CESIS Electronic Working Paper Series

Paper No. 310

Spontaneous Orders and the Emergence of Economically Powerful Cities

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April, 2013

For *Cosmos & Taxis 1(1)*, An invited reply to Gus diZerega's Outlining a new paradigm.

Spontaneous Orders and the Emergence of Economically Powerful Cities

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Abstract: The importance of cities to economic dynamism and growth cannot be emphasized enough. It is crucial for our understanding of what drives economic growth to understand how cities emerge, develop and prosper. This paper investigates the emergence of cities from a spontaneous order and urban economics perspective. The analysis focus on agglomeration effects, externalities and regional clustering as explanations of cities and regional growth. Factors such as local knowledge and dispersion of knowledge are identified as important growth factors. With origin in Hayek's famous citation "particular circumstances of time and place" these factors are thoroughly discussed in a spontaneous order framework.

Keyword: Spontaneous orders, cities, urban economics, dynamic externalities, knowledge-flows.
JEL code: R10, R12, O18, B53, B25

1. Introduction

Cities are the engines of economic growth (Jacobs 1969; Bairoch 1988). It is in cities that a large share of the innovations and entrepreneurship take place and it fosters economic growth in the long-term. Densely populated urban economies in which corporations, occupations, and individuals are close together create an environment in which ideas can flow rapidly from individual to individual. Through their organization cities provides meeting places for face-to-face communication, which further benefits the flows of tacit or local knowledge and thus creates positive agglomeration effects for firms located in an area.

Jacobs (1969) was one of the first scholars to describe the emergence of cities as a spontaneous order rather than from a central planning and organizational perspective.[1] The emergence of cities is spontaneous, as it is "self-ordering, self-sustaining, and self-regulating" (Ikeda 2004, p. 253). Jacobs' argument is based on the assumption of ever increasing social complexity in the formation of multifaceted spontaneous networks that consists of individuals who cover many different fields of knowledge, interests, and activities. The nodes in such networks consist of individuals which are linked through formal or informal relationships that can be used to transfer knowledge in an effective manner (diZerega 2013).

By analyzing cities from a spontaneous order perspective the current paper relates closely to the arguments offered in the introductory paper "Outlining a New Paradigm" by diZerega (this issue). diZerega argues (p. 27) that "*Unlike spontaneous orders, civil society is not coordinated by any single system of feedback signals, but incorporates many, …[.]*" That is, civil societies incorporate many different feedback systems and individuals are essentially free to choose which signals they will adhere. The manner in which this is organized could likely account for some of

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[1] Note, however, that Jacobs was not a "theorist of spontaneous orders" although her analytical framework could be understood in terms of spontaneous orders.

the differences between cities and explain how cities evolve over time. The evolvement of culture is another spontaneous order that evolve over time just like the market and shapes the characteristics of cities.

The novelty in this paper is the combination of ideas from urban economics with a spontaneous order perspective on civil societies and the emergence of economically powerful cities. The two fields could be linked with respect to at least three points: *i*) the Jacobian analytical framework of the emergence of cities, *ii*) the importance of knowledge spill-over and local knowledge and *iii*) the role of individuals in knowledge-flows (i.e., methodological individualism[2]).

This paper uses the Jacobian analytical framework of cities as a starting point. Within this framework, the analysis focus on agglomeration effects, dynamic externalities, regional clustering and local knowledge as explanations for cities and regional growth. The relatively high degree of spatial concentration in cities emphasizes features such as local embeddedness, social and professional networks, and face-to-face communication. Thus, as in Austrian economics, the urban economic framework identifies factors such as local knowledge and the dispersion of knowledge as important growth factors. Despite the inclusion of "place" in the famous argument "particular circumstances of time and place" by Hayek (1948), the Austrian theoretical framework is almost entirely lacking a spatial dimension. Recently, however, the situation has started to change (e.g., Andersson 2005; Desrocher 1998; 2001; Heijman & Leen 2004; Andersson 2012), with the development of a new line of Austrian economics that incorporates a

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[2] Desrocher (2001, p. 26) argues that the "traditional geographical perspectives" does not contain an individualistic approach but rather applies a "regional innovation system"-approach. Because of the access to detailed register-based data on both the individual and firm levels, empirical research on cities and externalities has become increasingly individualistic in its methodology.

spatial dimension to explain the transmission of knowledge, entrepreneurship, innovations, and markets.

In densely populated cities, both individuals and firms can take advantage of positive agglomeration effects and knowledge-spillover which increase the propensity to innovate and thus increase economic welfare (e.g. Audretsch 1998; Malmberg & Maskell 2002; Storper & Venables 2004). In fact, theories of dynamic externalities can be used to explain both how cities form and why they grow (Glaeser, Kallal, Scheinkman & Shleifer 1992). This paper builds on these insights and develops an analytical framework that includes both the emergence and growth of cities using a spontaneous order perspective.

The remainder of the paper is structured as follows. Section 2 provides an overview of the development and importance of cities. The following section discusses the importance of spatial proximity in the emergence and development of urban economies. This section provides a theoretical framework that focuses on dynamic externalities, agglomeration economies and the importance of knowledge flows for knowledge-intensive firms, entrepreneurship, innovations, and city dynamics. Section four discusses spontaneous order of cities, the Hayekian knowledge problem, and how it can be related to tacit knowledge and face-to-face communication. The final section summarizes and concludes the paper.

2. Global Cities and Their Economic Power

The importance of cities to economic dynamism and growth cannot be overemphasized. For example, recent data show that nearly 90 percent of the total US economic output is produced in cities. American cities also account for approximately 85 percent of all jobs in the US (Florida, 2012). This feature is not unique to America; rather urbanization is occurring across the globe.

Today, half of the world's population lives in cities, and United Nations estimates that this will rise to 70 percent in 2050. The concentration of urban economies is even greater when the data are disaggregated. For example, the largest 600 cities, which comprise one-fifth of the world's population, account for 60 percent of the global GDP (McKinsey 2011).

The group of global cities is not static; rather, the specific cities that constitute the top 600-cities are continually changing. Current economic development in the southern and eastern parts of the world will lead to a shift in economic power. McKinsey (2011) estimates that in 2025, 136 new cities will enter the top 600 group, all of which are located in the developing world. The economically most important city development is occurring in China, from which 100 of the new top 600 cities are expected to emerge. Thirteen of the new cities will be in India and another eight cities will be in Latin America. Hence, it is crucial for our understanding of what drives global and regional economic growth to understand how cities emerge, develop, and become economically powerful.

The conventional method of globally ranking cities has involved the use of population size. A common definition of mega-cities includes metropolitan regions with more than 10 million inhabitants (Florida, Gulden & Mellander 2012). Table 1 presents a ranking of the 10 largest cities in terms of population in 2011 and estimates for 2025. The largest urban agglomeration is Tokyo (Japan) with 37 million inhabitants, followed by Deli (India) and Shanghai (China).

Table 1: The 10 largest urban agglomerations in terms of population, 2011 and 2025

Rank order	Year 2011			Year 2025		
	Country	**City**	**Populations (millions)**	**Country**	**City**	**Populations (millions)**
1	Japan	**Tokyo**	37.22	Japan	**Tokyo**	38.66
2	India	Delhi	22.65	India	Delhi	32.94
3	Mexico	Mexico City	20.45	China	**Shanghai**	28.40
4	USA	**New York**- Newark	20.35	India	Bombay	26.56
5	China	Shanghai	20.21	Mexico	Mexico City	24.58
6	Brazil	São Paulo	19.92	USA	**New York**-Newark	23.57
7	India	Mumbai (Bombay)	19.74	Brazil	São Paulo	23.17
8	China	**Beijing**	15.59	Bangladesh	Dhaka	22.91
9	Bangladesh	Dhaka	15.39	China	**Beijing**	22.63
10	India	Kolkata (Calcutta)	14.40	Pakistan	Karachi	20.19

Note: Bold indicates that the city is also present in one of the rankings of the economically most powerful cities in the world (Table 2).
Source: Source: United Nations, Department of Economic and Social Affairs, Population Division (2012).

Only three of these mega-urban agglomerations (Tokyo, New York, and Beijing) qualify for the top-10 ranking lists that measure the economic power of global cities (Table 2). That is, many of the largest cities in terms of population appear to be located in the developing world, with a rapid rate of urbanization. Many of these urban-agglomerations suffer from the same socioeconomic and economic problems that were present in the developing world during the industrial revolution in the 19th century (Dahiya 2012; Retsinas 2007). Thus, if we are interested in the most economically powerful cities, we must employ other metrics.

Economic strength is not a function only of population; one must also include factors such as productivity, technological change, human capital or skills, financial development, and the rule of law and institutions. Until recently, it has been difficult empirically to compare and rank cities according to their economic power. The main problem has been the "*lack of good, comparable and systematic data*" (Florida, 2012). A number of research institutes and think tanks throughout the world have exerted a significant amount of effort into finding this type of data, and there are

now reliable (and comparable) metrics at hand. Table 2 presents six of these measures; the sixth metric is a weighted average of the first five metrics computed by Florida (2012).

The focuses of these indices differ, but together, they provide a good indication of which cities are the most economically and financially influential.[3] The city of New York is ranked in first or second place in each of the five metrics and thus receives the highest overall score. London is the second most powerful city, followed by Tokyo in third place.

Table 2: The World's Most Powerful Cities

Rank	Global Economic Power Index[a]	Global City Competitiveness Index[a]	Global Cities Index[a]	Global Financial Centers Index[a]	Global City GDP 2025[a]	Overall score for global cities[b]
1	Tokyo	New York	New York	London	New York	New York (48:5)
2	New York	London	London	New York	Tokyo	London (43:5)
3	London	Singapore	Paris	Hong Kong	Shanghai	Tokyo (37: 5)
4	Chicago	Paris (tie)	Tokyo	Singapore	London	Paris (25:4) tie
5	Paris	Hong Kong (tie)	Hong Kong	Tokyo	Beijing	Hong Kong (25:4) tie
6	Boston	Tokyo	Los Angeles	Zurich	Los Angeles	Chicago (20:5)
7	Hong Kong	Zurich	Chicago	Chicago	Paris	Singapore (15:2)
8	Osaka	Washington DC	Seoul	Shanghai	Chicago	Shanghai (11:2)
9	Washington, DC (tie)	Chicago	Brussels	Seoul	Rhine-Ruhr	Los Angeles (10:2)
10	Seoul (tie)	Boston	Washington DC	Toronto	Shenzhen	Zurich (9:2)

Note:
a) Global Economic Power Index: Martin Prosperity Institute; Global City Competitiveness Index: The Economist; Global Cities Index: AT Kearney; Global Financial Centers Index: Z/Yen; Global City GDP 2025: McKinsey Global Institute.
b) The column includes weighted averages of the five other global city rankings. The values within the brackets show the total score from the five ranking lists (e.g., "10 points for first place, 9 points for the second rank etc.). The second value is a measure of the number of rankings in which the cities are included (Florida 2012).

Source: Florida 2012 (http://www.theatlantic.com/business/archive/2012/05/what-is-the-worlds-most-economically-powerful-city/256841/).

Table 2 indicates that although the economic power in the world is shifting towards Asia, especially China, a considerably amount of time will likely pass before any of the Asian cities

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[3] Another dimension to include could be Acs, Bosma, and Sternberg (2008) that uses the Global Entrepreneurship Monitor Data (GEM data) to rank world cities according to i) early stage entrepreneurial activity, ii) entrepreneurial perceptions and iii) the characteristics of early-stage entrepreneurial activity.

(except for Tokyo) rises to the top of the metrics. Which factors or processes then make these top-ranked cities so economical and financial influential/powerful? A related question is why the low correlation between the economically most important cities and the largest cities in terms of population can persist?

3. Theories of knowledge flows, dynamic externalities and cities

Theories of city growth are based on the assumption that progress is generated by spatially co-located firms in which the knowledge flows between individuals working in such firms are significant. In this context, cities grow because individuals interact with one another and freely absorb knowledge. In more rural areas, the interactions and, hence, the knowledge spillovers between individuals are less intense, which is one explanation as to why cities generally grow much more rapidly than rural areas. The focus on knowledge flows between individuals who work in an area indicates that urban economics tend to adopt an individualistic methodology.

Furthermore, central to the Austrian tradition is the role of spontaneous order. In this section I first present the role of knowledge as interpreted in urban economics, and in section 3.2 I discuss the spontaneous order approach. Section 3.3 combines the two theories by highlighting differences and similarities and attempts to provide an enriched picture of the role of knowledge in city growth and formation.

If we view cities as the engines of economic growth and believe development and that spatial proximity simplifies the transmission of ideas then we could expect knowledge flows to be especially important in cities. Marshall (1890) defines several factors that generate knowledge such as i) specialized labour, ii) specialized suppliers, and iii) knowledge dispersion, which spread through networks and other information-based activities.

3.1. Dynamic Externalities

Thus, theories of dynamic externalities could be used to explain both how cities form and why they grow (Glaeser et al., 1992). The key determinants of the model are spatial co-location and knowledge spillovers which improve the growth rate for regional specialized firms relative to regionally isolated firms. The dynamic externality approach consists of three different theories of externalities and knowledge spill-overs that differ on several important issues: i) the MAR (Marshall-Arrow-Romer) theory, ii) Porter's theory and iii) Jacobs' theory (Glaeser et al., 1992).

The MAR approach applies to intra-industry knowledge spillovers, i.e., those that occur between firms within *a single* industry. The theory originates from Marshall (1890), who applied it to city formation and it was subsequently more formally developed by Arrow (1962), and refined and extended by Romer (1986). In essence, the MAR theory argues that industry specialization leads to increasing knowledge spill-over between firms which facilitates long-term growth for both the industry and the city in general. However, because of incomplete property rights knowledge of new innovations will be spread to neighboring firms without compensation. Because the outflow of knowledge is not fully compensated the return on investment is lowered and hence, incentives to innovate are lower. Thus, the rate of innovation and growth would benefit from reduced competition between firms that immediately copy new products (Romer 1990). Based on this, MAR argue that local concentration is beneficial for the rate of innovation and growth because it enables firms to internalize their innovations.

In contrast, Porter (1990) disagrees with MAR and argues that local competition is more beneficial for co-located firms because innovations are easier to adapt in a competitive environment; and hence, "externalities are maximized in cities with geographically specialized, competitive industries" (Glaeser et al., 1992 p. 1128). In competitive environments, innovations

are more rapidly adopted, and innovations improve more rapidly. In the Porter theory context, firms that do not develop technologically will not keep pace with their competitors, even though such firms cannot internalize all the returns from their innovation.

However, Jacobs (1969) argues that industry diversity (compared with specialization) generates beneficial conditions for entrepreneurship and innovations because the main element of knowledge flows is obtained from outside of the core industry. Both Porter and MAR argue that the most important knowledge flows are found internally within in an industry. In addition, Jacobs agrees with Porter (1990) that local competition generates a better climate for the adaptation of innovations compared with local monopolies, as argued by MAR. The empirical literature on dynamic externalities is inconclusive on the issue.

3.2. Internal and external knowledge capacity

A consensus in the literature on agglomeration economies is that firms benefit from internal learning but that external knowledge in urban regions is also of great importance. Empirical research indicates that the external knowledge flows in a region generates nearly equal intra-firm investments (Keller 2010; Lööf & Nabavi 2012). Consistent with the arguments proposed by Jacobs (1961), urban economists has demonstrate that geography is relevant and although the largest multinational firms and innovative firms are closely linked to the "global stock of knowledge" these firms predominately conduct their innovation processes in a few key regions (Rugmann 2000).

Research on innovation economics shows that both innovation and knowledge spillovers are spatially localized and concentrated (Feldman & Kogler 2010; Johansson et al., 2012). For example, large metropolitan regions produce disproportionally more patents than do smaller

regions. The results suggest that spatial co-location in entrepreneurial cities generate increasing returns on innovations that do not exist in smaller cities. However, co-located firms with higher levels of internal knowledge capacity are likely to reap more benefits from positive externalities in a city (Johansson, Lööf & Nabavi, 2012). That is, to be able to absorb the external knowledge flows in a region the firm must have relatively high levels of internal knowledge capacity. Using Swedish register-based data, Johansson et al., (2012) argue that there are large significant differences between innovative and non-innovative firms in their ability to absorb and assimilate external knowledge. Being located in a region with high levels of external knowledge increases the productivity and long-term growth of innovative firms, whereas there is no corresponding effect for non-innovative firms. That is, to take advantage of external knowledge flows, a firm must possess a large internal knowledge base.

How (or why) does spatial proximity affect innovations and firm productivity? Firms benefit from being located close to a dense market that provides a variety of knowledge resources and a labor force consisting of a wide spectrum of qualifications and competences. This diversion of knowledge supply and human capital provides the foundation for knowledge exchange and creative interaction between firms and individuals in a region. Thus, agglomeration effects increases the rate of return on human capital and innovation (Gleaser and Ponzetto 2010), which increases the growth of cities. In densely populated areas knowledge spillover makes it profitable for firms to be located near one another because they can benefit from the knowledge and innovation activities of other firms (Fujita & Thisse 2002). In such settings, a firm can also take advantage of knowledge spillovers from specialized business services and other sources external knowledge.

4. Spontaneous order of cities.

The above observations regarding the economic importance of cities to global economic development clearly shows that data on the national level can be quite misrepresentative. One important effect of globalization is that national political borders become less relevant in economic terms; in this economic climate, firms choose location with the highest profitability and individuals choose to live in places in which they have access to opportunities. Thus, both capital and labor locate in places with the highest returns, opportunities, and productivity. Empirical research shows that regional economic growth is highly persistent (e.g., Fritsch & Wyrwich 2012; Decressin & Fatás 1995). Cities or regions that have a high level of economic growth generally have a long history of entrepreneurship and innovation.

The groundbreaking scholar Jacobs (1961; 1969) argues that diversified cities/urban economies are optimal environments for innovation and entrepreneurship. Through innovations, job and wealth creation, entrepreneurship generates long-term increases in living standards (Acs & Audretsch, 1988; Cagetti & de Nardi 2006). Research also shows that both innovation and entrepreneurship benefit immensely from face-to-face communication and spatial proximity. In her research, Jacobs initially studied cities with a focus on the internal structure of neighborhoods and how such structures support meetings between individuals. Jacobs applies an ecological analytical framework that has been subsequently developed to embrace the spontaneous order argument (diZerega 2013, this issue). In her framework, a city is defined as "*a settlement that consistently generates economic growth from its own local economy*" (Jacobs 1969, p. 262).

4.1. Spontaneous orders, knowledge and cities

Spontaneous order is the idea that individuals strive "*to achieve their own purposes and plans can through the guiding signals and incentives of the price system result in a socially desirable allocation and distribution of resources*" (Boettke 2013, p. 2). The concept corresponds to terms such as emergent order, self-organizing systems and mutual causality (diZerega 2004 p. 446). Economic theory includes all purposive human action, and hence it is not possible to isolate or dispatch the economic realm of human action. Spontaneous orders are coordinated by "order-specific feedback" which together with agglomeration effects and location specific attributes constrain the order. The modern understanding of spontaneous orders steam from Polanyi (1961) and Hayek (1970) and it refers to the independent individuals that pursue plans in order to accumulate order-specific assets. In the market economy actors aim to maximize their economic wealth and in a democracy individuals maximize votes given for example election rules (Andersson 2013). Other spontaneous orders have other order specific rules which constraint the actors in an attempt to maximize order-specific assets. In civil societies actors need to take into account the constraints from different co-existing orders when maximizing utility or order-specific resources.

Hayek uses spontaneous order theory to explain and praise the market and to argue that moral traditions are generated by evolution. Spontaneous order is created by individual actors' by the decisions of individual actors' and is thus a by-product with no specific aim or goal. Individuals can use the abstract signals, such as prices or evolved rules, generated by this order to pursue their own goals. For example, prices in a market system give rise to rational expectations and enable individuals to act on information that they do not explicitly possess. Because no single individual or group is in control of all of the information that is needed to determine prices or the

evolution of culture, no individual in society is capable of planning economic activities or determining how cultural will evolve. In a market economy, this "planning" is conducted by all firms and individuals that operate on the market. For cities prices includes prices on land and offices, wages on labor and other input prices. The decision to locate in a specific region can be seen as an investment decision where the net present value should be positive, thus the make a net contribution to firm value.

Hayek (1937; 1945; 1948) argues that the market economy is the system that best allocate dispersed knowledge and hence generate the highest level of wealth. Market prices are "*a mechanism for communicating information*" (Hayek 1945, p. 526) and can be viewed as a coordinating mechanism that transfers knowledge across members of society. Market prices transfer only relevant information to market participants. In this sense the price system facilitates the "*division of labor but also a coordinated utilization of resources based on equally divided knowledge*" (Hayek 1945, p. 528).

Economic problems in society stem from change where the entrepreneur is the driving force of the market process. In its incessant quest for profit the entrepreneur act on changing market conditions and pushes the market system towards equilibrium. The market theory process that is based on two principles (Kirzner 1997, p. 62), this approach i) "sees equilibrium as a systematic process in which market participants acquire more and more accurate *mutual knowledge* of potential demand and supply attitudes, and ii) sees the driving force behind this systematic process in what will be described as *entrepreneurial discovery*". Unlike neo-classical economics, the market theory process sees the competitive process of entrepreneurial discovery as a systematic process that pushes the system towards equilibrium. Here, the entrepreneurial process is a way to gradually discover new knowledge and push back the boundaries of sheer

ignorance (Kirzner 1997). The competitive process reveals mutual awareness of prices, output and input qualities and quantities and pushes them towards equilibrium.

Therefore, economically successful societies have a superior advantage in terms of the ability to adapt and take advantage of economic changes, i.e., economies consisting of individuals who are alert to entrepreneurial discovery (Hayek 1945; Kirzner 1997) and have the inevitably quest for realizing profits from trade and innovation. Market economies are societies with effective knowledge dispersion and in which individuals have "the knowledge of the particular circumstances of time and place" (Hayek 1945, p. 521). Knowledge spillover is one of the building blocks of urban economies that can be used to explain both the emergence and growth of cities. For firms to take part of localized knowledge flows and "changing conditions" based on tacit or specialized knowledge it has to be spatially co-located with other firms. Interesting to note is that it is only firms with relatively high levels of human capital that benefit economically from external knowledge-flows (e.g. Lööf and Nabavis 2013).

Both within spontaneous order framework and the urban economics school dispersion of knowledge plays a determining role for economic development and growth. In urban economics, one speaks of dynamic externalities, which refer to knowledge-spillovers between employees in co-located firms, whereas in the spontaneous order framework there is a greater focus on the market process where the entrepreneur act on changing conditions which drives the economy forward. The similarities lay in arguments regarding knowledge and its importance for entrepreneurial discoveries and innovations. Tacit or specialized knowledge does not spread costless among members of society. To access or take part of the knowledge-flows individuals have to meet face-to-face which is a costly process. Andersson (2005) introduces another implication of a spatial perspective on the entrepreneurial process, namely that the choice of

location is an entrepreneurial act which includes profit opportunities. By being alert to new locations or benefits of co-location firms that locate in a specific city or region can make entrepreneurial profits in the same way as an entrepreneur discovering a new innovation or making profit on differences in relative prices. Hence, inclusion of space in the theory of entrepreneurship makes it more complete (Andersson 2005).

Kirzner argues that spontaneous orders (as discussed by Boettke 2013) should be analyzed by assuming a fixed and given framework. For example, given pre-defined moral codes, ethical rules, and legal institutions that define, for example property rights and the freedom of contracts the analysis occurs within a pre-specified institutional framework. According to Kirzner, analysis of the emergence of institutional frameworks is much more difficult, and Kirzner is critical to the fact that "existing economic tools" are sufficient for this task.

4.2. Cities consists of more orders than the market

A market economy is the most conventional example of a spontaneous order. The civil society consists of more than just the market. Cities constitutes for example of spontaneous orders such as language, networks, and culture. To access these orders face-to-face communication is of great importance.

The role of culture is briefly touched upon in the discussion of tacit knowledge. Many agglomeration economies develop special cultures which increases both the benefits and the costs for the participants. The agglomeration culture increases the costs of entry. Kiriakos (2011) is an interesting study of "the cost of being there". Kiriakos (2011) analysis the cost of not being located in Silicon Valley for Finnish professionals where the interviews with the Finnish businessmen reveals disadvantages of being located in Finland instead of in Silicon Valley.

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Examples that are brought up in the interviews are indirect costs such as not being invited to network meetings, seminars, missing out on business opportunities for the only reason that one has a Finnish address and phone number. The discussion relates clearly to the characteristics of face-to-face communication that are being highlighted by Storper and Venebles (2004 see section 3.3 for further discussion).

The culture of agglomeration also relates to the spontaneous order of language. To take part and be able to access the tacit knowledge in the industry one has to be able to communicate with the other participants. How this communication develops over time is also a spontaneous order. The channels for communication could also be considered a spontaneous order. Within densely populated areas there are many examples of clubs, networks and associations that facilitate the communication of tacit or specialized knowledge. Such congregations, enables members of society to get superior knowledge of new innovations, developments and other issues that are important for technical development and entrepreneurship. They are also important for knowledge transfers of new business, potential employees and business opportunities. Within these networks specialized cultures and ways of communication evolves over time. That is, firms invest in these economic networks in order to get superior information about the industry and its development. The links accumulate economic value over time. One can apply the same type of analysis to these networks as to the market. They are enabled by human action but the order is a by-product and there is no goal or aim with the networks and the associated culture or specific language.

4.3. Dissemination of Knowledge

Depending on its characteristics, knowledge can be divided into two main groups: i) specialize/private knowledge and ii) ubiquitous/transparent knowledge. For the analysis of the emergence of cities, the first group is relevant to the discussion of the spontaneous order of cities. In addition, there are two types of specialized knowledge ia) tacit and ib) codified knowledge (Storper & Venables 2004). In the context of entrepreneurship and innovations, specialized/tacit knowledge is of primary importance.

The main difference between codified knowledge and tacit knowledge is how it is communicated. Codified knowledge can be communicated through symbols, i.e., written texts, whereas tacit knowledge requires direct experience within a given context. Tacit knowledge is a kind of personal knowledge and can only be transferred through social interaction such as face-to-face communication, conversions, debates, imitation and observation. In addition, agglomeration economies are often characterized with a contextual homogeneity or culture which thus makes it more distance sensitive and increases the benefits from spatial proximity. Face-to-face communication has four main effect on the collaboration process i) efficient communication, ii) enhanced trust and incentives in relationships, iii) improved screening and socialization, and iii) extra effort and innovation (Storper and Venables 2004).

5. Concluding Remarks

This paper shows that even despite the enormous development of information and communication technology (ICT) which makes it possible to spread information worldwide in almost real time, knowledge spill-overs of tacit knowledge is still dependent on spatial proximity. Dynamic externalities are one of the key factors that generate city growth and emergence. There

are many similarities between the spontaneous order approach to economics and urban economics. Both have a strong focus on the dispersion of knowledge in society. Both frameworks also highlight the importance of entrepreneurship for economic growth and development. The current paper focuses on these aspects with the aim of showing how the two fields can gain from each other.

Over the last years there has been an increasing amount of research papers with the aim of bringing the two frameworks together which has enriched the analytical framework and enabled research a deeper understanding of the role of spatial co-location for economic theory. Another important development is the increasing amount of data which enables urban economic researcher to apply an individualistic methodology and come closer to empirically analyze the knowledge-flows between individuals. This development corresponds well to the understanding of human action as applied in the Austrian methodology.

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