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Welfare gains by reducing transaction costs: Linking trade and innovation policy

Joost Baeten and Frank A.G. den Butter *

Abstract

Specialisation and trade are major sources of productivity increases, and therefore of welfare gains. With reference to the Netherlands this paper discusses how (international) fragmentation of production and outsourcing may enhance productivity. In order to promote further specialisation and trade, innovations which lead to lower transaction costs – trade innovations -are needed. When trading countries, which are likely to have a comparative advantage in reducing transaction costs, focus on the coordination function in the production chain, they are able to internalize part of the welfare gains from increased trade. Infrastructure and knowledge investments that reduce transaction costs, the so called trade capital, partly have the character of a public good. Moreover, trade innovations bring about positive externalities, which is another reason for government intervention and for linking trade and innovation policy. From this perspective the paper gives some policy recommendations.

Keywords: outsourcing, transaction costs, knowledge spill-overs, trade policy, innovations, coordination function.

JEL-codes: F10, Z13, D23, K12

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Welfare gains by reducing transaction costs: Linking trade and innovation policy

Joost Baeten and Frank A.G. den Butter

1. Introduction

The major concern of structural economic policy is to foster economic growth. There are two ways to enhance production, namely through higher labour participation and through an increase in production per capita, i.e. labour productivity. Most industrialized countries face an ageing problem so that there is no much scope, or even no scope at all, to raise labour participation with respect to total population in the next decades. It has been suggested that immigration of workers may solve part of the participation problem. Yet, experience from the past and calculations of the welfare implications of immigration show that, at least for the Netherlands, net welfare gains from immigration are very small, if not negative (see e.g. Borjas, 1999, WRR, 2001, Euwals and Roodenburg, 2003, CPB, 2003). Therefore, the focus of structural policy for these industrialized countries is on raising labour productivity. The usual policy prescription is that (labour) productivity should increase through innovations that result from higher R&D investments and investments in human capital (see e.g. the Lisbon strategy). Commonly these recommendations refer to investments which enhance productivity in the production sector through product and process innovations.

This paper highlights another aspect of welfare growth, namely enhancing the productivity of the present workforce by exploiting the welfare gains from international division of labour and fragmentation of production. For nations with a tradition in trade such as the Netherlands –Belgium and Ireland are other examples in Europe – it implies that structural economic policy should also be directed at a reduction of transaction costs. It should be tried to coordinate production in such a way that goods and services are produced in those countries with the lowest production costs, given the standards for quality. This scenario takes advantage of demographic differences and skills around the world and will enhance trade. The innovations in the transaction sector, which we call trade innovations, remain somewhat underexposed in the prescriptions of innovation policy. A reason is that knowledge investments, which bring about these innovations, are commonly not included in the R&D statistics, which is a main indicator for innovation policy. Yet, trade innovations may equally well translate to higher productivity in the production sector. From that perspective this paper focuses on policy recommendations which foster innovations in the global organization of production. The question is how a trading nation such as the Netherlands can use its comparative advantages in keeping the transaction costs low, in the most adequate way and what policy measures the government can take in order to facilitate this scenario. This links trade policy to innovation policy.

The content of the paper is as follows. The next section discusses how more trade through the reduction of transaction costs enhances welfare. Outsourcing and offshoring are major aspects of this tendency to move production abroad (section 3). For the distribution of the gains from international specialisation it is important for a country to keep the coordination and trade function: both consumers and producers may benefit from it (section 4). Section 5 discusses how the efficiency of coordination can be enhanced and section 6 considers the role of the government in enhancing productivity through making transactions more efficient. The main argument here is that knowledge and infrastructural investments that reduce transaction costs – we call it trade capital – have positive external effects and also partly have the character of a public good. Following this argumentation section 7 provides some practical policy recommendations. Section 8 concludes.

2. Trade and transaction costs

Adam Smith already noted that division of labour and specialisation are the main sources of wealth. Specialisation becomes profitable when persons or nations have different endowments and skills in producing different commodities. That is why *comparative advantages* have been central to international trade theory ever since Ricardo came up with the concept. In various ways trade theory has tried to explain actual trade flows from the principle of comparative advantages. However, most of the traditional trade theories do not account for the fact that trade is not for free: the effective exchange of goods and services is costly. In essence all trade transactions relate to exchanges of property rights. So trade and specialisation bring about *transaction costs*. Traditional trade theory does not reckon with these transaction costs and calculations show that international trade would be much larger indeed, when there were no such transaction costs (e.g. Trefler, 1995). These transactions costs relate, amongst others, to the search for a good trading partner, the negotiating and making of the contract, control on execution of the contract and juridical sanctions if the contract is broken. Formal trade barriers, such as tariffs on trade, cause part of transaction costs. However, informal trade barriers are of much greater importance. They are the consequence of differences in language and culture, lack of knowledge and insufficient trust (see e.g. Den Butter and Mosch, 2003, Linders, 2006).

Therefore, transaction cost economics provides us with further insights into the welfare enhancing effects of specialization, but also to the limits of the extent of specialization (Williamson, 1998). The way in which transactions are organized is endogenous according to the transaction costs theory. Alternative modes of organization imply different transaction costs. Transaction cost economics sees a trade off between transaction costs and efficiency of production. If a transaction is simple and transparent, the market is well-equipped to facilitate the transaction. But when transactions get more complicated and other issues become more important (e.g. because of sunk costs or intellectual property rights), more complex contracts have to be designed and enforced.

Consequently, the transaction costs will rise. At a certain moment, transaction costs will be so high that it will be more efficient to internalize different production stages in a single firm. This will reduce transaction costs because there no longer is a need to formulate and enforce complicated contracts. But, meanwhile, internalizing production will lead to less efficiency, because hierarchical structures provide less

powerful incentives than markets. The choice for a certain mode of organization thus depends on the characteristics of the transaction and the institutional environment¹. That is a useful conclusion since it corresponds with the choices firms and other businesses in practice face. This strategic decision is often referred to as the “make-or-buy decision”. This decision on whether to outsource or not is utterly relevant in the current international business environment.

So the substance of trade flows and the performance in trade may not only depend on factor endowments, as is suggested by the neoclassical trade theory, but also on comparative advantages in reducing transaction costs. The Netherlands Scientific Council for Government Policy (WRR, 2003, pp. 77-78) concludes, on the basis of a study on the composition of Dutch imports and exports and a historical review, that the Netherlands possesses two main comparative advantages. The first is its geographical location. The Netherlands is situated on the coast and has many big rivers that connect it with the interior of the continent. These are ideal circumstances for developing into a distribution hub, connecting a big part of continental Europe with the rest of the world.

The second comparative advantage that the council distinguishes is based on social-cultural aspects. The Netherlands has traditionally been and continues to be a nation of traders. This can be interpreted as the Dutch having developed specific skills in trading and therefore a comparative advantage in trade. This is in line with new trade theory that allows for path-dependent comparative advantages². A comparative advantage in trade means that the trading costs are kept low. The Dutch therefore seem to possess a skill in keeping transaction costs low. This has two effects. It makes trading more profitable and it makes transactions viable that would otherwise not have been profitable.

In the following we focus on this second comparative advantage. As a matter of fact there is a continuous dematerialisation of trade so that the comparative advantage of fulfilling a distribution function for (bulk) products will gradually become less important. A comparative advantage in reducing transaction costs implies that innovations should also be directed at such a reduction, and hence on the organisation and coordination of the production process. It is somewhat at variance with policy prescriptions based on modern growth theory, which advocate product and process innovations. These innovations directly lead to higher productivity. Yet innovations which reduce transaction costs may be equally important for economic growth and may appear in the statistics as productivity increases in the production sector (see section 4).

3. Moving production abroad

A major and recently much discussed issue in international trade and the division of labour is the question whether to produce at home or move (parts of the) production

¹ In the extreme case, when public interests enter the arena, transaction costs can lead to regulation or even a public bureau (Williamson, 1998, p. 47). However, these issues are not relevant for the issues at stake here and will not further be discussed.

² Such a comparative advantage on the basis of social-cultural aspects is also compatible with the concept of “social capital” that plays an important role in modern sociology (Portes, 1998).

abroad. Together with the make-or-buy decision, this leads to the following possibilities:

- (i) production at home: internalised production in the home country;
- (ii) subcontracting (or outsourcing) at home: externalised production in the home country;
- (iii) offshoring: internalised production abroad; part of foreign direct investments (FDI);
- (iv) offshore outsourcing: externalised production abroad.

In a more general sense the term outsourcing is used for all kinds of moving production to other places. Then it relates to existing jobs and production activities whereas the term *global sourcing* is used in case of new jobs and production activities (job creation).

In order to illustrate various aspects of outsourcing, consider a two-stage production process, with the second stage executed in the home country. If the first stage of production is internalized in the home country, this leads to a domestic firm. If the first stage is outsourced, either to a domestic or to a foreign producer, this leads simply to a business purchasing its inputs. The only difference between buying from a domestic firm and a foreign firm is that the former does not and the latter does lead to international trade. Another option is to have the first stage produced abroad by a foreign affiliate. This leads to a *vertical multinational enterprise (MNE)*. The establishment of a vertical MNE involves an initial investment in a foreign country, followed by exports to the home country.

Offshoring will be more attractive when the foreign location advantages are big, international trading costs low and (in the case of intra-firm offshoring) there are few restrictions on international investment. Outsourcing will become more attractive if the efficiency advantages of outsourcing are big, transaction costs low and internalization advantages small.

Now, consider the case where the company has the option to start serving foreign demand as well. The company may decide to refrain from serving the foreign market, which would not change anything. If the company possesses some ownership advantages and decides to serve the foreign market, it has three options. The first is to produce domestically and export the final goods. The second is to supply licenses to a foreign company, which will produce the goods and will serve the foreign market. The last option is to open a foreign plant that produces for the local market. This is called a *horizontal MNE*.

Exporting will be attractive when there are economies of scale (at the plant level) and the transaction costs of exporting are low. Licensing is the option when the transaction costs of licensing are relatively low in comparison with those of exporting and economies of scale are rather present at the firm level than at the plant level. When licensing is hard (e.g. because it involves the transmission of sensitive firm specific knowledge) and the transaction costs of exporting are high, opening a foreign plant becomes an attractive option (Visser, 2005, p. 6).

It is important to realize that the second case, where the company starts serving a foreign market, differs in one aspect from the case of serving the domestic market only. In the case of the, earlier mentioned, vertical MNE exports and international

investment are complements. In the second case, by contrast, a horizontal MNE is an alternative to exports. Therefore, the two are substitutes in that case. This difference is a central issue in the literature on MNEs (e.g. Yeaple, 2003 and Markusen and Maskus, 2001) and springs from the type of location advantages of the foreign affiliate.

If a foreign affiliate is set up to avoid international trading costs, it will lead to a horizontal MNE (which produces the same good in different countries). This interpretation of MNE motivation is in the literature referred to as the proximity-concentration hypothesis (Markusen and Maskus, 2001, p. 29). When it is set up for production efficiency reasons (defying international trade costs), it will lead to a vertical MNE. This kind of motivation for multinational activity is called the factor-proportions hypothesis (Markusen and Maskus, 2001, p. 29).

Obviously, vertical and horizontal MNEs are ideal types. In practice, most MNEs are simultaneously horizontal and vertical. Yeaple (2003) terms these MNEs complex MNEs. These complex MNEs are the businesses best capable and most likely to engage in “global sourcing”. This is the process of deciding for every single business process whether to outsource it and whether to offshore it.

Effects of moving production on international trade

The question now is how, both from the theoretical and from the empirical perspective, these various ways to move production abroad affect international trade and investment flows.

The theoretical perspective is that lower trade barriers will bring down international trading costs. This will make vertical MNEs, offshore outsourcing and export more attractive, while it makes horizontal MNEs, foreign licensing and domestic production less attractive. The reduction of foreign direct investment barriers stimulates both horizontal and vertical MNEs.

The effects of the ICT revolution are twofold. On the one hand, it has made offshoring more attractive, because it has significantly reduced the price of long distance communication. On the other hand, it can make outsourcing more attractive, since fragmentation of services has become easier and transaction costs have fallen³. Advances in ICT, however, also reduce the costs of coordination through the hierarchy. It has become easier for managers to obtain information, to communicate their decisions and to monitor their subordinates. Which effect will be bigger, the lower transaction costs for the market or the lower coordination costs within the hierarchy, crucially depends on the trustworthiness of the information in the market. If the new communication media outside the hierarchy only spread unreliable information, they are unlikely to promote outsourcing.

Foreign licensing and offshore outsourcing probably become more interesting because of the advances in ICT. The effects on both horizontal and vertical MNEs are ambiguous. If the cheaper internal communication and coordination outweighs the

³ Modern information technology has brought down the transaction costs by reducing the costs of finding a possible counter party, gathering information on the counter party and his product and monitoring the contract.

increased attractiveness of outsourcing, their numbers (and sizes) are likely to rise. If not, their numbers (and sizes) are likely to fall as a consequence of the advances in information technology.

Altogether, the trends seem to promote offshore outsourcing and vertical MNEs. Exports by national enterprises will probably also become more attractive, albeit not at the expense of other forms of international entrepreneurship. A rise in exports will rather come from businesses that were exclusively domestically oriented and now get the chance to export as trade barriers and information costs fall. It is harder, though, to say how these trends will affect horizontal MNEs. The reduction in barriers to international investment and reduced communication costs will make horizontal MNEs more attractive. But lower international trade barriers will promote exports of home production vis-à-vis horizontal MNEs and lower transaction costs will make international licensing relatively more attractive.

When looking at empirical evidence, Markusen and Maskus (2001) find strong support for the dominance for horizontal MNEs and little support for vertical MNEs, because most activities of a MNE take place in similar countries⁴. However, considering recent developments, there are reasons to believe that vertical MNEs are becoming more important. UNCTAD (2004, p. 9) concludes that foreign affiliates account for one-third of world exports and that their importance is growing⁵. Another sign that vertical MNEs are on the rise is the increased foreign direct investment in developing countries⁶ (UNCTAD, 2004). India and especially China are major examples of developing countries that have been able to attract considerable FDI flows since the early 1990s. The fact that foreign direct investment into developed countries did not suffer from FDI in developing countries, seems to indicate that the number of horizontal MNEs did not decline⁷.

Data of the World Trade Organization (WTO) show that merchandise exports have been growing steadily since the second half of the 1980s. Notably this growth rate cannot be explained by the growth in vertical MNEs (WTO, 2005) only. A considerable part of this growth is caused by exporting national enterprises.

The growth in service exports increased considerably since the early 1990s. The export of commercial services (excluding transport and travel) quadrupled between 1989 and 2004 (WTO, 2005). This is partly a consequence of increased FDI in services (by both goods and service TNC; UNCTAD, 2004, chapter 3) and partly a consequence of exports by national enterprises. The role of outsourcing companies that specialize in offshoring is striking in this context. The relative importance of these outsourcing companies is difficult to assess, but anecdotal evidence suggests that, mainly Indian, outsourcing companies play an increasingly important role in the international business world (e.g. Wipro, Tata Consultancy Service and Infosys Technologies).

⁴ This implies that not factor-proportions considerations, but proximity considerations tend to motivate multinational activities.

⁵ This is in line with the vertical MNE concept, because exports and foreign direct investment seem to be complementary.

⁶ These countries have different factor endowments than the investing developed countries and therefore the investment seems to spring from a factor-endowment consideration.

⁷ This is in line with the theory, which nowhere suggests that the two types of MNE are substitutes.

Finally, international licensing has also increased over the last 20 years, but keeps playing a marginal role in international business. Total royalties and license fee receipts grew from 9 to 72 billion dollars between 1982 and 2003, but remain negligible in comparison with FDI flows, exports and production by foreign affiliates (UNCTAD, 2004).

The main conclusion from the empirical evidence is that vertical MNEs are gaining importance, but not at the expense of horizontal MNEs which can be expected to remain dominant for a considerable period of time. Exports by national companies and offshore outsourcing are also becoming more important. The growing importance of trade in services is another remarkable development.

Opportunities for the Netherlands

In order to be able to add as much value as possible to the international value chain, the Dutch should specialize where they have a comparative advantage. Given the two types of comparative advantages mentioned in the previous section (geographical position and trading skills) the Netherlands can specialize both in distribution and in coordinating international trade.

Data indicate that the Netherlands is more and more becoming a distribution hub for Europe. In the 1990s re-exports have grown in importance in total Dutch exports (Kusters and Verbruggen, 2001) and the Netherlands attract a large proportion of all European distribution centers of MNEs (Pellenbarg and Steen, 1999, p. 447). The question whether this is desirable depends on the trade off between the added value in distribution and the externalities it brings along. There may exist positive externalities as the re-exported goods could be processed in the Netherlands. The negative external effects associated with re-exportation are environmental harm and congestion.

Since international trade (both organized by national enterprises and MNEs) is increasingly important, there are interesting growth opportunities for performing the distribution function. Yet in a densely populated country as the Netherlands the negative external effects of the distribution function are considerable. On the other hand few scale advantages exist (which reduces the chance of strengthening the comparative advantage). Therefore, it does not seem attractive to specialize in distribution for its own sake. Only as far as combining the international trade coordination function with the distribution function bring synergies, further specializing in distribution is warranted. Such synergies could, for instance, appear if international trading requires personal inspection of the traded goods by the trader or if trading and distribution require the same skills (e.g. knowledge on foreign cultures and languages). It is, however, obvious that the strategy of exploiting comparative advantages in the Netherlands should in the first place be directed at fostering the international coordination function. That is, as mentioned before, the focus of our paper. The next section demonstrates how beneficial it can be to perform this function and what is critical for reaping the benefits.

4. Welfare gains from further fragmentation of production

We illustrate the possible gains from international coordination with the help of the simple accounting model of a company that first produces a product itself but then decides to specialize in coordinating the import (or more generally: the production elsewhere) of that good.

$$NG = M \times p(M) - T(M) - C(M) \quad (1)$$

where:

NG stands for the net gain for the company when it decides to give up producing and to start coordinating production,

M for the number of imported (or offshored goods),

p for the sales price of the product,

T for the that transaction costs that offshoring induces,

C for the total production costs.

Now, consider the following stylized case. A company that produces a final product decides to stop producing the product and to import it from abroad. In the initial situation it employed 100 workers to produce 100 final products. In the new situation 400 products can be bought abroad for half the price (200) on the condition that all 100 workers of the firm stay employed to coordinate the transaction (they represent all transaction costs). So we assume no net job losses or gains. If the sales price of the final product is not expected to change (let us say it remains constant at $p = 1$), the total revenue of outsourcing (i.e. $M \times p$) is 400. The transaction costs (T, valued on the basis of opportunity costs) are 100. Since the costs of production abroad are 200, the net gain (NG) is 100 (i.e. $400 - 100 - 200 = 100$). Productivity statistics would in this case indicate that the productivity of the company's workers has doubled, since the company of hundred workers first had an added value of a hundred, which grew to two hundred. Such a productivity growth is probably a lot harder to achieve with an improvement in the production technology. It also illustrates how productivity increases which are in the statistics allocated to industry and the production sector, are in fact generated through a reduction of transaction costs

Of course the case above only aims to illustrate which decisions are to be made, and what mechanisms are at work in the "make or buy" question, or to put it differently, in the "make it at home or make it abroad" question. In practice it is a dynamic decision problem where all elements of the problem should be modelled in a more sophisticated way. Yet, at least the case shows that, in the short run, considerable efficiency gains can be achieved with performing the coordination function, whereas, by assumption there is no loss of jobs associated with the outsourcing. From a more general perspective this accounting exercise shows that there are 3 major factors that govern the "make or buy" decision.

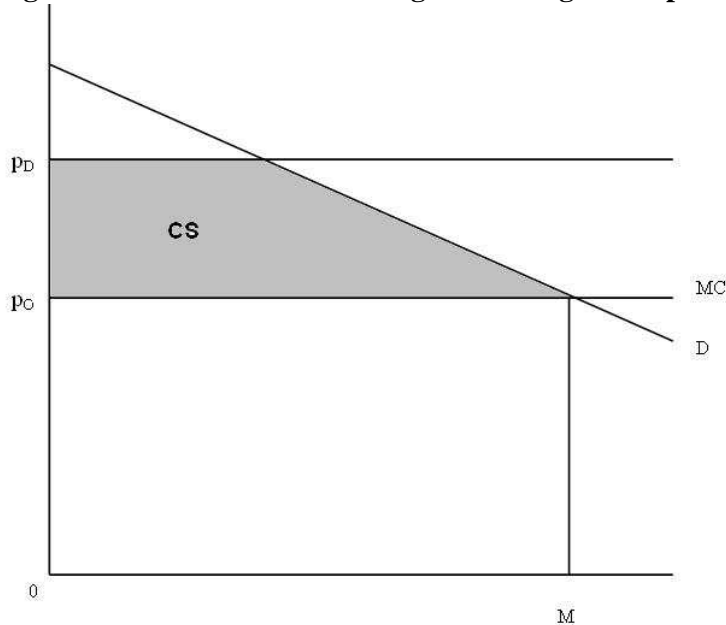
First of all, the net gain depends on the relative costs of producing abroad (depending on C). The lower production costs abroad, the more attractive it becomes to perform the coordination function. Conversely, outsourcing also becomes more attractive when production costs (e.g. wage costs) at home are rising faster than abroad. Of course, in reality the strategic decision to outsource – or where to produce – should be based on dynamic expectations of these relative prices. Higher expected domestic production prices, e.g. because of a fall in labour capacity, should be anticipated in the decision to outsource, but on the other hand, expectations of wage increases and

production price rises abroad should call for cautious decisions with respect to outsourcing.

The second and, from the perspective of this paper, most important parameter is the transaction costs (i.e. T). The lower the costs are, the bigger the efficiency gain is. That is why this paper puts so much emphasis on innovations which reduce transaction costs. Given production costs at home and abroad, the numerical example above assumes that transaction costs have fallen from at least half of the production price at home to one quarter. Such a change in transaction costs makes outsourcing profitable, at least when we disregard the costs of substituting (or schooling) the personnel from the production to the transaction sector. As a matter of fact these replacement or schooling costs are part of the transaction costs and constitute, together with other transition costs, an important element in the dynamic cost and benefit analysis of outsourcing. This is an aspect which requires more sophisticated modelling from the perspective of labour market developments. The transition from production workers to workers with good coordination skills will bring about considerable labour market dynamics and requires a proactive education policy with respect to skills needed in the new situation. There is destruction of production jobs and creation of transaction and coordination jobs. The net employment effect will depend on the (relative) productivity in the coordination function and on product demand. In a long run equilibrium at the labour market the situation will hold where relative wage differentials between production and “transaction” workers reflect relative productivity levels. A reduction of transaction costs other than through personal skills of transaction workers may enhance the proportion of transaction workers in total employment.

The third factor that influences the efficiency gain is the sales price (i.e. p). Of course, especially in the long run, the sales price is not fixed, but will change as a consequence of the increased supply of the product. It especially happens when competitors embark on producing abroad too. The price changes will depend on the characteristics of the product market. If there is perfect competition, the efficiency gains will lower the price of the product until all gains for companies are zero (i.e. $NG = 0$). In this equilibrium at the product market, the entire efficiency gain will be converted completely into consumer surplus. This is illustrated by figure 1.

Figure 1: Gains from outsourcing/ offshoring under perfect competition



In figure 1 the marginal costs consist of the marginal transaction costs (dT/dM) and the marginal production costs of production abroad (dC/dM). p_D denotes the price under domestic production and p_O price under outsourcing or offshoring. At the other extreme, a situation exists where the sales price of the product (p) is not affected. The individual company that coordinates the international trade then fully reaps the benefits of the efficiency gain. This situation is represented by figure 2..

The sales price can only remain unaffected if the coordinating company is unable to serve the entire market at lower marginal costs than the going sales price under domestic production (represented by the fact that MC and p intersect to the left of the intersection of D and p). If an individual company coordinates international trade and is able to keep its marginal costs below the going sales price while providing for the entire market, it acquires the position of a monopolist. This situation is shown in figure 3. As can be seen, the sales price drops, so that a part of the gains goes to the consumers. The coordinating firm, however, having market power can secure part of the gains⁸. The firm's market power also causes a deadweight loss (DWL).

⁸ The company maximizes NG . So that: $\frac{\partial NG}{\partial M} = 0 \Rightarrow p(M) + M \frac{\delta p(M)}{\delta M} = \frac{\delta T(M)}{\delta M} + \frac{\delta C(M)}{\delta M}$,

implying that the marginal benefits of the sales of an extra product (being the price of the product minus the loss of turnover as a consequence of the drop in sales price) are equal to the marginal costs of supplying another product (including transaction and production costs).

Figure 2: Gains from outsourcing/ offshoring in the absence of price effects

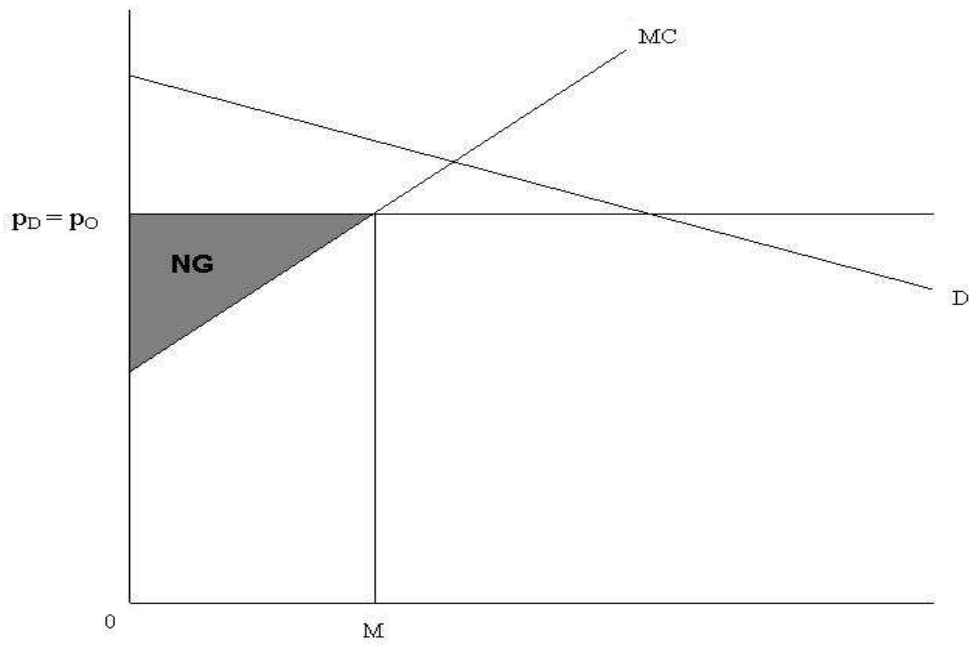
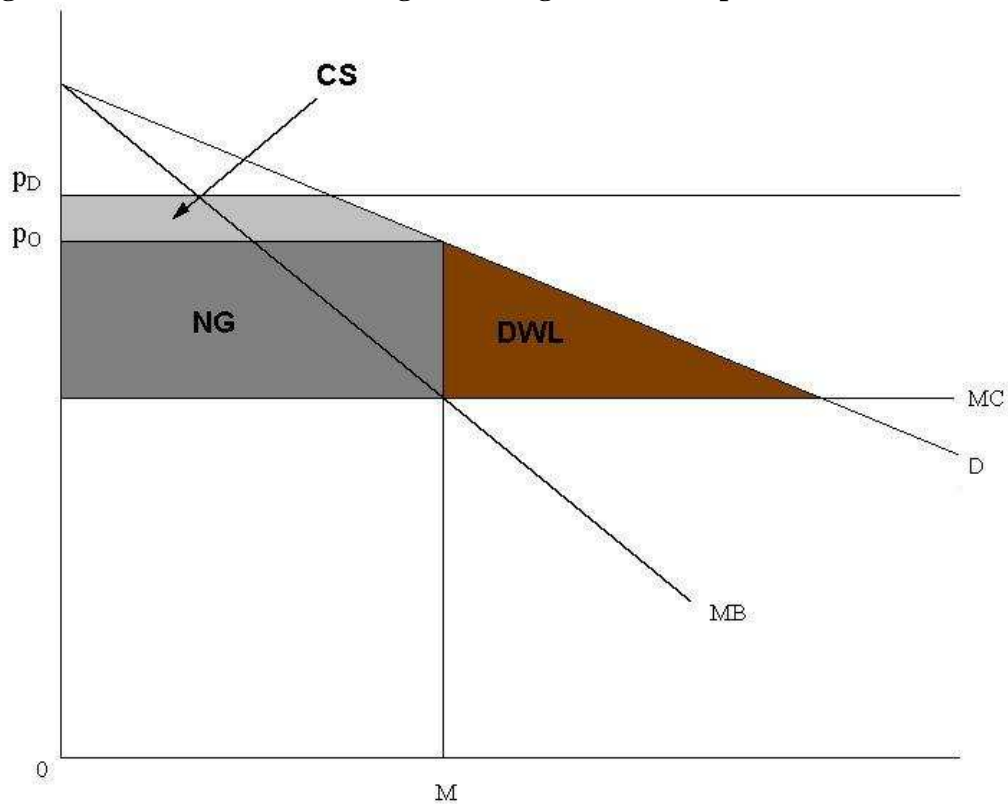


Figure 3: Gains from Outsourcing/offshoring with a monopolist¹



¹: The consumer surplus (CS) and net gain (NG) both include the two compartments with the same color.

These representations of the market situation for the product to be outsourced illustrate the various ways the welfare gains from outsourcing can be distributed over producers and consumers. From the macro perspective of a country that initiates the reduction of transaction costs, it is warranted to keep (most of) the gains of lower transaction costs at home. Therefore it is important that a trading nation like the Netherlands is able to retain its coordinating function.

5. Enhancing the efficiency of coordination

Both for retaining the coordination function and for further welfare improvements it is crucial to enhance the efficiency of coordination. In case others (other countries) are also aiming at a reduction of coordination costs, it is relative coordination costs that matter. Domestic producers could compete with foreign products by keeping the cost differential (C) small. This is, however, difficult as in the long run cost reductions at home do not seem feasible. It will boil down to prolonged wage restraints, which in the end is detrimental to national welfare. Moreover it seems likely that in an ageing society labour shortages will have an opposite effect on wage costs. Therefore, in this paper we assume cost differentials as exogenous and focus on transaction costs.

Transaction costs per product are the crux for improving the efficiency of coordination. They are an important determinant of the efficiency gains stemming from outsourcing and offshoring and can effectively be manipulated. The third parameter, the price change and situation at the product market, determines how the benefits are distributed.

Transaction costs include search costs, information costs, bargaining costs, monitoring costs and enforcement costs. All these costs can be reduced by the more efficient provision of knowledge or an increase in trust (that is not betrayed). If mutual trust between a Dutch company and its foreign counter part would be bigger, it has to spend fewer resources on informing itself about the product and partner, and on defining, monitoring and enforcing the contract. (see Mosch, 2004). If the company can acquire information at lower costs, searching, informing itself, bargaining and monitoring will be cheaper.

The amount of trust that trade partners have in each other could be split up into two elements⁹: the perceived chance that the partner will cheat and the damage that it will imply. The perceived likelihood that the other trade partner will cheat partly depends on both rational and irrational factors. Specific experiences of a manager that hold no predictive value can, for example, influence his perception of the likelihood that he will be cheated. Other misperceptions may play a role in a company's trust too. Rational factors also play a role in the degree of trust that a company has in its counter part. It could, for example, look at his partner's track record or credit rating. Obviously, these rational reasons for trust are much easier to manipulate than their irrational counterparts. If a company is not really hurt when his partner cheats him, the company will be more inclined to trust him. Harm could be minimized through a strong legal system or credit risk insurance¹⁰.

⁹ Although these two elements cannot be strictly separated (since they affect one another), it is a useful distinction for analyzing perceived risk.

¹⁰ Obviously, not requiring to build in these safeguards would even further reduce transaction costs.

Information costs and knowledge

In order to be able to engage in international trade a lot of information needs to be gathered. The company has to find a suitable party, gather information about the partner and his products, inform himself about what would be a reasonable price, figure out what legal rules apply and a lot more. When it becomes easier to collect that information relative transaction costs will drop and efficiency will improve. In this respect there exist two types of knowledge: *explicit (or codified)* and *tacit knowledge*.

Explicit knowledge is codified and can therefore easily be passed on. This means that this knowledge is non-rival. It can be shared among as many people as desired, while the marginal costs of acquiring the knowledge can be reduced to virtually zero.

By contrast, tacit knowledge is mainly acquired by experience and resides in a person's head. Therefore it is a lot harder to pass on to others. It is rival. Some tacit knowledge could be made explicit by codification. But, because of the personal and complex nature of most tacit knowledge, codification is not always an option. Codification of tacit knowledge can be very difficult and expensive, while some crucial knowledge could also be lost in the codification process.

As mentioned before, the distribution of the gains from enhancing the efficiency of coordination is an important issue. Whether the gains will go to the consumers or coordinators depends on how the prices will react on the improvement in coordination. If efficiency improvements in coordinating (i.e. a fall in T) coincide with an equivalent fall in sales prices (p), consumers are the only ones that benefit (see figure 2.). For the consumers at home that would be beneficial. It, however, would in that case be irrelevant whether domestic or foreigners perform the coordination function. Assuming that the coordinators supply the entire world market, the benefits for the home country as a whole are likely to be bigger if part of the gains goes to the coordinators (see figures 2 and 3)¹¹.

If all coordinators face the same restriction, there will be perfect competition and coordinators cannot make profits. A competitive edge on foreign competitors is therefore needed for the home country to benefit from performing the international coordination function. So coordinators at home need to keep their transaction costs (T) lower than their foreign competitors. The remainder of this section addresses the question how that can be achieved. We now take the Netherlands as the example for the home country

Increasing trust

As indicated above, increasing trust will lead to lower transaction costs. Therefore, boosting foreign trust in Dutch companies and trust in foreign trade partners (as compared to other nations), would lower transaction costs and could create value for Dutch companies.

¹¹ If it is assumed that the Dutch coordinate for the entire European market, gains for Dutch residents would be much bigger when all gains accrue to the coordinators. The Dutch coordinators would then benefit from a much higher M , even if a deadweight loss exists (as in figure 3).

The actions of individual Dutch companies influence foreign trust in all Dutch companies. The fact that something like a national reputation exists is an argument for intervention. This national reputation is part of what we call “trade capital” and has the character of a public good as it is non-rival and non-excludable. However, moral hazard can damage the Dutch reputation, as some companies could decide not to fulfil their obligations, ignoring the impact on the Dutch reputation. Certification of trustworthy Dutch companies could therefore reduce moral hazard and raise the trust that foreigners have in “the” Dutch. A good credit rating system performs a similar function.

Clear laws and a fair and fast judicial system (including bankruptcy regulation) could on the other hand reduce the damage that Dutch default incurs on foreign trade partners. Meanwhile, it would also discourage moral hazard of Dutch companies, as cheating would become less beneficial (see also WRR, 2003).

The risk of foreign default perceived by Dutch companies would be lower if they would know more about their foreign trade partners. Dutch companies could be better informed about their foreign counterparts, if a track record of the foreign company would be available or if it would know more about foreign mentalities and cultural differences. The size of the risk would be reduced if the company would have access to expertise on foreign legal systems and would effectively be able to enforce contracts abroad. Credit risk insurance could also reduce the size of the risks accompanying foreign trade.

Leveraging knowledge

A more efficient use of knowledge on international trade can also lead to a reduction in the transaction costs. When discussing how to treat knowledge efficiently, the distinction between tacit and explicit knowledge is essential.

The prescriptions for explicit knowledge are rather simple. Since transferring the knowledge is almost costless (i.e. the knowledge is non-rival), sharing this knowledge among different companies would almost certainly lead to a welfare improvement. This information should therefore be accessible for all interested Dutch companies. When explicit knowledge is shared, there should always be a check on the usefulness and accuracy of the information. The knowledge can either be checked before being shared or a system could be developed to judge its value afterwards. Checking the information in advance typically involves an expert that judges the value and relevance of the provided knowledge. The other possibility is to share the knowledge and let the people that use it judge it on its accuracy and relevance.

Since tacit knowledge is harder to share, prescriptions for how to treat tacit knowledge are more complex. Although tacit knowledge is rival, there may be positive externalities so that sharing this type of knowledge is welfare improving. As tacit knowledge is very important for doing international business, it is likely that the costs of sharing tacit knowledge are still smaller than the benefits. Generally speaking, there are two ways to encourage the sharing of tacit knowledge: making it explicit and connecting knowledge seekers with knowledge owners. The latter means organizing knowledge spillovers.

Making tacit knowledge explicit is often difficult and expensive. On top of that it is often not possible to codify tacit knowledge well and valuable information is lost in translation. These are all setbacks for codifying tacit knowledge. Codifying may, however, still be worthwhile under certain circumstances. This will mostly be the case, when the knowledge is very popular and is consulted very often. The sunk costs of codifying are then quickly offset by the low marginal costs of sharing explicit knowledge.

Connecting knowledge seekers with knowledge possessors is an option that has lower sunk costs and that is a better instrument to pass on the full depth of the knowledge. This approach is more appropriate when the tacit knowledge is hard to codify, has a short shelf-time or is extremely context dependent (Horvath, 2000). Persons could be brought into contact with one another through people finding technologies or through a knowledge intermediary.

Before a framework for connecting people can be set up, it should be identified who has what kind of knowledge. Then, in order to be able to distribute the knowledge efficiently, the knowledge needs to be described and classified. After that has been done, people finding technologies will be able to connect knowledge seekers with the knowledge owners. An alternative for a knowledge seeker would be to hire an intermediary that either is aware of the whereabouts of specific tacit knowledge and connects the knowledge seeker with the knowledge provider (i.e. a broker) or possesses the knowledge himself and sells his expertise to the knowledge seeker directly (i.e. a merchant).

Having discussed the different types of knowledge and how they could be employed more efficiently, we stress the importance of identifying what knowledge is relevant and should be shared. Basically, there are two ways. The first approach is top-down, by identifying broad knowledge domains and then reasoning back to what specific knowledge should be shared. This approach could be supplemented by a bottom-up approach where end-users identify what knowledge they lack and where, then, a look is taken whether that knowledge is available somewhere.

Some other problems associated with sharing knowledge should also be mentioned. First of all, sharing tacit knowledge incurs costs on the person making the knowledge available, because he or she has to spend time on either codifying the knowledge or on personally transmitting the tacit knowledge to others. Since the knowledge supplier is not the party that benefits from the knowledge transfer, compensation seems appropriate.

Hall (2001, pp. 142-145) distinguishes several forms of compensating knowledge providers. He makes a distinction between explicit awards, which include monetary compensation and access to others' knowledge, and soft rewards, which include an enhanced reputation and personal satisfaction. The choice of the form of compensation depends on the circumstances, which we discuss later.

The fact that some knowledge is codified but is not yet publicly available, also poses a problem. Explicit knowledge in the possession of private companies cannot be made accessible for other companies without the cooperation of the proprietor of the knowledge. Again, the proprietor could then be persuaded to share his knowledge, for

example by a monetary compensation. If the knowledge of that company gives it a competitive advantage over other companies, it will be unwilling to share it. Although that does not enhance consumer welfare, as competition will remain absent, it could be beneficial for the Netherlands as a whole. From the perspective of keeping the coordinating function in hands, Dutch companies with a competitive advantage would be preferable to perfect competition.

Transaction costs in multinational enterprises (MNEs)

Reduction of transaction costs within MNEs is also relevant in this respect. In line with the transaction costs theory, MNEs can be seen as a way to avoid international trade costs in the open market. The choice to internalize (parts of) the production chain is inherent to the nature of the transaction. By internalizing different elements of the chain in different countries, international transaction costs in the open market are avoided and replaced by costs incurred by a hierarchical organization. These coordination costs are simply the equivalent of other transaction costs outside the hierarchy. Therefore, the know-how that an MNE holds on operating internationally, is equivalent to knowledge that keeps transaction costs (T) low in the open market. Headquarters typically perform the coordination function for MNEs. The headquarters manage the MNE's hierarchy and engage in global sourcing (i.e. a way to keep transaction and production costs as low as possible).

This implies that MNE headquarters add a lot of value by coordinating international production chains. Although the gains of that coordination are kept within the MNE and could completely materialize elsewhere (through transfer pricing), hosting MNE headquarters probably is still beneficial.

First of all, residents could benefit from the good jobs and high wages of the MNE headquarters. But, even when all employees of the MNE headquarters come from abroad, residents could still benefit. For- and backward linkages can create well-paid jobs and make personal and professional services indirect sources of foreign currencies that can finance imports. Finally, if knowledge is less than perfectly "sticky", the presence of MNE headquarters would create knowledge spillovers that raise the productivity of residents. Attracting MNEs can thus be seen as a beneficial way of attracting expertise in international coordination that is beneficial even as the MNE is trying to keep the benefits of that expertise to itself.

6. Strategies to improve the coordination function

The above discussion on how international transaction and coordination costs can be reduced suggests that such reductions bring about (positive) externalities. Investments in knowledge and infrastructure which enable reduction of transaction costs can be regarded as trade capital. Because, as mentioned before, trade capital partly has the character of a public good, and because of the positive externalities mentioned above, there is a role for the government. With respect to increasing the trust that foreigners have in the Dutch the government obviously has a task. The moral hazard that can damage the common reputation of all Dutch companies should be limited as much as possible. The trust that Dutch have in foreigners could be improved with the help of credit risk insurance or better knowledge on foreign trade partners. The market could

provide the former, while the latter is related to the various kinds of knowledge discussed below.

Codified knowledge is non-rival. But, since it is possible to protect codified knowledge, it is excludable. The implication is that codified knowledge is not a pure public good. Therefore, club solutions could be an alternative to government intervention. Clubs can provide the codified knowledge to its members for free, while keeping out free-riders. The problem that would occur under private provision of the codified knowledge (i.e. a higher price than the marginal costs, which are zero) can then be avoided, since club members do not face other costs than fixed membership costs.

The government should only intervene in the absence of clubs. The government could then set up a club that promotes the sharing of codified knowledge. An alternative would be that the government itself makes the knowledge accessible. This would be appropriate if there are few possibilities for setting up a club (e.g. because the knowledge is used by a very heterogeneous group). The government should then focus on making the codified knowledge easy to find and comprehend, so that the costs of acquiring this knowledge are minimal.

Assuring the validity of the disclosed explicit knowledge is just as important as making it readily available. The knowledge distributor should judge the quality and validity of the knowledge before publication. Then, after publication, it should stimulate users to give feedback on the usefulness of the knowledge, since this adds value to knowledge that is available to everyone. In the setting of a club, giving feedback can be a made requirement for club membership.

For tacit knowledge things are more complicated. In some cases owners of tacit knowledge should be persuaded to make it explicit. In other cases, the knowledge should remain tacit and sharing it should be promoted differently. The following equations can clarify:

$$SG_T = \sum_i^{G_{ij} > CS_{ij}} (G_{ij} - CS_{ij}) \quad (2)$$

$$SG_C = \sum_i^N (G_{ij} - CC_j) \quad (3)$$

with:

SG_T the social gains from sharing tacit knowledge one-on-one,

SG_C the social gains from codifying tacit knowledge and making it public,

G_{ij} the gains for the i -th person that acquires the j -th (tacit) knowledge

CS_{ij} the costs of sharing j -th (tacit) knowledge with the i -th person (including all costs)

CC_j the costs of making the j -th tacit knowledge explicit

Then, making the tacit knowledge explicit is only efficient, if this brings net social gains (i.e. if $SG_C > SG_T$). Substitution leads to the following equation:

$$\sum_i^{G_{ij} > CS_{ij}} CS_{ij} + \sum_i^{G_{ij} < CS_{ij}} G_{ij} > CC_j \quad (4)$$

Equation (4) implies that codifying tacit knowledge is profitable when the costs of sharing the tacit knowledge together with the gains of people that would choose not to buy the tacit information are higher than the costs of codifying the knowledge. A club or the government should pay the compensation for the codification, since many individual companies share in the benefits of codification.

Furthermore, equation (2) illustrates some other properties of the sharing of tacit knowledge. First of all, it shows that introducing a database that helps people look for persons that possess specific knowledge, can bring big gains. Many individual companies benefit from such a database (in the form of a reduction in CS_{ij}). Since using the database does not incur costs (i.e. the marginal costs are zero), the open market is incapable to create such a database efficiently. Therefore, it is up to a club or the government to create such a database¹².

Equation (2) also illustrates that the person who receives the tacit knowledge should compensate his or her provider. The social gain from sharing tacit knowledge is optimal only if the condition on top of the summation-sign holds (i.e. only people that benefit more than the cost should acquire the knowledge; $G_{ij} > CS_{ij}$).

The next question with respect to the compensation for sharing knowledge is on the form of the compensation. Since the value of knowledge is hard to assess for knowledge buyers, an ordinary monetary compensation might not yield optimal results. As G_{ij} is, ex ante, unknown to the knowledge purchasers themselves, they could end up buying an inefficient amount of knowledge¹³. Besides that, the ex ante ignorance of knowledge buyers could even lead to moral hazard for the knowledge sellers.

Compensations that depend on the proven (i.e. ex post) value seem to be the most attractive solution in this case. It reduces the financial risks for companies that want to buy knowledge and simultaneously eliminates the incentives for the knowledge providers to cheat their customers. In the following section more attention will be paid to the specific design of compensation schemes.

Acquiring knowledge by attracting MNEs should also be of governmental concern. First of all, the positive spillover effects are an argument for the government to promote the establishment of MNE headquarters in the Netherlands. Besides that, agglomeration effects exist. This implies that the establishment of MNE headquarters in the Netherlands stimulates the establishment of other headquarters. In line with new trade theory this can lead to a man-made comparative advantage.

¹² Again, the lump sum costs of creating a database should be smaller than the sum of the savings by the purchasers of tacit knowledge plus the gains for the ones to whom purchasing tacit knowledge only now becomes beneficial.

¹³ They are unable to satisfy the conditions on top of the summation signs in equations (2) and (4).

The agglomeration effects stem from the fact that MNEs prefer to locate their headquarters in the vicinity of high quality business services. This motivation may have become less important as a consequence of the recent advances in ICT, as communication over long distance has become easier and cheaper. Duranton and Puga (2002, p. 28), however, find evidence that modern communication technology and face-to-face contact are complementary¹⁴. This is why HQs still tend to be located in big urban centers (Ono, 2003). In turn, business services providers locate themselves near clients. The MNE headquarters therefore attract service providers too. This can create a dynamic in which more and more MNE headquarters and business service providers establish themselves in the same location. This leads Duranton and Puga (2002, p. 28) to predict the emergence of only a handful of global business centres (such as New York, Tokyo and London).

It is not probable that any city in the Netherlands can develop itself into such a global business centre, since cities like London, Tokyo and New York already are too far ahead. The Netherlands should therefore focus more on becoming a so-called beta world city. That implies that it will perform a similar function as global (or alpha) business centres, but with a stronger regional focus. Therefore promoting the establishment of regional headquarters seems to be a sensible choice. The persisting importance of horizontal MNEs suggests that regional headquarters will remain important in the future too. On the other hand, the analysis above also predicts that there will be a growth in the number of vertical MNEs. Good conditions for the establishment of such headquarters should also be provided. Here the attractiveness of a beta business centre may be confined to specific sectors of industry and services.

7. Government Intervention

Given these general arguments for government intervention, this section gives some recommendations for a strategy of the government to foster the coordination and trade function in the Netherlands. The upshot of these recommendations is to link trade policy to innovation policy.

Interventions to increase trust

As was concluded earlier, there exists a risk that some Dutch companies cheat foreign parties and therewith damage the collective reputation of all Dutch companies. This moral hazard risk demands concrete government action. The basic governmental task to provide a sound legal system is a way to discourage moral hazard. The government should ensure that foreigners can go to court if they feel cheated by Dutch residents, that their appeals are dealt with efficiently and that they swiftly receive a reasonable compensation¹⁵. In that way, the risks for foreign companies to deal with Dutch are smaller and Dutch are discouraged to cheat, improving their reputation abroad. Three factors are especially important to increase the trust of foreigners in the Dutch legal system. First of all, regulation needs to be comprehensive. It should be possible to explain the essence of a law to a non-expert fairly quickly. Besides that, the legal security that foreigners experience is essential to promote them to do business with Dutch residents. Finally, the time that it takes to solve a dispute (through going to

¹⁴ Only routinized business services (e.g. call centers) are likely to be provided from distant locations (Duranton and Puga, 2002, p. 29).

¹⁵ Clear bankruptcy regulation should obviously be part of any sound legal system.

court or by other means) has a big impact on the attractiveness of dealing with Dutch trading companies (Mosch and Van den Berg, 2003, p. 183).

An alternative to the legal framework would be to promote mediation as a means to solve disputes. Mediation can save time and money in comparison with a long and costly legal procedure.

Although efficient contract enforcement reduces the risks for foreigners to deal with Dutch companies, it only does so if the contract foresees all possibilities of cheating of the Dutch company. This makes it necessary for the two parties to write very long contract and be specific on each possible way of cheating. Negotiating such an exhaustive contract incurs transaction cost. Therefore, it would be better to increase the trust that foreign companies have in their Dutch counterparts without the need to resort to the legal system or mediation.

Examples of such institutions are: credit rating agencies, certification or a database that registers complaints on Dutch companies' misbehaviour. For all these institutions the trustworthiness of the information that they provide is essential. Other institutions can also raise the trust that foreigners have in Dutch trade partners. They all focus on supplying information on individual companies, which can then replace the general trust of the Dutch. This, on the one hand, increases the trust of the foreign company, since it is better to know that the company you deal with is trustworthy, than that his compatriots in general are. On the other hand, it discourages cheating behaviour by Dutch companies, as cheating can have severe repercussions on future trade activities. The government should step in to guarantee this trustworthiness if it does not develop spontaneously.

Measures to leverage knowledge

As was concluded before, spreading knowledge more efficiently can reduce transaction costs and therewith improve Dutch competitiveness. Now, the question is what should be done with what kind of knowledge.

A top-down approach on what knowledge is relevant, identifies the following areas of knowledge:

- (i) Knowledge on the trade partner
- (ii) Knowledge on the product
- (iii) Knowledge on foreign markets
- (iv) Knowledge on laws and legal requirements

Firstly knowledge on a (possible) trade partner is needed in order to come into contact. After that more knowledge on the trade partner is required to be able to judge his trustworthiness and the chance that he or she will cheat. Knowledge on the quality of the product is needed to judge the value of the product. Knowledge on foreign markets is necessary to estimate the profitability of entering the foreign market. Knowledge on both foreign and domestic laws and requirements is needed to assess the legal possibilities in case of differences of opinion on the contract. It is also essential to estimate the burden of bureaucratic requirements and to efficiently deal with those requirements.

Explicit knowledge on the four areas should be made accessible by clubs (e.g. branch associations) or by the government. It can very well be delegated by these parties to a knowledge institution on trade and transaction costs. The problem with the first three types of knowledge is, however, that they are often too specific to be readily available. It is, for example, not feasible that for all possible trade partners a track record exists. However, existing track records and credit rating of foreign companies should be as readily available as possible to Dutch companies. The same goes for product reviews and market explorations.

Laws and legal requirements are, by definition, explicit and can therefore easily be made accessible for Dutch companies. Since such knowledge is relevant for a very diverse group of companies, it seems that the government, rather than clubs, should try to make the knowledge more readily available. The Internet seems the most suitable medium to make explicit knowledge public. The Dutch Ministry of Economic Affairs already hosts a website that provides information on doing business internationally¹⁶. As an alternative, provision of this kind of legal knowledge can also be delegated to a knowledge institute. An example for knowledge on fiscal rules and regulations is the International Bureau for Fiscal Documentation (IBFD) in Amsterdam..

The tacit knowledge on doing international business mainly results from practical experience and could bring transaction costs down significantly, when there is a better infrastructure for sharing this knowledge. Making tacit knowledge explicit is one way of sharing information more efficiently. The problem with the top three knowledge areas (i.e. knowledge on the trade partner, product and market situation) is again that they are too specific.

The best way to make specific knowledge on individual trade partners and products explicit would be a denouncing system. Dutch companies that feel that they are cheated by a foreign company or are disappointed in the quality of a product can then denounce their trade partner or the product. This could prevent other Dutch companies from making the same mistake. The advantage of this denouncing system is that the codification costs are low and that the cheated Dutch companies are likely to be motivated to denounce their trade partner¹⁷.

Generalization is necessary to make the codification of knowledge on trade partners, products and markets useful. In case it is not worthwhile to make explicit the trading behaviour of an individual company, it could be useful to make tendencies in the behaviour of bigger groups explicit. Since people from a country (or region) share a

¹⁶ See: <http://www.minez.nl/content.jsp?objectid=5393>

This website supplies a lot of information, but overly focuses on export and does not spend much attention on import.

¹⁷ A similar argument could be made for centrally registering foreign companies that do fulfil their commitments. The disadvantage of such a positive registration system would however be that companies are likely to be less eager to give that kind of information to competitors, as they will not feel as intense emotions towards the counter party. This argument seems not to be in accordance with rational behaviour, as positive and negative reciprocity are not intrinsically different in material rewards. Offerman (2002), however, finds an important mediating role for emotions in this context. In his experiment, subjects were a lot more likely to reciprocate intentional hurtful choices than intentional helpful choices. Reactions on cooperative and cheating behavior are therefore asymmetric in the direction that was suggested by the argument.

culture and therefore behave in a similar way, it makes sense to typify their mentality and culture. Having knowledge on the trade partner's culture and mentality, not only makes it easier to interpret the actions of the trade partner. It also makes negotiations more efficient and risk assessments more accurate.

Information on foreign cultures and mentalities could be codified in two ways. First, experts can write books or articles on foreign cultures and attitudes, supplying concrete tips on how to do business abroad. Another way would be to have people engaged in international business write and/or lecture about their experiences. In that way the reader himself has to generalize the experience of that individual. These two ways of codifying tacit knowledge on foreign cultures can be very useful and are applied a lot¹⁸. Giving companies the possibility to comment on the stereotypes and anecdotes would stimulate the expansion of the knowledge.

Although foreign laws and regulation are always codified, dealing with it efficiently requires a lot of tacit knowledge. Knowing what is important and having oversight over what has to be done, can speed up the procedure of complying with the rules. Instruction manuals on how to comply with regulations are an example of how the codification of tacit knowledge could bring down transaction costs associated with laws and regulation.

Finally, we have the issue of compensation. In order to provide incentives for codifying tacit knowledge, the people sharing their knowledge should be compensated. A monetary compensation seems appropriate, as codifying knowledge generally is time consuming. The compensation could be made value dependent in order to optimize incentives. This could be done by making the amount of the compensation depend on the number of times that the codified knowledge is consulted and the valuation of the knowledge by the users. Such a setup is especially viable within the setting of a club. The knowledge users could then even be obliged to give feed back on the employed knowledge, adding even more value to the codified knowledge¹⁹.

Obviously, not all tacit knowledge mentioned above can be codified or is worthwhile codifying. On top of that, the codification often reduces the value of the knowledge. Therefore sharing of tacit knowledge without codifying it remains important. This is probably the type of knowledge sharing with most opportunities for improvement. The sharing of tacit knowledge requires both the possessor and the receiver of the knowledge to invest time and effort in the transfer. Here efficiency gains cannot be found in the transfer itself, but can be achieved in finding the person with the relevant knowledge, e.g. by founding and maintaining a database of tacit knowledge possessors. Organizing network meetings can be a supplement, or even an alternative to setting up a database. These network meetings can be structured as master courses or master classes within the framework of a knowledge institute.

¹⁸ See: <http://www.internationalehandel.mkb.nl/>, <http://www.evd.nl/> and <http://www.export.nl/> for anecdotes and generalized knowledge on doing business in specific countries. The Royal Tropical Institute even organizes training seminars for doing international business (see <http://www.kit.nl/>).

¹⁹ Their addition to the clubs knowledge stock is then rewarded by getting access to that knowledge stock.

There is no easy answer to the question of how the tacit knowledge providers should be compensated. On the one hand, tacit knowledge holders need to be stimulated to share their knowledge. On the other hand, given that the value of the tacit knowledge is ex ante unknown, too high a price would deter knowledge seekers from acquiring it. A flexible compensation could be a solution to that problem. For large companies monetary compensation seems to be most appropriate, as the deal is likely to involve sizeable sums of money. The compensation could be made flexible by giving the knowledge providers a stake in the project of the knowledge buyers. In that way, the risks for the knowledge buying party are limited and the selling party has incentives to share all its relevant knowledge. In order to promote such deals, where the knowledge seller takes a stake in the buyer's project, clubs could design a standard for such shareholder ship. That would reduce negotiation costs and would familiarize companies with value-dependent compensation for sharing knowledge.

Generally, small business will be more deterred by high prices for hiring expertise and the costs of negotiating a contract than large enterprises. It would, therefore, be wise to base the knowledge sharing among small business on non-monetary compensation. This is not an unfeasible suggestion. Small businesses hold more sympathy for one another and will therefore be more susceptible to soft rewards. An enhanced reputation and personal satisfaction are likely to sufficiently strong incentives for small business to help one another²⁰.

Measures to attract regional headquarters of MNEs

As was argued before, attracting MNE regional headquarters (RHQs) is very beneficial, because of positive spill over effects. It may even result in a comparative advantage in attracting even more MNE regional headquarters. The Netherlands are already doing relatively well in attracting RHQs. In the period 2002-2003 twenty RHQs were established in the Netherlands. That is 4 % of the world total and in Western Europe only the United Kingdom (64) and Germany (22) attract more RHQs. The good Dutch performance is encouraging, but provides no guarantee for future successes. At present, RHQs are mainly concentrating in Amsterdam (Pellenburg and Steen, 1999, p. 447). Fairly recent studies show that Amsterdam is on the edge between being a beta and a gamma world city (e.g. Beaverstock et. al., 1999; Taylor and Walker, 2001). From the perspective of economic welfare and keeping the coordination function at home it seems warranted that the government should contribute to making Amsterdam a stable beta business center. The government has basically two ways to stimulate the further development of Amsterdam into a RHQ center. In the first place, it could try to promote the settlement of more RHQs and hope that the business services and other facilitating infrastructure will develop by itself. The other option for the government is to ensure the infrastructure is in place and attract RHQs with that infrastructure²¹.

²⁰ The picture of smaller business looking for free knowledge and bigger companies (with over 2 employees) more willing to hire expertise is confirmed by a survey, executed by the Royal Association MKB-Nederland (Koninklijke Vereniging MKB-Nederland, 2004, p. 10).

²¹ The Singapore Economic Development Board gives a good example how investment promotion and improving the investment climate can be combined for headquarters (UNCTAD, 2004, p. 198; www.sedb.com)

Investment promotion could trigger MNEs to place their RHQ in the Netherlands²². According to Loewendahl (2001) investment promotion is most effective when the strategy is dynamic and combines marketing and company targeting with after-care. Getting the environment right for RHQs to settle in the Netherlands requires having a well-educated work force that can be contracted by the MNEs, having a broad supply of business services, ensuring the quality of the physical infrastructure, having competing tax rates and having a stable macroeconomic environment. Besides that, developing Amsterdam into a RHQ capital would allow for the provision of more sophisticated personal services, which makes life more pleasant for RHQ employees, and would add to the grandeur of the city, making the city even more attractive for other RHQs (see e.g. Tordoir, 2005).

8. Conclusion

This paper argues that, in a country like the Netherlands with a tradition in trade, keeping the coordination and trade function, but moving abroad part of the actual production, can be a good strategy in order to enhance productivity and welfare. In doing so the country exploits its comparative advantage and path dependency in reducing transaction costs, and makes use of international differences in the age structure and skills of labour. It implies that in strategic decision making the focus should be more on innovations and investments in the transaction sector, whereas up to now innovations in the production sector receive most attention. These investments in the transaction sector, which facilitate low transaction costs, can be regarded as trade capital. Part of this trade capital is non rival and non excludable, and therefore has the character of a public good. Moreover, the investment in knowledge on how to reduce transaction costs, involves positive externalities. This demarcates the scope for government policy. It illustrates that a combination of trade and innovation policy is needed in order to provide the infrastructure for trade and repair the market failures with respect to trade innovations. .

Because of the major role of trust in international trade relationships (see e.g. Den Butter and Mosch, 2003), an important task for government policy is to reduce the risks that foreigners are exposed to when trading with Dutch (e.g. by providing a strong legal framework). The costs of acquiring relevant information on international trade should also be brought down. Explicit knowledge should be readily available to interested companies. Codification of some tacit knowledge could also help. But sharing tacit knowledge more efficiently (without codifying it) would yield the biggest gains. To do so, a database that holds information on who knows what and a value-dependent compensation system for sharing tacit knowledge were proposed.

Another way to reduce the transaction (or coordination) costs of international trade would be to make MNEs locate their headquarters in the Netherlands. The specific knowledge on keeping coordination costs low that resides within the MNE will then be brought in automatically. The Dutch could then benefit from the knowledge spillovers, the good jobs and the forward and backward linkages. Promoting the settlement of MNE headquarters has another big advantage and that is that network

²² The website of the Netherlands Foreign Investment Agency is a good illustration of how much the Netherlands (just like other countries) tries to promote foreign direct investment through this channel. See <http://www.nfia.com/>.

advantages exist. This means that the more headquarters there are, the more attractive it is for other MNEs to locate their headquarters in the vicinity. For the Netherlands it seems attractive to promote Amsterdam as a regional headquarter capital. Evidence suggests that it has sufficient critical mass in trade capital for that role. Founding a knowledge institute, which internalises the externalities associated with investments in trade capital, and which fulfils a network function in this respect, can be helpful (see WRR, 2003, Tordoir, 2005). The institute may also contribute to that part of trade capital which has the character of a public good, for instance by establishing alumni networks of traders which are made familiar with the cultural heritage of the country.

In order to provide more specific and directed policy recommendations, further research is needed. A major research question is what kind of institutional set-up of knowledge creation can be instrumental in maintaining the comparative advantage of a trading nation in reducing transaction costs, so that most of the welfare gains is to be internalised (the distribution problem). Or, in other words, how can investments in trade capital be protected so that there is no underinvestment due to business stealing and spill-overs (which bring about positive externalities)? A further and related question is on the interaction and spill-overs between innovations in the production and the transaction sector: to what extent are research efforts and knowledge of advances in technological development needed in order to enhance productivity in the transaction sector? Answers to these research questions will also provide further insights on how trade and innovation policies can be linked.

It is also necessary to come to an operational taxonomy and classification of transaction costs. It enables to collect data on various types of transaction costs, so that total product costs can be separated into genuine production costs and transaction costs. Today most companies combine the production function with the trade function, so that the collection and analysis of data should be at the firm (or even plant) level. The traditional classification of various production sectors according to the system of national accounts is no longer appropriate. This is most certainly true for countries with headquarters of MNE's. According to the statistics these MNE's are part of industry but they earn money mainly through their coordination activities. Total factor productivity increases in these companies may very well be the result of their ability to reduce transaction costs and create value in trade and the international division of labour, and not so much be the result of technological innovations.

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