer than in other parts of Sweden. It has been common for the people of Småland to seek their livelihood away from home by working on the railroad, joining the army, seeking employment in

nearby or distant towns, and, during some time periods, by emigrating to the USA. Again, Virserum is no different in this regard.[5]

Annual population statistics reveal that there were 2,894 inhabitants in Virserum parish in the year 1900 and that the population grew consistently during the first half of the century. The peak was reached in 1949 when 4,031 people resided in the parish, a level upheld only a few years. The number of inhabitants has decreased steadily since and with 2,146 in 2009 Virserum is back at a population level resembling that of the 1860s. The negative trend was temporarily broken between 1989 and 1995, an effect of the establishment of an asylum facility in Virserum, and a large number of mainly Bosnian refugees receiving Swedish residency during those years.

In fact, investigating the population statistics closer, it appears as if the first half of the 20th century was unusual in the historical context of Virserum. During this period the parish experienced positive natural population growth as well as, for most years, positive in-migration from Sweden and elsewhere. Since the 1960s both trends have been reversed.[6] With respect to gender and age distribution, Virserum has gone from having a steady surplus of men during most of the 1900s, to a reversal of the pattern toward its end. Although originally fueled by outward migration – the number of women leaving the parish exceeded the number of men for almost every year between 1955 and 1980 (having firmly established the shift by the 1980s) – the pattern is today underlined by the aging population of the parish.

As in other parts of Sweden that have experienced a reduction in population levels, this decrease has not been evenly distributed across the parish. In a comparison of the socio-economic situation of Virserum in 1947 with that of 1970, Bringfors *et. al.* (1982) found that previously cultivated lands and prosperous farms were rapidly being abandoned, and that many villages ran the risk of being inhabited only by the elderly and a few summer residents. Between the two years, the rural population level had decreased from 1,850 to 947, a drop of almost 50 percent, to be compared with 11 percent for the parish as a whole. Moreover, the rural parts had experienced significantly more closures of manufacturing facilities than had the urban areas. Indeed, the level of urbanization has steadily increased. In the 1920s about 30 percent of the population resided in Virserum urban area, in the early 1940s the 50 percent mark was passed, and today the ratio is just above 80 percent (SCB, selected year).

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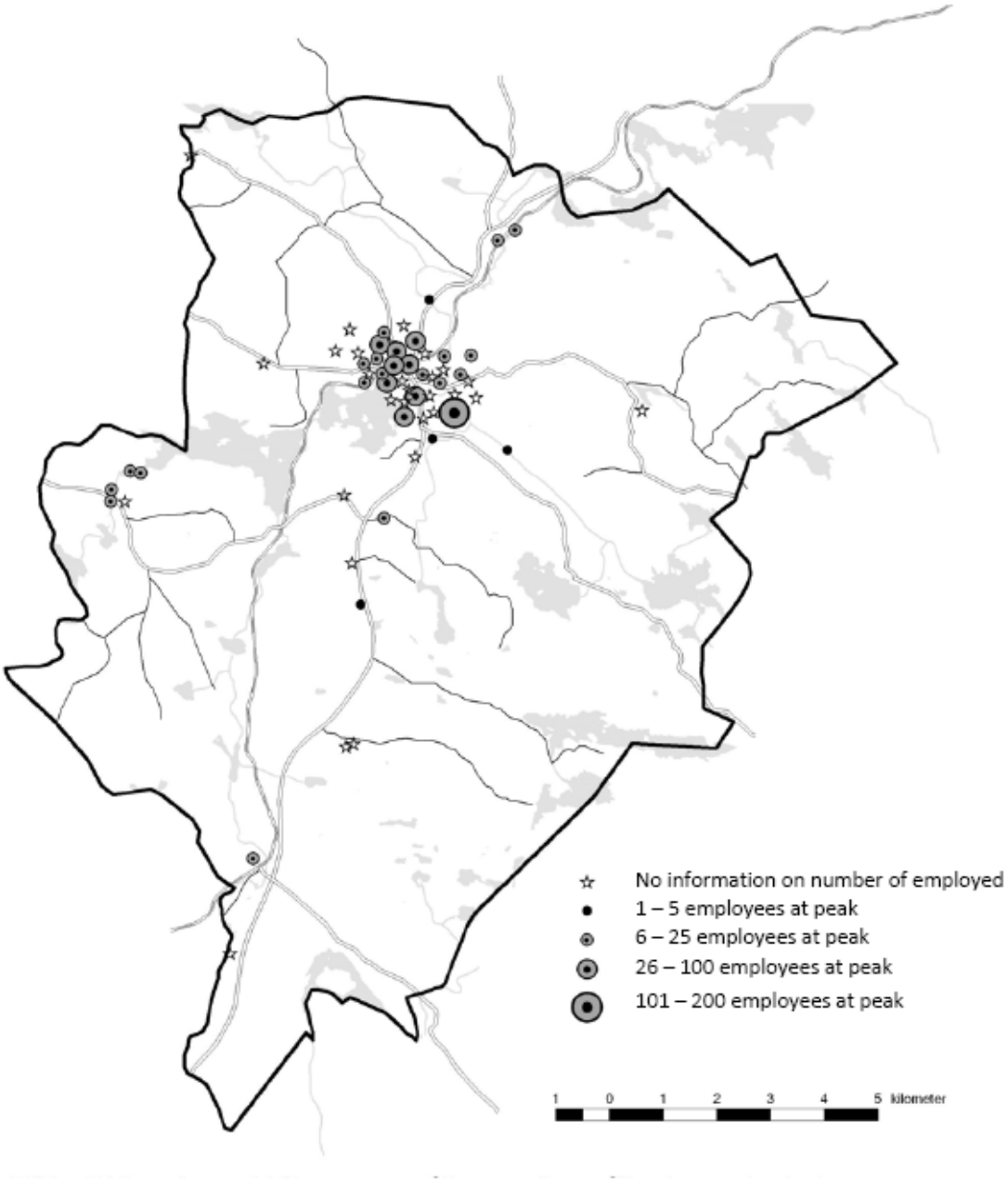
[5] Lindström (1985) shows that the "America fever" affected Virserum mainly in three waves: 1868–1872, 1880–1895, and 1901–1904. Lindström identifies bad crops and difficult economic conditions driving the first, while positive experiences from earlier emigrants in combination with American advertising campaigns influenced the second. The third period is linked to the early industrialization of Virserum, and the unrest that followed on the first attempts at unionization in the early 1900s. Petersson (1963) identifies the same time periods and claims that all in all some 1,260 people left for the USA between 1867 and 1914, which is not a small number for a parish that hosted 2,500 inhabitants in 1867. That the total population level was maintained indicates the degree of population pressure at the time. Interestingly, Peterson refers to the 1909 Emigration Report (Sandbärg 1913) which found that emigration from forest areas in Kalmar County (including Virserum) was driven by concerns over living standards rather than lack of employment and income. Arguably, people in these areas were used to good incomes from wood related activities during the winter, and were looking for ways to gain similar incomes all year around.

[6] There are positive net migration numbers for separate years also at other times, but at lower levels. Even though not substantial enough to offset the population decline in Virserum, it is almost without exemption that positive net numbers in population and migration statistics during the last decades relate to foreign migration, some of it resulting from foreign owners of second homes in the area settling there permanently. For a study of German second home ownership in Småland, see Müller (1999).

Map 2: Location and size distribution of furniture firms in Virserum parish.



Note: Only factories established before 1975 are included.

Source: The historical database of industries in Kalmar country as of May 1, 2010. Prepared by Kalmar County Museum.

Finally, in line with the evolution of the economic structure of Sweden at large, Virserum has gone from a predominantly agrarian society to one relying on industrial activities, and more recently services. As implied by this brief introduction, this study is concerned with a location small in size as well as a low level of aggregation. The identification of the agglomeration of furniture firms once located here is based on a documented historical empirical phenomenon – an unusual large number of firms and employees in a geographically confined area that not only dominated the local economy, but contributed to about 3 percent of total national production (at

levels above national average per worker) and where local supporting industries were found (Stålberg 1942, Ålund 1946, Bohman 1997).[7]

A more detailed analysis of these developments follows in the next section, but enough to note here is that all these firms and factories were located within the parish boundaries. In contrast to the municipal level, Virserum parish remained unchanged during the 1900s and is, hence, a *geographically stable* unit of analysis for this particular study. The parish is the smallest of the ecclesiastic administrative units in Sweden and forms the basis for population statistics as well as collection of industry data, and it largely overlaps with the Virserum postal code area. Virserum parish is, hence, the primary unit for collection and analysis of official data in this study.

However, as already indicated, the parish itself is highly differentiated geographically, both in real (population) and economic terms. Although the first furniture factories were established in the villages, all but a handful of furniture producing units were located within Virserum's urban core during the heydays of its furniture era. This means that the agglomeration of furniture firms was confined to a significantly smaller geographical area of about 2.5 km^2 at the heart of the parish. The pattern becomes clear in Map 2 that shows the location of furniture factories across Virserum parish.

The rise and demise of furniture making in Virserum

This section presents the evolution of furniture making in Virserum with the help of the cluster life cycle model of Menzel and Fornahl (2010). We start by investigating the direct dimension of the cluster, i.e. its size and diversity, and identify its life cycle stages. This is followed by a discussion of the systemic dimension, i.e. the cluster's ability to utilize its size and diversity.

Cluster size

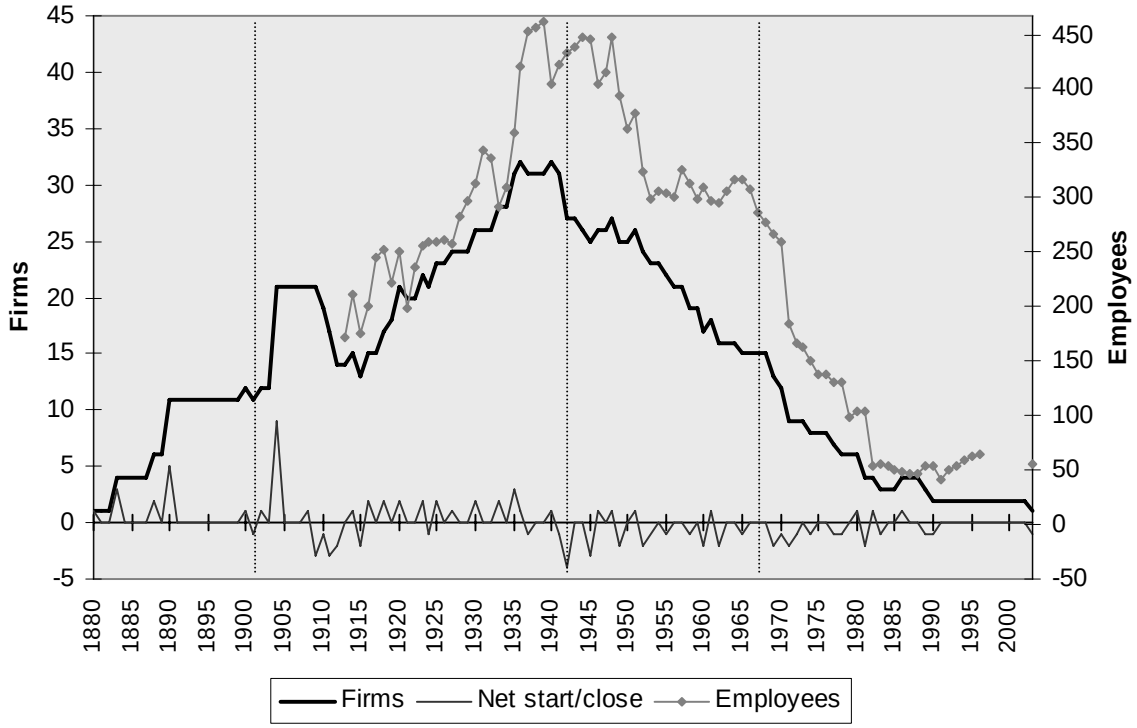
As official statistics tend to omit firms with fewer than five employees, we use data collected during fieldwork in Virserum in 2004 and 2008 to construct a data set and calculate cluster size. The research is based on semi-structured interviews with local actors and information from the Virserum Furniture Museum, Virserum Local Historical Society, Kalmar County Museum, local municipality archives, local newspapers, and published sources on Virserum furniture firms (mainly Johansson 1939, Stålberg 1942, Ålund 1946, Johansson 1947, Johansson n.d., Bohman 1997).

Figure 1 indicates the evolution of the size of the Virserum furniture cluster over time. It shows the number of furniture firms located within Virserum parish between 1880 and 2003, as well as the net ratio of establishments to closures for the same years. A first observation is the overall shape of the curve, with its pronounced peak between 1935 and 1940 when more than 30 furniture producers were operating in the parish. To the left we see a sharp increase in number of firms during the initial decade, followed by a flattening out of the curve in the 1890s, a "hump" in the first decade of the 20th century (which we will come back to), a virtual doubling of firms between 1915 and 1920 and then a steady, but slower, rate of increase until a maximum of 32 firms is reached in 1936. This number had been reduced to 25 already by 1945, and remained

[7] Hence, the Virserum cluster has not been identified by the application of statistical methods on industry data at national and sub-national levels, an otherwise commonly applied technique (e.g. Czamanski and Ablas 1979, vom Hofe and Chen 2006).

thereabout for the next five years until the curve again falls, sharply, in the 1950s and 1970s. It then stabilizes; the two firms discussed in the introduction are the only ones remaining from 1990 and onwards. If extended to 2009, the curve would come down to zero. The same movements are reflected in the net ratio for establishment and closures found at the bottom of Figure 1, where we see that the trend of positive net numbers revert to mainly negative ones after 1940.

Figure 1: Number of furniture firms and net start/closure rate in Virserum, 1880–2003.



Source: Johansson (1939), Johansson (1947), Bohman (1997), local information compiled by the author.

A word of caution may be warranted here: given the small size of the firm population, results are highly sensitive to errors in the data (e.g. omitted or wrongly included units, inaccurate dates etc.). Let us elaborate somewhat on this. In this study we are concerned with furniture firms, not factories, nor do we include firms with their main engagement in general carpentry or woodwork (cf. Christensen 2001, Lamke 2004). If a firm is equated with an individual who rents a work bench and produces furniture pieces independently, with usage rights to equipment owned jointly with other carpenters working in the same manner within the same facility, a given factory would be associated with more than one firm. This is a plausible scenario for an activity with low start-up costs such as furniture. In fact, it is one of the reasons why furniture is – or at least has been – an industry with modest barriers to entry. [8]

As will be seen, this practice did exist during the first decades of the development of the Virserum cluster. At that time carpenters tended to be "masters" in the sense of producing each piece themselves from beginning to end. The first example is the sons and son-in-law of C. J.

[8] This organization principle was a trademark of Tibro, the main furniture cluster in Sweden and one that still exists. It has influenced also the nature of the modern local production system in Tibro. For further details, see Larsson (1989) and Rafiqui (2010).

Ekelund, the man who set up the first furniture joinery in the parish center in 1880. After Ekelund's death his sons and son-in-law took over his facility, but each worked independently. Activities at the Nyström factory 1904–1912 are another example. Here ten carpenters joined forces to rebuild a factory that had just burnt down. Half of the new facility was used by an established furniture firm while the carpenters shared the rest, each with usage rights to at least one work bench and to common equipment as described above. Some of the carpenters were earlier employees of Nyström, others out of work due to a labor conflict at Virserum's largest furniture company at the time. Between 1909 and 1912 these independent units merged into two, through a series of acquisitions of usage rights by two particularly active carpenters future entrepreneurs (these units later evolved into well established and long-lived firms).

The data in Figure 1 accounts for the cases just described. The effects on the sample of the inclusion of the Nyström units is reflected in the hump in the curve for the associated years, which gives in indication of the sensitivity of the data to potential omissions or double counting. To reduce this risk, all information has been compiled into firm biographies that allows for comparison across sources before being translated into a numerical data-set. Likewise, the definition of "closure" and "new firm" will influence the shape of the net ratio curve in the lower part of the figure. If the reconstruction of a firm has entailed new ownership and/or a new name, this has been registered as a closure of the old and establishment of a new firm in the data. In Figure 1, most movements during the 1970s and 1980s refer to such reconstruction attempts rather than the establishment of "truly" new furniture firms in Virserum. Mere name changes or a change of juridical statues (predominantly from individual liability to joint stock companies) without change in focus of activities are not accounted for.

Moving on to employees, Figure 1 shows aggregate numbers for 1913 to 1996. These are based on Bohman (1997) and refer to firms with more than five employees. The series, hence, leaves out the one-man-operations and smaller firms that we for a fact know existed during that time period.[9] However, as we lack consistent employment data at the firm level for these small units and an inclusion of these would only slightly affect the level of the curve (with no significant influence on its shape), we have used the numbers provided by Bohman as an approximation. In the figure, we see that the curve largely traces that for number of firms, although with a time lag when it comes to the years of decline. From 1936, the industry employed more than 400 people in Virserum (the maximum of 461 was reached in 1939), a level that was sustained through the 1940s. The main difference between the curves is, however, that the employment level did not fall as rapidly as number of firms during the 1950s and 60s but instead was maintained at a level of roughly 300 employees. The big drop in employees comes in the 1970s and early 1980s when an astonishing 80 percent of the job opportunities in furniture manufacturing were lost. The curve then flattens out around 50 employees, a level that was maintained until the final two firms closed down as described earlier.

We have, in other words, a cluster magnitude of some 85 furniture producing firms active at one point or another in Virserum (with a maximum of 32 in the late 1930s and early 1940s),

[9] The expression "one-man-operation" is justified when it comes to furniture making, as the vast majority of firms have been, and still are, owned and run by men. This does not mean that women were absent in the industry. In the factories, most women were found in the finishing stages in the production process, waxing, polishing or varnishing each piece of furniture. But as in the case with many family firms, it was also common for wives entrepreneurs to run the business administration. Virserum has only had three female furniture owners/managers. Karin Thorén took over *Br. Johanssons Stol & Möbelfabrik* after her father's passing in 1938, and ran it together with her sister Ella-Greta Andersson until they retired and sold it to external owners in 1974 (R.-E. 1974). It closed in 1981. It would take almost 65 years before the next female owner/manager appeared; after many years at various positions in her father's firm, Anna Wissing finally took over *W-Möbler AB* in 2005 and ran it until it closed in 2009.

and providing employment to a maximum of 461 people (at roughly the same time). To this we can add about a handful of directly furniture related companies, such at tanneries and metal working firms, and another handful of specialized service providers, such as two banks, a furniture retailer, a print shop, and accounting services; as well as a few significant organizations, such as a trade union and a local industry association. Most of these will be presented in the investigation of cluster stages below.

Identification of cluster stages

Although only investigating the direct and quantitative dimension of the cluster – cluster size – the description so far is enough to make a characterization of the stages of development of the Virserum furniture cluster (Menzel and Fornahl 2010: 218). As indicated by the horizontal lines in Figure 1, the cluster *emerges* during the period 1880-1900 (roughly), when there are a few but growing number of furniture firms in Virserum. This is followed by a prolonged *growth* period in terms of number of firms as well as employees. There appears to be two sub-periods in the growth stage (Bergman 2008), the first last until 1920 and is characterized by a very rapid rate of growth. The second period still shows positive but somewhat lower growth rates, until the peak is reached (in terms of both number of firms and employees) around 1940. The late 1940s and early 1950s could be interpreted as an initial adjustment phase of the *sustainment* stage, after which a reduced number of firms were able to maintain the employment level during the 1960s. The *decline* stage started around 1970, again with two sub-phases; in the first (lasting about a decade) virtually all furniture firms closed and employment opportunities were lost, while in the second (from 1990) two furniture producers maintained a fairly stable level of employment in Virserum. Let us investigate these stages more closely.

1880 – 1902: Emergence

Making of furniture has been documented as a side activity to farming in the villages of Virserum parish since the mid 19th century. Over time the production became proto-industrial in character, involving small work shops with manually run machinery placed in connection to the family farm but run as independent activities. This development was stimulated by bad crops in the late 1860s and unusually low farming productivity in the following decades (Bohman 1997). As already indicated, the first firm in the parish center came in 1880 when C.J. Ekelund set up production in the spinning mill at the upper water fall in the stream that runs through the center. At that time, there were some 200 inhabitants living in 30 homes in the main settlement, of which about half were tiny and simple cottages. The center also hosted three shops, one mill, one dairy, one brewery, a few artisans, two tanneries (with glue for carpentry as an important by-product), and seven farms. A few winding dirt roads connected it to the outside world; the closest railway station was in Målilla 20 km away. There was no local postal service, doctor, or pharmacy (Johansson 1947).

Hence, it was not urban agglomeration economies in the parish center of Virserum that attracted its first furniture establishment. Instead, it was the availability of energy supply and raw materials combined with technological and legal changes needed to make use of these (cf. Maskell and Malmberg 2007), plus the local knowledge base combined with Ekelund's creativity and innovating thinking that made Virserum parish center particularly attractive.

In 1868, Ekelund (who was from a neighboring parish) and his brother-in-law (who lived in a Virserum village) had worked as carpenters in Stockholm. There a furniture retailer had allowed them to copy the design of popular chairs, which they produced when back home. They were quite successful and won medals at furniture fairs in towns in central and western Sweden

(Bohman 1997). After Ekelund's factory had burnt, his brother-in-law convinced him to open his new operation in Virserum in order to make use of the water power available there. This allowed Ekelund to install his homemade versions (in wood) of new types of machines developed by Sweden's first industrial producer of furniture, *Näsyjö Stolfabrik,* which produced Windsor style chairs some 80 km away. This equipment was particularly important for the treatment of Ekelund's material of choice – oak. Made available for others than the Navy and the Crown as late as in 1875 (Juhlin Dannefelt 1959, Eliasson and Nilsson 2002), oak is a particularly hard and difficult material to work with and requires a high degree of mechanization (Mårtenson 1981).

However, even though the new machinery and use of water power for furniture production were innovations in the local economic system, the innovation with a national reach came with the realization that when such mechanization was combined with skilful and delicate carvings, it resulted in highly ornamented pieces of oak furniture that did not only signal outstanding craftsmanship but offered something entirely new on the Swedish furniture market. Ekelund (the name of whom translates to oak grove) was successful; despite his rather small factory and staff of maximum 12, he sold furniture to upper and middle class customers nationwide, including to the Royal Military Academy at Karlberg in Stockholm (Bohman 1997). This started the oak era in Virserum, which would last through the 1920s. In fact, all firms established in the parish during the emergence phase had oak furniture as their main product, and sold mainly to the capital Stockholm – Virserum furniture was not to be found on local fairs or market grounds.

As already mentioned, Ekelund's two sons and son-in-law continued the production in the parish center after his passing in 1889, each running their businesses separately. His son-in-law, Oskar Petersson, delivered furniture to the royal princes Eugen and Carl, and was awarded a silver medal at the Stockholm Exhibition of 1897. At the time he had almost 30 employees.[10] In 1890, when the Ekelund brothers moved out to build new factories at the two waterfalls further downstream, a fourth enterprise was established in the spinning mill. By this time seven new furniture factories had started in the villages, powered by water or, in some cases, paraffin oil engines. Most had chairs as their main product (Bohman 1997). Responding to increased trade and commerce in the area, a savings bank was formed in 1884.

Yet, the event that would influence the development of the local furniture industry more than any other came in 1899 when one of the Ekelund brothers, Edvard, initiated the formation of *Oskar Edv. Ekelunds Snickerifabriks AB,* or *Bolaget* as it was called locally. This was a limited liability company with the impressive equity of 80,000 shares at a value of SEK 200 each, or SEK 160,000 (SHK 1903).[11] The following year *Bolaget* reported 101 employees, making it one of

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[10] With more than 6,700 exhibitors, the 1897 Stockholm Exhibition is explored as a "spectacular articulation of modernity" by Pred (1995) who points to its impressive industry and machine hall as a concrete expression of the process of industrial modernization that Sweden was undergoing at the time. More than 100 interior design companies, furniture producers and carpenters displayed their products in the main industry hall. The collection reflected the classical inspired and rustic styles that had dominated the last centuries, with a few examples of new European influences. The reception was generally lukewarm, some critiques even called the furniture pompous and old fashioned. As a reaction, *Svenska Slöjdföreningen* (The Swedish Art and Crafts Society) arranged the Modern Furniture exhibition in 1899, showing all prominent Swedish architects and artists that made art nouveau inspired furniture (Nyström 1991). Although this style was eventually picked up also by Virserum firms, none collaborated with any of these designers.

[11] Recalculated in current value (at consumer price index) this amounts to just above SEK 8,480,000, or approximately € 848,000 (Edvinsson 2010). This is way above the required equity of SEK 100,000 under present day

the largest employers in the county (Christensen 2001).[12] Workers were recruited from villages in Virserum and adjacent parishes, but traveling journey men added much needed skills. Carvers and turners were in particularly high demand and tended to come walking or hitchhiking from Stockholm or other locations on a seasonal basis (Bohman 1997). Operations expanded along the stream by incorporating both factories at the lower falls, as well as Petterson's part of the facility at the upper fall when he closed in 1902. Here *Bolaget* had own employees, but idle work-benches were rented out to independent carpenters (E.L. 1961).

The expansion of furniture making in Virserum increased the demand of appropriate tools and machinery. This was picked up by *Hjortöströms Gjuteri och Mekaniska Verkstad,* a metal working firm founded in 1884 that had its own foundry and was located on the opposite shore of Lake Virserum. *Hjortöströms* developed its own line of machinery for furniture and general carpentry that became renowned nationally as well as internationally (Ålund 1946, Habbe *et al.* 1994), and would dominate the market in Virserum when the cluster started to grow (Bohman 1997).[13] An increased demand for furniture fittings and ornaments in metal sparked the establishment of *Palmqvists Mekaniska Verkstad* in 1895. Both would branch off to other (wood related) sectors in the 1940s. We should also mention August Bohman who had opened a small furniture factory together with his brother in one of the parish villages around 1883, and who, after a study trip to Germany, started the first Nordic veneer factory in Blomstermåla in 1897, further south in Kalmar county (Bohman 1997). Veneer was produced there until 2003, in the last years as part of a flooring company (Winsell 2003).

The rapid transformation of furniture making to a mechanized industrial activity also changed the relationship between workers and factory owners, which had been rather informal during the artisan and proto-industry days. One sign is the formation of a local branch of the national *Träindustriarbetarförbundet* (Association of Swedish Woodworkers) in 1899, the same year as *Bolaget* started. Just as skills and technical knowhow was diffused by traveling journeymen, so was information about the union. But the movement struggled initially and met with resistance not only from employers, who would fire or threaten to fire union members, but also from many religious workers who associated union members with "socialists" – the antichrist of the times. Even though the union did not get a strong footing in Virserum until 1918, it did provide a basis for a political revivalist movement in the parish much earlier, to accompany the already existing Christian revivalist and temperance dittos. In 1902 the union arranged the first ever Labor Day demonstration in Virserum, proclaiming the demands of the workers' movement (Johansson 1939). In addition to the red Labor Day flags, the inhabitants of Virserum witnessed another new type of event later that year, when four carpenters joined forces and left *Bolaget* to form *Wirserums Nya Möbelfabrik* in the nearby village of Hultarp.

Hence, the parish center underwent significant changes already during the cluster emergence stage. The initial village-like character was fading and the economic system transformed, along with Virserum's social make-up. The role of *Bolaget* in this can not be over-estimated. Even its nickname – *Bolaget* literally translates as The Company – indicates not only

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legislation for a limited liability company. Sales in 1903 amounted to SEK 250,000 and according to the register, *Bolaget* had warehouses in Stockholm, Göteborg, Sundsvall and Helsingborg.

[12] This includes workers at the company saw mill, which at times was an extensive operation. Ålund (1946) report 37 carpenters employed at *Bolaget* at the turn of the century.

[13] A full set of *Hjortöströms* machinery and equipment still exist in the small factory in Lillefors village (home to two consecutive enterprises between 1883 and 1965, and initially also to an unknown number of independent carpenters who rented idle work-benches). With its associated dam and cottage, this factory today constitutes one of the best preserved industrial heritage sights from the late 1800s in Kalmar county (Lamke 2007).

the fact that it was the first limited liability company in Virserum, but also the impact that the large investment, entrepreneurial creativity, strategic location and sheer size of the enterprise must have had on the local community. After all, some 20 years earlier Virserum center itself had had an adult population of roughly the same magnitude as the number of people now employed by *Bolaget*. In terms of the Menzel and Fornahl model, Virserum had both a company with a vision along with a new technological path and certain local conditions beneficial for growth, which ensured that the furniture cluster could take off. Moreover, as spin-offs indicate the presence of a mechanism that transfers a cluster from its emergence to its growth stage, we put 1902 as the year of transition between the two in the case of Virserum.

1903 – 1940: Growth

As shown in Figure 2, more spin-offs from *Bolaget* were to follow. The role of *Bolaget* as a nursery for future furniture firms in Virserum comes across clearly. We may, thus, assume that *Bolaget* had a significant impact on competence development within the cluster throughout its growth phase, and that it formed an important focal point of activity. This is particularly evident for the first two decades of the period.

At least two spin-offs in Figure 2 are due to labor conflicts at *Bolaget*: the *Nyströmska* factory in 1904 and *AB Ekmöbler* in 1919.[14] In addition, both represent examples of modes of organization that never took hold in Virserum. The creation of *Nyströmska* and the way it offered carpenters a possibility to work independently with usage rights to shared machinery and equipment was described earlier. Although not evolving into an established way of working in Virserum, we see from Figure 2 that this factory was something of a hotbed of creativity that fostered a number of carpenters/entrepreneurs who would put a mark on the community for years to come. The most prominent one is *AB Harry Strömberg*, one of Virserum's three largest employers at the peak of the cluster and considered one of its classics. But an impressive number of furniture entrepreneurs and firms can be traced to *Nyströmska* or its subsequent spin-offs.[15]

AB Ekmöbler, on the other hand, was run as a cooperative, in the form of a limited liability company where 15 of the original 38 owners came from *Bolaget*. Facing the severe economic times of the early 1920s, the company was rather soon forced out of business, only to return a year later as *AB Nya Ekmöbler*. This time the number of owners was small, but the intention was still to constitute a workers' enterprise. Both arrangements brought out conflicts; in the first between workers paid by the hour or by piece, and in the latter between employees who were owners and those who were not. What is more, it does not seem to have struck a chord with the local community that nicknamed them The Old Testament and The New Testament respectively (Petersson 1981). The experiment was never repeated and we can instead see from Figure 2 that most firms were partnerships or family firms. At a different level the figure is, in fact, also a map of family ties, either by birth or marriage. Outlining the details of these is, however, beyond the scope of the present study.

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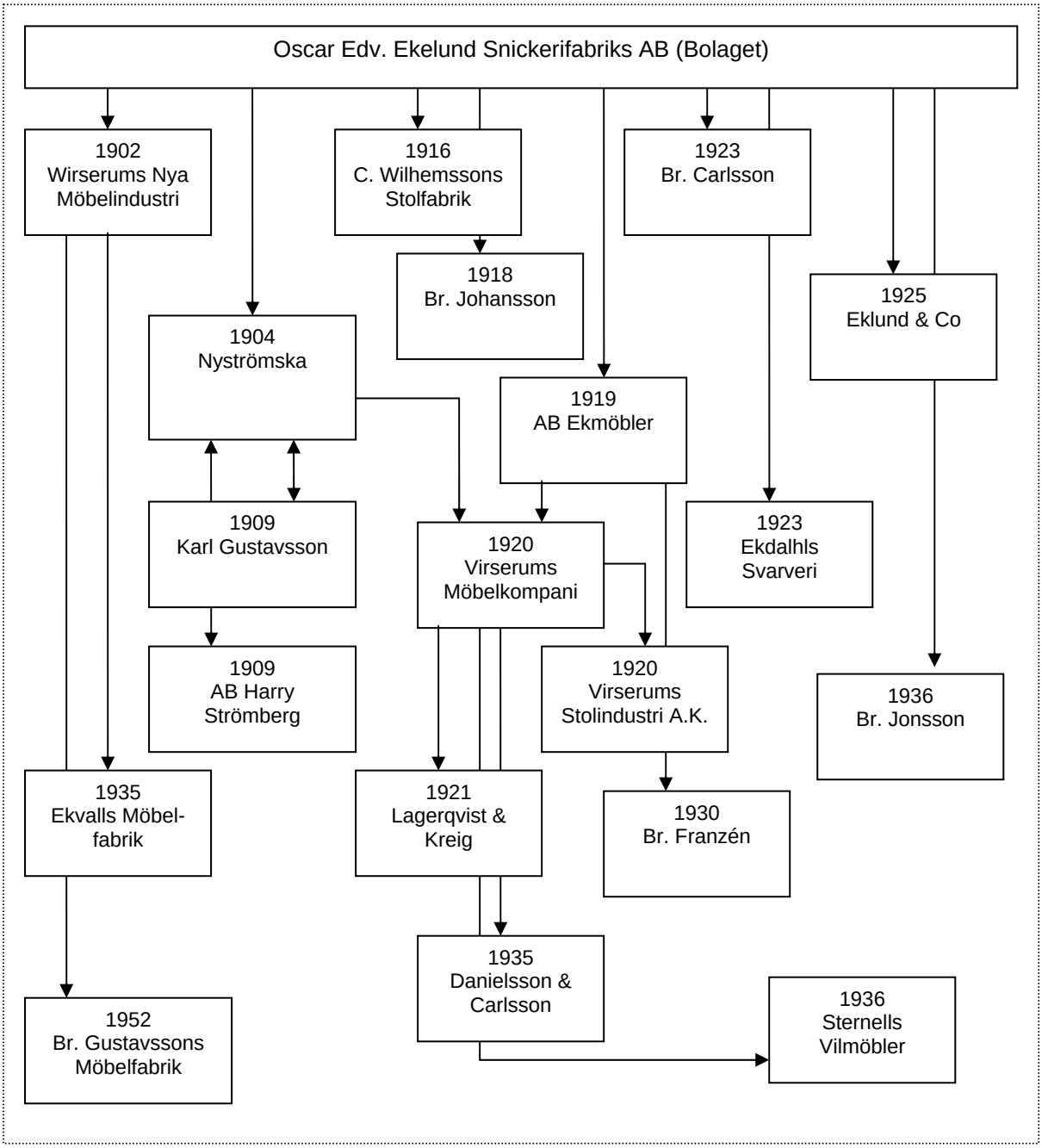
[14] The national strike of 1909 did not affect any of the firms in Virserum (Johansson 1939).

[15] *Nyströmska* was actually two adjacent units. *Bolaget, Virserums Möbelkompani* and later *Strömbergs* occupied one and the independent carpenters, and later *Karl Gustavssons Möbelfabrik,* made use of the other (Strömberg 1949, J. H-g. 1967).

Figure 2: Spin-offs from *Bolaget*, 1902–1936.



Source: Illustration by author.

Raising the question whether or not spin-offs from *Bolaget* were triggered by push or pull factors, we may note from Figure 2 that, with the exception of the first two, almost none other emerged during the first decades of the new century. This was a time of high demand for the industry, and, as indicated, the epoch of oak and oak garnitures in Virserum (Ålund 1946). In the more difficult times of labor conflicts or economic downturns, such as around 1920 and the 1930s, more spin-offs occur. We might thus hypothesize that with the exception of a set of particularly entrepreneurial minded carpenters, most employees at *Bolaget* were rather content with their status as employee (although often not with the pay and the working conditions). Interviews with retired carpenters (e.g. Andersson 1961, E.L. 1961, Dagnell 2000) as well as

obituaries in the local newspaper indicate that it was common for furniture workers in Virserum to remain with one, or two, employers throughout their work life.

Bolaget continued to grow. In 1910 it had about 200 employees and was still the larges employer among wood based companies in the county (Christensen 2001). This number would go even higher during WWI when its sawmill operation was particularly large (Johansson 1939, Bohman 1997). Although it can not be ruled out that the smaller firms produced chairs or individual pieces for *Bolaget* to be included in its garnitures, in particularly in the early years, there is nothing in the documentation that suggest that this became an established practice or production system in Virserum. Instead, *Bolaget* as well as smaller firms continued to have the capital Stockholm as their main market. The reverse may be plausible, i.e. that smaller firms would buy sawn oak from *Bolaget* to manufacture their pieces,[16] or from any of the other eight factories with own sawmills in the parish. At this time, demand for sawn timber was usually met by traveling traders with mobile sawmills, who set up operation at forests ripe for felling (Bohman 1997).

There are also indications of further entrepreneurial activities from the people engaged in *Bolaget*. One is the opening of a branch office of a Kalmar-based commercial bank in 1903, taken over by one with national reach in 1919, which was an initiative of the treasurer of *Bolaget* and the chairman of its board (who also held the position as local representative of the Enforcement Authority). Another is the factory for production of wood plugs for shoes for the Russian market, which was started in 1916 by the same treasurer from *Bolaget*, this time in collaboration with its chief technician. The Russian revolution put an abrupt end to this venture.

More generally, the first 20 years of the new century saw furniture making evolve fully into an industrialized activity in Virserum. As described by Ålund (1946), the degree of mechanization was high, old tools were discarded, production levels increased substantially, and serial production and by-piece-payment schemes were introduced. The factories started to produce to order and after drawings, instead of according to the ideas of the factory owner or entrepreneur. Small firms would often exchange photographs and drawings that they had received from furniture dealers. Furniture catalogues displaying the collection of the firm were introduced, as was the use of traveling salesmen who would often represent multiple, even competing, firms.

If one of the Ekelund brothers introduced oak as a product material and large scale production to Virserum, the other, Emil, introduced product specialization and electric power when he (re)started his operation in 1908. He and his 15 employees focused on sofa frames, and did so successfully until 1924 when business closed after a fire. The sofa frames would be sold to furniture retailers, who commonly had an upholstery workshop associated to the store. Up until Emil's new initiative, firms had offered full furniture sets and included all types of furniture in their product lines, even firms that mainly produced chairs. Most of the new establishments during the growth stage specialized in one type of commodity, usually sofa frames or chairs.

In the 1930s, it was common for these producers to add upholstery sections to their factories, and expand into upholstered sofas and sofa beds. The aforementioned *AB Harry Strömberg* is a prominent example, *Holms Möbelfabrik* another, as is *Br. Johansson Stolsfabrik* that

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[16] One example that combines both is *Ekmöbler*. Despite initially trying to prevent its formation, the management of *Bolaget* soon struck a deal with the cooperative to buy sawn oak from *Bolaget*, which in turn bought finished pieces from *Ekmöbler*. At most the deal amounted to 20 percent of *Ekmöbler's* annual turnover (Petersson 1981). We can speculate that this was a way for *Bolaget* to lessen the impact of the national lock-out that had been called by *Svenska Möbelindustriförbundet* (the Swedish Wood Industries Association) in 1919. Bolaget had joined the association at the same time as it allowed the union the previous year.

focused mainly on chairs, but also upholstered armchairs. As a result, the demand for upholsterers increased.[17] This was an area of expertise that was not readily available in Virserum, and the in-migration of skilled upholsterers that commenced in the 1930s challenged the status hitherto held by the carvers. Another change was that birch (or birch veneered pine) took over from oak as the preferred material. Fortunately, Virserum was even better equipped with birch and pine than with oak, and these were softer materials to work with. On the other hand, birch required more finishing work that did oak (Bohman 1981).

Hence, the early specialization displayed by furniture firms in Virserum amount to product specialization rather than specialization across the production and value chain. We do see a handful of one-man workshops focusing on upholstery, wood carving, turning and waxing during the period (three established in the early 1920s and three around 1935). The first set survived for 20-30 years, while the latter lasted only a few years. There are, in other words, indications of also some specialization across the production chain in Virserum, but it never evolved into a significant, or dominant, mode of operation in the local production systems. Most firms, and in particularly those of larger size, continued to do all production steps, from sawing and drying the wood to waxing and putting the finishing touches on the final pieces, in-house (sometimes involving a number of buildings at the company premises, and always involving the carrying of pieces, between floors or buildings, at multiple times in the production process). It is, hence, fair to say that throughout the growth stage in Virserum, a furniture factory was one in which timber was inserted at one end and finished furniture carried out at the other. As indicated in interviews and local media clippings, this was what a "real" furniture factory should look like in the minds of the local community.

Based on the data behind Figure 1, there were 20 new furniture firms established in the parish between 1914 and 1927 (of which 15 were in the center), and 12 new (10 in the center) in 1933-1940. On the other hand, six units (three in the center) were closed in 1918-1921, and an additional five (two in the center) in 1935-1938. This is in line with Bohman (1997) who identify 1913-1920 as expansive years for the Virserum cluster, followed by the financial crisis of 1921 that led to reduced production and wages, as well as decreased employment levels. Toward the end of the 1920s the economy improved, which resulted in new firms as well as increased employment levels, the majority of which occurred among the larger firms. Conservatively estimated, Virserum's share of the national production of furniture was between 2.5 and 3 percent through the period, the largest achieved in 1925 with 3.25 percent (Bohman 1981). The global economic crisis of the 1930s hit Virserum hard in 1933, the year of a third labor conflict at *Bolaget*. This was quickly followed by a very expansive period, with the highest ever number of 461 employees in the industry reached in 1939. The same year *AB Verktygsfabriken* was started, a metal manufacturing firm that, among other things, made veneer presses for the furniture industry.

According to Bohman (1997) the new furniture firms in the 1930s were established by carpenters who wanted to take a chance and make use of the good times. Firms rationalized by expanding their facilities and investing in modern machinery. At the end of the period, Virserum held some 3.2 percent of total sales in the industry as well as its maximum number of active firms: 32 (24 in the center). Four of these had 30-40 employees (*Vilhelmsons Stol- & Möbelfabrik, Br. Johanssons Stolfabrik, Holms Möbelfabrik, Ekelund & Co*), two had 45 employees (*AB Harry Strömbergs, AB Nya Ekmöbler*) and *Bolaget* had about 100, i.e. roughly 20 percent of those engaged in the industry in Virserum.

[17] In 1946, *Strömbergs* employed 12 upholsterers out of a total workforce of 45, while the corresponding numbers were 14 out of 37 at *Holms*. As comparison, *Bolaget* had 5 upholsterers among 78 employees in 1949 (Bohman 1997).

As might be expected, the cluster growth stage was an expansionary phase also for the community at large, involving changes in the built environment as well as in local services. It is the period where the modern urban-like settlement of Virserum takes form. A first step in the breaking of the virtual isolation of Virserum came in 1903 when it was connected to the national phone network, and a second in 1911 when it was connected to the Växjö-Åseda railway line. This helped energizing the local business community. The same is true for the provision of electric power, which arrived as late as 1915. To further erase the village character, town regulations were introduced to the one square km around the railway station that hosted about 1/3 of the parish population. In 1918 this area gained the status of *municipalsamhälle,* or locality with municipal rights, signifying an area with fairly urban character within a rural district.[18] This was a precondition for setting up a town plan, which was done in 1919 but adopted only in 1932. In the meantime the Virserum-Hultsfred railway line had opened (1922), a medical doctor been hired (1925), a fire station built (1925), and a water and sanitation system been installed (1933) (Johansson 1947). We may also note that as early as by 1905 had water ceased to be a triggering factor for the establishment of new factories in the parish (Bohman 1997). Hence, with the exception of the two first establishments of the period, incidentally also the initial spin-offs from *Bolaget* in Figure 2, other factors induced the agglomeration of furniture firm in Virserum, and in particular to its parish center.

Table 2: Growth (%) of Virserum furniture firms relative national firms, 1938-1945.

	Growth (firms)		Growth (empl.)		Avg. empl.	
Year	*Sweden*	*Virserum*	*Sweden*	*Virserum*	*Sweden*	*Virserum*
1938					14.02	14.74
1940	1.01	1.03	0.97	*0.88*	13.53	12.63
1941	0.97	0.97	1.00	1.04	13.98	13.61
1942	1.02	*0.90*	1.07	*1.03*	14.61	15.46
1943	1.06	*1.00*	1.09	*1.01*	15.02	15.68
1944	1.04	*0.96*	1.06	*1.02*	15.29	16.56
1945	1.07	*0.93*	1.10	*1.00*	15.72	17.80

Source: For Virserum: Johansson (1939), Johansson (1947), Bohman (1997), local information compiled by author. For Sweden: SOU (1947). Calculations by author.

As described above, in Menzel and Fornahl's model this stage ends when the growth of the cluster adjusts to that of the industry average, albeit at a higher level of production. Unfortunately, identifying the industry average for furniture during the growth stage of Virserum turns out to be rather difficult. As noted by the first governmental evaluation of the furniture industry SOU (1947), furniture factories and firms were not separated from general carpentry in the industrial statistics until 1940. Recalculating the data from 1938 and onwards, the evaluation finds little growth during WWII but that that 1944-1945 were particularly expansive years for the industry. Using the data from Figure 1 and comparing them to developments in Virserum for the same years we arrive at Table 2.

[18] The *municipalsamhälle* status lasted until 1956 and had by then expanded to an area of 7.33 km², or some five percent of the total land area of the parish.

The table indicates that from 1942 and onwards, Virserum lags behind the national growth numbers in terms of both number of firms and number of employees (while at the same time having a larger average size of units). Given this, we make a rough estimation and put 1940 as the end of the growth phase.

1941 – 1968: Sustainment

Table 2 could be taken to indicate that the sustainment period for the Virserum furniture cluster was extremely short, about one year to be more precise. To ascertain if this could indeed be the case we compare our figures for firm growth in the table with those reported by Bohman (1997), even though he uses official statistics and, hence, leave out the smallest of firms (see discussion in relation to Figure 1). The number of firms and variation is lower in his data (from 22 firms in 1938 to 20 in 1945), but we still find a similar trend of growth below the national level from 1942. Having established that the datasets move in the same direction, we use Bohman's data for later years to assess the duration of the sustainment period. The result is found in Table 3.

Table 3: Growth (%), average size of Virserum and national furniture firms, 1945-1989.

	Growth (firms)		Growth (empl.)		Growth (sales)		Avg. empl.	
Year	*Sweden*	*Virserum*	*Sweden*	*Virserum*	*Sweden*	*Virserum*	*Sweden*	*Virserum*
1945	1.07	*1.00*	1.10	*1.00*		1.19	15.81	22.25
1950	0.85	0.95	0.95	*0.82*	1.31	*1.20*	17.71	19.16
1959	0.73	0.84	0.90	1.09	2.24	*1.79*	21.71	24.88
1968	0.84	*0.81*	1.10	*0.70*	2.21	2.26	28.43	*21.31*
1981	0.62	*0.31*	0.82	*0.38*	3.51	*1.06*	37.68	*26.00*
1989	0.87	*0.75*	0.94	*0.52*	2.11	*1.30*	40.55	*18.00*

Source: Bohman (1997: 71). Calculations by author.

From Table 3 we see that Virserum actually fared reasonably well for the next twenty years, which is underlined by the fact that it maintained its share of total national production at above 2 percent (from 2.9 to 2.2%) between 1945 and 1968 (Bohman 1997: 71). This is within the range of earlier variation in the data, and should be interpreted against the background that the 1960s and 1970s were the "golden decades" for the Swedish furniture industry, with a doubling of national production volumes (Gunnarsson 2000).[19] In Table 3, the big break comes in 1968 after which Virserum fails to trace the national trends in any of the variables; the share of total production had also plummeted to 0.7 and 0.4 by 1981 and 1989 respectively. A similar pattern is indicated also in Figure 1. We therefore choose to put 1968 as the final year of the sustainment stage and turn to the events in Virserum.

[19] This was partly driven by the development of the welfare state, which influenced the furniture market in two main ways. Firstly, there was an intense increase in the production of housing, which peaked with the programmatic construction of a million new units (mostly apartment) between 1965 and 1975, and an increase in demand for home furniture. Secondly, the public sector, such as hospitals, schools, day care services and the administration itself, received much investment, resulting in an increase for furniture to be used by the public sector. Hence, office furniture, for use in the public as well as private sector, was a third market segment that took off during the "golden decades." After WWII there was a parallel process of consolidation and rationalization of the industry (as illustrated by the figures for average number of employees in Table 3).

The sustainment stage starts with the only documented case of a village furniture firm relocating to the parish center, when John Karlsson sold his factory in Tobro and built a new in Virserum in 1940.[20] Two years later, a firm employing about ten people was lost in a fire, something that unfortunately was common in Virserum, as in the industry at large. Bohman (1997: 41) records no less than 14 fires at furniture factories during the sustainment stage, of which five were major (*Vilhelmsons Stol & Möbelfabrik* in 1945, *Br. Franzén* in 1946, the joint factory of *AB Harry Strömberg* and *Karl Gustavssons Möblefabrik* in 1949, *Ekelund & Co* and the adjacent *Br. Johansson* in 1951). The largest of these was *Vilhelmsons Stol & Möblelfabrik* with 30 employees in 1940 (Christensen 2001). The firm was closed after the fire. Karl Gustavsson moved his firm to a different location after the devastating fire in 1949, after 40 years in Virserum (see Fig. 2). Being anxious about the welfare of his employees, Harry Strömberg quickly purchased the factory from *AB Nya Ekmöbler* that was just closing, in order to resume production as quickly as possible. This was a rushed decision according to his son Torsten, who was actively involved in running the enterprise at the time; the facilities needed to be extended and renovated to meet the needs of *Strömbergs*. Perhaps with the benefit of hindsight, Torsten argues that time and money should instead have been invested in building a completely new, modern and "rational one-story factory that would have been able to handle the new volumes that the increasingly tough competition would come to entail" (Dagnell 2000: 54).

The year 1949 saw the beginning of a period of furniture firm closures, which was particularly intense the next five year but that did not end until 1962. By then a total of 16 firms had ceased to operate, all but three of which were located in the parish center.[21] The largest was *AB Nya Ekmöbler* that had some 35 employees when it was wound up (without bankruptcy) in 1950, a few years after the demise of its manager and fiery spirit, moreover a principal of the savings bank (Petersson 1981). Another was the long-established *Björnöströms Möbelfabrik. Emil Bohman & Co,* that closed in 1960 after 55 years in operation in Björnöström village. All the small (1-3 people) upholstery workshops mentioned earlier, plus one connected to the local furniture retailer, also closed. In other words, just as the industry at large started to outsource parts of the production process (Larsson 1991), the few providers of intermediary goods found in Virserum closed. With a few exceptions, most were closed in connection with the retirement or passing of its owner. One such exception is the merger of *Virserum Stolindustri, Axel Karlsson* with *Daniel & Carlsson Möbelindustri* in 1949 (see Fig. 2), the first recorded such event in the cluster. From the data we see that during the 1949-1961 period, 228 people within the industry lost their jobs in Virserum, a reduction of 54 percent.

Even so, some of the largest furniture companies simultaneously expanded their operations, resulting in a similar movement toward larger units in Virserum as in the industry at large (Bohman 1997). The main example is *Holms Möbelfabriker* that expanded from 60 to 80 employees in the 1950s, and took over from *Bolaget* as the largest furniture producer in Virserum. Initially intended as a temporary strategy to mitigate unemployment for him and his sons, Karl Holm (a former employee at *Bolaget* and a few other furniture factories in the region) founded his business in 1920. The company focused on sofa frames and expanded into upholstery in the manner described earlier. Under the leadership of Helmer, one of the three sons that took over

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[20] The sustainment and decline stages are generally less well documented in published sources than the emergence and initial growth of the industry in Virserum.[20] The main source is Bohman (1997), as Bohman (1981) is a reprint of a study from 1946, and hence too early, while Christensen (2001) only brushes the subject of Virserum's decline in his overview of the industrial development of Kalmar county.

[21] In the villages corresponding periods of succeeding years of firm closures occur somewhat earlier (1935-1942) and later (1960-65).

in 1945, the company expanded rapidly during Virserums sustainment period, also in physical terms. The focus was on sofa beds and sofa-armchair sets, and the company developed a product line based on own patents (Johansson 1947, Rick. 1967). This was very much in line with the development of the national furniture market, where sofa beds were high in demand in the 1940s and 50s, due to the restricted living spaces in the major cities of Sweden and the rapid urbanization process the country was undergoing (Boman 1991, Larsson 1991). In 1967, *Holms* made it to the top-20 list of thriving furniture manufacturers in Sweden, at the time it had 95 employees (Gunnarsson 2000). *Strömbergs*, with a number of patented "practical improvements" from the 1920s and an ottoman of own design called "Smålänningen" that sold particularly well during 1928-1933 (Strömberg 1949) also embraced the sofa-bed segment. It became nationally renowned in this line of production and remained one of largest furniture enterprises in Virserum (Bohman 1997). A third company that was expanding in the 1960s was *Premo Möbler AB* (formerly *Br. Gustavsson*). Based on a patented solution for mounting of shelves, the company sold steel structured book cases with wooden shelves nationally and internationally, primarily the USA. It was in need of new facilities and negotiated intensely with the local authorities, which failed to meet the demands as the investment was considered too large.

The increased importance of the upholstery segment was further underlined by the addition of two producers of intermediate goods for the furniture industry in Virserum in the mid 1960s (that are both still operating). The first, *Virserums Smides- and Mekaniska Verkstad*, is yet another indigenous metal working enterprise stemming from the 1940s, which started focusing on fittings and metal frames for upholstered furniture around 1965 (IE n.d.). The second, *Högsby Plast AB,* is a producer of polyether for the furniture industry that relocated to Virserum in 1966 in order to be closer to its main customers. This is the only documented case of such relocations in the life cycle of Virserum's furniture cluster. Both supplied to *W-Möbler* until it closed, in parallel to expanding their business in other markets besides furniture.[22] The presence of *Högsby Plast* also signifies the adjustment of Virserum firms to technological changes within the production of upholstered furniture, where sofas and armchairs now used cut pieces of polyether dressed in (removable) fabric, rather than traditionally crafted upholstery.

Another significant event occurred in 1967 when *Bolaget* was sold to *AB Dackehus*, a non-Virserum company focusing mainly on production of wooden houses, and owned by two civil engineers with backgrounds in wood processing and marketing (OT 1967). *Bolaget* had for a along time faced the challenge of a shrinking market for high quality classical furniture in wood, down to 10-15 percent in the 1960s (Bohman 1997), and sought ways to adapt and modernize its product line. At the time of the take over, it was still using its factory from 1919, by then the oldest in Virserum. The take-over was symbolic in many ways. Not only did it incorporate the once so dominating furniture firm in a business group structure primarily intended for the production of wooden houses, it involved external capital and owners with an entirely new set of competences than what was previously common in Virserum. Taken together, the events of 1967 put an exclamation mark to the process of a shift from wood to upholstered furniture among Virserum firms that had been going on for decades.

Hence, toward the end of the period, there had been a consolidation of the industry into fewer and larger units in Virserum, a general shift in focus from wood to upholstery (both still

[22] In 2005 *Högsby Plast AB* in turn attracted the latest addition of furniture related firms to Virserum, when its close collaboration with a design student from the university college at Kalmar resulted in a product line of highly innovative polyether notice boards and desk screens – as well as the budding entrepreneur's relocation to Virserum and subsequent launch of his one-man-firm *Innersmile Furniture*.

within the home furniture market segment),[23] as well as technological changes within the production of upholstered furniture, and a significant reduction of number of people employed in the industry. Given this, it is perhaps not surprising that the local government became more engaged in various ways of supporting the local business community in the 1950s, an engagement that would become more pronounced in the following decades (Bohman 1997). The aim was to attract the establishment of new businesses, and to differentiate the industrial base of Virserum. Seemingly this was an opportune time to do so, as manufacturing firms in particular did relocate from the main industrial centers to more peripheral localities down the urban hierarchy (i.e., the process known as filtering; see Thompson 1968), and indeed were encouraged to do so as part of the then current regional and industrial policies (Törnqvist 1963, 1964; Lundmark and Malmberg 1988). Investigating the local council protocols, we find that toward this end, the Trade and Industry Committee, under the stewardship of Helmer Holm (of *Holms Möbelfabriker*), negotiated with a number of firms in Stockholm and elsewhere about relocating to Virserum, and tried to convince a few that were planning to leave not to do so. The statutes of the local government were also changed to allow it to own commercial and industrial property, and a special Craft and Industry Foundation was formed in 1962 (many years with Helmer's brother Alton as its vice chairman). Perhaps in line with the aim of differentiation of the local business community, most of the activities in the protocols concerns non-furniture firms.

In fact, the dominance of the furniture industry in the local labor market went down from 80 to 50 percent in during the sustainment stage (Bohman 1997). This was not only due to the loss of employment opportunities within furniture, but also to a parallel increase in those offered by other industries in Virserum. The presence of non-furniture related manufacturing was becoming increasingly apparent during this time period.

Manufacturing activities in Virserum had never been limited to the furniture producers displayed in Figure 1, or to the related activities discussed so far. In terms of wood manufacturing, there was for starters the factory for wooden plugs for shoes mentioned earlier (1916-1918). But also others focused on wood based production, such as wheels (1904-1923), heels for shoes (1918-1981), log cabins and pre-fabricated wooden houses (ca 1940-1970), and staircases (1965-n.a.). Examples of other production include a brewery (1906-1980s) and a maker of rat-traps. An enterprise producing trailers was established in 1940, but left Virserum some 20 years later (much to the dismay of the local council). Yet, none of these activities had challenged the dominance of the furniture industry. In the mid-1940s a new phenomena emerged, however, with the potential of doing so: metal working as an expanding and important industry in it own right, that is, not in relation to furniture making within the cluster.

It started in 1947 when Wahlfred Johansson sold *AB Verktygsfabriken* (which continues to serve the wood based manufacturing industry to this day, although under a different name). He started *Demanders Mekaniska Verkstad* to focus solely on production of machinery and equipment for the manufacturing sector. At almost the same time, four brothers started the *Modigs Mekaniska Verkstad* focusing on production of lathes and drilling-machines for the manufacturing sector. In 1956 two of the brothers spun-off to form *STAR Mekaniska Verkstad,* initially to perform subcontracting services for *Modigs* but responding to demand from local farmers they re-focus on production of timber cranes. Going somewhat ahead of events, we note that *Demanders* and *Modigs* continued to provide national and international markets with new and

[23] This does not imply that there were no wood furniture manufacturers left in Virserum, however. In particular those that focused mainly on chairs (*Vilhelmsssons Stol & Möbelfabrik*, *Br. Johansson*, and *Danielsson & Carlssons Stolindustri*, later *Virserums Stolindustri*) or offered a full range of furniture (e.g. *Bolaget*) had a large share of their production in wood.

improved products of their own design well beyond the point in time when furniture production had peaked in Virserum. In the process they created well-known brand names and, until the 1980s when they expanded even further, they had some 30-50 employees each in Virserum.

A further differentiation of industrial activities continued in the 1960s, as a keyboard maker; a mannequin producer; a maker of craw fish traps; a producer of doors, window frames and façades of aluminum; and a maker of truck platforms establish themselves in Virserum. Some of these establishments came in response to the efforts of the Trade and Industry Committee, and to a dedicated advertising campaign in regional news papers to attract companies – including those offering job opportunities to women – to relocate to Virserum (Isaksson 1964).

1969 – 1981 and beyond: Decline – or renewal?

The process of consolidation and rationalization that the Swedish furniture industry had started in the previous cluster stage was now in full progress.[24] During the period 1969 to 1981 Virserum saw the loss of yet another 16 furniture companies, among them all its leading firms. This includes *Bolaget* that closed in 1971, after 72 years in business. The buildings and remaining inventories were sold at a public action the following year; the property was bought by a local plastic manufacturer. After having served as a warehouse for some time, the main factory from 1919 was ultimately torn down. Today the remaining buildings on *Bolaget*'s factory grounds host a collection of museums (including the Furniture Industry Museum) as well as the Virserum Art Exhibition Center. Parallel to the auction at *Bolaget,* there was another auction in an adjacent factory where the remains of *Premo Möbler AB* were sold out, putting an abrupt end to its high profiled production of books shelves just a few years earlier. The same plastic manufacturer bought also this property. A mere month earlier had the remains of *Johansson & Jonsson Träindsustri* (a maker of upholstered furniture established in 1946) gone under the club at another public auction, making the challenges of the industry in Virserum particularly visible and tangible in the summer of 1971. The owners decided to wind up their business after the retirement of a large part of their workforce the previous years, and the general state of uncertainty for small firms in the industry (OT 1971).

Another leading company that saw a rapid decline in the early days of this stage in the cluster life cycle, was *Holms* that closed in 1973 (after 62 years in business). We can only speculate if the sudden and unexpected passing of first Carl – the only brother solely devoted to the company and attributed with most of its later success – in 1971 and then his brother Helmer in 1972 contributed to this development. *Holms* had some 60 employees at the time of the bankruptcy. The firms was sold on composition and reconstructed under new (external) ownership, only to declare bankruptcy in 1978 and to finally close in 1979. Remaining tools, machinery and inventories were sold at a public auction the same year. In 1980 the local authorities decided to tear down the old factory building on *Holms*' premises (stemming from 1931), as well as that of *Ekmöbler/Strömbergs* (from 1918). By then, these were the only remaining "classical" factories in the parish center (R.-E. 1980).

[24] From 1972 this process was supported by the launch of a governmental support program including export subsidies, training subsidies, technical consultancy services, and various guarantees to aid the phasing out or refocusing of unprofitable operations (Bohman 1997)

The following year, 1981, saw the end the other three "classical" furniture firms in Virserum: *Strömbergs*, *Br. Johansson* and *Ekelund & Co.*[25] Starting with the last, *Ekelund & Co* has not been well covered in the narrative so far. It was started by Birger Ekelund, the son of the aforementioned Emil Ekelund who introduced specialization into the Virserum cluster in 1908. When his father's factory burnt in 1924, Birger partnered with two brothers who had previously worked at *Bolaget* (see Fig. 2) to resume the business. They focused on chairs and sofa frames as well as so called "complementary furniture" (such as small tables and chest of drawers), but later expanded into upholstered sofas and armchairs. In the mid 1970s, now under the name of *EKO-Möbler* and the ownership of Birger's three sons, it had about 50 employees and planned to expand in response to the high demand of its products (R.-E. 1974a). According to the local media, *EKO-Möbler* was to be the center of a new "industry package" crafted by the local authorities with a new and substantially larger modern factory. The package also included investment in new facilities for *Strömbergs* (OT 1975a, b). The deal did not come through, however, and *EKO-Möbler* made a smaller investment in its existing facilities to improve the "flow" of its production (R.-E. 1976). Despite a new constellation of owners as well as new sources of funding, and a cut of the sofa frame production, the company filed for bankruptcy in 1981 – only to be restructured and in operation for an additional five years (with some 25 employees). This time the Ekelund family was not among the owners.[26]

Br. Johanssons had been in operation since 1918, and, as mentioned earlier, was run by Virserum's only female furniture producer since 1938. It was sold to external investors in 1974. In this case, the new owners were already engaged in the industry and owned factories in Vaggeryd and Bjärnum. They saw *Br. Johanssons* as having a rational factory, modern machinery and skilled personnel. *Br. Johanssons* had 30 employees at the time, and exported to the USA and Canada (R.-E.1974b, OT 1974). The same year, it merged with the local chair maker *Danielsson & Carlsson*. *Br. Johanssons* focused on chairs for the public sector – the only documented case with an explicit public sector profile in Virserum – which made the firm less sensitive to market fluctuations in the private sector. For its high quality chairs, it used experienced furniture architects (Dagnell 2000). Still, it ran into financial trouble and closed down in 1981, adding another 40 people to the list of those having lost their jobs in the furniture industry in Virserum.

Strömbergs, finally, was the last of the three to file for bankruptcy in 1981, after 72 years in business. After a short interlude of co-management by the three sons of the founder, and another under sole management of one of them, the running of the company was handed over to a brother-in-law in 1962. Although being under severe financial pressure in the early 1970s, the situation improved and *Strömbergs* was able to close a deal with the local authorities to allocate space and funding for the construction of new and much needed factory, which put an end to production in two locations in Virserum. The new factory was inaugurated in 1980, only one year prior to the bankruptcy. At the time, IKEA was the main customer of *Strömbergs* (Tolge-Bergkvist 1981). A reconstruction deal was put together by the local authorities and the regional

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[25] Five other companies had closed in between, among them the first spin-off from *Bolaget*, *Wirserus Nya Möbelfabrik* (1902–1977) in the village of Hultarp (Fig. 2). It employed some 20 people in the late 1930s, and closed when the last owners retired. With 75 years in business, it became one of the oldest firms in the parish. Today the factory is part of the Skansen open-air museum in Stockholm, where it is run in full operation twice a year by members from the Virserum Industry Museum and the Virserum Historical Society.

[26] The Ekelund family was, in other words, engaged in the industry from it emergence trough its decline stage. As outlined by Bohman (1997) they were involved in three influential enterprises over five generations. First – C.J. Ekelund (*C.J. Ekelunds Möbelfabrik*); second – Edvard (*Bolaget*) and Emil (*Ekelund & Co*); third – Josef (*Bolaget*) and Birger (*Ekelund & Co*); fourth – Börje, Lars, and Nils (*Ekelund & Co /ECO-Möbler*); and fifth – Anders (*ECO-Möbler*).

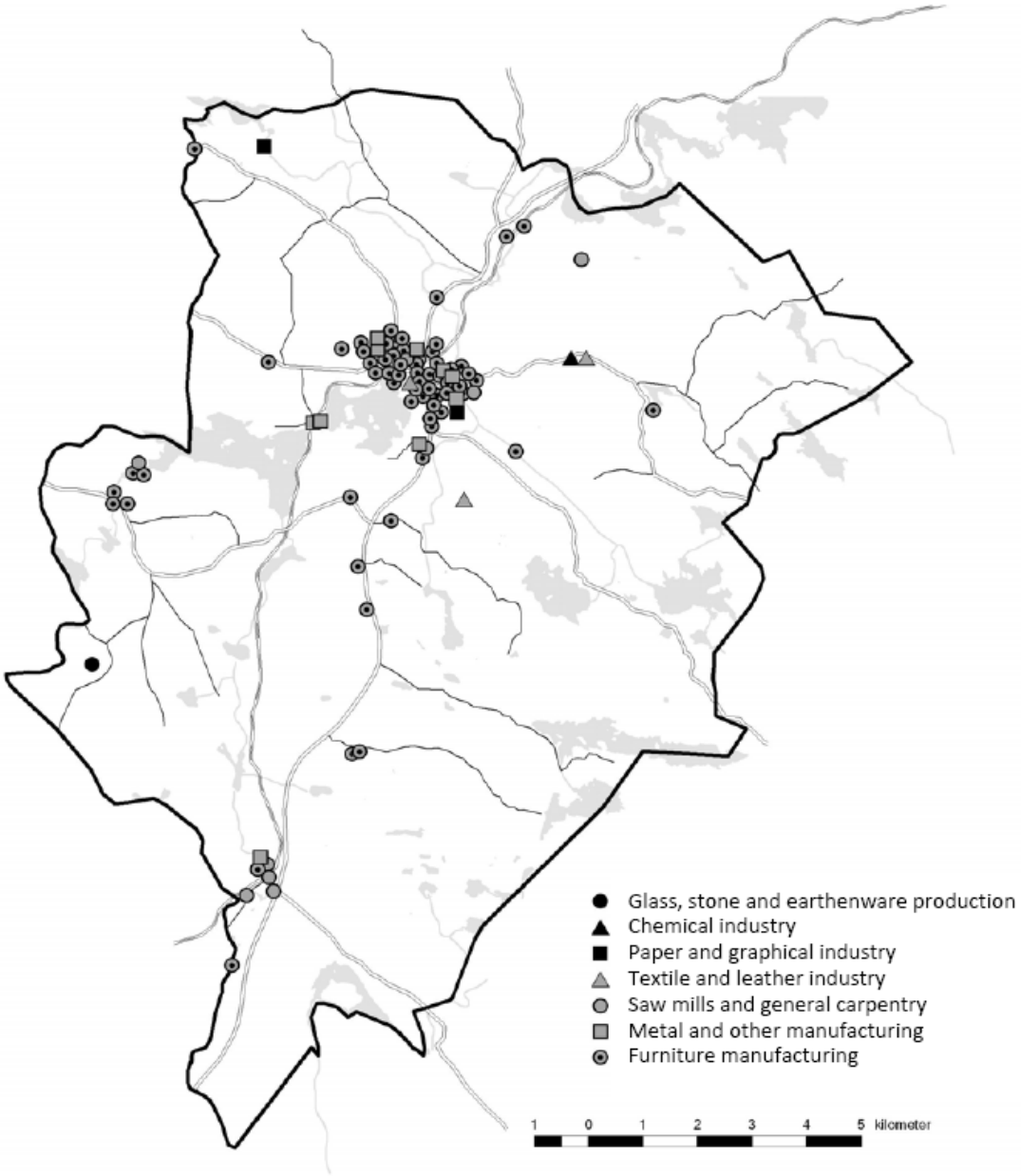
development fund. *Strömbergs* was reconstructed three times within the next few years. In 1987 it was sold to the Wissing family who ran the firm as *W-Möbler AB,* that closed in 2009 as described earlier.

It is easy to overlook that there were, in fact, a few establishments of new furniture firms also during the decline period. A unit within a nationally subsidized program of "protected factories" offering employment to workers with special needs opened in 1970, with a focus on furniture and wood processing. It ran until 1987. In 1975 two furniture makers educated at an acclaimed furniture crafts program in Stockholm, moved to Virserum to open a small factory for own designed furniture in pine. The father of one of them had his roots in Virserum and according to the newspaper report the new owners were alerted to the opportunity by relatives (OT 1975c). By the 1980s the main focus has shifted to designed fitting for commercial spaces, such as shops, in collaboration with architects (IE 1981). The most significant new establishment, however, came in 1986 with the opening of *Wood Tech Sweden*, member of the Forsnäs business group. Focus was on pressed wood components for the furniture industry, a new type of production for Virserum. As discussed in the introduction, the company was closed in 2003.

Yet, the developments outside of furniture production continued in Virserum and an entirely new type of manufacturing was established in the 1970s – plastics. At that time no less than three plastics manufacturers were active, producing plastic pipes, insulation material for cables, and plastic details for refrigerators and freezers. And as the final few furniture producers were struggling in the 1980s, the metal producer *Modigs* instead invested heavily in product development for the car and airliner markets. This resulted in it being selected supplier of the year by Boeing in 1997, and, as the first ever non-American company, receiving Boeing's "Outstanding performance award". It went into financial trouble in 2001, following delays in major product development projects combined with a drop in demand due to the 9/11 tragedy. By then *Modigs* had a turnover of SEK 150 million (about €15 million), employed 120 people, and utilized some 40 local suppliers (Westling 2001, 2002). It had also incorporated *Demanders* within its business group. Today the two again exist independently, and while there appears to be limited, if any, production activities within the *Modigs* business group, *Demanders* focuses on sub-contracting and assembly services to the metal manufacturing industry and employs some 20 people in Virserum.

Hence, while total employment in the furniture industry went down from 267 in 1969 to 53 in 1982 – a drop of 80 percent – it continued to increase in other manufacturing industries active in Virserum. As a result, the furniture industry's share of the local labor market dropped even further; from 50 to 18 percent (Bohman 1997). In fact, lack of skilled labor had started to become a concern for furniture producers already toward the end of the sustainment period. Implicit in the narrative so far is that in the 1970s the shortage became acute, as a large share of not only the company owners but also their work force, was reaching retirement age. Even though competition over skilled labor had been present also earlier, indications are that there existed a local norm that prevented outright pouching of workers between furniture firms. But the competition form other manufacturing firms was different and tougher, as they consistently offered higher salaries (Rafiqui 2010). In addition, there was little natural growth of the labor pool as the young tended to leave Virserum to attain their education or look for jobs in larger urban areas.

Map 3: Location of manufacturing factories in Virserum, historical overview.



Note: Only factories established before 1975 are included.

Source: The historical database of industries in Kalmar country as of May 1, 2010. Prepared by Kalmar County Museum.

We should not forget that despite the general downturn in Virserum, old manufacturing companies have survived and new ones emerged since the 1970s. Indeed, using "Virserum" as a search string on the business information web site *allabolag.se*[27] will today result in more than 400 registered economic units in the parish. Most are related to farming and forestry (133 units), but the second largest group is manufacturing and industrial activities with 31 registered firms. This

[27] It compiles information from Bolagverket (the Swedish Company Registration Office), Skatteverket (the Swedish Tax Agency), SCB (Statistics Sweden), and UC (a leading business and credit information agency in Sweden).

is followed by construction, design and interior decoration (22, of which the majority are in construction). Most of the manufacturing firms are small in size. The list indicates a continued focus on the metal and plastics industries, as well as wood related activities and general carpentry. There are also a few firms offering technical consultancy service, mainly to the metal industry. A general trend toward service provision is also apparent, ranging from healthcare and geriatric care, to IT, PR and marketing, transportation, accounting services, and tourism.

Recalling that the model by Menzel and Fornahl (2010) allows for the possibility of the decline stage ending in a transition into a completely new field of business, with the integration of new actors and technologies that lead to an increase in diversity and heterogeneity in the cluster, we might ask whether or not this happened in Virserum. That is, should we interpret the emergence of a strong metal manufacturing sector in Virserum as a move "back" to a new growth stage in the cluster life cycle? We will come back to this question.

The historical location of furniture in relation to other manufacturing industries is indicated in Map 3. If units established after 1975 had been included, the dominating impression of the furniture industry would probably still be there – but less pronounced.

Degree of specialization

To address the issue of degree of specialization of the Virserum cluster, we follow the suggestion of Menzel and Fornahl (2010) to assess patent data and information about the evolution of business fields within the cluster. In doings so we note that furniture is a good that to varying degrees combine elements of art, handicraft and industrial design (in the sense of products aimed for the mass market that combine functional and aesthetic features). Hence, four main protective legal frameworks may apply: (i) Patent Law (protection of use of an innovation, i.e. technical solutions to a problem), (ii) the Design Act (protection of shape, not technical solutions), (iii) the Trademark Act (protection of shape, as a distinguishing factor between goods), and (iv) the Copyright Act (protection of shape, furniture as applied art). Recalling that *AB Harry Strömbergs* claimed to have had "legal protection of practical solutions" already in by the 1930s (Strömbergs 1949: 9) as did later *Holms Möbelfabriker* (Johansson 1949) and *Premo Möbler AB* (Rune 1969), we start with patents.

Using the digital patent register of the Swedish Patent and Registration Office (PRV) and the on-line Nordic Patent Database (Uppdragshuset 2009), we were able to identify 35 patent applications stemming from firms in Virserum between 1919 and 2005. Of these, 17 were granted patent rights. Six applications come from furniture firms, five concerned sofa beds and one an integrated bed and sun-bed. As we might expect, we find *Strömbergs* and *Holms* on the list, but at somewhat later dates than those indicated above. *Holms* appears first, for a construction of sofa that is easily turned into a flat bed (applied in 1955, received in 1962). Then comes *Strömbergs* with a cushion for sofa beds (applied in 1969, received in 1972), and a second type of sofa bed (applied in 1971, received in 1973). The firms applied for two more patents of sofa beds (in 1978 and 1983). The integrated bed and sun-bed is an application in 1989 from a consortium related to *Holms*. These applications were not granted patent rights, but we can not tell why from the data. Surprisingly neither *Premo* nor its founder/inventor shows up, which indicates that there might be missing data in this set.

We also see that innovation in terms of received patents is found in almost every business segment represented in Virserum, including plastics and metal manufacturing. *Demanders* as well

as *Modigs*, or men behind them, have registered patterns. But they are not the only ones. One of the latest is the walking stick Axess patented by *Kolfiberteknik AB* in 2000/2006.[28]

How should we interpret this pattern? First, we may note that the data from the patent register is only partial in that it does not show unsuccessful applications pre-1970. Hence, we can not tell whether or not Virserum furniture firms were particularly active in *applying* for patent, but less successful in receiving them. What we can say, though, is that the furniture firms continued to apply for patents throughout their life times. The stream of patents and applications from *Strömbergs* in particular, imply perhaps product innovation as a strategy out of the economically pressed situation the firm found itself in at the time. Taken at face value, the data also indicates that it was within upholstered furniture and in particular sofa beds that these signs of product innovation were found, in what by then must be considered "old" technological trajectories.

Yet, does the lack of manufacturers of wood furniture from the patent data mean that they were less innovative? Not necessarily. As it turns out, they were more constrained in their ability to seek legal protection of their products, and may have had a lesser interest in doing so. In terms of patents, it would take long until the production of wood furniture entailed technical solutions eligible for patent registration rather than skills based manufacturing. The technical incentives for applying for patents were, hence, for a long time low. So were the incentives for seeking design protection, but for different reasons. Legally, there was a law concerning design in place after 1899, the year of formation of *Bolaget*, but it was in practice only applicable to ornamental details within metal manufacturing. It would take until 1970 before the current Design Act was adopted, making it applicable to all sectors and to non-ornamental design (Essén and Sterner 1971). Not surprisingly then, we find only one application from a Virserum furniture firm in the Design Register at PRV: a combined sofa, sewing and tea table/trolley from *Br. Johansson* in 1950 that was rejected due to non-payment of the application fee.[29]

Despite being notoriously easy to copy in terms of design and technical solutions furniture has historically not been well covered by intellectual property rights frameworks.[30] Quite on the contrary. As indicated also in the narrative of Virserum, innovation in design, material and technology appear to have been almost public goods in the early days of the industry, which spread quite quickly despite the friction of geographical distance and limited infrastructure networks. Mobility of individuals is one reason, availability of blueprints another. The traveling journeymen (often changing locations seasonally) took not only technical skills and information about the union with them, but also designs. In addition, the Swedish Crafts Society published "design folios" with pictures, measurements and detailed descriptions of "suitable and exemplary

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[28] Interestingly, since a few years back *Kolfiberteknik AB* is part of a business group where the mother firm (run by the inventor) focuses on development of patents and design protection services.

[29] Application no 218/1950. We can only speculate whether or not the lack of payment was due to a realization of the application falling outside of the Design Act's domain of ornamental design for the metal industry. Registrations that do concern furniture include metal fittings for chests of drawer and cabinets, and metal bed frames.

[30] In addition to the Patent Las and Design Acts, the Copyright Act originating in 1919 and was amended to include arts and crafts in 1926. In line with the current Copyright Act from 1960. it put rather stringent demands on the artistic content of artifacts eligible for protection. The Swedish Trademark Act also stems from 1960, for the first time offering an opportunity to protect design as a trademark. Yet, it was not until the 1993 harmonization with the European Community legal framework that the individualization and differential potential of design was recognized (Hoffer 2008). As there is no Copyright register, this potential source of design protection is difficult to trace. There are, however, no indications of copyright related issues, e.g. dispute settlements or furniture pieces accredited to Virserum designers, in the documentation on which this study is based. The same goes for brand names or trademarks.

pieces of furniture" (Nyström 1991: 46) that were widely available. This tradition held on well until the 1920s (Ericsson 1991), i.e. at least during the establishment stage and the most intense growth phase of the Virserum furniture clusters. Originally, furniture was designed by architects, painters and sculptures and it would take until the 1930s before a special furniture architecture education was offered and a dedicated trade association took form. One of its first tasks was to advocate for furniture being covered by the Copyright Act (Eklund Nyström 1991). Even so, it would take until the mid 1950s before the furniture industry started to build closer relations with the design community, decades later than was the case in glass-making, textiles and ceramics (Ericsson 1991).

Yet, from the perspective of investigating diversity and degree of specialization of individual clusters, this type of data gives only rough indications. For one thing, patent data risk missing examples of specialization within segments of the production value chain that are generally considered vital parts of clusters and their potential success. In this study the exclusive making of sofa frames that appeared already in the 1910s is one such example, and the specialized production of metal ornaments or fixing for furniture another. And the data completely misses the one innovation that sparked the emergence of the Virserum furniture cluster in the first place, the making of classical furniture in a new material. Not constituting a technological innovation or even a new design – in fact they were copies of existing models – the richly decorated chairs, tables, and cabinets in oak that *Bolaget* offered in the late 1800s and early 1900s nevertheless constituted something entirely new on the furniture market at the time.

In other words, for an industry like furniture where innovation applies not only to technology and rarely takes the form of R&D, and for a period of investigation such as this one, 1880-2003, information on the evolution of business fields within the cluster seem to better reveal the degree of specialization of the cluster and variation in heterogeneity among its firms. From the description of the cluster stages above we see that furniture production started with wood furniture and expanded to include upholstery and sofa beds, which are the segments that survived the longest. We also see that very few firms explored other market segments than that of home furniture (e.g. office furniture or furniture for the public sector) and none embraced new materials in serving its market (e.g. plastic, which was available locally). Moreover, they appear to have applied similar or closely related technologies within old trajectory (be it wood or upholstery). Specialization across the production chain was also low. There were some experimentation with new organizational forms, *Nyströms* factory and *AB Ekmöbler*, but less so with the dominant of organization of production – that of a complete furniture maker with all or most production steps done in house.

In terms of the model of Menzel and Fornahl (2010) we may, then, conclude that the furniture cluster in Virserum displayed a fairly limited diversity, in terms of types of knowledge, competences and organizational forms among furniture firms. The cluster appears to have converged around a few focal points, initially *Bolaget* then *Holms* and *Strömbergs,* which were influential in shaping the formation of these knowledge and competences. Although upgrading to new production techniques and use of material, such as plywood, did occur, it was incremental and did not cause new technology shifts or shift of focus among furniture firms in the cluster.

Use of cluster size and diversity – the systemic dimension

This dimension of the model concerns the relative success of a cluster, i.e. how well clustered firms manage to make use of the size and diversity of the cluster. Given the fate of the Virserum furniture cluster, the short answer to this question must be – not very well.

Utilization of size

Starting with the quantitative dimension of the cluster (Tab. 1) we recall that Virserum was considered one of the three most influential locations for furniture production in Sweden in the mid-1940s (Ålund 1946), and considered the pronounced furniture center in the region of Småland (Stålberg 1947). In the first decades of the 20th century it had hosted the largest wood manufacturer in the Kalmar county, *Bolaget* (Christiansen 2001). We may, hence, safely assume that by the time of its peak, the Virserum furniture cluster – as well as some of its individual member firms – was well known both nationally, regionally and locally. It ought to have been in a position to lobby for the needs of its members, and potentially for the industry at large.

Even so, the capacity for cooperation and collective action on behalf of the cluster appears to have been limited among furniture firms in Virserum. It was not that there was a general resistance to forming organizations in the area, which, as indicated, hosted at least two trade unions related to furniture making, and a number of political, religious and civil society organizations. *Virserums Industri- och Hantverksförening* (the Industry and Trade Association of Virserum) arranged, for example, an Exhibition in 1947, an event that was followed up by an industry, trade and arts Exhibition 1972, this time arranged by Club Lions. The furniture industry was well represented on both occasions, but had not developed a mechanism for arranging such events.

Likewise, Virserum firms did not collaborate on the national furniture fairs when they emerged in the 1950s, or use joint advertising campaigns under a Virserum "brand name." In a reportage about the "furniture center" Virserum in a national furniture journal in 1969, a handful of owners of furniture firms point to the general lack of collaboration between them. With the exception of transportation, where a common service was set up for a few years in the 1960s, none of the ideas regarding coordination around idle machine capacity, procurement or advertising had been acted on. As commented by Bohman (1997: 49), the awareness and willingness to cooperate was high, but did in the end not amount to many activities. Perhaps had a lecture arranged by the Virserum local council and *Kalmar läns företagarförening* (a county level business support network) in 1960 entitled "Progress through cooperation" planted ideas, but not resolved how to put them into practice.

The lack of cooperation between furniture makers is a consistent theme in interviews and among commentators investigating the decline of the cluster in Virserum. The attitude of "being one's own master" that appears to have prevailed in the industry at large, at times also in Tibro, the furniture locations otherwise associated with a high degree of cooperation (Larsson 1989, Rafiqui 2010), seems to have had a particularly strong footing in Virserum. Interestingly, this was apparently not the case in neighboring Järnforsen, which indicates that conventions and regional cultures may vary also across short distances. Instead, relations among furniture firms in Virserum were more often than not marked by conflict and competition than collaboration and cooperation.

The general impression is, hence, that furniture firms in Virserum were not successful in building cluster specific organizations and networks. Does this mean that they did not collaborate at all, or not just locally? As the data collected in this study does not cover the customer supplier networks of individual firms, we are not able to answer this question. For all practical purposes it also means that we are not able to identify the reach or spatial boundary of the Virserum cluster, which is a weakness of the study.

Utilization of diversity

This dimension concerns the exploitation of synergies, networks and value chains (Tab. 1), and forms that basis for the thematic boundary of the cluster. The discussion so far indicates that firms in the Virserum furniture cluster did not exploit possibilities of such synergies, networks and value chains. Contraintuitive as it might seem, the lack of collaboration between between firms may have contributed to them pursuing similar lines of business, using similar technology and similar modes of organization. The result is a rather narrow thematic boundary that varied incrementally over time. An example of an enlargement of the thematic boundary was the inclusion of *Högsby Plast* and *Virserums Mekaniska Verkstad* into the cluster in the 1960s. The lack of training and educational bodies within the thematic field is particularly obvious in the case of Virserum. Initially, training took place within an apprentice system where sons tended to help their fathers in the factories. Despite discussions, Virserum never managed to set up furniture and carpentry training programs within the ramification of the school based system that emerged later. Research on wood based production and design are very recent phenomena and not applicable to the Virserum furniture cluster. It is perhaps ironic, that the thematic boundary of the cluster extended to include also the design program at the (then) University College of Kalmar just as the cluster itself ceased to exist.

Reflections and conclusions

This paper took off by noting that the literature on clusters is one of the most rapidly growing sub-fields of economic geography, but that most studies so far have looked at successful cases of cluster formation and have not paid enough attention to the issue of dynamics of cluster evolution. The aim of the paper was to contributing to the literature on both these counts, by investigating the rise and fall of furniture making in Virserum with the help of a new model of cluster life cycle developed by Menzel and Fornahl (2010).

After having described the model and briefly introduced the general context of the parish of Virserum, the paper proceeded to tell the story of furniture production in this small location, guided by the framework. The narrative took into account the quantitative and qualitative dimensions of the cluster, to estimate its cluster size and diversity, and identified cluster life cycles stages. It also analyzed direct and systemic dimensions of the cluster, in order to discuss how well firms in the cluster utilized its size and diversity, and the nature of its spatial and thematic boundaries.

The paper identified a cluster size of in total some 85 furniture firms between 1880-2003, with a maximum of 32 in 1939 and 1941, employing at most some 460 people at roughly the same time. To this a handful of furniture related firms and an additional handful of service providers were found. The paper then identified four cluster stages in Virserum: *emergence* (1880-1902), *growth* (1903 – 1940), *sustainment* (1941-1968), and *decline* (1969-1981). The character of each of these was discussed at some length.

It was found that the emergence and initial growth of the cluster was largely associated with one particularly large scale manufacturer of classical style furniture of oak, a product invention. Over time, upholstery took over as did other types of wood. The local production that emerged was built around furniture factories with all production steps in-house and limited collaboration between firms or across steps in the value chain. In parallel to the decline of furniture making, other manufacturing activities emerged, in particular in relation to metal working.

The paper also identified some innovation among furniture firms in terms of patents, but found that for an industry like furniture and the time period in question, the evolution of business fields within the cluster gave more information. It inferred that the degree of diversity and heterogeneity was low within furniture. The paper then moved on to investigate the systemic dimension and found that clustered firms had limited capacity for cooperation and collective action, and low utilization of its diversity. Finally, the paper pointed out that it too had limited ability to assess the spatial boundary of the Virserum cluster, but that the thematic boundary of the cluster was narrow with only incremental expansions. In line with the predictions of the model, a lack of diversity among Virserum furniture firms and homogeneity in its knowledge base may, hence, be deemed as main explanation of the fall of this particular cluster.

In reflecting on these findings and the use of the model in arriving at them, we can not help but note a few things. One of the benefits of the model is that it allows for renewal of clusters, which translates into incorporating the dynamics of also other economic activities into the analysis. More specifically, the model allows for the possibility of the decline stage ending in a transition into a completely new field of business, with the integration of new actors and technologies that lead to an increase in diversity and heterogeneity in the cluster. Given the focus of this study, we might ask whether or not this happened in Virserum. That is, should we interpret the emergence of a strong metal manufacturing sector in Virserum as a move "back" to a new growth stage in the cluster life cycle?

Indeed, metal and other manufacturing did take over after the peak of furniture production in Virserum, and, as indicated, sometimes in competition with the old sector for local resources (mainly labor). If we adapted Figure 1 to account for metal (and potentially other) manufacturing, we would see a new emergence and growth phase of this industry from roughly 1950s, taking off when furniture starts to decline. Without going further into the details of the dynamics and structure of the metal manufacturing industry in Virserum, it is enough to say that we could follow such a line of investigation, and that is does offer an alternative interpretation of the events in Virserum. But it also raises some additional questions, not only empirical, but also more theoretical.

One obvious such is what we then actually mean by "cluster" in this (and other) life cycle models. If a cluster can renew itself by transitioning into entirely new lines of business, involving new firms and new individuals that are not connected to the old ones other than by their physical location, are we then not investigating the industrial history of particular geographical places? Or put differently, if the intersection between the spatial and thematic boundaries that make up the cluster in the Venn type of diagram used by Menzel and Fornahl (2010: 229) vanishes, are we then not left with two disjoint sets – but potentially a new cluster within a different thematic boundary within the spatial boundary of the old one? Is the appearance of manufacturing in Virserum signs of renewal of the cluster, or the establishment of (potentially) a new one?

This brings us to the question raised in the introduction whether or not Virserum was indeed a cluster in the sense of a geographical concentration of related industries with high proximity effects, or an agglomeration in the sense of an amassment of things within a certain spatial range (Amin 1994, Lindqvist 2009). As an industry with low entry barriers and, at least initially, often dependent on localized sources of energy along with a need to source at times heavy and bulky inputs, similar location factors across plants rather than any agglomeration economies *per se* might be of importance for the emergence of an "empirical cluster" (Crouch and Trigilia 2001) rather than a "true" one (Malmberg and Power 2006). The fact that many sought alternative sources of income to agriculture, and found them in seasonal work (including

in furniture making) does not turn it into a self-sustaining cluster, but rather points to the importance of outside factors (e.g. demand).

On the other hand, the availability and knowledge on how to work oak was a local feature that must have played a role not only for the establishment of the first furniture firms, but also in its growth phase. Once learned, this skill and general direction of production helped define the cluster. By attracting skilled carvers and training them on the job, a labor pool with the requisite skills developed. Subsequently overtaken by events, and the growth of upholstery, it still served to define the cluster as perceived up to the very end as evidenced by the local furniture museum and writings in local history. As such it emphasizes the changing skills requirements over the life cycle of the cluster, reflecting a more general process of shifting needs and possibilities – including changes in the benefits derived from any agglomeration economies as might exist – as the cluster moves from inception, to growth, maturity and decline (Neffke *et al.* 2008; cf. Phelps and Ozawa 2003). Something similar can be said about entrepreneurship in furniture making, where an early pattern of spin-offs is not much repeated beyond the early decades. In Virserum's case, perhaps this was because many of these early entrepreneurial events were defined not primarily by ideas and an urge to go it alone but by necessity. Be this as it may, demonstration effects and the skills learnt at *Bolaget* did figure quite prominently in the process of spinning off to set up one's own shop, or at least as part of the decision on what to produce and how.

A more tangible feature that contributes to the conclusion that Virserum was indeed a true cluster is the emergence and development of supporting industry (production of metal parts and plastics, machinery adapted to the needs of furniture making). The fact that many of these survived thanks to changing the direction of their businesses does not erode this conclusion, but rather underscores the possibility of Virserum having experienced something of a process of cluster rejuvenation. All in all, the three classical Marshallian externalities have at one point or other been present. On the other hand, and importantly, the analysis made in this study indicates that the proximity effects of the furniture firms located in Virserum were relatively small and may have been eroded over time. At the very least, they were not strong enough to offset the pressures of rationalization.

Hence, the interpretation of the decline of the Virserum furniture cluster done here is that it indeed was a "true" rather than an "empirical" and that it followed a full cluster life cycle. The model that has guided the investigation also points to too little heterogeneity in knowledge within the cluster being the source of its inability to sustain and renew itself.

Even though this means that the model at least implicitly prompts us to keep an eye also at some external sources of dynamic change, it is easy to overlook other, structural causes. One example is the influence of regimes governing wage negotiations, that deliberately fueled the rationalization process that Sweden was undergoing from the mid-1950s to the early 1980s, and that played itself out in Virserum through a generally tough climate for firms with low productivity. Furniture firms simply found themselves at the loosing end of the local labor market as wage differentials typically worked in favor of metal manufacturing firms, and did so as a result of the national level wage negotiations mandated by the then current institutional set-up and the political priorities that backed them up (Rafiqui 2010).

Put more generally, we find that albeit being useful for identifying patterns, the model is less helpful in assessing *why* they have emerged. We can not address that question – the perhaps most interesting one when investing a real world case – unless some of the factors that are left out of the model are brought back in.

One obvious such is demand, and changes in demand or market structure over time. According to the analysis here, Virserum's low heterogeneity in knowledge and narrow thematic

boundary made it vulnerable to changes in market demand, technology or organization of production. In the end, this led Virserum firms to produce furniture that the market did not want, at a price that it was not prepared to pay. Although this is a mechanism that will take the cluster into its decline phase, the equally interesting question of why this happened, why the thematic boundary became too narrow, is mainly left unanswered. As implied in this paper, we have to have a much better understanding of peculiarities of the industry and the furniture market, as well as those of the local context, in order to address that question than what is perhaps indicated in the model.

Another concerns legislation, as well as social institutions and conventions that influence all companies in the same specific context (Menzel and Fornahl 2010). Although being careful not to fall into the trap of "reading off" individual behavior from national or local institutional structures (Gertler 2010) such as laws and regulations, we can nevertheless see that changes in the legislation regarding the use of oak was fundamental to the emergence of the Virserum furniture cluster. Similarly are patents – the indicator of cluster diversity and specialization suggested by Menzel and Fornahl – in themselves legal rights and we have seen that the way they overlap with other intellectual property rights influence the incentives to apply for such protection, and, hence, how we might interpret the data. The application of the model to the Virserum case study also shows that it is difficult to discuss the capacity of collective action among cluster firms and organizations without evoking the social institutions and conventions that the models seeks to omit. What is more, the case study suggests that the assumption of such "regional cultures" being uniformly applicable to all firms within a region is actually a rather strong one. Cultures may vary across regions, even between adjacent parishes, and potentially also between industrial sectors within the same region (or, as here, parish).

The above points to one obvious area for future research: further specifying the systemic dimension of the model. This could presumably be done by investigating ways of incorporating appropriate theories on collective action and networks, and social institutions. One interesting aspect of the dynamics of the Virserum cluster that is left unanswered in this study is the reach and evolution of its spatial boundary. If furniture firms in Virserum did not cooperate or coordinate with local furniture firms, who did they collaborate with? Have we missed out important aspects of the cluster by focusing on a too narrow part of it, i.e. those firms located only within Virserum parish? And what did the process of emergence of the metal industry really look like? Despite its length, this paper is, hence, still an indication of much work left to be done.

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PAPER 4

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Evolving economic landscapes: why new institutional economics matters for economic geography

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Abstract

As institutional change is an integral part of economic development, institutionalism ought not to be left behind in favour of an evolutionary economic geography despite the attention the 'evolutionary turn' has recently received. Rather, we need to re-address our treatment of institutions within the analysis of evolutionary economic landscapes. This paper engages a new institutional economics (NIE) conceptualization that draws on cognitive sciences instead of Darwinism when investigating processes by which institutions and economies change. It finds that NIE offers a useful definition of institutions as well as existing analytical frameworks, both capable of informing our view of the economy as an evolving system in which place and space matter.

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'[T]he likely returns from the institutional turn will depend largely on the proposed definition of institutions and the respects in which they are held to matter.'

Jessop (2004), p. 33

1. Introduction

Hard on the heels of the cultural, institutional and relational turns in economic geography, it is now time for an 'evolutionary turn' of the field. As Boschma and Martin (2007, p. 538) claim in a recent theme issue of the *Journal of Economic Geography*, 'the evolutionary turn in economic geography has gained sufficient momentum to merit recognition as a distinctive perspective no less promising in scope than the other approaches to economic geography that have been proposed in recent years'. Its basic concern is the process of dynamic transformation of the economic landscape, where it aims to demonstrate how place matters in determining the trajectory of evolution of the economic system. What is distinct to the evolutionary turn is the attempt to apply evolutionary economics—in which the economy is seen as a dynamic, irreversible and self-transforming system—to the investigation of uneven geographical development. This includes employing concepts and metaphors from Darwian evolutionary biology or complexity theory, and emphasizing innovation and knowledge in the spirit of Schumpeter (Boschma and Lambooy, 1999;

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Essletzbichler and Winther, 1999; Boschma and Frenken, 2006; Martin and Sunley, 2006; Frenken, 2007).

A concern with dynamic change, innovation and knowledge creation is, however, not restricted to evolutionary economics, neither within economics nor geography; institutional approaches in particular share similar interests. Or as Martin (2000, p. 76) reminds us in an earlier piece, 'the form and evaluation of the economic landscape cannot be fully understood without giving due attention to the various social institutions on which economic activity depends and through which it is shaped'. A related sentiment is found in what Boschma and Martin (2007) identify as the future challenges facing an evolutionary economic geography: (i) thinking about the economic landscape in terms of punctuated equilibria; (ii) viewing the economic landscape as both the product and source of knowledge in the form of rules; (iii) explaining how novelty and structural change emerge in given institutional contexts; and (iv) conceptualizing the nature of path dependence. Indeed, in their contribution Maskell and Malmberg (2007) argue that it is the interplay between the process of knowledge evolution and its institutional underpinnings that make up the core of evolutionary economic geography. Essletzbichler and Rigby (2007) for their part advocate 'generalized Darwinism'[1] but suggest interpreting regional institutional differences as differences in regional selection environments, and raise the question if work on institutions could be embedded more carefully in an evolutionary economic geography. This article argues that it not only could, but also should.

Thus, its first claim is that this is not the time to leave an institutional perspective or 'turn' behind in favour of an evolutionary ditto; the two are instead to be seen as intimately related. Hence, we ought to re-address the issue of how to treat institutions within the analysis of dynamic economic landscapes—and ultimately how to let an improved understanding of the process by which institutions change inform an evolutionary perspective on our subject matter. This, however, brings us squarely back to the question of what type of institutional theory and what conceptualization of institutions economic geography should adopt. So far, geographers have typically turned to sociological institutionalism, or to the historical or 'old' institutionalism in economics (OIE) associated with Veblen, Mitchell and Commons (Amin and Thrift, 1995; Martin, 2000). The latter is what Boschma and Frenken (2006) refer to in their comparison between 'institutional/cultural', evolutionary and neo-classical takes on economic geography. They acknowledge a number of similarities between geography based on OIE and evolutionary perspectives (both reject the assumption of rational utility maximization and favour a view of individuals as bounded rational basing their decisions on routines and institutions), but note differences important enough to warrant a separate evolutionary approach to economic geography (in contrast to evolutionary geography, OIE rejects formal modelling *a priori* and is static). They conclude that there are potentials for fruitful exchanges between the two. Hayter (2004) instead argues that committing fully to an application of OIE provides embedded, evolutionary explanations as to why places are different, rendering biological metaphors redundant.

1 In 'generalized Darwinism' the key concepts of variation, selection and continuity are assumed to apply to all domains—including social—but their meaning and underlying mechanisms may vary between domains (Hodgson, 2002).

A premise of this article is that restricting ourselves to OIE in these comparisons overlooks a rich body of research that addresses exactly the challenges facing an evolutionary economic geography identified above, namely the new institutional economics (NIE). It is moreover in disagreement with contemporary institutional economics, where OIE and NIE are growing closer (Hodgson, 2003, 2005), and economics, where NIE has been instrumental in inspiring a renewed mainstream interest in institutions. Hence, sympathetic to the point of Boschma and Frenken (2006) that much interesting work emerges at the interfaces between the evolutionary, institutional and neo-classical perspectives to geography, a second claim of the article is that NIE—associated with Coase, Williamson, and North—is an at least as interesting partner in this triad. A NIE based approach to economic geography may be interpreted as constituting the interface between the institutional and neo-classical methodologies described by them. This indicates a potential for fruitful exchange with also this line of research in the formulation of an evolutionary agenda for economic geography.

The purpose of this article is to explore ways in which NIE matters for economic geography, with a particular eye on the issue of evolution. It investigates the NIE conceptualization of institutions, i.e. its definition and theory of institutional change (Martin, 2000), which means that the work of Douglass North becomes predominant. In this respect, the article offers a partial rather than a full overview of the NIE approach. Yet, by focusing on North it picks up the argument of Nelson (2002), further refined by Pelikan (2003), who suggest that there are strong affinities between evolutionary economics and North's version of NIE. The article aims at showing where some of these affinities lie.

The article is organized as follows. Section 2 offers a brief synopsis of NIE, Section 3 examines the definition of institutions as humanly devised formal and informal behavioural constraints as separate from organizations, routines and belief systems, while Section 4 investigates a cognitive approach to institutional change that stresses the intentionality of agents. Section 5 illustrates this conceptualization with the Institutional Analysis and Development (IAD) framework and discusses it potential usefulness for economic geography. The article ends with a concluding discussion.

2. NIE and the social economy

The term 'new institutional economics' was coined by Oliver Williamson in reference to a group of economists who focused on micro theory, economic history, property rights, comparative systems, labour economics and industrial organization. In a line of reasoning resembling that often heard among geographers, these economists argued that conventional micro theory was too abstract to usefully address real world economic phenomena. They also shared a sense that the study of transactions was central to economics and deserved renewed attention (Williamson, 1975). Hence, even though NIE builds on the idea of costly transactions put forth already by Ronald Coase (1937), it is a relatively young and highly eclectic subfield in economics. It slowly emerged in the 1960s, took off in the 1970s, but was not established as a fully developed and acknowledged research programme until the formation of the International Society for New Institutional Economics in 1997 (Ménard, 2004; Richter, 2005).

In contrast to the old school, NIE was not intended as a new paradigm of economic thought (although Richter (2005) claims that a paradigm shift is currently on the way).

It was instead positioned as an explicit attempt from within the core of economic to influence its mainstream by complementing and extending its micro theoretic foundations (Mäki, 1993; Rutherford, 2001; Ménard, 2004). In its first handbook NIE is described as a multidisciplinary[2] yet unified field centred around (i) a set of key concepts and research areas (transaction costs—or broadly 'the costs of running the system'—property rights, and contracts); (ii) a criticism of fundamental behaviour assumptions in mainstream economics; and (iii) a methodology based on comparative analysis of institutions at all levels. Institutions influence all key concepts and rule out a methodology based on benchmark comparison, the standard in neoclassical economics. In particular, NIE rejects the neo-classical assumptions of perfect information, costless transactions and instrumental rationality, while it maintains those of scarcity and competition (Ménard and Shirley, 2005).

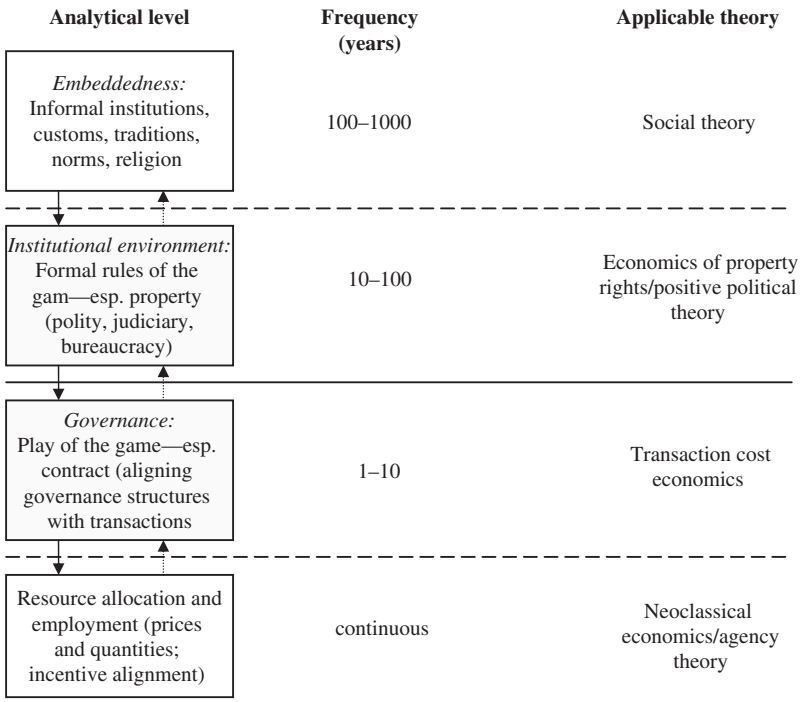
NIE has been successful in (re)engaging the mainstream with the issue of institutions. For example, a search for the term 'institutions' in the 2008 edition of the on-line *New Palgrave Dictionary of Economics* returns more than 1000 (full text) entries, ranging from property rights and market institutions, economic governance, constitution and political organization, state capture and corruption, technology and economic growth, to Islamic contract law. Admittingly, far from all this research part with neo-classical assumptions and tools in the manner described above, or apply the concept of institutions discussed in this article. Still, there is no doubt that institutions are now considered important and that NIE is part of a current trend in economics away from neo-classical dominance towards mainstream pluralism (Davis, 2006).

Based on an approximation of the number of years it takes for institutions to change, Williamson (2000) illustrates NIE by four analytical levels of social analysis (Figure 1). These are connected by constraints imposed by higher levels on those immediately below, with feedback mechanisms in between. Hence, institutions are nested within higher level institutions making the system fully interconnected in the long run.

At the top is the *social embeddedness* level of norms, customs, traditions, taboos and codes of conduct. These are assumed to change only very slowly and new institutional economists tend to treat them as given informal constraints. Yet, as pointed out by North (1990, 2005a) and now generally accepted in economics, institutions at this level have pervasive influence on economic decision making, transaction costs and economic performance, and there is a need to better understand the mechanisms behind their rise and evolution.[3] The second level is the *institutional environment* of formal rules including constitutions, laws and property rights. 'Constrained by the shadow of the past' (Williamson, 2000, p. 598) these change on a medium to long term, although the direction of change is difficult to predict. *Governance of contractual arrangements*, or modes of organization, is the core of the third level, usually concerning vertical integration, the nature of the firm and inter-firm relationships. Such structures operate at the short to medium term. Generally, NIE has focused on the formal institutional environment (formal political rules and structures) and

2 NIE economists take pride in representing one of the few 'importing' parts of economics that frequently borrows from or collaborates with the other social, managerial and legal sciences (Coase, 1999).

3 As indicated by the reference to embeddedness (Granovetter, 1985, 1992), there has at times been quite an extensive exchange of ideas between NIE and economic sociology (Brinton and Nee, 1998; Nee and Swedberg, 2005).



Source: Adapted from Williamson (2000), p. 597.

Figure 1. A representation of new institutional economics.

structures for governance of contracts (organizations and systems of organizations). While Williamson and Coase have addressed the third level, North is the big name at the second. North has also made inroads to a potential 'zero level' in Figure 1, investigating cognitive processes, identity formation and the functioning of the human mind (Denzau and North, 1994; Knight and North, 1997; Mantzavinos et al., 2004). The fourth level is that of *neo-classical marginal analysis*, where adjustment to prices and output occur more or less continuously and instantaneously. This is not a focus of NIE.

The representation in Figure 1 can of course be debated. The time frames may strike some observers as questionable. The assumption that lower institutional levels are fully nested within higher ones (indicated by the arrows in Figure 1) could also be problematic. For example, if all formal institutions that exist in a given society are seen as being nested within informal constraints, does this imply that they are also supported by such higher level norms or codes of conduct? Or is there room for dissonance between informal constraints and formal rules—or between identity formation, and the informal and formal institutional environment for that matter—in this nested setting? What Figure 1 illustrates well, though, is the scope of NIE and its division into two main branches of research; one focusing on modes of organization and the other on analysis of the institutional environment in which these arrangements are embedded.

Apart from working at dissimilar levels of aggregation, there are some important differences between Williamson's 'transaction costs economics' and North's

'institutional economics of history' (Richter, 2005). First, they diverge in their view of efficiency of institutions; given competitive markets, Williamson argues that institutions are efficient outcomes of efforts to reduce transaction costs, while, by taking political markets into account, North has abandoned this idea and stresses that inefficient institutions may prevail over long periods of time.[4] Second, Williamson takes the institutional framework as given and investigates transaction (and production) costs of various organizational forms within it, while North focuses on the process of institutional change and its effects on transaction (and production) costs for overall economic performance (North, 1993). Third, Williamson (2005) defines transaction costs economics as a theory of contracts, in particular, *ex post* contracting under assumptions of imperfect enforcement and bounded rationality, as opposed to a theory of choice, which he sees as the domain of orthodox economic theory. North (2005a) instead perceives himself to be deeply involved in a theory of choice, of which contracts are but a part—but a theory that is contextual, applying a 'weak version' of methodological individualism (Hedström and Swedberg, 1998), as individuals are social beings and do not make choices in isolation. Consequently, he has explicitly and repeatedly challenged the neo-classical assumptions of instrumental rationality and stable preferences (North, 1993, 1997, 2005a).

It is, then, perhaps not strange that geographers who equate NIE with Williamson-type transaction costs economics tend to dismiss it as a source of influence when addressing the role of institutions in the evolution of the spatial economy (Amin, 1999; Barnes, 1999; Cumbers et al., 2003; Hayter 2004). As Williamson does not primarily focus on such issues it is a misguided comparison (and a partial account of NIE). A similar conclusion was reach by the so-called 'California school' around Allen Scott and Michael Storper—representing the perhaps best know application of a NIE perspective in economic geography—who in the 1980s sought to explain agglomeration by utilizing a perspective of division of labour (vertical integration and inter-firm linkages) and transaction costs (Scott and Storper, 1986; Storper and Christopherson, 1987; Scott, 1988a, b, 1993; Storper 1989; Storper and Walker, 1989). In the words of Storper (1999, p. 30), they came to view this model as incomplete and, by stressing evolution and institutions, they tried to go 'beyond the initial Williamsonian framework to argue that the ''institutional arrangements'' of agglomeration—i.e. the nexus of transactions and their economic performance—were themselves outcomes of broader institutional environments, and themselves generators of future choices for pathways of development'. Instead Storper turned to the French 'economics of conventions' perspective to address social interaction and institutions in regional collective learning processes (Lagendijk, 2006). In this approach economic conventions—humanly generated and routinized implicit rules of action and coordination—are taken to come together in frameworks of economic action, or 'worlds of production' (Storper and Salais, 1997), and form regional specific relational assets or 'untraded interdependencies' (Storper, 1997).

Evolutionary economics focuses primarily on level 2 (Figure 1) where it offers an alternative interpretation of the firm (a nexus of routines) to that of transaction costs economics (a nexus of contracts). Winter (1993) shows that there are conflicts as well as complementarities between the two; both use bounded rationality

4 See North (1990, p. 7) for his own description of his change of position on this issue.

assumptions but the evolutionary perspective focuses more on production than transactions. Importantly, he points out that firm routines must solve the problem of organization of transactions, and that transaction cost economics offers 'a great deal of useful guidance' in characterizing different transacting environments (p. 192).

3. Defining institutions

As a reading of the institutional literature quickly reveals, 'institutions' is one of those fuzzy concepts that 'possesses two or more alternative meanings and thus cannot be reliable identified or applied by different readers or scholars' (Markusen, 1999, p. 870). Going back to Martin's (2000) outline of an institutional economic geography, he distinguishes between the 'institutional environment' and 'institutional arrangements'. The former denotes systems of informal conventions, customs, norms and social routines as well as formal rules and regulations, while the latter are particular organizational forms (such as firms, unions, city councils and the welfare state). Martin concludes that the central concern of economic geography is how the interaction between these two aspects of the 'institutional regime' of the economy varies across space, and how it shapes local economic outcomes.

This definition is picked up by geographers who differentiate between institutions as a set of rules, regulations and constraints on the one hand, and organizations in the form of economic, political, social and educational bodies on the other (Storper, 1997; Lundequist, 1998; Del Casino et al., 2000; Jones, 2001; Dale, 2002; Grabher, 2002; Bathelt, 2003; Hall, 2003; Gertler, 2004; Rodríguez-Pose and Storper, 2006; Dawley, 2007). Still, institutions and organizations are commonly conflated in the literature, either by equating institutions with 'structurally important organizations' (e.g. regional development agencies or business associations) in empirical studies (Keating, 2001; Wolfe and Gertler, 2002; Greco, 2004; Jones and MacLeod, 2004; Goodwin et al., 2005) or conceptually—the influential notion of 'institutional thickness' (Amin and Thrift, 1995) being a prime example (Jessop, 2004).[5] This is the result of a historical tendency to *expand* the institutional concept from an initial focus on identifiable organizations (Manion and Flowerdew, 1982) to include embeddedness, regulation, norms, habits and every-day practices (discussed by Philo and Parr, 2000; Wood and Valler, 2001). Though in many ways attractive, such conceptual broadness and flexibility comes at a cost; it may render the notion all-inclusive making it a blunt analytical tool. MacLeod (2001) has warned against this leading to a 'tautological trap of soft institutionalism' in which the presence of institutions is taken as an adequate explanation for uneven economic development across space.

3.1. Separating institutions and organizations

Martin (2000) explicitly relates his conceptualization to the approach of North and Davis (1971), which has since evolved into the 'institutions-as-rules-of-the-game' and 'organizations-as-players-of-the-game' analogy in North's subsequent work. Acknowledging that in real life organizations and institutions both provide structure to human

5 Coulson and Ferrario (2007) has developed a methodology for the empirical assessment of institutional thickness that they claim evades this problem.

interaction and are highly interrelated, he nevertheless argues that rules must conceptually be separated from players—in particular for analysing and understanding the evolution of economic systems (North, 1990).

Yet, applying this analogy is not as straightforward as it might seem. First, organizations are governed by numerous external and internal rules. For example, an individual working in a team within a division of a firm is influenced by a complex multilevel set of behavioural constraints that stem from the firm itself, the sector and networks it/he/she is active in, national and international regulatory and legal structures, as well as cultural factors. Hence, in some instances organizations may been seen as actors within an institutional framework, while in other the organization itself provides the rules of the game within which individuals act—the organization is simultaneously both actor and structure. Moreover, certain organizations are carriers of institutions in the sense of having the mandate to implement or monitor particular regulations. This has led some institutionalists to argue that one cannot make a useful distinction between institutions and organizations the way suggested by North (Hodgson, 2004; Greif, 2006). At closer inspection, North explicitly defines institutions as the humanly devised constraints (or rules of the game) that define the incentive structure of *societies* and *economies*, not those internal to organizations. To him, this is more than an issue of scale; modelling organizations involves 'theorising about the structure, governance, and policies of purposive social entities', which, he argues, is different from modelling institutions (North, 2005a, p. 63). His focus is instead on the interaction between institutions and organizations, and its effect on the process of institutional change and economic performance of societies over time.

What North does not acknowledge, however, is that understanding how decisions are reached inside organizations may improve our understanding of that interaction; when analyzing a particular case of institutions change (or lack thereof) it may become necessary to investigate not only the role played by particular individuals (stressed by North), but also the internal structure of influential organizations. Moreover, there is no discussion of what lies behind the terms 'society' and 'economy', especially with reference to empirical application. While the intent of North's conceptualization clearly is to capture a general structure, usually at the national level, that influences how organizations act (and how organizations in turn seek to influence or change that structure), its limits—what is included and what is excluded—are not problematized. As geographers are very well aware, this may have a bearing on the analytical results.

3.2. Institutions: rule constraints and/or behavioural patterns?

Even after having excluded organizations from the definition it is by no means a simple concept that remains. The definition of institutions in the *Handbook of New Institutional Economics* (Ménard and Shirley, 2005) includes constitutions, laws and rules (that govern society at large), written rules and agreements (that govern contracts and corporate relations), as well as unwritten codes of conduct, norms and beliefs. This reflects a current dominance in NIE of *institutions-as-rules* and *institutions-as-norms* approaches focusing on linguistic constraints that influence preferences and behaviour, over that of the *institutions-as-equilibria* approach where stable patterns of behaviour are regarded as institutions (Crawford and Ostrom, 1995; Kingston and Caballero, 2006).

North combines the first two of these and defines 'institutions' as the formal rules, informal norms, and their enforcement mechanisms (i.e. third party law enforcement

or social ostracism; second party retaliation; or first party self-imposed codes of conduct) that define the incentive structure of societies and the 'way the game is played' (North, 2005a). The 'institutional framework' incorporates the *political structure* (that specifies the way political choices are developed and aggregated), the *property rights structure* (that defines the formal economic incentives) and the *social structure of norms and conventions* (that defines the informal incentives of the economy). *Institutions-as-equilibria* theorists instead claim that it is not the rules of the game that matter, but how actors play it (Schotter, 1981; Greif, 1993, 2006; Aoki, 2001, 2007; Greif and Laitin, 2004). Underlining that 'individual agents are not only constrained but also informed by institutions' (Aoki, 2000, p. 18), they use classical or evolutionary game theory to seek to explain the self-enforcing nature of institutions by 'endogenizing' the issue of enforceability, thus avoiding an infinite regression of operational games and meta-level social-choice games where rules are defined. The emphasis is on behavioural beliefs, i.e. 'beliefs about the behaviour of others in various contingencies, whether or not that behaviour actually occurs' (Greif, 2006, p. 37), that result in regularity in the way the game is played in a repeated setting.

Still there is common ground in the emphasis on the crucial role played by beliefs and expectations in behavioural choices (Aoki, 2000; North, 2005a, b). The structure of incentives (that institutions form) shapes actors' expectations about the outcome of their actions, which, in turn, depends on the behaviour of others. An expectation that other players take the same institutional constraints into account increases the predictability of choices, which help to solve the problem of which choice to coordinate on. By including options that are beneficial only when certain institutional constraints are respected this mechanism may in effect enlarge the subset of promising choice alternatives (Pelikan, 2003). This does not mean, however, that actors are assumed to be automatic rule followers; incentive systems are always imperfect and not all may share the preferences reflected in the prevailing institutional matrix.

In line with the *institutions-as-equilibrium* theorists, evolutionary economists and old institutionalists stress regular patterns of behaviour and suggest that institutions are habits and routines that direct actors to coordinate on particular choices (Nelson, 2002; Hodgson, 2004). Some claim, however, that exactly due to routines providing step-by-step guidance to actors' behaviour they ought to be defined as strategies or 'ways of playing the game' rather than incorporated under the concept of institutions (Pelikan, 2003). Similarly, Gertler (2004, p. 5–6) identifies the conflating of institutions and behaviour of economic actors as a source of 'fuzziness' of the institutional concept in geography, and argues that routine forms of behaviours are 'shaped and constrained—though not wholly determined—by a set of institutions that govern the way work is organized, workers are trained and deployed, industrial relations are structured and technology is implemented'.

3.3. Separable conceptual spheres: structure—agency

This article proposes that 'de-conflating' the institutional concept by distinguishing institutions from organizations and routines is beneficial for economic geography, as it allows for a dynamic and non-deterministic description of the structure–agency relationship. Hence, when investigating institutions there are a number of conceptual spheres that are highly interrelated but analytically separable in terms of purpose and

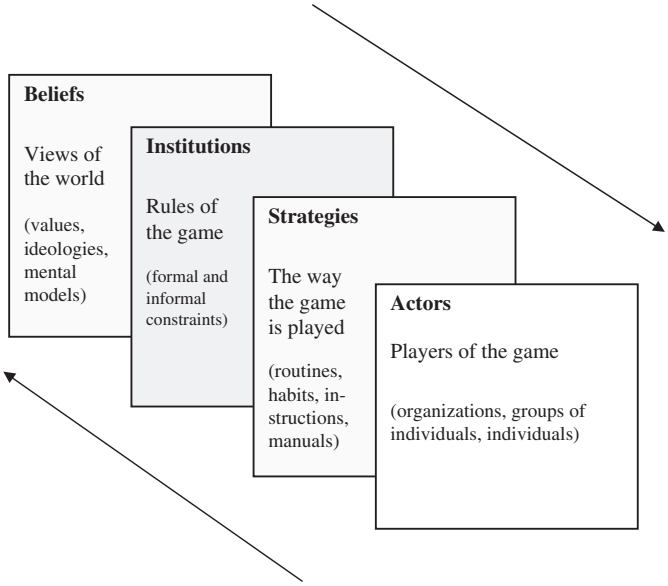


Figure 2. Suggested key conceptual spheres and their relations.

underlying mechanisms, and NIE is the clearest among the institutional perspectives on this point. One typology is suggested in Figure 2.

Figure 2 illustrates a separation between the spheres of beliefs (views of the world), institutions (formal and informal rules of the game), strategies (ways of playing the game) and actors (players of the game). As indicated by the arrows there is a downward movement in the figure, connecting in an unspecified way underlying mental models and institutional structures with strategies and action, as well as an upward movement, indicating the potential for strategies and actions of agents to influence belief systems and institutions. Admittingly, these spheres are not clear-cut and there exist 'border concepts' that are closer to adjacent spheres than others. Norms is one example (Dequech, 2006), routines are, as we have seen, another. However, as each sphere have different functions and underlying mechanisms, changing either may involve different processes—which is why they have been separated in the figure.

To clarify, the argument is not that analysts should be restricted to institutions as 'rules of the game' at the expense or exclusion of the other categories in Figure 2. Studying in particular institutional change entails investigating interrelated systems of rules, beliefs, norms and organizations (Greif, 2006), and, hence, all of the above. Yet agreeing with Markusen's (1999, p. 873) claim that 'committing oneself to stating where and when a concept applies and where it does not is often the easiest way to pare fuzzy concepts down to a sharp and clear profile', the point is that acknowledging the varying roles and characteristics of each sphere—as well as their relationships—will maintain the analytical edge of the institutional concept and facilitate communication of research results.

Importantly, evolutionary economic geography implicitly separates between institutions and organizations (in contrasts to evolutionary economics where the terms are used interchangeably), and between institutions and routines by treating institutions

as specific to territories and routines as specific to firms. Frenken and Boschma (2007, p. 637) propose routines as the main theoretical concept of an evolutionary economic geography, with economic development described by 'changes in the time-space distribution of routines'. Yet, an understanding of institutions as a constraining context is acknowledged, as is the fact that (territorial) institutions still allows for variation in routines among firms (Boschma and Frenken, 2006). Hence, treating routines and habits as interpretations of institutions as rule-constraints codified into 'ways of playing the game' as in Figure 2, is congruent with an evolutionary economic geography.

4. Institutions and the process of economic change

A main critique of neo-classical economics from geographers and institutionalists alike is that it is fundamentally a static theory. Not surprisingly, a substantial amount of NIE research is devoted to clarifying the role of institutions in the process of economic change. Ménard and Shirley (2005) show the sentiment within NIE that institutional change is hard to achieve and, although progress is being made, there is still a long way to go to before we fully understand it. This is problematic as empirical studies overwhelmingly point to institutions being a key determinant of economic performance—perhaps even dominating direct effects of geography.[6] Yet, moving beyond the truism that 'institutions matter' and differ between places to pin-point exactly how they influence economic development has proven difficult.

According to North (2005a) a full theory of economic change requires integration of theories on change in demography, technology (i.e. knowledge) and institutions over time. In line with evolutionary economists and geographers, he sees knowledge creation and technological development as drivers of economic growth. Institutions play a central role in setting up incentive structures that favour certain investments in human capital and technology, as well as the degree of conformity or flexibility of the system in terms of experimentation and variation. Again in line with evolutionary economists, he claims that modelling economic change should draw inspiration from evolutionary biology rather than physics (which is standard in neo-classical economics). But in contrast to Darwian theory, the selection mechanism has to be informed by beliefs about eventual consequences.

6 As pointed out by one referee to this article, there has been a virtual explosion of work in economics in the last decade that link institutions and economic growth (see Acemoglu et al. (2005) for a summary). Although a review of this literature is beyond the scope of this article, the seminal contributions of Acemoglu et al. (2001, 2002) and Rodrik et al. (2004) need to be mentioned as they directly concern geography. Picking up North and Thomas's (1973) argument that institutions are fundamental (as opposed to proximate) causes of long-run economic growth, these studies use cross country comparisons to seek to substantiate their claim and to disprove a competing 'geography hypothesis' forwarded by, for example, Diamond (1997), Sachs (2001, 2003) and Sachs and Warner (2001). They find that institutions are relatively more important than geographical variables (i.e. geographical location, temperature, natural resources or health environments) in explaining long-run disparities in economic performance, but that geography affects per capita incomes via its impact on the quality of the institutions that countries form. This research has been highly influential, but critiques exists (Gleaser et al., 2004; Knabb, 2005; Carstensen and Grundlach, 2006) and the debate continues.

4.1. Sources of institutional formation: uncertainty and imperfect perception

According to North (2005a), beliefs about the nature of the political–economic system—both a positive model of how the system works and a normative of how it should work—and the way these beliefs evolve are at the heart of understanding the process of economic change. The closer they are to the 'true' system, the greater is the possibility that the strategies that actors form and actions that they undertake will lead to intended outcomes. In his view, beliefs and institutions only make sense as 'ongoing responses' to varying levels of uncertainly. Hence, uncertainty is the source of institutional formation. North builds on Heiner (1983) who saw uncertainty as a function of the complexity of the environment—in modern times mainly stemming from the human landscape rather than the physical—and the perception of humans. Hence, he asserts that the role of institutions as rule constraints is to reduce uncertainty in a world that is constantly changing in a non-ergodic way, and where agents have imperfect perception. Non-ergodicity is important as it implies that actors do not know if the decision rules used yesterday will guide them also tomorrow.[7] Still, they need to make decisions.

In fact, humans make decision in the face of uncertainty daily, i.e. without the ability of assigning a probability distribution to events that turn uncertainty into risk (Knight, 1921). How do they do that? According to North, by forming beliefs about how the world works and build institutional structures that, by constraining individuals' choice sets and shaping expectations of behaviour of others, reduce this uncertainty into something more manageable. Greif (2006, p. 36) refers to this as 'internalized beliefs' about the structure and details of the world, as opposed to 'behavioural beliefs' that are the focus of game theorists like himself. While both have direct as well as indirect influence on human decision making, the emphasis on the latter is one reason why game theory is well suited to increase our understanding of the self-enforcing nature of institutions—although it has generally little to say about their origins (North, 1998; Aoki, 2000).

4.2. Sources of institutional change: perception, cognition and learning

In NIE, perception is seen as the key to choices humans make. *Institutions-as-rules* advocates stress how existing institutional frameworks, incentive structures and existing knowledge and skills influence perception, while *institutions-as-equilibria* theorists point to ways that existing patterns of behaviour influence perception. According to North (1998), human perception is based on a combination of the genetic evolution of the brain, cultural heritages, local day-to-day problems that need to be solved and non-local learning. Given that perception is imperfect it may differ between individuals in the same place, as well as between places.

The so-called 'integrated cognitive approach' endorsed by North is a combination of a connectionist model of the brain from the neural sciences, and

7 A non-ergodic stochastic process means that averages calculated from past observations can be persistently different from the time average of future outcomes; hence, in a non-ergodic world systematic relationships may change over time in unpredicted ways (North, 2005a, chapter 2).

cultural anthropology. It points to learning occurring through pattern recognition and pattern matching (i.e. classifications and typologies) rather than logical reasoning, the base for neo-classical economics. Connectionist models learn by example and use statistics from those examples to produce a system of knowledge that is generalizable to new circumstances. Hence, they offer an explanation of how humans construct theories in the face of real uncertainty (North, 2005a). Pattern recognition implies that institutional structures are intimately linked to learning, in which case individual learning concerns not only what goes on in the heads of individuals, as stressed by cognitive psychologists, but is ultimately also a contextual process (Knight and North, 1997). In short, cognition in its cultural context ('scaffolds' consisting of accumulated physical and human capital) influences the beliefs that human have, which influence the institutions they form that provide incentives and influence economic outcomes. In this way, NIE and evolutionary economic geography face similar ontological challenges in viewing the economic system as made of 'knowledge in the form of rules' and a focus on the 'dynamics of the rule population' in time and space (Boschma and Martin, 2007, p. 544).

4.3. Mechanisms, patterns and promoters of institutional change

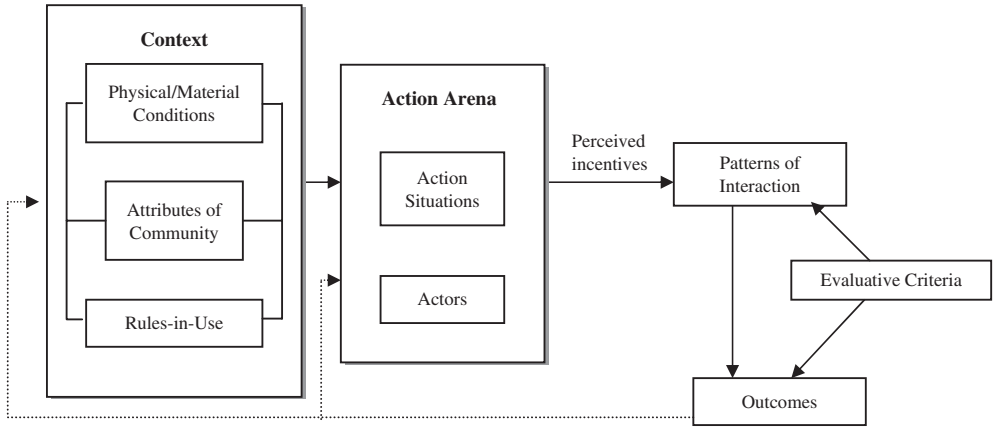
The fundamental mechanism underlying institutional change in North's approach is perceived changes in opportunity sets. The interaction between institutions and organizations, and between informal and formal institutions, is fundamental to understanding the process. Changes in technology, cost of information, or the ratio of factor prices are all changes in relative prices, that can be viewed as an exogenous source of institutional change (North, 1990). Competition between organizations (with survival as their prime motivation) in a setting of scarcity is another, endogenous, source. Organizations as players of the game try to improve their position vis-à-vis their competitors, and those that have the most to gain from institutional change in a certain direction may seek ways to achieve it (North, 1998, 2005a). Hence, certain actors are promoters of institutional change and *their* perceptions, beliefs and intentions will influence the direction of the adjustment of the institutional framework. This implies that existing institutions can not be interpreted as efficient outcomes to transaction costs minimization problems in markets or societies at large. Moreover, as the environment is constantly changing in a non-ergodic fashion and perception is imperfect, the end result may be different than originally intended; institutional change is to a large extent characterized by unintended consequences. Hence, there is substantial scope for inconsistencies or even contradictions in the institutional matrix. Another implication is that institutional solutions are non-homogenous across space; varying physical environments and historical experiences means that beliefs, institutions and organizations differ between places.

Institutions-as-rules theorists tend to view institutional change as path dependent and mainly evolutionary, characterized by small incremental adjustments to the institutional matrix (Campbell, 2004). North claims, for example, that revolutionary change is on closer scrutiny often preceded by a long period of negotiation or conflict between ideas; hence, given an appropriate time frame most change is evolutionary. Even so, he admits that the 'occasional radical and abrupt institutional change suggest that something akin to the punctuated equilibrium change in

evolutionary biology can occur in economic change as well' (North, 2005a, p. 2). Despite that 'the institutional matrix produces massive increasing returns' (North, 1990, p. 95) he claims that institutional path dependence is different from that of technology (David, 1985; Arthur, 1994), the basic treatment of path dependence in evolutionary economic geography. Rather than small, random changes that have large accumulated impacts, North sees incomplete markets with imperfect feedback mechanisms that influence the 'subjective models of actors', and network externalities, complementarities and economies of scope as sources of in particular non-efficient dynamic patterns (North, 1990, 1998). Or, put differently, path dependence stems *partly* from organizations resisting any alteration that might threaten their survival, and *partly* from the role perception plays in forming those institutions and organizations; it is the interaction between beliefs, institutions and organizations (Figure 2) that makes path dependence fundamental to institutional and economic change. Hence, shared belief systems are a source of cognitive path dependence, which is a source of institutional path dependence that in turn contributes to economic path dependence (Manzavinos et al., 2004). In this way path dependence is not 'inertia' but the 'constraints on the choice set in the present that are derived from historical experiences from the past' (North, 2005a, p. 52), in which informal institutions play an imperative role.

Institutions-as-equilibria theorists (Aoki, 2000; Greif, 2006) see institutional change as equilibrium shifts rather than change in rule constraints and work directly with punctuated equilibrium patterns where change stem from new parameter values (exogenous) or new behavioural beliefs (endogenous). Aoki (2007) has recently attempted to combine the two by modifying the equilibrium view with bounded rationality used by rule-constraint economists in a model where agents have limited capacity to analyze the structure of the game. Institutions are then 'self-sustaining, salient patters of social interactions, as represented by meaningful rules that every agent knows and are incorporated as agents' shared beliefs about how the game is played and to be played' (p. 6). These are essentially endogenous, but appears as exogenous constraints to individual agents. In this setting, institutional change means going from one state of common behavioural expectations associated with a particular equilibrium to another state and a new equilibrium. Among other things he shows how formal institutions (consequence functions) can change without agents changing their beliefs of how the game will be played—in other words, as long as it is common knowledge (in terms of expectations) that the game will be played as before, a change in formal rules will not lead to a change in behaviour.

But, when change occurs, how do we know which will be the new equilibrium or institution in this multi-equilibrium setting? In a manner similar to that of North, Aoki points to the complex process by which a particular belief of an economic or political entrepreneur (or organization) becomes a focal point for the convergence of behavioural expectations. Greif (2006) expresses parallel ideas in his broad account of the evolution of the modern economy. In other words, NIE tends to stress the agency and intention of certain organizations—or individuals within them—as promoters of institutional change, rather than relying on spontaneous and unconscious processes. What this overview shows is that a concern with path dependence, punctuated change patterns and how to explain novelty and structural change is core not only to evolutionary economic geography (Boschma and Martin, 2007), but also to NIE.



Source: Gibson et al. (2005), p. 276. Modestly altered versions are in Ostrom (1999, 2005a, 2005b).

Figure 3. A framework for institutional analysis.

5. A visual illustration—the IAD framework

To visualize the conceptualization outlined above, we briefly introduce the IAD framework developed by Elinor Ostrom and her colleagues (Figure 3).[8] It is a multilevel conceptual map that well illustrates a NIE way of thinking of institutions and institutional change as contextual variables to specific situations.

The purpose of the IAD framework is to identify major structural elements that to some extent are present in all institutional structures, but whose importance may vary between situations. Its central piece is the *action arena*, a conceptual unit referring to a social space where 'individuals interact, exchange goods and services, solve problems, dominate one another, feel guilty, or fight' (Ostrom, 2005a, p. 829).[9] Action arenas can be used to analyze, predict and explain behaviour within institutional arrangements. They are made up of two collectives: the *action situation* and *actors*. The framework allows for, indeed requires, a detailed account of the situation and actors that together make up a particular arena. The situation is characterized by seven components (participants, positions, outcomes, action–outcome linkages, level of control, information, costs and benefits), while actors can be individuals or groups. Assumptions about actors must be made explicit as these determine what theory of rationality and behaviour (e.g. self-centred rational choice, bounded rationality or norm-driven behaviour) to apply in given situations.

The action arena, in turn, depends on a context that specifies the situation as well as motivational and learning structures. *Physical and material conditions* concern the 'attributes of the state of the world and their transformation' (Ostrom, 2005a, p. 837). Usually, this refers to aspects of goods and services (e.g. private or public)

8 For more details and varied applications, see for example Ostrom (1999, 2005a, b), McGinnis (2000) or Gibson et al. (2005).

9 As pointed out by Ostrom, the term arena corresponds to that of fields of Bourdieu (1977), meaning 'situations where organized groups of actors gather and frame their actions vis-à-vis one another' that produce local social orders (Fligstein, 2001, p. 108).

and most applications of the framework address issues of excludability, subtractability, free-rider and collective action problems. But the degree of mobility of goods or resources and the location of storage possibilities are occasionally included. *Attributes of the community* refers to generally accepted norms of behaviour, the level of common understanding about the structure of a particular arena, the extent to which preferences are homogenous within the community and the distribution of resources among those affected (Ostrom, 2005a, p. 841). *Rules-in-use*, finally, refers to a configuration of written or unwritten regulatory rules (i.e. rules that can be announced, put into effect, enforced, disobeyed, broken, revoked and reinstated) that, as opposed to rules-in-form, constitute binding constraints on choice sets of actors in the arena. Rules-in-use is the 'set of rules to which participants make reference if asked to explain or justify their actions to fellow participants. They are the ''do's and the don'ts'' that one learns on the ground that may not exist in any written document' (Ostrom, 2005a, p. 832). Rules-in-use constitute a necessary (but not sufficient) explanation of the structure of an action situation, perceived incentives, patterns of behaviour and outcomes. The empirical challenge is to find the rules that are binding in the situation at hand, how they interact in processes of change and how they relate to the general system of rules-in-form.

Hence, institutions as formal and informal behavioural rules are both included in the framework, although grouped along the lines of rules-in-use and attributes of the community, and it maintains the differentiation between institutions and organization—the former belonging to the context and the latter to the action arena—sought after by NIE. But it takes one step further by focusing on the binding constraints in a certain specified empirical situation. Contextual variables are exogenous to the analysis of incentives and behaviour within a given arena, but treated as endogenous when analysing institutional change (Ostrom, 2007) through feed-back mechanisms (dotted lines in Figure 3). Some evaluations that participants do will lead to changes in the context, i.e. to institutional change, while others will feed directly back into the action arena accounting for changes in relationships, contracts or organizational routines within a given institutional setting. Exogenous influences may lead to institutional change as action arenas in most cases are linked to other action arenas, and a working rule in one arena may be determined in another. In this way, the framework allows for evolutionary analysis as series of snapshots of linked action arenas.

The institutional conceptualization outlined here indicates that important analytical formulations commonly used in economic geography, such as markets and regions, ought not to be equated with institutions, but rather seen as arenas supported by an institutional framework (i.e. political, economic and social structures). Take, for example, the suggestion to equate regions with institutions or 'meeting places' for local and global processes (Hayter, 2004; Barnes and Hayter, 2005). From a NIE perspective, regions as meeting places where multiple voices of multiple organizations that are in agreement or in conflict interact, or as 'territories where there are *both* common values, processes of valuation and regulations, modes of thought, and distinct grooves to local life and/or where there are clashes of values over how the available territory is to be used and what the conventions and regulations should be' (Hayter 2004, p. 107, original highlight) does not translate into institutions; it rather describes regions as territorial counterparts to arenas where certain formal and informal rules pertain that are constantly re-negotiated by organizations or individuals, and under pressure to change. Institutions are the rules, conventions and regulations that define the territory and its

usage, which in turn depend on sometimes conflicting values and modes of thought, and that actors fight or cooperate over. Lumping all of this into one unifying concept does not improve our understanding of these complex relationships and processes—applying a conceptual map like that in Figure 3 may take us further.

This example highlight that the IAD framework may serve as more than an illustration; it may be of potential use to economic geographers as an analytical tool. One benefit of Figure 3 is that physical geography is explicitly included as a contextual variable influencing the otherwise aspatial conceptual unit of the action arena, which refers to a social space at an undefined level of abstraction. This means investigating the joint effect of physical and institutional contextual constraints on given empirical situations, rather than putting one against the other. Yet, if economic space means 'the field in which economic processes and relations are located' it may be argued that for many phenomenon of interest to economic geography (e.g. local clustering) economic space and geographical space overlap, but do not perfectly coincide (Tappi, 2003, p. 158). The IAD framework offers a way to investigate abstract economic space as fields by specifying particular action situations, actors and the (linked) action arenas that they are part of—and the varying geographical domains that these fields relate to. Concepts such as 'regions as meeting places' or 'institutional thickness' are then geographical territories or places hosting multiple action arenas and sets of contextual variables. Conversely, the economic space of clusters or regions corresponds to geographical arrangements and places that vary with time, with particular rule configurations or with the relevant set of actors. Hence, we may use the tension between action arenas as abstract and potentially spatial units of analysis to deepen our understanding of the nature of institutional change rather than focusing on either or.[10]

A working hypothesis developed here is that the IAD framework has the potential of framing research into the variation of 'institutional regimes' across space (Martin, 2000) and of linking the NIE approach to the issue of spatial and geographical closeness. One of its weaknesses is that it is not explicit about how to incorporate relative prices changes as exogenous sources of institutional change, another that the 'rules-in-use' variable may be sensitive to post hoc rationalization by involved actors. On the other hand, the framework encourages an explicit discussion of actors' perception and degree of consciousness of the context that influence their choices and practices, an issue specifically important for tacit knowledge and learning (Gertler, 2003). Moreover, the questions used to identify the situation components (mentioned above) help to specify power structures in action arenas, i.e. actors' varying claim over resources and rules, implicitly identifying its degree of heterogeneity with implications for the capacity (in terms of ability and willingness) to change. Additionally, the same questions cover the basic information necessary to formalize a game (Ostrom, 2005b); applying IAD to empirical settings thus opens for—but does not require—the use of game theory in economic geography, in particular, when

10 One possible way to investigate the geographical borders of the action arena is to evoke the time-geography perspective of Torsten Hägerstrand (1985, 1991). In fact, time-geography shares a common world view based on individuals' constrained action spaces and concepts of an akin flavour (e.g. situations, domains, pockets of local order). Combing the IAD framework and time-geography—and implicitly NIE—is an alternative to the use of Giddens' structuration theory in time-geography (see also Åquist, 1992).

exploring self-sustainability of economic systems. This, in turn, opens for an engagement with experimental economics, and a (re)engagement with behavioural geography (Strauss, 2008).

6. Concluding discussion

This article set out to explore ways in which NIE matters for economic geography, particularly given the recently suggested evolutionary turn of the field. It aimed at two main contributions; to give an overview of modern NIE and to point to affinities between it and an evolutionary economic geography. As to the first, it was shown that NIE has two main investigatory branches, and that it is the one focusing on the institutional environment that is of interest to geographers interested in the evolution of the socio-economy. Key aspects of that approach are (i) a definition of institutions as the humanly devised formal and informal behavioural constraints and their enforcement mechanisms; (ii) the role of institutions being to reduce uncertainty in an ever changing world; (iii) institutions influence the incentive structure that affects feasibility and profitability of engaging in economic activity; and (iv) institutional change is fundamentally path dependent, largely owing to cognitive path dependence. Importantly, this conceptualization allows for a distinction of interrelated, yet analytically separable conceptual spheres (Figure 2), and there exist compatible analytical tools with potential use in economic geography (Figure 3).

As to the comparison of neo-classical, institutional and evolutionary approaches to economics geography (Boschma and Frenken, 2006), the article indicates that NIE constitutes a range at the interface between neo-classical and old institutional economics, involving issues at the research frontier in contemporary economics. At the general level, NIE and evolutionary economic geography both embrace the assumption of bounded rationationality, utilize formal modelling techniques and are explicit dynamic attempts at investigate economic systems. In contrast, NIE is increasingly drawing on the cognitive sciences to investigate human behaviour and learning and the process by which institutions and economies change. Moreover, the NIE perspective actively addresses the key challenges for an evolutionary economic geography identified by Boschma and Martin (2007)—but may differ in interpretation or emphasis. Since these are important yet inherently difficult and unresolved issues, both approaches have an interest in taking research further. This article suggests that there is a potential for fruitful exchange between NIE and evolutionary economic geography in exploring these differences along their research interface.

For example, the sources and mechanism of path dependency are different between technological and institutional change. As pointed out by Martin and Sunley (2006), institutional lock-in is one possible, but not inevitable, outcome of path dependence in NIE, and if reached it may be perceived as a 'conditional equilibrium' in which there is still scope for endogenous change to arise. As informal institutions are held to be of particular importance to institutional path dependence, the line of research followed by Aoki (2007) where a change in formal rules does not lead to a change in behaviour in the face of a persistent informal convention is of particular interest. It points out that when informal institutional change involves coordination problems, a revolutionary type of change where actors simultaneously move to a new state of affairs may be needed for change to occur. If coordination is the key problem of

economic life (Storper, 2002), it usually involves subsets of actors in the economy and there is a possibility of punctuated equilibrium change occurring at micro-levels—between individuals or firms in local territories or networks—that may still appear as smooth or evolutionary processes at higher levels of aggregation. Hence, an evolutionary economic geography needs to address the combined effects of technological and institutional path dependence on economic evolution, as well as how these may differ between places and aggregation levels.

Another example is the emphasis on certain beliefs as 'focal points' that influence the trajectory of institutional and evolutionary processes, and the role and action of individuals (in organizations) that hold those beliefs that is core to the NIE, but less so to the evolutionary approach. A fundamental question is how obsolete but well-established institutions may be intentionally transformed by individuals who are engrained in the same institutions (Maskell and Malmberg, 2007). In the NIE perspective impetus for institutional change comes from changes in relative prices that alter the relative position of actors, contradictions in the existing institutional framework or from changes in preferences or beliefs. North suggest that it is individuals who perceive changes in the world as alterations of their opportunity set and/or have dissimilar beliefs about the 'true' economic system, and who manage to gather enough 'support' for this view that become 'institutional entrepreneurs'. That institutional change is complex can be exemplified by research on institutional diffusion that shows how mechanisms behind translation (the combination of new elements with locally given) into full practice involve the existing local institutional context, local power struggles, local leadership support and local implementation capacities (Campbell, 2004). As there are numerous combinations of these, we should not be surprised that institutions do not travel well. Nevertheless, the stress put on perceived changes in opportunity sets as a source of institutional formation and change opens for the issue of strategic agency in 'path creation' (Martin and Sunley, 2006), not only for firms that intentionally try to make their technology the basis for a new path, but also for the evolution of institutions. The question is how to address it.

One way compatible with NIE (and the IAD framework) is suggested by Fligstein (2001, pp. 113, 116) who defines 'social skills' as the ability to induce cooperation among others. Skilled social actors can 'frame ''stories'' that help induce cooperation from people in their group that appeals to their identity and interests, while at the same time using those same stories to frame actions against various opponents'. Those who become institutional entrepreneurs invent 'new cultural conceptions' that change actors' identities and interests, plus a 'new banner under which to unite disparate groups'. Hence, if institutions are taken to constitute the selection environment of localities or regions (Essletzbichler and Ruby, 2007), an evolutionary economic geography needs to take into account how the composition of institutional entrepreneurs and their tactics change over time in the involved action arenas. North (2005a) stresses that places where that selection environment is characterized by high degrees of conformity tend to perform less well over time, as they have limited abilities to adjust to changing circumstances, resist adopting novel ideas and will see little institutional change. As a result, relative transaction and productions cost increase and put the location at a disadvantage.

Going back to the initial quote from Jessop, this article holds that even though the respects in which institutions are held to matter is fairly similar across institutionalist approaches—institutions reduce uncertainty, influence expectations and

incentives, and is part of the path dependence by which economies evolve—NIE is clearer in its definition, which gives analytical advantages for investigating the mechanism and processes by which institutions and economies change. It also has an obvious economic 'anchor' in its emphasis on transactions costs, and how these affect firms' production, investment and location decisions, and in its closeness to the research frontier in economics (which often challenges core neo-classical assumptions). In light of the discussion on the appropriate focus of economic geography and the merits of its 'cultural turn' (Amin and Thrift, 2000; Martin and Sunley, 2001; Plummer and Sheppard, 2001; Rodríguez-Pose, 2001; Yeung, 2001, Scott, 2004), this—odd as it may sound—is another benefit of NIE that (evolutionary) economic geography should not overlook.

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