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The Creative Class and Regional Growth: Towards a Knowledge Based Approach

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Research in regional growth has been characterised by two trends in recent years. The first is that creativity and talents are seen as parameters for regional growth. The creative class approach has argued that competition for talents has increased as innovation becomes crucial for maintaining competitiveness. This has forced local and regional authorities to implement new political actions toward supplementing the traditional business orientated policies with policies orientated towards attracting and retaining people. The second trend argues that regional analysis and policy-making need to be disaggregated to meet the diverse needs of different regions and due to the particularities characterizing innovative industries drawing on different knowledge bases. This paper argues that combining the understanding of knowledge on a disaggregated level that characterizes the knowledge base approach and the perspective on talent that the creative class approach represents provide a promising framework for regional analysis.

The Creative Class and Regional Growth: Towards a Knowledge Based Approach

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Abstract

Research in regional growth has been characterised by two trends in recent years. The first is that creativity and talents are seen as parameters for regional growth. The creative class approach has argued that competition for talents has increased as innovation becomes crucial for maintaining competitiveness. This has forced local and regional authorities to implement new political actions toward supplementing the traditional business orientated policies with policies orientated towards attracting and retaining people. The second trend argues that regional analysis and policy-making need to be disaggregated to meet the diverse needs of different regions and due to the particularities characterizing innovative industries drawing on different knowledge bases. This paper argues that combining the understanding of knowledge on a disaggregated level that characterises the knowledge base approach and the perspective on talent that the creative class approach represents provide a promising framework for regional analysis.

The Creative Class and Regional Growth: Towards a Knowledge Based Approach

Introduction

Two trends have characterized the recent years of research in regional growth. On one hand, it has been recognised that creativity and talents are behind regional growth (Florida 2002a, 2005a, 2005b). According to the stream of research, time-space compression has resulted in the emergence of a regionalizing learning economy (Asheim and Vang 2005) where competition for talent has increased as innovation becomes crucial for maintaining competitiveness. These insights have entered the regional political agendas. Subsequently, it has forced local and regional authorities to implement new political actions toward supplementing traditional policies towards attracting investments (business climate) with people's climate-policies. This is done with the purpose of attracting and retaining the talents and members of the creative class as such. Richard Florida's work, condensed in his bestseller *The Rise of the Creative Class* (2002a), has played a crucial role in spurring these interests. Beyond doubt, this literature on the creative class and the competition on talent and innovation have provided valuable insights.

On the other hand, it has been argued that regional analysis and policy-making need to move beyond the highly aggregated level characterizing Florida's work and differentiate between the particularities characterizing innovative industries drawing on different knowledge bases (Asheim and Gertler 2005, Asheim and Vang 2004, 2005). This literature differentiates between three knowledge bases; synthetic, analytic and symbolic. The individual knowledge bases are constituted by different mixes of tacit and codified knowledge and a different need for institutional support deriving from the nature of output. The knowledge based literature has, however, not yet explicitly incorporated the insights on the importance of talents.

This paper aims at adapting the insights from the creativity class approach to the insights of the knowledge base approach. The assumption is that there is a need for differentiating between industries drawing on different knowledge bases. The nature of the knowledge bases determines the importance of attracting and retaining talents; subsequently, the need for and content of a people's climate.

The structure of the paper is as follows. The paper begins by outlining the central elements of the creative class approach. Following Florida (2005b), there is an urgent need for this exercise as ' … a good deal of the popular debate over these ideas has become diluted, ill informed, overly ideological …and straw-man arguments can begin to overwhelm honest

and forthright discussion' (p. 2). Special attention is paid to the importance attributed to retaining and migration of talents. The next section introduces the knowledge base approach with the aim of rethinking the importance of migration of talents; subsequently, reformulating Florida's aggregated policy recommendations to the demands of the specificities of the different knowledge bases. We end the paper by concluding and pointing to the need for further research.

The Creative Class Approach

While the knowledge base approach has the organization of the innovative production and the related support structure as the prime focus, the creative class approach pays attention to retaining and attracting talents for innovative production. The aim of the section is to clarify what is meant by talents/creative class, and which role it plays in regional development.

Upgrading Cities for the Creative Class

Florida's conceptualisation of the importance of talents stands on the shoulders of insights generated by research in economic and urban geography on the link between globalisation and the crisis of Fordism. According to this, the miss-match between the institutions that underpinned Fordist mode of accumulation up through the 1970s and 80s transformed the Fordist state into a regionalizing learning economy (Asheim and Vang 2005, Lundvall 1992) where innovative industries constitute the foundation for the economies of the developed world.

Harvey (1989) examined this shift in strategically governance of city-regions as a move from managerial towards an entrepreneurial approach. According to Harvey, four strategies were used in shaping competitiveness. The four strategies that Harvey listed were to a large extent the mantra of planning in the late 1980s and early 1990s: 1) Creation of exploitation of particular advantages for the production of goods and services; 2) improve competitive position with respect to the spatial division of consumption; 3) acquisition of key control and command functions in finance, government or information gathering and processing, and finally; 4) to compete on the redistributed surplus from central governments.

These strategies were seen as elements in the increasing competition between cities on national and transnational levels. In Florida's vocabulary the policies mainly focus on business climates and thus building regional comparative advantages based on allocative efficiency. The core of business climate policies refers to policies targeting firms' financial

incentives. Because of the focus on business policies, the strategies were blind to the requirements from innovative industries; subsequently, the importance of retaining and attracting talents. Innovation industries are based on learning, that is knowledge creation, acquisition and use.

The Creative Class and its Role in Regional Development

According to Florida, the creative class represented by talents constitutes the core of innovative industries. Compared to other classes, the creative class poses new conceptual challenges since the members of the creative class do not see themselves as members of a class (Florida 2002a). In other words, the creative class fails to fit into the traditional class concept as it is defined by creative occupation within a variety of innovative industries. The creative class can be divided into two occupational sub groups: the Super Creative Core being persons occupied with computers, mathematics, architecture, arts, science and education and the Creative Professionals being persons occupied with management, business and finance legal issues, health care and high-end sales (2002a, p.328). The creative class – especially the Super Creative Core – contributes the 'raw material' to innovative production – that is new ideas, new approaches and visions. Compared to research stressing the importance of the individual genius, Florida links idea-generation and thus innovativeness to the availability of heterogeneity of voices and perspectives. The more heterogeneous the creative class is, the more possibilities it opens for combining and mixing different ideas and viewpoints which in turn leads to a large supply of possible innovations.

Inspired by Jane Jacobs (1985), Florida (2002a) emphasises the importance of cities as the ultimate location for innovative industries (see also Scott et al 2001, Scott and Storper 2003 and Storper and Venables 2004). He suggests that the heterogeneity found in cosmopolitan cities is the backbone of creativity and thus innovations. He argues that companies agglomerate in cities to draw on the concentration of talented people who generate innovation and economic growth. The ability to rapidly mobilize talent from such a concentration of people is considered a tremendous source of competitive advantage for companies and subsequently for regions. Constellations of talents and creative people, he argues, are most commonly found in large city regions where the diversity of urbanising economies is more abundant.

These insights go against earlier insights that linked innovative performance to social capital. Putnam (1993) is used in many of these studies to argue that social capital, understood as networks and connections, trust, common rules etc., is of crucial importance for creating

learning environments, transforming knowledge into product or process innovations (e.g. Maskell and Malmberg 1999). According to this string of literature, innovation within industries will have better odds when strong ties between people are present.

Florida (2002a) comes to different results when analysing the creative class. He argues that social capital as defined by Putnam (1993) is exclusive in the sense that social interaction is based on communities of likeness. The problem of Putnam's social capital is that its exclusive nature eliminates diversity and hence strangles space for innovative thought. Simultaneously, the exclusive nature of strong ties makes it very difficult for outsiders, e.g. migrants, to enter social circles and, hence, mobility is lowered.

The creative class favours quasi-anonymity based on weak ties rather then strong ones (Granovetter 1973, Grabher 1993). Florida argues that a new social structure is emerging. People in the creative class do not want neighbours peering over the fence. Former social structures have proven restrictive and have been substituted by new ones that are weaker and, hence, open to innovative and diverse mindsets. Alongside, weak ties allow a much faster inclusion into communities favouring rapid absorption of new ideas as well as adjustment of norms and values. This, together with other factors such as labour markets characterised by high demand for qualified personnel, cultural diversity and tolerance, low entry barriers and high levels of urban service, largely determine the economic geography of talent and of creativity, both of which display concentration in large cities[1].

Hence, Florida argues that it is not enough to attract firms; the 'right' people also need to be attracted. Thus he calls for complementing policies for attracting firms (business climate) with policies for attracting people (people's climate). People's climate can be understood as a series of ingredients that spice up the city making it 'cool'. On the supply side, this covers different amenities such as cultural organization, bars, nightclubs, parks, and Florida's notorious bike tracks. Recently, he (2005a) has also emphasized a well functioning welfare state providing social, educational and economic comfort and security.

This has, however, been recognised in economic and urban geography for a long time. Florida's contributions come from supplementing the traditional amenities with the importance of diversity and tolerance for the creative class. Places with high rates of uniform

[1] Florida's reference to Putnam's work suggests an understanding of social capital as bonding, i.e. rooted in civicness. However, social capital can also be considered as 'bridging'. As such it can co-exist with weak ties as this form of social capital is a result of organizational and institutional innovation at the societal level (e.g. labour market collaboration and legislation in the Nordic countries).

identities and cultures are not attractive to this class. Rather they seek for places offering multiple opportunities and diversity.

The importance of these factors has been documented by Florida (2002a) and his colleagues. Through quantitative studies they find correlation between ethnical, social and sexual diversity, concentration of talent and clustering of high-tech industries. Diversity is propelled by tolerance. Tolerance refers to the acceptance of individual differences and an absence of pressure towards conformity. Based on empirical investigations, Florida and Gates (2002) conclude that '…a city's diversity – its level of tolerance for a wide level of people – is the key to its success in attracting talented people. Diverse, inclusive communities that welcome unconventional people – gays, immigrants, artists, and freethinking "bohemians" – are ideal for nurturing the creativity and innovation that characterize the knowledge economy' (p.32).

Tolerance also underpins the ability to attract talents as the creative class tends to gravitate towards urban areas characterized by bohemian values and openness. According to Florida, cities with the highest degree of ethnic, social and sexual tolerance is capable of attracting the most promising talents on a global scale. The logic in the argument is simply that it allows for a global sourcing for the best ideas; hence, a city located in a non-tolerant environment will push valuable innovative inputs away. In the context of Florida's home country, the US, he explains it in this way:

'It is not the country's generous endowment of natural resources, the size of its market, or some indigenous Yankee ingenuity that has powered its global competitiveness for more than a century. America's growth miracle turns on one key factor: its openness to new ideas, which has allowed it to mobilize and harness the creative energies of its people.' (Florida 2004, p. 122)

This suggests that conventional business climate policies should be supplemented by people's climates aiming at retaining and attracting talents from all over the world. However, talents and tolerance only constitute two out of the three pillars underpinning the successful development of innovative industries and regions; a so-called technological foundation is also required. The outcome of attracting and retaining a pool of talents should be directed towards high-tech industries as they are considered to be the most important means to generate regional growth. "Each is a necessary but by itself insufficient condition: To attract creative people, generate innovation and stimulate economic growth, a place must have all three" (Florida 2002, p. 249).

Summing up

The role of the creative class in promoting regional economic development has called for new competitive measures. In opposition to the 1980s and early 1990s, cities today compete on at least two fronts. Firstly, cities try to attract investments by forming an inspiring business climate. This is done by providing attractive space for location, actively guiding firms through public administration and bureaucracy etc. Secondly and narrowly linked, the ability to attract and retain highly skilled labour is crucial to the current and future prosperity of cities. Hence, cities seek to attract talents from all over the world by shaping a competitive people's climate.

Diversifying the Creative Class Approach – the perspective of knowledge bases

While we concur with the need for paying more attention to the role of talents as a source of developing innovative industries and regions, this section aims at illustrating why there is a need for de-aggregating Florida's general claims and contextualise them to the particularities of the knowledge bases which different industries draw upon. Unless this activity is undertaken, causal mechanisms and hence regional policy recommendations are likely to be misleading. Thus we suggest that the creative class approach could gain from adding a distinction between knowledge bases - acknowledging that different knowledge bases ask for different political actions and depend on different types of talent in different parts of the innovation process.

We do not intent to give an exhaustive presentation of the characteristics of the different knowledge bases, nor do we wish to elaborate on the importance of multiple sources of knowledge bases for innovations (see Asheim and Gertler 2005 and Asheim and Vang 2004 for more detailed elaborations). We merely provide sufficient presentation of the knowledge base approach for engaging in discussing the importance of talents and especially migration of talents for the three different knowledge bases.

The knowledge-based approach – originating in the Regional Innovation System literature - identifies three different knowledge bases: the synthetic (engineering based), the analytical (science based) and finally the symbolic (creative based) (Asheim and Vang 2005, Asheim and Gertler 2005). The typology could be enlarged. In Asheim and Vang (2004), artisan knowledge base is used to cover for the artisan base and derived competences used in

classical industrial districts in the Third Italy with traditional low-tech clusters (footwear etc.), while Gertler and Wolf (2005) use hybrid knowledge base for industries combining analytical and symbolic knowledge bases. To enlarge the typology is, however, not the aim of the paper. A knowledge base refers to several elements. First of all, it refers to a mix of tacit and codified knowledge used in a particular industry; secondly, to codification possibilities and limits; and, thirdly, to competencies and skills and the characteristics of the institutional support system (Asheim & Vang 2005).

Policies for building innovative regions (and innovative industries) should reflect the particularities of requirements of the different industries for talents, institutional support, and so forth. The needs depend on the character of the knowledge base; Florida fails to distinguish between the different requirements and thus his policy advice is too general, and thus inadequate.

The Synthetic Knowledge Base

Typically, industries drawing on the synthetic knowledge base are industrial settings where the innovation mainly comes from new combinations of partly tacit and partly codified but existing knowledge. Often innovation is incremental product innovations and often developed in a user-producer interaction context aiming at solving the user's specific problems. The synthetic knowledge base is present in e.g. plant engineering and specialized advanced industrial machinery. Products are often dedicated or produced in small series. R&D can take form as applied research, but more often R&D takes place in specific product or process development projects. However, in general the innovative activities can be seen as more D than R. Links between university and firms or industries are relevant, but they are more in the field of applied research and development than in basic research. Knowledge is mostly created in an inductive way through testing, experimentation and simulation or through practical work. Knowledge is embodied in technical solution and engineering work and is only partially codified. Tacit knowledge seems to be more important than in e.g. the analytical knowledge base, in particular due to the fact that knowledge is often created through experience gained at the workplace and through learning by doing, using and interacting. Compared to the analytical and symbolic knowledge bases the synthetic is more based on skills and know-how, and knowledge production partly emerges from circulation within production routines.

The innovation process is often oriented towards the efficiency and reliability of new solutions, or the practical utility and user-friendliness of products from the customer's

perspective. Overall, this leads to a rather incremental way of innovation, dominated by the modification of existing products and processes. Since these types of innovation are less disruptive to existing routines and organizations, most of them take place within existing firms, which is why spin-offs are not very frequent. Industries based on synthetic knowledge bases tend to rely on learning by doing, experimentation and a high degree of tacit knowledge.

The Synthetic knowledge base: talents and migration

Industries drawing on a synthetic knowledge base tend to locate in proximity to lead users or in particular specialised clusters which cannot *a priory* be said to have advantages by locating in large urban areas. On the contrary, most of the cluster-literature stresses the importance of shared values and visions. The industries using the synthetic knowledge base are seen in clusters and industrial districts, which implies that these industries gain from relational propinquity and geographical proximity rather than multi culturalism and urban dynamics.

Industries drawing on a synthetic knowledge base do not have as high rates of creative class members as the analytic or the symbolic, but, according to Florida, engineering occupation does count as a creative one. Florida argues that the creative class prefers weak ties and quasi-anonymity; however, literature on industrial districts find that strong ties between co-located firms as well as between employer and employees are the essence of the competitiveness of these districts (e.g. Malmberg and Maskell 1997, Maskell and Malmberg 1999, Asheim 2000), which once again points to the sometimes square assumptions that the creative class approach argues.

The presence of strong ties based on a high degree of social capital makes it very difficult to add new ideas to such systems, as migration of talents will face difficulties in entering the social circles. Hence, new ideas developed outside these settings can have difficulties penetrating such systems. Industries of this kind need 'new blood' now and then to shake up the system and to avoid negative lock in. The tacit and informal way of doing things makes it difficult to implement new ideas coming from short visits by outsiders. The tacit character of the knowledge used within these settings requires longer stays for persons who want to enter the system. The tacit knowledge has an embedded cultural aspect and therefore creation and use of new knowledge within synthetic knowledge based industries require a cultural understanding. Hence, attraction of talents in large masses does not seem to be a solution for promoting such settings. On the contrary, a large supply of foreign elements might undermine the embedded structures within the setting – though a limited supply can increase competitiveness both in the short and long term. The industrial districts in the Third Italy

represent examples of open economies with a high degree of export orientation, which implies openness to the needs of non-local customers. This is thus one important way for implementing non-local knowledge and technology transformation within industries drawing on the synthetic knowledge base.

Policies toward the Synthetic knowledge base: business and people's climate policies

Industries drawing on a synthetic knowledge base depend on the passing on of tacit knowledge. This process is embedded in cultural institutions and hence fragile to destructions of the existing institutions. However, underpinning and systematically upgrading skills and assets within the industries is important for developing the industries and thus innovativeness and competitiveness. Policies toward promoting the industries can be focused toward education and up-skilling of existing and new employees. In these industrial settings, governments can help building up organizations together with firms and unions that provide livelong education. This is the successful case in some of the Scandinavian countries where regional educational centres give access to educational courses often developed in cooperation with firms located in the region.

For these industries providing a people's climate is not necessarily the best way to promote future competitiveness. A tolerant and talented environment can of course attract and retain talents, but creating a business climate based on skilling and up-skilling of the labour force as well as building other institutions and organisations that can facilitate e.g. adoption and adaptation of new technology in the production process might have more powerful influence.

The Analytical Knowledge Base

Industries drawing on an analytical knowledge base are much more dependent upon abstract formal codified knowledge than tacit knowledge. The analytical knowledge base refers to industrial settings, where scientific knowledge is highly important, and where knowledge creation often is based on cognitive and rational processes. Types of industries that rely on an analytical knowledge base are genetics, biotechnology and information technology. Both basic and applied research as well as systematic development of products and processes are relevant activities. The firms within the analytical knowledge base depend more on R than D. Companies typically have their own R&D departments, but innovation processes also depend on research and results from organizations outside the firm such as universities. Thus, links between universities and firms and industries are important and more frequent than in the other types of knowledge bases. Knowledge inputs and outputs are more often

codified than in the other two knowledge bases. This does not, however, imply that tacit knowledge is irrelevant, since both tacit and codified knowledge always are involved in knowledge creation and innovation (Nonaka et al. 2000, Johnson and Lundvall 2001).

The codified character of knowledge within these industries makes transnational arrangements highly favourable. Knowledge transition is often seen through formal channels, but informal networks can also pass on knowledge about recent research. Knowledge can rather easily be spread within organisations and can therefore be transferred from one location to another. This favours a transnational organisation of activities both on a permanent as well as temporary basis. The industries drawing on the analytical knowledge bases can with advantage engage talents from multiple locations. Hence, a high degree of transnational arrangements can be seen in the industries through transnational organisation and project based cooperation.

The Analytical knowledge base: talents and migration

Because of the industries relying on codified knowledge, patents are more often seen within analytical knowledge base than in the synthetic or the symbolic. This makes results in innovation very concrete, and, hence, results of every research group can be measured and analysed. Consequently, a lack of qualified resources within certain fields can easily be illustrated and action can be taken. This forces international migration as companies can search worldwide for personnel with the right skills as cultural differences only play a minor role in the working situation. The attraction of talents to a certain location will, however, be influenced by the settings at the location. An intolerant and hostile environment will probably make attraction of talents difficult whereas an open and friendly environment makes attraction much easier, and, hence, the chance of creating a creative and professionally stimulating environment increases.

In addition to tolerant environments, researchers working within the scientific knowledge bases tend to add preferences of favourable conditions for exploring their scientific ambitions when they locate. In these industries, access to for example sophisticated laboratory equipment has a pulling effect. The scientific knowledge based industries tend to depend on high investments in laboratory equipments; hence, these are not ubiquitous available. Access to such equipment, collaboration with good universities, and so forth, might therefore influence on the attraction of talents as a supplement to openness, tolerance and bohemian values.

In the industries, drawing on an analytical knowledge base migration of talents is most relevant. The codified character of the knowledge facilitates cooperation between researchers from multiple locations. The researchers are necessary for their formal competencies. While face-to-face encounters are important – as opposed to buzz (Asheim and Vang 2005) – the high degree of codification tends to reduce the importance of permanent migration to some extent; reliance of creative tourism and travelling might often prove sufficient. Moreover, transnational corporations within these industries tend to be organized along global networks and temporary (virtual) projects which allow them to source competencies globally.

Industries drawing on the analytical knowledge base tend to locate and cluster around leading universities. This is even though the character of the knowledge is easily transferable. Explanations can be found in two different ways. First, formal and informal networks between organisations and employees – between universities and firms – can help private firms to have a state-of-the-art knowledge of what is hot on the international research agenda. Secondly, cities with leading universities tend to attract talents. First of all, this is done by providing attractive research facilities that meet the talents' own ambitions. Next, cities with large universities tend to have an international and intellectual atmosphere including tolerance. This can easily lead temporary visits to become more permanent. Therefore, though location in cities may not be the single most important factor in attracting talents for the analytical knowledge based industries, it might very well be the reason why talents choose to stay within an industrial setting for a longer period.

Policies toward the Analytic knowledge base: business and people's climate policies

The large influence of codified knowledge in industries drawing on the analytic knowledge base makes attraction of talents much more meaningful than for the synthetic knowledge base. Migration of talents within these industries can have an important effect on innovation. Researchers can be brought in for shorter or longer periods and be appointed due to their skills only. The codified nature of knowledge in these industries even opens for distantiated knowledge transition. To improve conditions for industries, drawing on the analytical knowledge base access to both national and international talents can prove important. Bringing in new researchers schooled in different traditions or with different mindsets facilitates innovation. This can be done by reliable governmental administration when firms seek green cards for new employees. Simultaneously, foundings to research institutions like universities can help build up an international environment of research that in time can develop into international magnets on talents working in certain industries as well as building links between universities and industries. This is a difficult task but can be done by public

private founded research projects etc. This is seen in e.g. pharmaceutical industries where joint research can be seen between hospitals, medical staff and private firms.

The industries drawing on the analytical knowledge base do not, however, only gain from the business directed policies as described above. These industries also gain from the creation of people's climate that will meet the wishes of the creative class. Though short term interaction between researchers is a possible strategy for innovation within these firms, they still need a number of researchers in R&D organisations that efficiently can anchor the knowledge created in the locality to the locality. Retaining attractive talents cannot only be done by stimulating their professional interests but also by providing them facilities that make them feel at home.

The Symbolic Knowledge Base

Industries drawing on a symbolic knowledge base tend to be the so-called creative industries (sometimes referred to as infotainment or cultural industries) (Scott 1997, Caves 2000, Florida 2002a, Pratt 2004), that is film, theatre, publishing, advertising, etc. As for the synthetic knowledge base, these industries refer to industrial settings where innovation takes place mainly through the application of existing knowledge or through new combinations of knowledge, and, occasionally, through setting new technical, aesthetical or narrative standards. Moreover, the innovations are different than in other types of knowledge bases as the products tend to be evaporative. They are evaporative in the sense that while they might exist physically in some form, they only get the consumers' attention for a limited time span. The first five weeks after the release of a feature film, for example, it will attract the majority of consumers; and the majority of the consumers have only limited knowledge about to which degree the film includes innovations. The extent to which they do contain innovations, the films have to create innovations which live up to the consumers' expectations about conventions for particular genres (unless they explicitly work with challenging genres). Innovation in these industries can be understood as market orientated innovations. This means that firms do not necessarily compete on being innovative but on providing the users/buyers with what they expect in a slightly new way. This also reflects that the main purpose of the products is to 'kill time' or provide info- or entertainment. Hence, the innovation – and here we mainly stress product innovations – does not refer to the need to solve specific problems coming up in the interaction with clients and suppliers or the like, as is the case for industries drawing on a synthetic knowledge base. There is not necessarily a problem to be solved but - at least for strongly commercial players - an interest in releasing a new product that can spur a high return on their investment. The producers in

the film industry, for example, need to maintain a high rate of product releases since the industries are winner-takes-it-all industries (Caves 2000), and, hence, have to rely on the law of large numbers. Minor independent producers, however, might not be driven by commercial interests to the same extent but by a political desire to get a message through, an artistic mission, and so forth.

The creative industries are the paradigmatic cases of project-based industries and consist of 'one-off'-products (occasionally a serial production) where a group of agents are brought together with the aim of producing one new product (Grabher 2002, 2004, DeFillippi and Arthur 1998). The new product can, for example, be a film where a director works with a group of actors, cameramen, cutters, etc. with the sole aim of producing one film. Afterwards, their ways may depart for years. The one-off project organization is a function of the market's need for new films and new genres, the directors desire to experiment with new actors, and so forth. The productive knowledge – being mainly know-how – used in these industries is highly complex, dynamic and tacit. The tacit nature of the knowledge is often linked to the tacit nature of new trends in subcultural communities (i.e. youth cultures, particular urban cultures etc.) (Florida 2002a), as these communities do not codify their knowledge; hence, large costs are associated with doing this.

Moreover, the industries do not in general aim at a codification; this has to do with conventions, time-pressure, formal competencies and the one-off nature of the industries. The importance of 'hard' technical skills tends to vary with the industry. In theatres it is minor; in film it is far more important while in animation it is highly important. Know-why as R&D and similar types of knowledge is almost absent in these industries though formalised techniques for screening for example a film is used.

The institutional support structure varies from country to country. Compared to industries drawing on analytical and synthetic knowledge bases, industries drawing on a symbolic knowledge base tend to rely more on learning-by-doing in the job; even in more formal training settings, the pedagogic principles seems to be based on learning-by-doing (Asheim and Vang 2005). Compared to the analytical knowledge base, substantial parts of the creative industries rely on government financed development projects. The role of the government, therefore, is of crucial importance. The archetypical industry, in this respect, is the film industry which tends to receive financial support from public organizations such as ministries of culture, public service television stations and so forth camouflaged as cultural support. On the other hand, the industries that draw on the symbolic knowledge base also include non-capital intensive creative industries (i.e. advertising), which tend not to receive

much financial support from public organizations and which is more left to compete on market premises.

While publicly financed institutional structure for distribution and marketing tends to be of minor importance, creative industries in successful countries tend to have a developed support structure. Again, we find this most developed in the film industry while almost neglected when it comes to advertising.

The Symbolic knowledge base: talents and migration

Despite the role of cities being more crucial for creative industries than is the case for industries drawing on a synthetic knowledge base, it is not a straightforward picture. On one hand, the creative industries tend to be largely urban industries in large countries such as in the US; at least for the major players (there are local advertising companies in most cities serving the local market, and so forth). It is the vast heterogeneity or variety of competencies, in the broad sense of the word (including both technical and artistic), in the cities that make cities attractive locations. The supply of 'quality of life' aspects, reflecting the dominant tastes of the employees in the industries with respect to bars, cafés, nightclubs, are crucial in attracting the creative workers (Grabher 2002).

In smaller countries relying more on relational propinquity than on physical proximity – as is the case in the Danish film industry which counts only a few important directors – the idiosyncrasies of the individual directors are highly visible in the 'locational patterns'; thus, the cities play a less clear role.

Some creative industries are even located in rural areas. The industries located outside hot urban areas tend to be industries with a high degree of possibilities for using modularity (i.e. animation) or where the input is based on the work of a single person (e.g. poets). The modularity based creative industries, as illustrated by Norcliffe and Rendace (2003) in a study of Comic books production, apparently do not rely on heterogeneity to the same extent as the other creative industries. Nevertheless, one might still argue that diversity/heterogeneity transmitted in an urban setting generally constitutes an important context for creative industries. But can a link from heterogeneity to migration and a need for attracting talents from all over the world be made? Obviously, it is not a disadvantage to be able to attract talents from all over the world, but how important is it? As explained above, creative industries tend to rely on tacit knowledge which is face-to-face mediated in urban settings. Hence, seeking towards urban settings that are tolerant to immigrants from all over the world can facilitate variable knowledge assets about both markets in other countries (i.e.

tastes, importance of narratives, etc.) and particular agents (i.e. actors, musicians, painters, decorators). These assets are mainly important for global creative industries while the insights that migration brings along are limited for national orientated creative industries due to linguistic and cultural reasons. This is the case for a majority of films, theatre plays, literature and even cartoons.

The largest players on the global market for creative products tend to be US sited corporations. Zooming in on Hollywood's productions illustrate that the films they release tend to be rather non-ethnical and targeting a global taste. In a minor study looking at the successful Danish film industry, we do not find that at least first generation immigrants have played an important role measured in terms of foreign directors (Asheim and Vang 2005). The computer game industry, on the other hand, tends to be a creative industry where migration seems crucial as there is a need for balancing global and local demands. Hence, we suggest that the importance of migration is of more variable importance in the symbolic industries than assumed by Florida. It shall, however, be stressed that also outsourcing of humdrum activities for cost reasons in creative industries to developing countries is increasing.

Policies toward the Symbolic knowledge base: business and people's climate policies

As most creative industries are deeply rooted in and constrained by cultural institutions and locate in urban areas which tend to be rather heterogeneous, it is debateable to what degree newcomers can contribute to increased innovation and competitiveness. In the film industry, the study by Asheim & Vang (2005) showed that immigrants had had limited influence as directors. In other industries drawing on the symbolic knowledge base, the picture is quite different. Especially in the music industry, people with a different ethnic origin have contributed to international success. It is, however, primarily second generation immigrants that succeed, often by combining their cultural inheritance with the influences from the culture that they are brought up in. This also implies that a people's climate policy shall be seen in both a short term and a long term perspective. While migration of talents does not necessarily show as economic growth on a short term – due to the cultural constraints – attraction of talents can prove valuable for the coming generations.

Getting impulses from abroad is important to constantly develop products produced on basis of the symbolic knowledge base. Impulses can come from various initiatives, and political actions can help to promote these initiatives. This can be done by supporting or sponsoring excursions for inspiration to leading locations for different types of production, e.g. arranged by educational or branch organisations, or it can be done by establishing

festivals, conferences etc. that in a limited period of time facilitate the face-to-face contact needed for developing transnational networks.

Transnational networks are crucial for, for example, the film industry in smaller countries such as the Scandinavian ones. Transnational collaboration is a requirement for making non-low budget films in these countries, as the local financial sources tend to have their limits. Set conditions might be that all post-production should be made in one particular country, or the like. These types of projects have caused problems for Scandinavian film-makers; their lack of success has earned them the label Euro pudding. Hence, business climate policy should be aiming at building intercultural competencies and developing an infrastructure supporting virtual collaboration within creative industries; virtual collaboration that imitates some of the advantages possessed by real creative clusters in larger countries such as the US. Moreover, developing learning-by-doing elitist public educational institutions have proven valuable for smaller countries, but not terrible relevant for creative industries in larger countries. Finally, it has proven important in capital-intensive creative industries in smaller countries for the public sector to finance both experimental and more mainstream films to ensure a constant renewal of the food chain for the commercially successful products. Contrary to what is to expect from Florida's work, business climate policies might prove to be highly important for creative industries; especially in capital-intensive creative industries. As these industries is synonymous with a high degree of risk, capital intensity private firms outside major clusters such as Hollywood are reluctant to make the large investments that are required. Business climate policies supporting favourable loan conditions, low interests on risk productions and generous possibilities for deducting losses might therefore prove as important as people's climate policies.

Summing up

Above we have sketched some of the most obvious differences between the synthetic, analytic and symbolic knowledge bases. We have shown that the tacit or codified nature of knowledge within the three knowledge bases asks for a differentiated type of talents. By approaching the different character of the knowledge base used in a certain industrial setting, we have illustrated that political actions toward promoting these industries are different. This is done to put focus on the lack of diversity in the sometimes almost universal character of the creative class approach. This points to an absence of a systemic perspective. Each of the knowledge bases has specific needs. The analytical knowledge base can gain governmental foundings and bridge between universities and firms. Access to and attraction of talent is important to facilitate innovation. Industries drawing on synthetic and symbolic knowledge bases are much more dependent on tacit knowledge, and, hence, attracting talents might not

prove as valuable for the analytical knowledge base. Thus, building a tolerant and technological environment to attract talents from abroad differentiates between the knowledge bases.

Furthermore, the case of synthetic knowledge bases shows that weak social ties and quasi-anonymity, which Florida argues characterises the creative class, are not valid within all industrial settings. On the contrary, the synthetic knowledge bases tend to survive on strong ties and social propinquity.

Political actions toward promoting and facilitating the different knowledge bases also differ. In the analytical knowledge base, building an inspiring and international research milieu can help creating an international talent magnet. In the synthetic engineering, learning by doing and learning by using can be supplemented by education and courses constantly bringing skills of the labour force to a state-of-the-art level. It is, however, also important that public initiatives seek to renew impulses within these industries simply to help them from ending in a negative lock in situation, as was seen in several regions in Europe in the 1980s and 1990s. Finally, in the symbolic knowledge base industries, educating persons working with creative tasks is crucial. Though a large part of the knowledge base is based on tacit knowledge, basic skills, marketing etc. can be important for the survival of small creative entrepreneurs, as well as an attraction of persons with a different cultural inheritance can be valuable in a longer perspective.

Conclusion and Further Research

In this paper we have put attention to the creative class approach. The approach has entered the agenda for regional development and within research, politics and planning authorities, the creative class approach has received massive attention. This is in many ways positive as paying attention to people's climate will hopefully result in more tolerant and diverse regions. It is, however, alarming that the creative class thesis in many cases is used out of its context. Therefore we have portrayed the approach by clarifying often mis-interpreted central elements, and, at the same time, we have pointed at some of the square and inadequate elements of the approach as well.

Above, we have argued that talent is important in understanding the making of regional innovation systems. Subsequently, we have argued that three different knowledge bases can be identified. Industries drawing upon different knowledge bases use different kinds of knowledge. The synthetic knowledge base is characterised by a high degree of tacit knowledge; the analytic by a high degree of codified knowledge; and the symbolic by a mix

of the two, though tacit knowledge is most frequently used. The more dominant tacit knowledge is, the more embedded knowledge creation becomes in local institutions, and the more difficult it becomes for outsiders to enter and to contribute to the industrial setting. Hence, migration of talent into these types of industries does not gain much from temporary visits. Consequently, in a short term perspective, business climate most likely have as much influence on these settings as people's climate. In a longer perspective, at least the music industry implies that second generation immigrants can contribute significantly to improve regional competitiveness. This can be illustrated by the case of Sweden but is also very prominent in UK and France.

Industries based on an analytical knowledge base can easily gain codified knowledge by locating within regions that actively focus on people's climate. This is due to the transferable nature of the codified knowledge and thereby the positive influences which bringing in e.g. international top researchers can have on the competitiveness.

This is, however, only a part of a more critical and nuanced view on the creative class approach. Much is left to be discussed. One suggestion is the inadequateness of the US originated theorising on the migration patterns of the creative class in a European context. Though a European analysis of the creative class has been done (Florida and Tingali 2004), the creative class approach is initially based on observations from USA. Hence, explanations are all based on the finding of the creative class in one country.[2] Approaching the migration patterns of creative classes, the first step is then to ask whether Florida's US-based creative class is having value systems that are identical to the value systems dominating the creative classes in other countries. We find it worthwhile analysing this before generalising. In our view the creative class approach might represent the dominating values within the US, but this is not necessarily shared by members of the creative class in other countries. Europeans, for example, tend to be far less mobile than their US counterparts, since they are more locally embedded due to cultural as well as institutional contexts. Therefore the approach might gain from adding an understanding of identity in the sense that belonging is both socially constructed and territorial bundled (Massey 1994, Amin and Thrift 2003 and Amin 2004). Linked to this, the differences between labour market organisations and regulations and a perspective on the influence of the variety of capitalism have to be added to the creative class approach. These are important for understanding the flexibility of the labour market as well as for the mobility of the labour force in general.

[2] Gertler et al. (2002) have replicated Florida's study in Canada. This study confirms most of the findings of Florida from the US.

In the more gender-equal countries with high participant rates of both men and women on the labour market such as the Scandinavian, mobility is also constrained by the fact that the unit for decision-making is the family; not solely the man's career. This implies that the mobility of the creative class is rather low since moving within and between countries has to match the man's and the wife's career opportunities as well as provide a safe environment and good schooling for the children. Accordingly, we suggest that research is done on the creative class focusing on the migration patterns of the talents but based on data from other countries than USA.

Lastly, we would argue that by targeting US migration of talents, the creative class thesis conveniently avoid a discussion of language as a barrier for international allocation of talents. Studies of regional development and relocation of talents have primarily been on English speaking countries (Florida 2002a, Boyle and Motherwell 2004). However, if moving from e.g. Sweden to Italy or France, language often becomes a barrier. Though a few big corporations have English as the working language, a majority of firms tend to use native language in locations outside English speaking areas. From our point of view, moving from Glasgow to Dublin or Boston to Toronto would be far more easy than moving from Copenhagen or Stockholm to Paris or Athens. The point is that beside traditional cultural differences and difficulties of moving from one home base to another, language in itself easily becomes a barrier that can restrict cross-border migration patterns of talents.

Though Florida and his creative class thesis has many interesting and probably correct observations and findings on the importance of the rising creative class, some of the assumptions do not fit into a European and especially a Scandinavian context. Consequently, we ask for further research aiming at rethinking the approach into a European context by addressing differences in language and culture as well as a variety of capitalism perspective, which, among other things, implies paying attention to a less mobile labour force, as possible barriers for relocation of talents [3].

[3] An ongoing project founded by the European Science Foundation and coordinated by Bjørn Asheim is currently analyzing the assumptions of the creative class approach by, in a modified version, adapting to a European context. The project is called Technology, Talent and Tolerance in European Cities and counts Denmark, Sweden, Norway, Finland, the Netherlands, Germany, Switzerland and UK.

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