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Abstract

This paper discusses the role of so-called national champions within the context of the EU's ambitious goal to become the most competitive and dynamic knowledge-based economic region in the world by 2010. We find football to be a useful analogy in our discussion of national champions. There are many different types of football players: veteran performers who are past their prime, young stars who have not yet developed their full potential, fans' darlings, and the actual stars—the key performers. For a team to be consistently successful across time, it needs to maintain the right mix of different types of players, particularly in regard to current and future key performers. What makes a key performer a "real" star is not only extraordinary talent but also, and perhaps even more important, ability to be a team player and inspire others to be the same. Applying this analogy to the economic field, we come to the conclusion that the "real" champions in the business environment serve as network pilots within regional networks. By fostering a dynamic economic environment, they create their own rents, unlike less successful firms who concentrate on unproductive rent seeking and shifting.

JEL-classification: L52, O25, O33, P11

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1. Introduction

One central element of the EU's Lisbon Strategy is to make Europe "the most competitive and dynamic knowledge-based economic region in the world" by 2010. Although there are many different ways to reach this goal, the idea of an industrial policy that promotes European or national champions as the best way to compete in a globalized world has become (again) en vogue among European politicians.

We can illustrate the pitfalls and benefits of such a strategy by drawing an analogy with the one European champions league that already exists—the *football* UEFA Champions League[1]. Similar to the EU's Lisbon Strategy for economic success, it is the Champions League's goal to make Europe known as an, if not *the*, outstanding region for top-class football clubs and, in the process, attract football fans from all over the world. Apparently, the Champions League's goal to be the most competitive and dynamic league in the world is strongly related to a desire to gain market share among sport-interested viewers worldwide.

National champions from all over Europe compete annually to win the European Cup. During this tournament, the characteristics of certain players become obvious and it usually turns out that it is these very players who will be crucial to the success (or failure) of their club. There are veteran players, a bit past their prime, perhaps, who are older and not as agile as they used to be, the lame ducks as it were. Then there are the young stars, whose potential, while not fully developed, is hinted at and their contracts often reflect their future value, making these players the young male chicks of the field—flighty and full of themselves. Further, there are some players who are simply

and sometimes inexplicably adored by the fans. Their value for "marketing" purposes is enormous; they are the club's "big projects." Regardless of performance level, they simply cannot be cut from the team; the fans would be too upset. And then, finally and of course, there are the actual stars—the key performers. All these different types of players are valuable to the team in one way or another, but in the quest to win the Champions League's, the key performers are most important. However, to be ready to win the cup again *next year*, a team needs to maintain the right balance of current and future key performers. Sheer talent is not the only thing that makes a key performer a "real" star: ability to act as a team player and inspire others to act the same is just as important, if not more so. Moreover, because playing as an integrated unit is crucial to a team's success, the star's capability to achieve this creates a symbiotic relationship: a star is not a star without a winning team, so enhancing teamwork among the players, which will increase the chances of winning, also enhances the star's reputation. In economic terms, stars create their own rents.

We now leave the football field (a little reluctantly, it must be admitted) and enter the economic arena. In accordance with Cohen (1995), we distinguish between *strong firms*, *lame ducks*, and *big-project firms*. Going beyond Cohen, however, we add one more category—*chicks*. "Chicks" are like the future key players on a football team—they will be necessary for sustained success and so must be taken into consideration. Chicks (see Section 2) are those firms that have not yet reached the technology frontier—unlike the *lame ducks* (Section 3), who were once at the front lines but have now fallen far behind. The *big-project firms* (Section 4) are highly visible either because of their size or

[1] The UEFA Champions League is a seasonal club football competition organized by the Union of European Football Associations (UEFA) for the most successful football clubs in Europe. The prize is

because of their strategic position (e.g., energy- or military-related fields) and thus are similar to those football players who are the fans' darlings. Finally, the *strong firms* (Section 5) are the "real" national champions—these firms operate on or close to the technology frontier and are highly competitive in the world market. Initially, our analyses focus on champions at the firm level. However, this level is closely connected to an industry's overall development as firms and products are major drivers of industry development (Klepper, 1996). Accordingly, the firm and industry levels sometimes overlap. Furthermore, we restrict our argumentation to immobile firms, e.g., firms likely to stay in the same region due to their high physical investment, thus creating a regional "stickiness." This restriction is appropriate in view of our spatial concept of *national* champions. Finally, in Section 6, we switch from a pure status description to an analysis of firms' actions in a changing environment and how they themselves can be agents of change. In doing so, we sketch out a training program for long-term success.

2. Promoting the Chicks or the Infant Industry Policy

The standard infant-industry argument (cf. Navarro 2003: 5) involves learning-by-doing effects leading to a downward sloping cost curve. Government intervention at the early stages of the firm's life is justified on the basis of speeding up production externalities. Such intervention could take the form of subsidizing or protecting national production.

However, Seabright (2005) and Carlin et al. (2001) have fundamental objections to this kind of policy, two of which will be discussed here. First, incumbent firms expanding into the infant industry will be the greatest beneficiaries of public subsidizing as they

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the European Champion Clubs' Cup or European Cup for short.

are already politically well-connected, i.e., they are successful lobbyists. However, there is strong empirical evidence that many radical innovations have been introduced by new firms rather than by incumbents (cf. Audretsch 1995). Second, politicians, simply because they are politicians, are reluctant to admit that one of their projects has failed unless they are absolutely forced to by some spectacular and very public event. However, allowing projects to fail and disappear is a very important part of innovation and productivity. Schumpeter described this process as "creative destruction": "But …, it is not the kind of [price] competition which counts but the competition for the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance)—competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms, but at their foundations and at their very lives" (1942: 85). There is a large body of literature in the Schumpeterian tradition that finds empirical evidence for positive effects of exit or firm turnover on growth (cf. Fogel et al. 2006; Comin and Mulani 2005; Aghion and Howitt 2006).

Johnson and Jacobsson (2002) provide an example of misconceived infant-industry policy—the Swedish wind turbine industry. In 1975, the incumbent firm Saab received funding for the design of a large experimental turbine. In 1977, a more substantial R&D program for wind energy was initiated. Up until 1979, Sweden spent more government money on wind energy R&D than did Germany, another country active in wind energy R&D. In Sweden, national R&D programs were widely restricted to very large turbines. In fact, Sweden was considered one of the leading countries in wind energy at this time. However, it turned out that there was no market for large turbines. German firms, in contrast, experimented with turbines of different scale, resulting in a wider range of

technical knowledge about turbines and a set of industrial firms with experience in building various sized turbines. The Swedish wind turbine industry was dominated by three—and later only two—large firms that had some experience with large turbines. The Swedish firms now must compete with the German firms, firms now capable of mass-producing turbines of different scale.

In summary, in infant industries, or *chicks*, the key elements of success are experimentation and variety. As illustrated above, Sweden, largely due to government support (intervention), concentrated on the development of very large-scale turbines and had very few firms involved in production. Sweden did, indeed, become the world leader in large turbine production. *But*, the market turned out to favor smaller-scale turbines, something the Swedes had not learned to make. Meanwhile, firms in other countries accumulated knowledge by learning-by-doing by experimenting with a variety of designs and thus were able to capture the turbine market as it actually exists.

3. Supporting the Lame Ducks

3.1 Strategic Trade Policy or How to Beggar Your Neighbor

A first argument for supporting *lame ducks* is found in the strategic trade policy literature. Let us assume that there is a market for some arbitrary good. The market is characterized by worldwide imperfect competition and suppliers from around the world competing to capture excess rents. To retain the largest possible share of the excess rents within national borders, governments may be inclined to artificially bolster the position of domestic firms in this market, perhaps through state aid. Spencer and Brander (1983) were the first to present a theory of government intervention that provides an explanation for industrial strategy. Domestic net welfare is improved by the

capture of a greater share of the output of rent-earning industries. However, the subsidy-ridden noncooperative international equilibrium is suboptimal, leading to subsidy wars, which have the contrary effect of benefiting no one. The multilateral prohibition of subsidies, should such agreement prove possible, would actually increase the welfare of all countries. Furthermore, the German Monopolies Commission (2003: 80) has stated that there are at least two reasons why positive national welfare effects of such a policy are not guaranteed. First, domestic firms operating in imperfect markets do not earn excess rents only from foreign markets but also from home markets, leading to a loss of consumer surplus in the home country. Second, such a noncompetitive environment will not strengthen, but instead actually weaken the domestic firms. As an example of this latter effect, the German Monopolies Commission (2003: 80, 81) cites the Deutsche Bundespost (German Postal Services and Telecommunication), which, largely due to government subsidization aimed at capturing excess rents, managed to sleep through the development of Internet technology and is now behind the technology frontier (see also David and Werle 2000).

3.2. National Champions Are Mortal

A second argument in the *lame duck* arena deals with structural change and unemployment. Cohen (1995: 30) states that "there is little need to dwell upon the *lame ducks* other than to remind the reader that a national champion is mortal." A dynamic economy, by definition, undergoes constant structural change, due, among other things, to different industry growth rates of production and demand (for an overview, see Pianta and Vivarelli 2007). Structural change has geographical implications, too, as industries are not evenly distributed geographically (for a European discussion, see Midelfart-

Knarvik and Overman 2002). Industries that do not change and grow will eventually die. This will, obviously, have serious negative effects on employment in the short-run but industry death can have long-term effects on employment too, particularly when the labor market is inflexible and immobile. In this situation, state intervention can, at best, merely delay the inevitable, but politicians, who usually manage to think short-term, especially those up for reelection, may wish to smooth out the process of decline and thus ease social tension. This is especially the case when a major national firm is in trouble. A famous example is former German chancellor Gerhard Schröder's 1999 attempt to rescue one of the biggest construction companies in Germany—Philipp Holzmann AG. Due to mismanagement and a far-too-optimistic view concerning a possible construction boom in Eastern Germany, Philipp Holzmann AG accumulated more than 2.4 billion German marks of debt, which put the firm's survival in great danger. In a highly visible and celebrated move, chancellor Schröder offered debt guarantees from the state. However, the firm's death was only delayed, not averted, and in early 2002, Philipp Holzmann AG went bankrupt.

This "save the lame duck at all costs" phenomenon is also found in the banking sector, as reported by Vives (2001). Politicians are apparently very taken with the idea that a national champion in the form of a bank must not be allowed to fail as the fallout would be so bad for national industry. Particularly large banks are believed to be "too big to fail." This was the case for the French Credit Lyonnais, which began to founder in the early 1990s due to poor management and fraud (Vives 2001), but was not allowed to die a natural death. This sort of big champion is indeed mortal, but because it is "too big to fail," it becomes a *big-project firm*, as discussed next.

4. The Temptation to Support "Big-Project" Firms

4.1 High Visibility

Seabright (2005) asks: "What do we know about the biases of politicians in selecting investment projects for public support? They tend to be large, they tend to produce products that are highly visible in the press and media (affording many photo-opportunities for the politicians concerned), and they tend to be comparatively insulated from competition—both because this makes them less risky to finance and because it avoids awkward questions about their comparative performance with similar projects that do not receive public support." Furthermore, Roe (2003) argues that governments might lock in the status quo to please voters who prefer slow but smooth growth to faster but erratic growth.

One famous example that meets all these criteria is the French Concorde project, which failed because it was more engineer- than customer-driven. Another example is the European Airbus project. The Airbus project has been celebrated in the media as a shining example of successful European champion-oriented industrial policy. Indeed, there is a simulation study by Neven and Seabright (1995) concluding that Airbus was likely to earn a comfortable rate of return on the public investment made. Thus, it was a good investment from a pure rate of return perspective. However, the effect of Airbus' entry on consumer surplus is not clear: the gains from competition may be offset by lost economies of scale and the Airbus-induced exit of McDonnell-Douglas. In sum, it could turn out to be a negative-sum game and Europe's welfare might rise at the expense of someone else's.

4.2 Strategic Industries and Security of Supply

High visibility is also guaranteed when strategic industries such as energy are involved. In these industries, security of supply plays a crucial role in the context of state intervention. Take the European gas market as an example. Only a small fraction of total European gas consumption is actually produced in Europe. Much of the gas is imported from politically unstable countries, making disruption of supply quite possible. Gas is mainly transported via inter-urban pipelines, another source of risk, both political and physical. Moreover, construction of pipelines results in high sunk costs. As national production is limited, the only way to reduce these risks is to diversify gas imports, that is, build more pipelines, leading, of course, to even higher sunk costs. Therefore, it is often argued that a national or European firm (a heavyweight champion) is needed to guarantee the security of gas supply. And, it seems acceptable that a vertically integrated gas supplier will earn excess profits from consumers on its home market to compensate it for investing in the very expensive, but necessary for diversity and safety, pipelines and other infrastructure. Indeed, this argument was viewed favorably and perhaps had a hand in the eventual approval of the merger of E.ON and Ruhrgas. E.ON, already one of Germany's largest energy companies in the electricity sector, intended to acquire a 60% majority in the gas company Ruhrgas, resulting in E.ON/Ruhrgas becoming Europe's biggest energy company. Preliminarily, permission for the merger was denied by the Federal Cartel Office on the grounds that the merger would have a detrimentally strengthen E.ON's already dominant position. However, the merger gained ministerial approval for reasons of security of supply (for details, see Sinn 2002).

Nevertheless, natural monopolies (characterized by high sunk costs) can erode over time—especially through technical progress. Liquefied natural gas (LNG) transported by specially designed sea vessels and road tankers may, in the future, increase and diversify the supply of gas and decrease reliance on the pipelines, thus making state protection of the pipeline owners (the heavyweight champions) less necessary or desirable.

5. The "Real" National Champions

5.1. Government's Role: Simply a Spectator?

All the above arguments in favor of a champions-related policy eventually hinge on the actors' ability to appropriate rents: creation of additional rents to the innovator by speeding up the learning curve in infant industries, beggaring your neighbor by shifting rents to the home country, the lame ducks' efforts to continue securing rents in a world that has passed them by, and rents from the public good—security of supply—in strategic industries. Some of these rent-related arguments appear sound, especially those involving the creation of additional rents (positive-sum games); others less so, particularly those that have to do with simple rent shifting (zero-sum games). However, even if we only consider the "additional rent" cases, there are firms that are not subject to any state intervention (or interference) and yet still manage to appropriate sufficiently large additional rents that they do extremely well. These firms are not just standing on the technology frontier, they are pushing its boundaries ever outward purely on the strength of their own innovation and management. These firms are the "real" national champions.

Rosenberg (1990) argues that the most successful basic research laboratories can be found in the private sector, e.g., Bell Labs., IBM, Dupont, Dow Chemical, Eastman Kodak. Their research success and the appropriability of its fruits has been, to a large extent, due to the close intellectual proximity maintained between the basic research laboratories and the development and production wings of these firms (cf. Dasgupta 1988).

Whether a firm directs its effort to creating additional rents or is simply content to indulge in rent-shifting activities is fundamentally based in underlying institutions. Institutions are sets of common habits, routines, established practices, rules, and laws that regulate the relations and interactions between individuals, groups, and organizations (Edquist and Johnson 1997: 46). Thus, as we have seen above, a poorly designed industrial policy may channel a firm's effort into counter-productive directions, for which there is no market demand, or into rent-seeking activities. When, however, both policy and institutions are "good," "real" national champions will be productive and create additional rents and economic growth. In this situation, the state's role is primarily that of a spectator (Cohen 1995), but it can also be of enormous benefit by creating a climate where "good" institutions will naturally arise. Benchmarking—the comparison of national institutions—is one way of identifying best-practice institutions. However, best practices are always temporary: good only until the next best practice is discovered. This ongoing process lends some support to the evolutionary view of institutions, which basically questions whether an "optimal" institution is ever possible. Thus, problems and successes should *both* be investigated as to cause as part of designing a policy that will foster "good" institutions and thus a productive and growing economy (cf. Edquist 2001).

One of the best examples of the importance of "good" institutions is the comparison of the famous Silicon Valley in California with Route 128 in Boston, Massachusetts, both high-tech districts, but widely divergent in how they evolved. In 1965, Route 128 had approximately three times more high-technology employment than did Silicon Valley. Today, however, Silicon Valley is way, way ahead in the high-tech game. Saxenian (1994) attributes Silicon Valley's success to two major differences between it and Route 128. First, companies in Silicon Valley relied on vertical disaggregation, from which emerged competing modular suppliers (see Baldwin and Clark 1997: 85), whereas companies along Route 128 focused on vertical integration. Second, technological knowledge diffused much more rapidly in Silicon Valley than along Route 128.

Knowledge diffusion is a double-edged sword. Rapid knowledge diffusion undermines the appropriability of "exclusive" rents arising from the lock in of knowledge. However, knowledge diffusion across a network of firms can also act as a multiplier, resulting in the creation of new knowledge and, therefore, additional but "collective" rents open to all network participants. Of course, whether this multiplier is a benefit fundamentally depends on the extent to which the individual will have access to the collective rents, i.e., the intensity of knowledge diffusion. Implicit and explicit institutions play an important role in this context as they can provide a foundation for trust in reciprocity, which will help assure that each network member is willing to feed the network with new knowledge (Powell, 1990).

Job hopping is one of the simplest methods of knowledge diffusion. Gilson (1999) and Hyde (2003) argue that the only way this type of knowledge diffusion can be stopped is by means of a post-employment covenant not to compete. Employees who enter into such covenants are not permitted to work for competitors for a fixed length of time

(usually two years) after termination of employment for any reason. Returning to the Silicon Valley vs. Route 128 example, it is interesting that Massachusetts allows non-compete covenants but California does not. Accordingly, "any firm connected to the personal networks through which information and employees flowed in Silicon Valley could benefit from the best innovation produced in the entire cluster rather than the best innovation produced by their own, proprietary research and development efforts" (Fallick et al. 2006). It thus appears that the government's role, as a spectator, is as an institution setter. By constantly monitoring economic developments, it can appropriately adjust the institutional framework to meet current needs. However, this does not imply that it should directly interfere with the market; ordering the market is the firms' task, an activity best accomplished by the "real" champions.

5.2. "Real" Champions as Network Pilots

The Silicon Valley example highlights the advantage of unhampered knowledge flows over restricted knowledge flows within a regional network. In Silicon Valley, the absence of legal restrictions on job mobility led to a vertical disintegrated business culture of *coopetition*. Firms *cooperate* in creating a regional knowledge stock that, in turn, becomes the foundation of their *competitiveness* in global markets. Knowledge came to be seen as a regional club good and each company connected to the network could benefit from it. This resulted in a regional "standing-on-shoulders" effect that gained companies a competitive advantage over regions where companies could build only on their own internal knowledge. However, such an environment can only exist when there is trust in reciprocity (Powell 1990), i.e., the absence of free-riding. Basically, every rational company would desire to benefit from other firms' ideas and knowledge circulation within the network while, at the same time, locking in its own

knowledge. If this was a dominant strategy, the regional standing-on-shoulders effect would not occur. However, if the law eliminates the possibility of locking in knowledge—as in the case of California—cooperation becomes the dominant strategy and thus helps overcome problems of collective action that would eventually produce a regional disadvantage. In the absence of external institutions, social sanctions, acting as kind of informal institution, can produce the same result (see Ellickson 1991).

Being aware of the comparative advantage of regional cooperation over isolation, it becomes desirable to engage in a network strategy such that it is each company's own interest to cooperate, leading to an intense flow of knowledge. However, in the absence of explicit institutions, there is a certain risk of free-riding that can be avoided only by adequate implicit institutions in support of trust. Depending on the regional network's structure, there are two ways of generating trust where both strategies eventually relay on a firm's regional embededdness.

In networks of equals (i.e. small and medium sized firms) where firms are usually owner led, trust results from the owner's regional embeddedness and his or her social ties. The literature on industrial districts (see, e.g., Piore and Sable 1984; Becattini 1990) particularly highlights the advantages of coopetition resulting from trust in reciprocity due to strong social ties. The stronger the social ties within a network, the higher the probability of being caught out as a free-rider. Assuming that free-riding would, in a worst-case scenario, lead to an exclusion from the network, the costs of free-riding usually exceed the benefits. Well-known examples of industrial districts using social ties as a form of regulation are the textile and leather industry in the northern Italy and the manufacturing industry in southern Germany. These strongly export-oriented manufacturing sectors with many small and medium-sized companies, often family-

owned, are highly specialized and they are competitive in the global market. However, as they usually act in niche markets, they are not highly visibility and thus are rather "hidden champions".

In the case of hierarchical networks dominated by a large firm, trust does not prevail per se. Large companies' organisational structures are usually not compatible with relationships based on social ties. In this environment, the big player's potential to become a real champion is determined by its ability to act as a network pilot. As a network pilot, the real champion needs to convince other firms in the region of the network's profitability. To do so, game theory would suggest the importance of a positive signal, usually some kind of self-commitment, from the network pilot. In giving this signal, the network pilot demonstrates its commitment to the network and thus contributes to strengthening and expanding the network. This idea is complementary to the French view of a national champion—mentioned in the introduction—which stresses such an entity's social responsibility. Social responsibility should be understood as all efforts contributing to build up, foster, and intensify the network.

Thus, once a network pilot has managed to build up a regional network, i.e., the network pilot has gained other companies' trust, further social responsibilities come into play. At this point, the entire network of firms needs to engage in various regional activities so as to stimulate regional dynamics and thus generate positive externalities for its members. With regard to network care and development, the network pilot may still bear most the responsibility, but maintaining the network is in the pilot's own self-interest and thus the obligation can be justified in terms of time and expense. However, to create and maintain an all-embracing regional network, large companies must not be too dominate and positive externalities from participating must be perceptible to all members,

independent of size. This is especially important as small companies are believed to be a driving force of innovation (cf. Audretsch 1995). Thus, supporting small companies and start-ups means that fresh knowledge will be produced, eventually increasing the public pool of knowledge. One way to contribute to knowledge production is to provide corporate venture capital to start-ups (see Gompers 2002); another way is to join forces with universities.

Further social responsibilities of a regional network of firms might include sponsoring and donating to cultural institutions, e.g., festivals, concerts, exhibitions, and other bohemian projects in the region. This activity will enhance a region's amenities and make it more attractive to creative persons of those with high potential, thus not only keeping the current labor pool in place but expanding it with highly skilled workers (cf. Glaeser *et al*. 2001 or Florida 2002).

6. Conclusion

We return to the football field to present our conclusions. Any football club that wants to win the UEFA Champions League relies to a great extent on its real stars to accomplish this ambition. However, as these stars are usually wooed by top clubs offering a lot of money, the stars may become like mercenaries, following the money with no regard to loyalty. Therefore, even though real stars may be necessary to a club's immediate success, it should not rely on them for its future. A squad of loyal, home-grown players, dedicated to the team and its fans, will be a better bet for long-term success.

Extending this idea to our economic champions league, we conclude that a solid base of small and medium-sized companies are the economy's true backbone. These businesses are usually owner-led and embedded in the region. They are "dedicated to the team and

its fans," so to speak, and we argue, in particular, that a network of small and medium-sized companies will be the earmark of a successful region.

These findings lead to a change in focus away from the European (or national) champions to the direction of regional champions. The spatial spread of a firm network is determined by the homogeneity of the underlying institutions and culture. Thus, a "region," in the European context, could be an entire small country (e.g., the Netherlands or Belgium), or it could be a certain part of a large country (e.g., some region in Germany). In other words, the concept of "national" champion may be inappropriate; "regional"—in any of its manifestations—is more relevant.

In line with this idea, consider all the arguments that have been made in favor of *national* champions, for example: we need a large future market for the new products of infant industries to speed up production externalities; large national firms with market power compete for shifting rents to the home country; with regard to security of supply, we need strong national energy service providers having enough power to bargain with monopolized suppliers. All these arguments are common in the literature on industrial organization. In contrast, the concept of *regional* champions emphasizes the role of cooperation in fostering regional knowledge production and innovation, leading to increased competitiveness on global markets. We believe that this evolutionary perspective is of great value in explaining how regional knowledge production and innovation contribute to global competition on goods market.

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