Learning in the village economy of Denmark. The role of institutions and policy in sustaining competitiveness

Maskell, Peter

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Peter Maskell
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Peter Maskell
Danish Research Unit on Industrial Dynamics (DRUID),
Copenhagen Business School, Nansensgade 19, DK-1366 Copenhagen K, Denmark.
☎ +45 3815 2881, Fax: +45 3929 2226, E-Mail: MASKELL@CBS.DK

Abstract

The benefits of an international division of labour is never illustrated more clearly than in small developed nations like Denmark. Without many natural resources such countries can never be self sufficient and they need access to foreign markets in order for their firms to specialise and utilize economics of scale. The specialisation chosen is mainly in low-tech goods, where the risk of sudden domestically damaging changes in technology or demand are relatively small.

Besides such general features of small developed nations, the Danish case has some special characteristics, which distinguishes it from many other nations and regions. One important feature is the century-old, deep-rooted egalitarian beliefs of the society which during the last century has intermixed with the growth of the public sector in shaping not only the welfare state, but also a strongly consensus-seeking political system - the negotiated economy - incorporating all major groups in the economy. Recently, the development towards a knowledge based world economy has increased the importance of another feature with an small egalitarian country: the kind of trust-relations, that come into existence, when everyone in an industry has known everybody else through many years. The international industrial competitiveness of the country's vast majority of small, export oriented firms are not only favoured by a reasonable adequate macro-economic policy but further enhanced by the ease in the exchange of information resulting from established trust-relations.

Keywords
International competitiveness, small nations, economic development, learning economy, informal institutions.

JEL Classification
L10, L20, O1, O31

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Contents

1. Introduction

The increasing competitiveness of Japanese firms and its consequences for Northern America and Western Europe have been addressed in great many governmental papers, business reports and articles in scientific journals. Without any intension of adding further to all this jazz one might, however, draw attention to the fact, that Denmark - one of the smallest of the OECD-countries with a population of just above five millions - has through a number of years been able to maintain a surplus on its balance of trade vis-a-vis Japan in spite of an unfavourable location, few natural resources and with production costs in the top league of the world.

When trying to understand the causes behind such a position there is something slightly dissatisfactory about the traditional explanatory factors of international trade theory like resource endowment, labour costs or capital ratio. The capital ratio, the use of new technologies, and level of formal education in Denmark is not higher than in many other countries. The small number of patentable innovations reflects the scarcity of large, global oriented firms and the low level of public or private sector research spending[1]. Even the labour productivity per hour are low compared with the rest of the countries in the OECD (fig. 1), and the annual growth in labour productivity has been lower than most in European countries for the whole period from 1960 (!) to 1992 (table 1).

When Denmark nevertheless has a GDP per capita in 1993 exceeding 25.000 US$[2] and has been able to maintain and increase the standard of living (even with an unemployment rate of more than 10 per cent (table 2)) the explanation must be sought in a set of *qualitative* factors, which have led to the present rather favourable position occupied by the nation in the international division of labour.

Some of these qualitative factors are simply related to the national strategies which small countries have to adopt when confronted with international competition. But these strategies interact with the perceived outcome of the nations' and regions' previous history and are
embedded in a number of specific, though mostly informal, institutions. For want of better, the national and regional endowment of these informal institutions might here be called culture.

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[1]. The total research spending in 1993 were 1,7 per cent of the gross national product in Denmark and 2,3 per cent in the OECD (incl. Denmark, weighted average) and 1,9 per cent in the European Union (incl. Denmark, weighted average). A lot of effort has in later years been put into increasing the research effort especially in private industry, but with relatively little effect. A recent survey from the Danish Governmental Agency for Industry showed, that 44 per cent of the firms in manufacturing industry - according to their own opinion - did not innovate at all (Christensen, 1993).

[2]. This might be compared with Germany's 23.000, UK's and Italy' 16.000, France's 21.000, USA's 24.000 or Japan's 33.000 US$ per capita (1993).

The main argument addressed in this paper is that some national and regional cultures are more predisposed than others to support and advance the industry of today (Gertler, 1995). The national and regional culture interact with natural and human resources, with formal institutions and with build structures in constituting a specific set of national and regional capabilities, which contribute to the competitiveness of the firms localised in the country.

The underlying notion, however, is that the differences in national or regional capabilities to enhance the competitiveness of firms should be seen primarily as the result of territorial specific differences in the ability to create and use knowledge. The international economy is favouring firms, which are able to learn, change and adapt a little faster than their competitors (OECD, 1994). The competitive edge has thus gradually shifted from static price competition towards dynamic improvements. The formation of regional or national institutions which actively supports firms in coping with this process are now of crucial importance.

Formal (designed) and informal (self-grown) national or regional institutions both play a significant role in determining the success or failure of firms in the international competition, but it will be argued, that informal institutions might often be fundamental for the long term competitiveness of firms within such territorial defined economies (Krugman, 1994a).

The difficulties in creating economic progress through designed institutions have been made painfully clear through the meagre results of the past fifty years' development policies in many countries in the third world. And the persistence of *intra*national developmental problems in most industrialised countries can hardly be seen only as a consequence of insufficient supply of well-designed institutions (Putnam, 1993, Hill, 1995). We might paraphrase Barney (1991) in submitting, that the total informal *and* designed institutional endowment of a nation or a region can lead to sustainable advantages only if the resulting national or regional capabilities are valuable (they must allow the firms to create profit), rare (they cannot be in abundant supply), not subject to substitution and imperfectly replicable, meaning that policy-makers in other nations or regions cannot readily copy them.

While designed institutions or specific policies can more or less easily be imitated[3], this is in no way the case with national or regional culture. Even when governments imitate each other's successful policies the outcome always differs, because the policies interact with firms, rooted in distinctive national and regional cultural settings (Zysman, 1994). If we want to understand the fundamentals behind the formation of sustainable international competitive positions, we need,

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[3]. This process of imitation sometimes also witness the existence of leaks in the national scientific and technological system, leading to a process of territorial dispersal or "trickling-down" (Hirshmann, (1958)1975, p.187-190), which is an important part of less developed nations or regions "catching-up" with the most developed (Cornwall 1969, 1977, Olson, 1982).

then, to start with an understanding of the seemingly spontaneous established, economically important *informal* institutions.

In recent years, many have forwarded the idea, that spatial agglomeration or clustering of related economic activities at a subnational level - the industrial districts - does promote firms' competitiveness, by condensing the effects of such informal institutions. The clustering of the Danish furniture and clothing industry (Kristensen, 1992, Maskell, 1992) or the radiocommunications cluster in Northern Denmark (Dalum, 1995) might be used to illustrate this phenomenon, but compared with the population of many of the industrial districts elsewhere in Europe it might be more appropriate to take the whole of Denmark as a frame of reference. In doing this we must, however, keep in mind that regional cultural differences within the countries 43.000 sq.kilometres (16.600 sq.miles) can be substantial, and that the number and the variety of instruments ability to policymakers and administrators are considerably greater than in intra-national regions or districts.

By focusing on the whole of Denmark it is possible to demonstrate how a number of economically important informal institutions, which is sometimes associated with industrial districts in larger countries, has characterised the political and economic development of a small nation.

2. Informal institutions and small nations

2.1 Liberalisation, specialisation and path dependency

All small nations are faced with the same dilemma of openness: They need access to foreign resources and can only pay their way by exporting commodities or services at an internationally competitive price. This in turn forces the domestic producers to match or outstrip foreign firms in competitiveness and the only feasible way to ensure that the domestic firms keep pace with the best is by eliminating all barriers to trade. Protectionism is simply not a viable option for small nations. Small nations need to become *regions* in a broader economic entity with as little loss of political independence as possibly.

It is not surprising then, that the small developed nations of Europe - Denmark, Sweden, Norway, the Nederlands, Belgium, Austria and Switzerland - a long time ago opened their economies and actively advocated adopting a non-tariff, non-barrier world trade system (Balassa, 1969).

In the case of Denmark the liberalisation has been an ongoing process beginning with commodities and later encompassing services, capital, knowledge and - to a degree - also labour[4]. In order to secure this process, and to balance the different sectorial interests along the road, a strong central government was needed - a government with detailed economic information on all major aspects of the society, and with the power to coordinate the liberalisation process. Close institutional and personal connections and extended informal networks between the central administration of government and the business associations, organised labour and the political parties, became a prerequisite for a successful outcome.

Once the domestic market for commodities had become sufficient open, a process of industrial restructuring was set in motion whereby the small nations experienced a further specialisation in certain groups of products in which they already had some market power. Even without any major initial advantage the growth in competence and the utilisation of economies of scale enabled each of the nations to establish an internationally competitive manufacturing industry (Krugman, 1991). Over time, generations of rounds of investments - based on perceived international developments in demand and competition - together with embedded knowledge and other sunk costs have solidified the once chosen distribution of investments and thus limited the range of possible avenues, that might be taken in the time to come (Dosi, 1990).

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[4]. It must be mentioned, that the European movements of labour across borders are very insignificant and has until now only involved a little cross-border commuting, a few workers engaged in temporary jobs in the construction industry or some workers in the transport sector, and finally a group of bureaucrats. It is nothing near the expectations when this issue where originally discussed before the signing of the treaty of Rome. The low mobility is significantly different from the situation in the US. Even on a cross-regional scale can labour hardly be considered a mobile factor of production in most European countries.

Two size-related factors are here at play. **First** and foremost do the modest size of the national economy in small countries like Denmark place tight restrictions on the ability to function as a buffer for supernormal fluctuations in international demands. **Secondly** will the limited size of the national knowledge and capital base influence the range of industries in which small nations might successfully specialise[5]. If the technological spill-overs are mainly domestic - as claimed by the "new growth theory" (Grossman & Helpman, 1991 & 1995) - large countries will profit more from any investment made in R&D than smaller countries, where some of the spillover of any such investment are likely to benefit its trading partners [6].

The restrictions of size have thus gradually channelled the process of specialisation towards industries with rather stable demands and low price-elasticity[7]. These industries are often medium or low-tech, but can, nevertheless, yield high profits. Front edge, high-tech industries are to a high extent left to the bigger nations, either by choice or by necessity. Even a nation like Sweden has probably exhausted its economic ability to participate in the race for developing the next generation of advanced military air crafts.

The Danish specialisation pattern is typically in this respect with a long bias towards meat, fish, dairy-products, beer (Carlsberg, Tuborg) and related machine industries. Only recently Denmark has also gained ground in non-natural resource, high-value subsectors ("niches") within traditional industries like consumer goods (LEGO), clothing, furniture and machinery (Dalum & Villadsen, 1994). It is further striking, that the nations' few high-tech firms - in electronics, medical appliances and pharmaceuticals - are often historically rooted in the agro-industrial industry.

2.2 Domestic compensation

The specific profile of industrial specialisation towards low-tech or medium-tech products with relative stable demand and low price-elasticity raise little hope of creating high-flyers with extraordinary growth rates[8] and vast net revenues. On the other hand it reduces the danger of

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[5]. Drèze (1960 (1989)) where the first to forward this "standard goods hypothesis", and Melchior (1995) presents new empirical evidence on this, while Fagerberg (1995b) use a different approach to address the same question. One should note, that the specific specialisation of small countries like Austria and Switzerland are very different from the specialisation in the Benelux-countries, which again is different from the Nordic countries. All have by and large a specialisation in natural resource-based products. The specific products that dominate the Nordic Countries include metal and ore, paper and pulp, fish and wood etc. For a further discussion on specialisation patterns and divergence/convergence see Dalum, 1996.

[6]. Se also Zander & Kogut (1995) on this. Furthermore, the "new trade theory" (Krugman, 1994b) hold, that countries are likely to specialise in sectors and commodities, where the domestic market are of particular importance. The home market for high-tech commodities do seldom play such role in small countries. Empirical investigations indicate, however, a limited effect of such spillovers in manufacturing industries (Fagerberg, 1995b).

[7]. The empirical evidence of a low price-elasticity is, however, not very solid and might still be questioned.

[8]. The limited number of workers available often act as a further barrier to rapid growth in one sector and a sustained demand might just fuel inflation.

damaging domestic economic consequences, when the international demand or competitive situation suddenly changes. However, the risk for such unexpected and unavoidable "imported" dislocations can never be completely eliminated. This is especially the case when imports to Denmark (and other small nations as the Netherlands) today cover more than 50 percent of the total national consumption and when more than half of the total national production is exported.

The larger nations might choose to reduce the domestic effects of sudden international economic eruptions by various protective measure. The small nations simply do not have the political power to do so, just as they fear immediate retaliation if they ever tried. Therefore, they are forced to react to sudden changes in the international economic environment with rapid adjustments of their *domestic production system*.

Being reactive sometimes implies jeopardising the vested interest of firms, individuals or larger groups with the power to impede the process[9]. In his analysis of changes in the rate of economic growth and development at the level of the nation state Mancur Olson (1982) presents further evidence to suggest that vested interest increasingly encumber economies during periods of stability, and therefore results in a deceleration of economic growth (cf. North, 1994).

The ability to readjust to sudden changes in the international economy is thus closely connected to the ability to avoid such impediments[10]. The developed device to accomplish this is domestic compensation for damages endured.

Though the specific strategies have differed profoundly between the small European nations, they have all developed systems to respond to dislocations by compensating those who are specially affected by sudden changes in the international economic environment. In his analysis of this phenomenon Peter Katzenstein (1985) notes, that:

> *"... elites in the small European states, while letting the international market force economic adjustments, choose a variety of economic and social policies that prevent the costs of change from causing political eruptions. They live with change by compensating for it."* (Katzenstein, 1985 p.24)

Through a system of domestic compensation to such groups, their resistance are reduced to a point where the necessary rapid readjustment can take place. The reactive, incremental and flexible

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[9]. For a discussion on the resulting national or regional lock-in, see David, 1985, Arthur, 1989, Friedrichs, 1993.

[10]. Imai et al. (1986, p.373) contributes an important part of Japans economic success to the ability to unlearn former organisational or institutional rigidities through the acceptance of managerial declarations of a state or emergency or crisis, which makes radical changes easier to swallow.

pursuit of industrial adjustment might even take place *before* the question of domestic compensation has been settled, *if* these firms, groups or individuals, with the potential power to prevent or delay certain changes, trust that eventually they will be fully satisfied[11].

Belief in government can therefore be crucial to the national response-rate to external economic shocks. The investment in a reputation of reliability becomes a subtle, but essential element in the economic and industrial policy of small nations.

2.3 Negotiated economy

Small nations like Denmark have a tradition for working out broad compromises between stakeholders in business, politics and public life in toto. The consensus-seeking behaviour is rooted in a special sort of collective learning taken place when all participants know, that their chance of success in international business critically depends on the degree of domestic unity. Dissatisfied partners or neighbours mean continuous problems, which will have negative effects on all. The collective learning taking place when living together - yesterday, today, tomorrow and the day after[12] - seems to convey the message, that yielding on some point in order to reach a compromise, will often give better long term results, than taking full advantage of a contemporary strong bargaining position.

A common and distinct language, a shared cultural heritage, a sense of unity and participation all reinforces this tendency towards consensus-seeking (just as Belgium is a contemporary example of what might happen when some of these features are lacking). Within the consensus-seeking framework it can be implicitly or explicitly recognised, that criticism and conflict play a positive role in order to identify the arena of interests, where a compromise must be found. On the surface the political picture might look chaotic, but behind the screen the consensus-seeking process is at work. When, for instance, the number of political parties in Denmark rose steeply in the 1970s it was noted that

> *"Even in their fragmented political pattern there is a broader sense of unity than before"* (Boyd, 1978 p. 30)

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[11]. That such a mechanism sometimes in fact do increase the rate of response of small nations, it is not universal or unlimited. On the contrary, it is often possible to find specific situations, where necessary changes are blocked for a shorter or longer time by some group with vested interests in maintaining the present state of art.

[12]. The low mobility rate in European countries thus play an economically important though often overlooked role.

In Denmark the consensus-seeking process has interacted with century-old, deep-rooted egalitarian beliefs and an aversion against conspicuous consumption (Veblen, 1899). Historically this egalitarianism affected not only the income distribution and the distributions of land holdings - both being more even than in the rest of Europe - but turned out to be a decisive factor in the local processing of growth impulses from the world market in ensuring that accumulated capital was directed into productive use[13] (Menzel, 1980). The difference in post-tax incomes between top and bottom in the work force is still very modest compared to other European nations, though a process of divergence has started and is likely to continue in the years to come[14]. Nevertheless it is the extent of the egalitarian structure of the Danish society which continues to distinguish Denmark from most other small developed nations.

In the production and reproduction of the Danish political, cultural and economical identity the egalitarian tradition and the consensus-seeking behaviour have amalgamated to form a common *informal* institution, which has shaped the ways of *formal* decision-making. The result has sometimes been called the "negotiated economy" (Hernes, 1979, Nielsen et al., 1988), where interest-groups from all walks of society are drawn into the decision-making process. A negotiated economy is a specific

> *"structuring of a society, where an essential part of the allocation of resources is conducted through institutional negotiations between independent decision-making centres in state, organizations and/or corporations"* (Nielsen & Pedersen, 1991).

Few who have witnessed the functioning of the negotiated economy at close quarters will probably feel tempted to praise its simplicity or effectiveness. Its merit lies, however, on another level: in the way whereby the process of reaching an agreement or decision simultaneously increases the insight in - and understanding of - the other participants position, interests and visions. Negotiation does in this sense imply learning, which makes next round of negotiation slightly easier and which enables not just the elites but sometimes even the society at large to reach a common perception of present and future challenges and of the way the society might proceed. When imported disruptions necessitate rapid adjustments in the domestic production system, an already existing platform for intervention is thus sometimes established.

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[13]. If Adam Smith is right in claiming that "The chief enjoyment of riches consist of the parade of riches" a society which bans conspicuous consumption and praises egalitarianism will tend to direct any surplus created into the available and socially acceptable outlet: new productive investments.

[14]. The best way to structure the wage system and the labour market in order to increase long term employment growth has been increasingly been discussed through the last five years, though no final agreement has been reached neither in Denmark nor in international bodies (European Commission, 1993, Federal Reserve Bank of Kansas City, 1995).

2.4. Penalising opportunism

It is difficult to act in a fully opportunistic manner in a village, without being severely penalised. Utilising asymmetrical information[15], or passing defective or substandard goods as first class, or creating hold ups in order to benefit at the expense of others in the local community, will all be noticed. The information of such behaviour will be passed on to everyone, who in the future will tend to take their business elsewhere. Not so on the global market for standard goods, where all customers and all suppliers easily can be substituted. An unsatisfied customer has no way of reaching all potential future buyers, and opportunistic behaviour will then continue and become part of the game.

The business community in a small nation like Denmark has very strong elements of the village-mechanism. In most lines of business, and certainly within all sectors of manufacturing industry, the domestic producers know each other either directly or indirectly. Most managers in larger enterprises will meet regularly and many will have known each other personally for years. Even in sectors dominated by a great number of small and medium-size enterprises like plastic-production or furniture manufacturing all producers will have a remarkable degree of knowledge of most other domestic producers in the sector, their main domestic and foreign suppliers and the most important customers. All firms in the sector will usually be organised in at least one association or guild with nationwide coverage, with its own publications or newsletter and with annual or more frequent meetings. Many of the managers will share the same background and have received the same education, and most will have participated in some sort of joint activity on the local, the regional or the national level. Within the region the knowledge of each other is even higher and no major incident in a line of business passes unnoticed.

The present trend towards sectorial clustering in Denmark (and in the other Nordic countries (Eskelinen, forthcoming)) reflects the advantage of proximity - not in supply cost or in low lead-time[16], but in learning. Clusters or industrial districts are not designed. The most important internal institutions, which reenforce the process of clustering, are mainly informal: the quality of the financial services, the technological spillover, the entrepreneurial rivalry between firms etc. And

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[15]. The problems of asymmetrical information is illustrated by Barzel: *"For example, determining the weight of an orange may be a low-cost, accurate operation. Yet what is weighed is seldom what is truly valued. The skin of the orange hides its pulp, making a direct measurement of the desired attributes costly. Thus the taste and the amount of juice it contains are always a bit surprising. The grower, more knowledgeable than the consumer, may gain by making the surprise an unpleasant one. The potential errors in weighing the commodity and in assessing its attributes permit manipulations and therefore require safeguards."* (Barzel, 1982 p.27)

[16]. That lead-time plays a minor role is confirmed by a number of interviews with business in such clusters in Denmark, and reflect the efficiency of distribution systems in Northern Europe: goods can be ordered from warehouses located in Northern Germany or Sweden one day, and be at the gate the next.

most important: the proximity seems to create an even deeper village-atmosphere where malfeasance is punished and trust-relations can be build and utilised in knowledge-creation[17].

Such a business climate does not necessarily lean itself to cooperation and interaction. In more cases than not the opposite seems to be the case. Especially small firms often envision the fellow producer down the street as their main competitor and often try hard to outsmart him without damaging the firm's own reputation. Local rivalry of this kind stimulates the entrepreneurial spirit and reinforces the productivity in the region. At the same time the shared history, values and culture nevertheless make certain types of exchange and corporation easy (Aydalot, 1986). In regions and countries where the majority believe that opportunism is penalised, firms act as if they trust each other (Granovetter, 1985, Saxenian, 1994). And trust - as we know - is a remarkably efficient lubricant to economic exchange. Firms often compete while at the same time helping each other in overcoming technical problems, by lending materials and swopping surplus capacity or by exchanging information. Lawyers or written contracts are seldom used[18].

The low barriers for interaction between firms - especially at the local and the regional level - have increasing importance as the use of knowledge gradually intensifies when developing new products and processes and when accessing new markets in new ways. As the developments in the international competition increase the demand for knowledge-exchange, new network relations between firms seem to be build at a faster rate than ever before (Axelsson & Easton, 1992). In practise the effects of a trust-enhancing environment and the active trust-building through relation-specific sunk costs will be interconnected. In the pure market economy it is difficult to determine the price for information that will satisfy both buyer and seller (Nelson & Winter, 1982). The buyer wants to establish whether the information offered is worth the requested price, but given this information he or she is no longer on the market:

> *"...its value for the purchaser is not known until he has the information, but then he has in effect acquired it without cost.."* (Arrow, 1970 p. 152).

and further:

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[17]. It is interesting to note, that the experimental literature indicate that income maximizing individuals ideas about fairness etc. - which is part of the egalitarian perception of the world - may have significant consequences for the off-the-equilibrium-path incentives and subsequent off-the-equilibrium-path behaviour in a way that influence the outcome (Prasnikar & Roth, 1992).

[18]. In his still very readable account of this phenomenon Macaulay (1963) could have been addressing the situation in Denmark when he observes that "even when the parties have a detailed and carefully planned agreement which indicates what is to happen if, say, the seller fails to deliver on time, often they will never refer to the agreement but will negotiate a solution when the problem arises as if there never had been any original contract (p.61).

> *"The cost of transmitting a given body of information is frequently very low...In the absence of special legal protection, the owner cannot, however, simply sell information on the open market. Any one purchaser can destroy the monopoly, since he can reproduce the information at little or no cost"* (Arrow, 1962 pp. 614 - 615)

The knowledge of these mechanisms will discourage the seller from offering the information in the first place. Such *market failure* can be overcome by taking the transaction away from the market, by the development of long-term trust-based relations between two firms (Ford, 1990, Sabel 1992) - secured by each firm's investment in relation-specific sunk costs (Eccles, 1981). The market failure can, however, also be overcome by placing the firms in situations where any violation of trust is so severely penalised that in effect malfeasance become a non-option.

The village-nature of business-life in small nations like Denmark participates in creating such a trust-creating environment which do not force the firms to cooperate if they are not so inclined, but which makes cooperation possible for firms with a different frame of mind. Such informal institutions or conventions (Storper, 1994), which lower the barriers for interaction, cooperation or exchange and creation of knowledge, increase rapidly in economic importance as we turn towards the knowledge-based economy.

It has been shown (von Hippel, 1988), that on a local level, where firms share the same values, background and understanding of technical and commercial problems, such economic beneficial learning-by-interaction does in fact exist. In a recent paper Fagerberg (1995a[19]) brings this argument a little further by showing that it is not supply factors in each country, but domestic demand-induced innovation, which leads to international competitive advantage in western economies of today (Porter, 1990). In his study of 16 countries, 23 pairs[20] of user-producer relationships (Lundvall, 1985) in three years indicate, that advanced domestic users do have a positive impact on competitiveness, especially if the home market is exposed to foreign competition. He concludes that:

> *"....interaction between users and producers of technology (is) a major impetus to technological change. Interaction, however, involves costs...these are a decreasing function of both the stability of the user-producer relationship and the degree of 'proximity', defined to include factors such as language, the legal system, the educational system etc. Hence, most stable user-producer relationships are of a* ***national*** *character."* (Fagerberg, 1995a p. 254).

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[19]. Following Linder (1961)

[20]. A pair consist of a an export product an a home market sector. For instance do "milking machines" and "dairy products" or "sewing machinery" and "clothing" constitute pairs.

The socially constructed framework which enables firms to interchange otherwise purely internal information constitutes an important part of the total set of capabilities which distinguish some nations or regions from others, and enhance the competitiveness of the firms located there.

Hence, Denmark is by and large following a medium or even a low road, rather than pursuing international competitiveness in high growth or high-tech sectors[21]. The relative high wage-level - and the higher value-added - is only to a point related to the supply of capital or labour but is closely related to the nation's total competence.

Competence in an economic system can be embedded in the individual employees as the result of acquired skills, education, qualification and training. Competence can also be found embedded in the fixed capital of the firms through its investments in machines etc. And competence can be found in the organisational structure of the firm, where insignificant incremental improvements from learning-by-doing and from repeating tasks all accumulate and gradually result in new and better ways of doing things. These improvements will in due courses be embedded in the daily life of the firm as cost-reducing *routines*, representing "the transmission in time of our accumulated stock of knowledge" (Hayek, 1960 p.27).

In the Danish case the joint effect of the three forms of competence can, perhaps, explain how the economy is able to sustain the relative high level of income in year after year. It seems, however, likely that a major contribution must come from a fourth type of competence: the *interorganisational*.

The interorganisational competence includes the routines and conventions that make the economic system function without much fuss and with accordingly small transaction costs: the costs of persuading, negotiating, coordinating, understanding and controlling each step in a transaction between two organisations e.i. two firms. It is enhanced by the shared culture of the nation or region described in an earlier section of this paper.

For instance will the collective learning in the handling and processing of fish, in agro-industry, in the processing of wood to furniture etc. continuously eliminate technical and organisational problems and convert them to a matter of routine: this is the way we do things, and nobody needs to give it a further thought for the time being. Such a procedure will often be fatal on the high road

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[21]. Thus the direct foreign investments in Denmark has traditionally been on a rather modest level compared with most of the countries EU-partners. The first foreign firms to be established in Denmark include ABB (1920), Colgate (1926), Phillips (1933) and Shell (1939). Today app. 2.150 firms in Denmark (= 9 per cent of total) with app. 130.000 employees has foreign ownership. Most of these firms are very small firms within the service sector. Among the larger are ABB (with 4572 employees in 1992 an a turnover of 4.7 bill.d.kr.) Norsk Hydro (3249 employees, 9.2 bill.d.kr. in turnover) Shell (2899 and 7.4 bill.d.kr.) IBM (2643 and 6.9 bill.) and MAN B&W diesel (2460 employees and 2.9 bill.d.kr. in turnover in 1992).

of development, with its sudden shifts in technological trajectory, demand pattern or fierceness of competition[22]. It is, however, rather safe when moving slowly on the quiet and less glorious road of low-tech learning, avoiding the disruptions of rapid changing technology or of sudden demand-shifts.

All progress in the refinement of interorganisational routines increases the efficiency by lowering the total transaction costs (Langlois, 1992). When long-term national or regional collective learning has taken place in a line of business, the costs of using the market - as opposed to relying only on intra-firm activities - diminish to a point, where a territorial industrial configuration of small firms only, might become even more efficient, than a configuration with larger firms, burdened with the cost of internal control and measures against shirking (Alchian & Demsetz, 1972[23]). Thus, a business environment that enhances trust will always make an economic difference, but when the traditional, static, cost-related international competition is superseded by competition based on dynamic improvements and learning (Lundvall, 1994), the importance of such an environment increase dramatically.

3. Formal institutions

The reader, who has followed the argument this far, might have noticed a certain neglect of the role played by *designed* or formal institutions. This imbalance will be partly rectified in the following sections, starting with a general introduction to some of the central elements in the Danish political system.

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[22]. The concept of a "high road" of constructive competition was introduced in Sengenberger & Pyke (1992, p.12), in a somewhat different context of assessing the developmental effects of labour standards.

[23]. The existence of such general relative benefits for smaller firms are not the same as saying, that no larger firms can exist. Denmark do in fact have a number of larger enterprises, though their proportion of total industry are smaller, than in most other countries. Only 19 per cent of the Danish firms had more than 500 employees, compared with 36 per cent in Germany, 32 per cent in the UK, 33 per cent in France and 42 per cent in Sweden. Only Italy shared Denmarks size structure. The average turnover for the 100 largest enterprises in Denmark were 697 bill US$ in 1992 compared with 8.921 in Germany, 9.469 in the UK, 8.887 in France and 2.963 in Sweden (Strandskov et.al. 1994:39). The largest Danish firms include ISS with 115.000 employee, mainly employed outside Denmark.

3.1 Governance structure and policy stances

There is something slightly surprising in the fact that though the Danish social-democratic party has been in power for a large part of this century, no "master plan" has been drafted, nor has any detailed working program for the overall industrial development been put to work. On the contrary, the Danish industrial policy of the last 25 years can only be described as liberal (Sidenius, 1983), with dominant elements of "hands off"-policies, even if crisis-hit sectors such as shipbuilding received economic support of a considerable size through a number of years.

The government is not in general perceived as having superior knowledge on the spew of the business world, which would enable it to intervene in the "natural" course of events or in the trajectory of the technological development. Although the emphasis surely differs, the strong interest groups for both employers and employees all agree on the broader point, that the government should concentrate on establishing a stable and favourable macroeconomic environment with low inflation-rates, fixed exchange-rates, gradual and controlled growth in domestic costs (incl. wage-levels (table 3) and taxes (table 4)), and a rate of interest close to (or preferably below) the German. The government are only habitually called to step in if and when imported disruptions necessitate compensatory measures.

On all the macro-economic issues, the difference between social-democratic and conservative-led governments of the period has chiefly been marginal, thus reflecting the consensus-seeking nature of the negotiated economy.

This have not, however, prevented notions of "leading sectors" and "sundown"-industries to enter the public debate, supported by quarters in the social-democratic party, the left wing, a few but politically important unions and parts of the governmental apparatus. Plans has been forwarded - with some initial success - to try for a "active" industrial policy, based on public economic support to the supposed "winners" of tomorrow in order to increase their competitiveness and thereby put the nation on the fast track (Rasmussen, 1989). These ideas have now more or less petered out as many of the perceived winners went bust, while alleged doomed industries thrived. New research results and understandings of the roots of sustained competitiveness - mainly through the works of Porter (1990) and the subsequent revival of Penrosian resource-based thinking - further fuelled this development.

An important device in this process has been the ongoing business studies of the Danish industrial strongholds (resource-areas), consisting of related industries - often with an above-average market share - and with their upstream suppliers, their supporting industries as well as their main customers. The studies were originated by the Council of Industrial Development *(Erhvervsudviklingsrådet)* with representatives from the largest firms, the federation of industrialists, the

unions, the SMEs, the universities, etc., in short: a typically Danish consensus-seeking body. Eight business area-studies[24] covering approximately 90 per cent of all economic activity in Denmark (93 per cent of value added, 87 per cent of total export, 89 per cent of employment) has been published, identifying the main strategic issues for each stronghold (box 1). A further breakdown of the total Danish export and import on countries are shown in table 5 for the whole period from 1945 to 1994. The development in the annual growth etc. of Danish exports and imports are shown in table 6.

[24]. Each report contain an identification of the stronghold, an outline of the economic development of the industry and the industries present situation, a description of the external conditions: the international framework conditions and the market development as well as the internal conditions: the competition between Danish firms, their resource base, their strong and weak sides. Each report also analyses the relevant infrastructure, regulation, educational situation, R&D, technological service, industrial policy etc. and identifies the most important strategic issues for the industry (se Box 1). Finally it discusses the tendencies, scenarios and possible policy recommendations. The reports were written by a group of one or more professional management consulting firm(s) with one or more university researcher(s) in close dialogue with selected industry representatives (10 - 20) and assisted by 5 "monitors". The whole project was financed by the Ministry of Industry, Department of Industrial Development *("Erhvervsfremme Styrelsen")*

BOX 1

Identified industrial strongholds ("resource-areas")

Food: 14% of value added[25], 14% of employment, 21% of export
Strategic issues: Overcapacity. Regulation based supply problems. Regulation and problems of market access: retailers increasing power.

Construction, housing: 13% of value added, 15% of employment, 7% of export
Strategic issues: Low productivity and low international competence. Low quality levels in management and bad logistic performance.

Medico/health: 3% of value added, 2% of employment, 4% of export
Strategic issues: High growth and high risk, leading to increasing capital demand. Growing importance of international R & D and collaboration with hospitals and doctors

Transport/Communication: 11% of value added, 12% of employment, 20% of export
Strategic issues: Highly fragmented industry, low levels of competence and increasing competition, partly as a result of trends towards international deregulation.

Environment/Energy: 6% of value added, 4% of employment, 6% of export
Strategic issues: Increasing demands for financial competence, internationalisation and accelerated innovations. Importance of demanding customers for future product development.

Tourism/Leisure: 6% of value added, 6% of employment, 3% of export
Strategic issues: Many free riders and few producers of tourist products. Lack of relevant transfer mechanism from the beneficiaries (hotels, restaurants, transport services) to the producers of attractions. No one responsible for the product.

Consumer goods: 4% of value added, 6% of employment, 3% of export
Strategic issues: Lack of cooperation. Bad quality management. Increasing power at retailers.

Service (incl. retailing and wholesales): 33% of value added, 30% of employment, 23% of export

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[25]. All percentages shown are of the total value added in Danish industry, the total Danish employment and the total Danish export.

As a result of these studies and reflections a different paradigm is now emerging in the Danish industrial policy. It is *market-conformist* in the sense, that it explicitly avoids even Commission-permitted subsidies to individual firms or industries (the domestic implications of EU-agricultural policy being the major exception) and mainly depends on the workings of the market mechanism. It is, however, at the same time *selective* in its recognition of the necessity to build on the distinctive industrial pattern of specialisation in Denmark.

Together these two element have redirected the industrial policy towards improving the *framework conditions* of each industry: the technological and physical infrastructure, the skills and qualifications available on the labour market, the functioning of the capital market, the quality of the supply-system etc[26]. This turn in policy is reflected in statements from the government like these:

> *"The macro policy cannot produce a permanent increase in the national standard of living. The supply, quality and productivity of such factors of production as equipment, knowledge, labour and infrastructure are decisive for the national economic performance in the long run"* (Ministry of Finance, 1992).

> *"The tendency until now has been to concentrate the industrial policy on grants and other such economic intensives to industry. However, detailed studies of firms framework conditions show, that initiatives in areas as traffic and communication, public financed research, education, demand from the public sector, regulation and service all has greater impact on the development of the firms in any industry"* (Ministry of Industry, 1993).

The appropriate instruments to enhance the competitiveness of firms in for instance pharmaceuticals (medico/health) might be public investments in R & D and public support for building contacts between industry and research to disseminate new knowledge. It might further be the creation of demanding customers through investments in public health programs and through specialisation in hospitals.

The appropriate instruments in other industries would, however, be very different. Infrastructure-investments and programs to improve market access (language training, network-formation to strengthen market bargaining power etc.) are of the highest priority for firms in the consumer good-industry. Educational programs are more important in the leisure-industry etc.

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[26]. More than 50 task forces working under the Ministry of Industry are forwarding suggestions on how to implement such a policy within every sector of industry. Each task force consist of representatives from business, unions, universities and the relevant parts of the public sector. It is foreseen, that the number of such task forces will increase to about 300 in the coming year (Permanent under-secretary for Industry Jørgen Rosted, December 1995) .

The conclusion drawn from this exercise is that a good industrial polity is also a *differentiated* industrial policy. The role of macro-economic policy is to ensure stability and incentives to work and produce. The role of industrial policy is to eliminate bottle-necks and barriers on the path that the industry (and not the government) has chosen to follow and to increase the competitiveness of firms by supplying a favourable environment of demanding and supporting entities.

As the economic resources available are limited, a number of advisory boards and committees has been set up to identify the best way of doing this in practise. They interact and in a sense compete with a large amount of sometimes even more influential organisations and interest-groups outside the formal structure of government. The negotiated economy is in play.

3.2 Institutions for diffusion of technological innovations

A number of surveys has been conducted over the years on how Danish firms learn of global innovations. Not surprisingly, the results differs with firm size. The large, global oriented firms usually have R & D-departments of their own, monitoring international progress within the firms' field of interest. Sometimes these large firms plug into knowledge-pools throughout the world by out sourcing parts of the current research-portfolio and reaping the results, by obtaining access to foreign labs through cooperation or procurement, and by establishing own facilities in international research hot-spots.

However, the many SMEs (table 7 & 8) get the bulk of their information on new products, new processes, new materials and other input, and of new production equipment through the market: by visits of sales representatives, service personnel and consultants from upstream suppliers. Sometimes these sources might be supplemented with information coming from sources downstream. This is, for instance, the case within the furniture-industry, where IKEA, the global outlet for household furniture, on a regular basis inform their suppliers and subcontractors of innovations and improvements. Also trade organisations, fairs, catalogues and other written material are important.

As a supplement - and only as a supplement (though the officers employed enlarge its importance) - to these established channels of information the Danish government has established an elaborate system to monitor and disseminate knowledge (mainly technological) of relevance for the SMEs. Within agriculture, this effort has been decisive for the high productivity levels reached. The parallel system aimed at assisting manufacturing industry etc. was established more than 80 years ago, and comprises Danish Technological Institute (DTI) - where the two departments[27] with a turnover of 688 mill. d.kr. now employs approximately 1.100 persons (equal too approximately

[27]. One of the departments is situated in Taastrup in the vicinity of Copenhagen and the other in the countries second largest town of Aarhus. Smaller units is placed in a few provincial towns (like Herning).

1 per cent of the total workforce in the SMEs) and have a connected network of 15 local Technological Information Centres (TIC) spread throughout the country[28] - and FORCE/DELTA, which specialise in supplying advanced technological information within selected areas. On top of this a new government-led system have sprung into existence in recent years with special emphasis on entrepreneurs and entrepreneurial (intrepreneurial) activity.

Finally the universities, business schools and polytechnics all play a role in servicing industry. Most important in this respect is by far the knowledge conveyed through new generations of university candidates employed in industry, but some incidents of a closer day-to-day interaction has been recorded. The small cluster of highly specialised firms producing mobile phones and advanced radio-communication equipment in Northern Jutland has thus benefitted from their cooperation with the local Aalborg University (Dalum & Villumsen, 1994, Dalum, 1995)

The persistent low level of research and development in Danish firms[29] has created some concern in the Government, especially after it was shown, that the Danish innovative firms had a rise in turnover of 11 per cent and in employment of 3 per cent from 1990 to 1992 (incl.). The non-innovative firms had, on the other hand, only experienced a growth in turnover of 4 per cent and a *loss* in jobs of 2 per cent (Erhvervsredegørelse 1995:156).

3.3 Environmental institutions

A new actor in the technological game is the environmental authorities at the local, regional and national levels. Together with public opinion and customers demands they have had a growing influence on the investment pattern and internal restructuring in many industries.
The Ministry of the Environment has been setting (and controlling) firm- or industry-specific pollution limits, and introduced economic incentives, information programs etc. The government has further implemented a system of "green" taxation on natural resources (water, energy) and waste. As a result the manufacturing industry has moved - or are in the process of moving - from end-of-pipe solutions to new technologies with some degree of recycling, resource-savings and reduction in the use or production of environmental damaging materials or waste (table 9).

The most important change in attitude - according to sample surveys - has not been brought about by the environmental legislation or through the efforts of the environmental agencies to distribute smart pamphlets or establishing on-line databases with green information on products or

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[28]. Each TIC employ 4-6 consultants and have a secretarial staff of 1 or 2. From the first of January 1996, the TICs will be made independent of DTI, there role and tasks changed. A new organisational framework is presently being build (Erhvervsministeriet, 1995a).

[29]. The cost of research in private firms was 0.4 per cent of GDP in Denmark in 1970, compared with 0.9 in Sweden and 1.5 in Germany and in the UK. In 1993 the Danish level had risen to 1.1 per cent compared to 1.4 in the UK, 1.7 in Germany and 2.2 in Sweden (OECD, MTSI-database (here quoted from Erhvervsministeriet 1995b:157)).

processes, but through market-conformist impulses: Rapid (designed) increase in resource-prices and pressure from employees who see the connection between improved working conditions and the greening of industry. Perhaps even more important is the industry's recognition that customers actually might want environmentally sound products and production processes, and that their competitors are starting to meet this demand. The resulting innovative activity even in small firms are sometimes truly amazing, and sometimes the results can even be sold at a profit.

The often heated earlier public discussion on the economic growth-inhibiting effects of all greening of industry has gradually diminished as practical experience has been gained, profits earned, and the inevitability of the process accepted. The political and public focus is thus shifting from manufacturing industry to the pollution created in agriculture by the sectors use of fertilisers, pesticides etc.

3.4 Human capital and employment

Contrary to the popular domestic beliefs do the Danish educational level in 1992 only slightly exceed the OECD average (OECD, 1995) with 41 per cent of the workforce (age between 25-64 years) receiving less than eleven year of education (45 per cent in the OECD), and with 13 per cent of the workforce receiving more than 15 years formal education (11 per cent in the OECD), see table 10. The former gap in the average length of education between men and woman is, however, rapidly closing, and the proportion of female university candidates in areas like medicine and law exceeds the male. The same has since long been the case in teacher training, social educations etc.

An international comparative survey recently concluded that in spite of substantially higher annual costs per pupil in Denmark compared to most other countries, the Danish pupils ability to read a text when in third form where only marginally better than the pupils in Trinidad and Tobago - but below pupils from Cypress as well as from all other European countries. Certain changes in the Danish primary school system seems slowly to materialise as a result. The universities etc. are experiencing the same tendencies towards bibliometric evaluation and a similar output-related interest from the government as in many other countries in Europe, and have felt a need to proceed with and expand on already established procedures for quality control in research and in educational activities.

The intermediate layer of educations has experienced a gradual shift in the students interest away from technical specialities and towards commercial and humanistic areas. Also here are restructuring - with decentralisation of responsibility and power - in progress.

The vocational training system in Denmark consist of a great many different institutions who offers courses of very different length and content. A summation of all these activities show, that in 1993 more than 107.000 "full-year courses"[30] with a total budget of 5.6 billion Danish kroner (880 million US $). The public expenditure on vocational training in 1991/92 was approximately 0,40 per cent of GNP[31], compared with 0,19 per cent in the Nederlands and 0,59 per cent in Germany(West). The part of the cost for vocational training payed by the firms in the same period were 2.1 per cent of their total wage bill, compared with 1,5 per cent in the Nederlands and 1,8 per cent in Germany(West). A break down of the participants on age-groups shows, that the Danish vocational training programs have a comparatively greater emphasis on the older members of the workforce (table 11).

Since 1974 the number of industrial disputes - though already at a low level - has further diminished, just as the number of working days lost because of sickness etc. is only a fraction of what it was in the sixties. The growth in unemployment since 1974[32] has also influenced all other parts of the labour market and is not associated with specific age-groups. It is, however, closely associated with the level of education received: an unskilled person faces 2-3 times higher risk of becoming full-time unemployed than an individual who has received more than five years post-primary school education.

White-collar workers are guaranteed a minimum notice if laid off and the length of the notice is regulated in accordance with the number of years they have been employed in the firm, but many will have an individual contract specifying an even longer period. The exceptionally large group of civil servants in Denmark (table 12) have historically had a very high degree of job security. The blue-collar workers, however, have no job guarantee and can be fired at very short notice (a week) - officially in order to increase the flexibility of the labour market and ensure, that the employers will not be restrained in creating jobs because of fear from being stuck with an excess workforce tomorrow. A very large proportion of the blue-collar workers are thus hit by unemployment for longer or (often) shorter spells throughout the year. In order to make such a system function high levels of unemployment benefits must be available. The high level of compensation given to all unemployed has increasingly become a burden on the public finances.

Due to the high rate of unionisation in the Danish workforce (table 13), the unions or their federation are important and active players in the negotiated economy, not just on questions

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[30]. Ten persons each following two courses with an average length of 2½ weeks will make one full-year course (50 weeks).

[31]. A illustration of Denmark GNP in relation to other OECD-countries is given in fig. 3.

[32]. If new technology has any general impact on employment it is a negative one. New technology is needed in order to ensure the firms competitiveness and if they succeed in gaining market shares by such investments, this will off course also be reflected in the numbers employed. Many other factors influencing managerial strategy will have to be known before any causal relationship can be established.

related to the labour market, but also on tax[33] and financial policy, cultural and social policy, industrial and technological policy etc. In recent years parts of the biannual negotiation of wage and working conditions between the unions and the employers has been decentralised to the individual firms, enabling the management and the employed to find local solutions. It is too early to comment on the results of this development.

3.5 The future

Supported by the somewhat favourable present development in Denmark's economic performance (OECD, annual country reports etc.) and an small annual surplus on the balance of payment, it is generally felt that the country is on the right track.

Only the constantly high rate of unemployment stain the overall picture, and represent a threat to the coherence of the society. The economic upswing has, however, since the beginning of 1995 completely changed the situation on the labour market in many of the former peripheral and unemployment-ridden regional development areas in Denmark - where some sectors report of full employment and others of a growing number of unfilled jobs available - while the larger cities and especially the Copenhagen Region still suffers from lack of new activity. Hence it is increasingly feared that the rigidities on the labour-market - fuelled by the high levels of compensation - will undermine the current upswing or that it might lead to unwanted growth in inflation. A major labour market reform is therefore in the making. This is generally seen as the top-priority policy area the next five years[34].

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[33]. The development in the taxburden for individuals living in Denmark are shown in the appendices for the period from 1950 to 1994 (both years included).

[34]. The statement is primarily based on the authors discussions with party leaders and executives in labour market organisations.

4. Conclusion

In this paper it has been argued that the influence of the national and the regional institutional endowment on economic development is fundamental. In spite of the growth of trans-national corporations, the national features and distinctions are not completely washed away by the formation of global markets. What appears to be a global, convergent development is in fact constituted by firms deeply rooted in specific territorial settings, and the influence of the firms locational setting is, furthermore, often of paramount significance for their long term competitiveness.

The presented evidence from Denmark indicate that though policy and formal institutions surely play a role, much of the present day's advances in economic life are in reality shaped by informal institutions and conventions which are constantly reproduced and modified through the interaction and learning taken place between and within groups at all levels of the society. The market economy is in this sense a conglomerate of territorial defines entities, each with a specific and embedded mixture of peculiarities resulting from the specific development path taken. Time and space interact in creating restrictions on the distribution of options available to the firms of today.

* * *

Appendix

Table 1

Average annual growth in labour productivity, per cent

	1960-73	**1973-81**	**1981-92**	**1960-92**
Denmark	3.3	1.2	1.7	2.2
Germany	4.1	2.0	1.8	2.7
UK	2.9	1.2	1.8	2.1
France	4.7	2.3	2.0	3.2
USA	1.9	0.0	0.9	1.1
Japan	8.2	2.8	2.6	4.9
All OECD	4.5	1.5	1.7	2.8

Source: Economic Outlook Database, OECD
Here quoted from: Ministry of Industry (Denmark).
Velstand og Velfærd, Copenhagen 1995

Table 2

Unemployed of per cent of total workforce

	1950	**1960**	**1970**	**1980**	**1990**	**1994**
Total	3,3	1,8	1,3	7	9,6	12,1
Men	4,4	2,3	1,7	6,4	8,1	10,8
Woman	1,1	0,7	0,5	7,8	11,3	13,6

Source: Ministry of Industry (Denmark).
Velstand og Velfærd, Copenhagen 1995

Table 3

Real wage per employed (1965 = 100).

	1960	**1970**	**1980**	**1990**	**1991**	**1992**	**1993**	**1994**
Denmark	78,20	121,17	144,87	155,13	157,98	160,98	164,14	167,46
Sweden	....	120,18	148,56	157,51	151,75	154,02	153,11	156,75
Germany	76,03	133,15	182,77	205,99	187,27	197,38	198,13	200,00
UK	....	119,96	153,56	196,25	197,63	198,02	195,65	195,85
USA	88,98	110,07	117,42	118,72	118,48	121,09	122,51	124,05
Japan	....	150,27	219,4	268,31	273,22	270,77	269,13	271,31

Source: OECD. Economic Outlook, june 1995.

Table 4

Taxburden by form of taxation

	1950	**1960**	**1970**	**1980**	**1990**	**1991**	**1992**	**1993**	**1994**
Income tax and other direct taxes	9	12	21	26	29	30	30	30	31
VAT	0	0	8	10	10	10	10	10	10
Other indirect taxes	9	12	10	9	8	8	8	8	8
Other taxes	2	2	2	1	2	2	2	2	2
Total tax burden	20	26	41	46	49	49	50	50	51

Table 5

Export and import of commodities, (Current prices, bill. dkr).

	1945	**1950**	**1955**	**1960**	**1965**	**1970**	**1975**	**1980**	**1985**	**1990**	**1994**
Total Import		5.8	8.0	12.4	19.4	32.9	59.7	109.38	191.56	195.78	215.00
Finland							1.5	4.1	6.3	5.9	6.6
Sweden				1.1	2.5	5.2	8.4	13.9	24.9	22.6	24.8
Benelux							2.1	3.7	6.3	6.4	7.5
France						1.4	2.2	4.7	8.5	10.4	11.5
Greece											
Holland						1.3	3.4	7.7	10.0	11.3	14.3
Italy						1.0	1.5	3.1	6.8	8.1	8.5
Portugal	0,2								1.3	2.2	2.3
Spain	7,9								1.9	2.0	2.4
UK		1.8	2.0	1.8	2.5	4.5	6.1	13.2	18.0	14.9	14.0
Germany		..	..	..	..	..	..	..	..	44.6	46.6
E.Germany	..								1.8	..	..
W.Germany	..		1.5	2.7	4.1	6.2	11.7	20.1	40.3	..	..
Austria	..							1.1	2.0	2.3	2.2
USA				1.2	1.6	2.4	3.6	6.9	11.3	12.1	11.0
Japan							1.2	2.4	7.7	8.0	7.4
Total Export		4.5	7.1	10.1	15.7	24.6	50.0	95.6	179.57	216.44	252.28
Finland							1.1	2.0	3.7	5.6	6.0
Sweden					1.9	4.1	7.4	11.9	21.6	27.6	26.2
Benelux								1.8	3.2	4.5	4.5
France							1.5	4.9	7.9	12.9	13.8
Greece									1.4	1.7	1.9
Holland							1.4	3.6	6.5	10.3	10.0
Italy							2.3	4.8	7.1	10.7	10.0
Portugal										1.3	1.3
Spain									1.3	3.7	4.2
UK		1.9	2.4	2.7	3.5	4.6	9.4	13.6	21.9	23.2	20.5
Germany			1.3	2.1	2.8	3.3	6.8	18.6	28.8	42.9	56.4
E.Germany	..									..	..
W.Germany	..		1.2	2.0	2.7	3.1	6.6	18.0	28.4	..	..
Austria	..								1.3	2.0	2.6
USA					1.0	1.9	2.5	4.2	18.4	11.1	13.8
Japan								1.6	5.5	7.2	10.4

Table 6

Development in prices for export and import

	1950	**1960**	**1970**	**1980**	**1990**	**1991**	**1992**	**1993**	**1994**
Export of commodities (1948=100)	98,1	109,4	142	331,3	485,4	481,2	477,9	468,5	472
Import of commodities (1948=100)	109,3	112,4	127,8	377,1	527	533	525,3	515,6	521,6
Export prices, annual growth	-2,3	-0,9	6,6	13,8	1,4	-0,8	-0,7	-2	0,7
Import prices, annual growth	-0	-4	-4	2	2	8	5	5	5
Balance of trade	6	6	5	7	4	-1	9	1	2

Table 7
NUMBER OF FIRMS AND EMPLOYEES IN THE MANUFACTURING INDUSTRY IN DENMARK BY SECTORS (ISIC(68)) IN 1972, 1984 AND 1992

	1972		1984		1992	
	FIRMS	EMPLOY	FIRMS	EMPLOY	FIRMS	EMPLOY
EXTRACTION OF GRAVEL ETC.	70	1674	64	1002	81	1100
FOOD, BEVERAGES ETC.	786	71963	673	67901	559	59994
TEXTILE, CLOTHING ETC.	932	45472	653	29000	453	20177
WOOD AND FURNITURE	650	23729	623	22726	595	24713
PAPER & PUBLISHING	694	37275	647	31172	656	30577
CHEMICALS	604	36312	616	36813	566	42618
NON-METALLIC MINERALS	510	26504	370	17443	346	15408
BASIC METALS	725	41469	749	39009	743	41096
MACHINERY ETC.	707	52507	806	54532	791	57271
ELECTRICAL EQUIPMENT	291	34906	391	36047	401	32067
TRANSPORT EQUIPMENT	205	31733	245	24995	207	21899
TOYS, GIFTS, SILVERWARE	147	6546	105	5494	94	6754
TOTAL	6321	410090	5942	366134	5492	353674

Table 8
ALL FIRMS IN MANUFACTURING INDUSTRY IN DENMARK GROUPED BY NO. OF EMPLOYED 1972 SHOWING THE AVERAGE RATE OF CLOSURE 1972-92 AND THE AVERAGE SIZE OF SURVIVING FIRMS IN 1992

SIZE 1972	NO. 1972	%	CLOSED	SIZE 1992
10-23 EMPL.	3069	49%	72%	27
24-43	1308	21%	60%	41
44-71	742	12%	50%	66
72-112	458	7%	50%	103
113-169	300	5%	41%	141
170-266	194	3%	44%	219
267-405	128	2%	32%	294
406-808	75	1%	28%	417
809-1978	35	1%	26%	1179
MORE THAN 1978	12	0%	8%	1711
TOTAL	6321	100%	62%	98

EACH SIZE GROUP HAD THE SAME NO. OF EMPLOYED IN 1972

Table 9

Environmental indicators

	1976	**1980**	**1985**	**1990**	**1991**	**1992**	**1993**
Ozonlayer, thickness (Dobson units)	..	361	349	330	344	318	316
Total emission C02 (1000t)	58585	61106	60917	57428	59787	58717	58295
Total emission S02 (1000t)	457	431	342	220	237	206	161
Total emission N0x (1000t)	241	268	294	295	307	278	271
Emission from road traffic, CO2 (1000t	..	..	8031	9173	9344	9326	9177
Emission from road traffic SO2 (1000t)	..	..	10	5	5	3	2
Emission from road traffic NOx (1000t)	..	..	87	102	95	94	89
Emission from road traffic, CO (1000t)	..	..	526	536	522	490	451
Emission from road traffic, HC (1000t)	..	..	82	96	91	87	79
Emission from road traffic, particles(	..	..	4	5	5	5	5
Sales of pesticides, total (tons)	..	..	..	7323	6658	7060	6169
Pesticides, used on plants (tons)	..	..	..	6385	5579	5685	4783
Pesticides, used on wood (tons)	..	..	..	858	984	1270	1305
Pesticides, other use (tons)	..	..	..	80	95	104	81

Source: Denmark's Statistic: Statistiske efterretninger, Environmental Statistics.

Table 10

Formal education of the workforce 1992 (25-64 years), per cent

	No. of years of education			
	1-10	**11-12**	**13-14**	**>14**
Denmark	41	40	6	13
Sweden	30	46	12	12
Germany	18	60	10	12
UK	32	49	8	11
France	48	36	6	10
USA	16	53	7	24
All OECD	45	36	8	11

Source: Education at a Glance, OECD, 1995

Table 11

Vocational training 1992 in selected countries Per cent(Participants on age groups)

Years	**18-24**	**25-34**	**35-49**	**> 49**
Denmark	25	31	35	9
Germany	35	41	18	5
The Nederlands	29	37	26	9

Table 12

Employment, Denmark, 1948-1994 (in 1000 persons)

	1948	1950	1960	1970	1980	1990	1991	1992	1993	1994
Employed, primary sector	523,673	509,447	415,395	252,482	188,020	137,607	132,572	130,619	129,665	123,766
Employed, secondary sector	637,093	685,009	801,004	823,196	711,284	719,941	697,252	695,998	673,607	685,983
Employed, tertiary, private	621,457	635,331	698,963	861,956	851,615	926,529	919,868	914,917	901,030	900,948
Empolyed, tertiary, public	151,293	156,336	221,896	403,448	690,958	780,351	776,406	774,303	794,643	782,743
Total employment	1933,516	1986,123	2137,295	2341,082	2441,877	2564,428	2526,098	2515,837	2498,945	2493,440
Total employment excl. self employed	1378,549	1435,100	1599,571	1896,469	2073,191	2283,491	2256,553	2247,546	2231,211	2229,921
Per cent										
Employed, primary sector	27,1	25,7	19,4	10,8	7,7	5,4	5,2	5,2	5,2	5,0
Employed, secondary secto	32,9	34,5	37,5	35,2	29,1	28,1	27,6	27,7	27,0	27,5
Employed, tertiary sector, private	32,1	32,0	32,7	36,8	34,9	36,1	36,4	36,4	36,1	36,1
Empolyed, tertiary sector, public	7,8	7,9	10,4	17,2	28,3	30,4	30,7	30,8	31,8	31,4

Table 13

Total Danish workforce (unemployed included) 1950-1994 and membership of a union

	1950	**1960**	**1970**	**1980**	**1990**	**1994**
Total workforce (in thousand)	1811	2054	2371	2626	2836	2837
Workforce (as percent of total population between 15 and 64 years of age)	71	70	70	74	77	76
Men	95	98	86	82	82	80
Women	47	43	54	65	71	71
Ratio of union membership (as percent of total workforce)	35	44	48	67	73	76

Source: Danmarks Statistik (Statistical Department of Denmark) Statistical yearbook and the ADAM-database

References

Alchain, A. & H. Demsetz. 1972. 'Production, information costs, and economic organisation'. *American Economic Review* 62:777-795.

Arrow, Kenneth J. 1962. 'Economic Welfare and the Allocation of Resources for Invention.' Pp 609-630 in *The Rate and Direction of Inventive Activity: Economic and social factors*, edited by Richard Nelson. Princeton.

Arrow, Kenneth J. 1970. *Essays on the theory of risk bearing*. Amsterdam.

Arthur, W.B. 1989. 'Competing Technologies, Increasing Returns, and Lock-ins by Historical Events'. *Economic Journal* 99:116-131.

Aydalot, P. 1986. *Milieux Innovateurs en Europe*. GREMI, Paris

Axelsson, Björn & Geofferey Easton, eds. 1992. *Industrial Networks-A New View of Reality* London.

Balassa, Bela. 1969. 'Industrial development in an open economy: the case of Norway' *Oxford Economic Papers*, new series 21:344-359.

Barney, J. 1991. 'Firm Resources and Sustained Competitive Advantage'. *Journal of Management* 17:99-120.

Barzel, Yoram. 1982. 'Measurement cost and the organization of markets'. *Journal of Law & Economics* 25 (1):27-48.

Boyd, Andrew. 1978. 'How the storm changed the signs' *The Economist* (Survey), the 28th of January 1978.

Christensen, Jens Frøslev. 1993. *Innovation i dansk erhvervsliv* (Innovation in Danish industry). Erhvervsfremme Styrelsen. København.

Collis, David J. 1991. 'A resource-based analysis of global competition: The case of the bearings industry'. *Strategic Management Journal* 12:49-68

Cornwall, John. 1969. 'Postwar growth in Western Europe: A reevaluation'. *The Review of Economics and Statistics* L (3):361-368.

Cornwall, John. 1977. *Modern capitalism. It's growth and transformation*. Oxford.

Dalum, Bent & Gert Villumsen. 1994. *National erhvervsudvikling og konkurrenceevne* (National industrial development and the competitiveness) Erhvervsfremme Styrelsen, Copenhagen.

Dalum, Bent. 1995. *Local and global linkages: The radiocommunications cluster*. Northern Denmark. Paper presented at the Journal of Industry Studies and Industrial Relations Research Centre, University of New South Wales, Sydney, 30-31 August.

Dalum, Bent. 1996. 'Growth and International Specialisation: Are National Patterns Still Important?'. In Maceau, Jane (ed): *The competitive advantage of small welfare nations*. Canberra (forthcoming).

David, Paul. 1985. 'Clio and the economics of QWERTY'. *American Economic Review* 75:332 -337.

Drèze, Jacques H. 1960. 'Quelques réflexions sereines sur l'adaption de l'industrie belge au Marché Commun'. *Comptes Rendus des travaux de la Société d'Economie Politique de Belgique* du 20 décembre 1960 (17.45-19.15) 275:4-37. (A translated and revised version with the title The standard goods hypothesis is included. Alexis Jaquemin & André Sapir, eds. 'The European internal market: Trade and competition', Oxford 1989:13-32.

Eccles, Robert. 1981. 'The quasifirm. the construction industry'. *Journal of Economic Behaviour and organization* 2:335-357.

Erhvervsministeriet. 1995a. *Regionalpolitisk redegørelse* (Ministry of Industry: Report on regional policy). Copenhagen.

Erhvervsministeriet. 1995b. *Erhvervsredegørelse 1995* (Ministry of Industry: Annual report on industrial policy). Copenhagen.

Eskelinen, Heikki & Ingjaldur Hannibalsson, & Anders Malmberg & Peter Maskell & Eirik Vatne. *Regional specialisation and localised learning - Possibilities for prosperity. small open economies*. Forthcoming, GKW.

European Commission. 1993. White paper on Growth, Competitiveness and Employment. December.

Fagerberg, Jan. 1995a. 'User-producer interaction, learning and comparative advantage'. *Cambridge Journal of Economics* 19 (1):243-256.

Fagerberg, Jan. 1995b. *Competitiveness, Scale and R&D*. Paper presented at the NUIP/FIEF conference on Technology and International Trade at Leangkollen, Oslo 6-9 October.

Federal Reserve Bank of Kansas City. 1995. *Reducing unemployment: Current Issues and Policy Options.* Jackson Hole, August 25-27, 1994.

Ford, David, ed. 1990. *Understanding business markets-Interaction, relationships, networks*. London.

Freeman, Chris. 1995. 'The "National System of Innovation" in historic perspective'. *Cambridge Journal of Economics* 19 (1):5-24.

Friedrichs, Jürgen. 1993. 'A Theory of Urban Decline: Economy, Democracy and Political Elites'. *Urban Studies* 30 (6):907-917.

Gertler, Meric S. 1995. *Manufacturing Culture: The spatial construction of capital*. Paper presented at the annual conference of the Institute of British Geographers, Newcastle Upon Tyne, January 3-6.

Grossman, Gene M. & Elhanan Helpman. 1991. *Innovation and growth in the Global Economy*. Cambridge Mass.

Grossman, Gene M. & Elhanan Helpman. 1995. *Technology and trade.* CEPR discussion paper no. 1134, February. London.

Hayek, Friederich A. 1960. *The Constitution of Liberty*. Chicago.

Hernes, Gudmund. 1979. *Forhandlingsøkonomi og blandingsadministration*. Oslo.

Hill, Charles W.L. 1995. 'National Institutional Structures, Transaction Cost Economizing and Competitive Advantage: The case of Japan'. *Organization Science* 6 (1):119-131.

Hippel, Eric Von. 1988. *The sources of innovation* Oxford.

Hirschman, Albert O. 1958. *The strategy of economic development*, 17th printing 1975, Yale.

Iami, Ken-ichi & Ikujiro Nonaka & Hirotaka Takeuchi. 1986. 'Managing the new product development process: Companies learn and unlearn' in *The uneasy alliance. Managing the productivity-technology dilemma*, edited by Kim B. Clark, Robert H.Hayes and Christopher Lorenz. Boston.

Katzenstein, Peter J. 1985. *Small states. World markets*. Ithaca, New York.

Kongstad, J. & L. Larsen. 1990. 'The sectorial impact of the internal market in Denmark'. Pp. 140 - 1153 in *European Economy.* Special eddition on Social Europe. Directorate-General for Economic and Financial Affairs. Commission of the European Communities. Brussels.

Kristensen, Peer Hull. 1992. 'Industrial districts in West Jutland, Denmark' Pp. 122-174 in *Industrial districts and local economic regeneration* edited by Frank Pyke & Werner Sengenberger. Geneva.

Krugman, Paul. 1991. 'Increasing returns and economic geography'. *Journal of Political Economy* 99:483-499.

Krugman, Paul. 1994a. 'Competitiveness - a Dangerous Obsession'. *Foreign Affairs* 73 (2):28-44.

Krugman, Paul. 1994b. 'Empirical evidence on the new trade theories: The current state of play'. Pp. 11-31 in *New trade theories - a look at the empirical evidence.* Centre for Economic Policy Research (CEPR), London.

Krugman, Paul & Anthony J. Venables. 1993. *Integration, specialization and adjustment.* NBER Working paper no. 4559, Cambridge, Massachusetts.

Langlois, Richard N. 1992. 'Transaction-cost economics in real time'. *Industrial and Corporate Change* 1 (1):99-127.

Linder, S.B. 1961. *An essay on trade and transformation*. Uppsala.

List, F. 1841. *The national system of political economy*. London.

Lundvall, Bengt-Åke. 1985. *Product innovation and user-producer interaction*. Industrial development research series no. 31, AUC, Aalborg

Lundvall, Bengt-Åke, ed. 1992. *National systems of innovation. Towards a theory of innovation and interactive learning*. London.

Macaulay, Stewart. 1963. 'Non-contractual relations. business. A preliminary study'. *American Sociological Review* 28 (1):55-67.

Maskell, Peter. 1992. *Nyetableringer i industrien og industristrukturens udvikling* (New firm formation and the industrial restructuring) with summary. English. Copenhagen Business School Press, Copenhagen.

Maskell, Peter & Anders Malmberg. 1995. *Localised learning and industrial competitiveness.* Berkeley Round Table of International Economy (BRIE), Working Paper no. 80, Berkeley University. Available on Internet: HTTP://SERVER.BERKELEY.EDU/BRIE/WPLIST.HTML#WP80

Melchior, Arne. 1995. *Technology and International Trade: New Theory and Evidence on the Standard Goods Hypothesis.* Paper presented at the NUIP/FIEF conference on Technology and International Trade at Leangkollen, Oslo 6-9 October

Menzel, Ulrich. 1980. *Der entwicklungsweg Dänemarks (1880-1940. Ein Beitrag zum konzept autozentrierter entwicklung*. Projekt Untersuchung zur grundlegung einer praxisorientierten theorie autozentrierter entwicklung, Bremen Universität, Forschungsbericht, 8. mai 1980.

Nelson, Richard R. & Sidney G. Winter. 1982. *An Evolutionary Theory of Economic Change*. Cambridge Mass.

Nielsen, Klaus & Ove Kaj Pedersen. 1988. 'The negotiated economy. Ideal and history'. *Scandinavian Political Studies*, 11 (2):79-101.

Nielsen, Klaus & Ove Kaj Pedersen. 1991. 'From the mixed economy to the negotiated economy: The Scandinavian countries'. Pp. 145-168 in *Morality, rationality and efficiency: New perspectives on Socio-Economics*' edited by Richard M. Coughlin. New York.

North, Douglass C. 1994. 'Economic Performance through Time'. *The American Economic Review* 84 (3):359-368.

OECD. 1994. *Globalisation of industrial activities* I-II, Working paper no. 48, Paris.

OECD. 1995. *Education at a glance*. Paris.

Olson, Mancur. 1982. *The rise and Decline of Nations. Economic Growth, Stagflation and Social Rigidities*. New Haven, Conn.

Porter, Michael E. 1990. *The Competitive Advantages of Nations*. London

Prasnikar, Vesna & Alvin E. Roth. 1992. 'Considerations of fairness and strategy: experimental data from sequential games' *The Quarterly Journal of Economics.* August, pp. 865-888.

Putnam, Robert D. (with Robert Leonardi & Raffaella Y. Nanetti). 1993. *Making Democracy Work. Civic traditions in modern Italy*. Princeton, New Jersey.

Rasmussen, Poul Nyrop. 1989. 'Industrilokomotiver og samfundsøkonomisk organisering' *Økonomi og politik* 62:7-10.

Sabel, Charles. 1992. 'Studied trust. Building new forms of cooperation in a volatile economy'. Pp. 215-250 in *Industrial districts and local economic regeneration*. Edited by Frank Pyke & Werner Sengenberger. Geneva.

Saxenian, Annalee. 1994. *Regional advantage*. Cambridge, Massachusetts.

Sidenius, Niels Chr. 1983. *The policy role of legislatures. some preliminary reflections and observations on the decision-making process in Danish industrial policies*. Paper presented at the workshop on 'Parliament and Policy' in the ECPR joint sessions, Freiburg, 20. - 25. March.

Storper, Michael. 1994. *Institutions in a Learning Economy*. Paper presented at the OECD-conference on 'Employment and Growth in a Knowledge-Based Economy', Copenhagen, 7-8 November.

Strandskov, Jesper et.al. 1994. *Ejerforhold og konkurenceevne i dansk erhvervsliv*. Erhvervsfremme Styrelsen. Copenhagen.

Veblen, Thorstein. 1899. *The theory of the Leisure Class*. London.

Zander, Udo & Bruce Kogut. 1995. 'Knowledge and the speed of the transfer and imitation of organisational capabilities: An empirical test'. *Organizational Science* 6 (1):76-92.

Zysman, John. 1994. *National Roots of a 'Global' Economy*. University of California, Berkeley.

Danish **R**esearch **U**nit for **I**ndustrial **D**ynamics

The Research Programme

The DRUID-research programme is organised in 3 different research themes :

- The firm as a learning organisation

- Competence building and inter-firm dynamics

- The learning economy and the competitiveness of systems of innovation

In each of the three areas there is one strategic theoretical and one central empirical and policy oriented orientation.

Theme A: The firm as a learning organisation

The theoretical perspective confronts and combines the ressource-based view (Penrose, 1959) with recent approaches where the focus is on learning and the dynamic capabilities of the firm (Dosi, Teece and Winter, 1992). The aim of this theoretical work is to develop an analytical understanding of the firm as a learning organisation.

The empirical and policy issues relate to the nexus technology, productivity, organisational change and human ressources. More insight in the dynamic interplay between these factors at the level of the firm is crucial to understand international differences in performance at the macro level in terms of economic growth and employment.

Theme B: Competence building and inter-firm dynamics

The theoretical perspective relates to the dynamics of the inter-firm division of labour and the formation of network relationships between firms. An attempt will be made to develop evolutionary models with Schumpeterian innovations as the motor driving a Marshallian evolution of the division of labour.

The empirical and policy issues relate the formation of knowledge-intensive regional and sectoral networks of firms to competitiveness and structural change. Data on the structure of production will be combined with indicators of knowledge and learning. IO-matrixes which include flows of knowledge and new technologies will be developed and supplemented by data from case-studies and questionnaires.

Theme C: The learning economy and the competitiveness of systems of innovation.

The third theme aims at a stronger conceptual and theoretical base for new concepts such as 'systems of innovation' and 'the learning economy' and to link these concepts to the ecological dimension. The focus is on the interaction between institutional and technical change in a specified geographical space. An attempt will be made to synthesise theories of economic development emphasising the role of science based-sectors with those emphasising learning-by-producing and the growing knowledge-intensity of all economic activities.

The main empirical and policy issues are related to changes in the local dimensions of innovation and learning. What remains of the relative autonomy of national systems of innovation? Is there a tendency towards convergence or divergence in the specialisation in trade, production, innovation and in the knowledge base itself when we compare regions and nations?

The Ph.D.-programme

There are at present more than 10 Ph.D.-students working in close connection to the DRUID research programme. DRUID organises regularly specific Ph.D-activities such as workshops, seminars and courses, often in a co-operation with other Danish or international institutes. Also important is the role of DRUID as an environment which stimulates the Ph.D.-students to become creative and effective. This involves several elements:

- access to the international network in the form of visiting fellows and visits at the sister institutions
- participation in research projects
- access to supervision of theses
- access to databases

Each year DRUID welcomes a limited number of foreign Ph.D.-students who wants to work on subjects and project close to the core of the DRUID-research programme.

External projects

DRUID-members are involved in projects with external support. One major project which covers several of the elements of the research programme is DISKO; a comparative analysis of the Danish Innovation System; and there are several projects involving international co-operation within EU's 4th Framework Programme. DRUID is open to host other projects as far as they fall within its research profile. Special attention is given to the communication of research results from such projects to a wide set of social actors and policy makers.

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Mette Madsen
Fibigerstræde 4,
DK-9220 Aalborg OE
Tel. 45 98 15 42 11-2945
Fax. 45 98 15 60 13
E-mail: mm@business.auc.dk