Amsterdam, September 2005
Research project for the Ministry of Economic Affairs

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The welfare effects of national champions policy

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Patriotism is the last refuge of a scoundrel - Samuel Johnson

Il y a un patriotisme économique parce qu'il y a une guerre économique – Michel Guernaire

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Summary and conclusions

Research question and scope

The key research questions addressed in this report are:

1 Is policy aimed at creating national champions *effective*? Can temporal government intervention help a company achieve sustained dominance? If so, how and under what circumstances? What are the odds of being successful?

2 Can national champion policy create welfare and enhance economic efficiency? If a national champion is successfully created or preserved, does this pay off?

Countries that actively adopt national champion policy are France and Germany. Anglo-Saxon countries with their traditionally more liberal approach to economic development seem to pursue less stimulation policies aimed at specific companies. That is not to say that Anglo-Saxon countries do not create circumstances that are beneficial for local companies. For instance, although the Dutch government is not leading when it comes to fostering national champions, it does use national champion policy instruments, like golden shares (KPN), and state aid (state guarantees for shipbuilding yards[1]). Does the fact that the Dutch government is relatively non-active towards national champions compared to neighbouring countries imply a welfare loss for the Dutch economy? Conversely, does the fact that other countries are more actively fostering companies generate welfare gains for those countries, and a welfare loss for us? These questions are addressed in this report.

In this report a national champion is defined as a company which:

- has its head office in the home country;
- has a significant market share both within the home country and abroad;
- operates on or close to the technology frontier;
- has obtained that position at least partly thanks to deliberate government intervention.

There is a variety of policies that support *specific* national champions. We can distinguish the following policy options:

- Financial constructions that protect against foreign take-over or merger (including share issue and state participation);
- Mandated mergers or take-over of national companies;
- State aid and subsidies (including fiscal leniency or exemptions);

[1] The Dutch Ministry of Economic Affairs has the intention of introducing this policy. The reason is that private banks are unwilling to finance the complete production of ships and even withdraw their activities from the shipbuilding sector.

- Government acting as a launching customer of a company's technology (including procurement);
- Removing or imposing specific trade barriers.

To answer the research questions we have studied the literature. As it turns out the majority of the literature seems to be quite clear in its conclusions that actively stimulating a company may be effective and beneficial for the company itself, but that it tends to be inefficient in the longer term. However, empirical evidence to support this is scarce, probably because it is difficult to isolate events in such a way that the causal chain of efficiency effects of having a national champion and the effectiveness of stimulating a national champion can be measured.

We have investigated four European national champions in order to assess to what extent the results of the literature are confirmed in practice. The conclusions of the analyses of the four cases are discussed below. It should be noted that in this study we have taken the perspective of individual countries, i.e. have looked at the effects of national policy for a national champion on the home economy and the rest of the world. Theoretically there is no reason why the general conclusions would not extend to a case of European policy towards a European champion, and its effects on the European economy versus the rest of the world. A case in point could be Airbus. The economies of scale in the airplane industry are such that it can be argued that the optimal firm size is even larger than a European country, and Airbus is the result of growth to the efficient size. The market for larger aircraft has effectively developed into a global duopoly with Boeing. The establishment of European champion Airbus has created a certain level playing field and equilibrium. Whether further concentration could perhaps even reduce aggregate marginal costs is a theoretical one, because it is widely accepted that the societal global costs of (potential abuse of) market dominance would become far too high.

Conclusions based on theory

Mainstream *classical economic* theory argues that any of the abovementioned national champion policy instruments helps the company, in the sense that it reduces its costs, increases its profits, helps to increase market shares, or stimulates technological advance, etcetera. In theory under normal circumstances, national champion policy is effective for the company itself. However the help generally also causes either market dominance or X-inefficiency to occur or persist, and the consumer (both home and abroad) will pay the price of the above-efficiency marginal costs. National champion policy will thus cause a welfare loss in the home country. In addition, it causes a redistribution of welfare from the consumers to the shareholders (and other stakeholders) of the company. Additionally the result of the policy may be that market share abroad increases. Rents may be extracted from the higher prices charged to foreign customers, for instance if commodities are exported. The net effect of the welfare loss at home and the rents extracted from abroad is ambiguous.

The *evolutionary economics* school of thought argues that there are economic benefits in specifically stimulating national companies (1) to reduce transaction costs in evolutions, including cyclical fluctuations, and (2) to create specific rents associated with production with considerable positive external effects, such as R&D spillovers. Porter concludes that the role of the government when trying to improve the competitive position of its nation in global competition is a catalyst and challenger, encouraging companies to raise their aspirations and move to higher levels of competitive performance. According to Porter governments must encourage companies to raise their performance, stimulate early demand for advanced products, focus on specialized factor creation and stimulate local rivalry by limiting direct cooperation and enforcing antitrust regulations.

One possible economic argument for creating a national champion in anticipation of liberalisation could be to realise lower production costs due to economies of scale and network effects. The higher volume allows for the realisation of economies of scale. Lower costs, in turn, are assumed to result in lower prices, providing welfare gains. If this is the case, national championship is a natural outcome of competition and consolidation and would require no government policy other than a *laissez-faire* attitude towards mergers. If the optimum scale were even larger than the national markets, consolidation would be expected to continue after liberalisation. International mergers and acquisitions are often the least costly way for firms to realise economies of scale.

This argument, however, does not provide us with an argument for actively creating national champions. If economies of scale exist beyond the national scope, consolidation requires no government intervention. For these economies to be realised, it is immaterial where the company has its headquarters. Path-dependency and external effects hardly seem to occur when production has to meet demand locally so that the size of an industry is more or less exogenous.

Economies of scale could, however, provide opportunities for extracting rents. As far as the national market is concerned, such rents can never give a net contribution to welfare. Thus, in geographically based sectors, the primary economic motivation for policies to create national champions would be to extract rents from foreign markets. These rents could accrue to the owners of the champions through dividend, and directly to society through corporate taxes.

The *neoclassical* majority of economic authors prefer the functioning of market forces over specific national champion-like policies.

What price do the Dutch pay for fostering national champions by foreign governments? This price is related to the increased possibilities of national champions in other countries to extract rents from the Netherlands. Rents can be extracted by the fact that the foreign national champion has significant market power in the Netherlands, and can thus charge prices above marginal costs to Dutch consumers. Another term of rent extraction can be the competitive disadvantage of our own national champions. We identify five mechanisms through which extraction of rents by a national champions can take place. Rents can be extracted as a consequence of (a) market power (abroad and at home), (b) scale and scope effects, (c) the removal of X-inefficiency, (d) improving dynamic efficiency and (e) employment effects via control over foreign employment.

The possibilities to extract rents elsewhere depend on the different perspectives taken by different countries. Take, for instance, the perspective of a small versus large country. For companies from smaller countries scale effects are more limited than for companies from large countries. A company from a large country can grow to supply to an increasing market on the home territory, whereas a company from a smaller country needs to extend its market abroad. That will in most cases require at least the establishment of certain activities in other countries. Consequently, in order to become a global player, companies from small countries are sooner forced to international mergers and acquisitions. A national champion that was born in a small country will have to take root in many other countries at an earlier stage in its growth process than companies from large territories. A government of a small country, that contemplates to foster a national champion, has another view than a large countries' government because a (larger) part of the (positive) effects may arise elsewhere. However, this argument does not hold in all cases. Imagine a firm in a small country that has a unique means of production (like gas or fields to store gas). This enables the firm to also exhaust the monopoly benefits in other countries besides the homeland (be it small or large). This is one of the reasons why the Netherlands do not lead the way in the liberalisation of the gas market (whereas it does lead the way when it comes to liberalising the electricity market).

A second difference in perspectives is related to the growth potential of the sector involved. For geographically based firms (like post and telecom, Royal Mail and Telefónica) it is more difficult to increase the total pie (for instance set by the number of inhabitants)[2], whereas for most footloose companies it is easier (Siemens and Sanofi).

A third difference is the perspective governments have on the effect that a domestic competitive environment has on the company's competitive strength on the global market ('education effect' of competition on the home market). Some countries typically prefer gradual changes: fat and lazy companies grow up in a protected environment that only slowly becomes more market-like. The Anglo-Saxon countries prefer to liberalise (and privatise) their markets in one sweep: the aim is to foster lean and mean companies that are well-trained to enter the fierce global competition contest. In box 1 we show an example in the telecom industry which shows that a tough education at home does not necessarily give the best results.

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2 Of course, the geographically based firm could grow by taking over foreign companies thereby increasing the scale (or pie so to say). Such a take-over is, generally speaking, more complicated than other growth strategies.

BOX 1: The emergence of national champions, in global telecommunlcatlons

In the 1960s the European governments encouraged the formation of one or two chosen national champions from a number of existing firms in computing and aerospace industries. The justification was that too much domestic competition prevented companies from achieving the scale and strength to challenge foreign competitors. Three different approaches to domestic restructuring and internationalisation pursued by the PTOs (Public Telephone Operators) and their national governments:

(i) Defensive national approach: the traditional path of protecting PTT and other domestic interests (e.g. Austria and Italy). This is the traditional policy of protecting national PTOs from foreign competition inside their home market with little or no attempt to venture abroad continues. Inward-focusing PTOs that have maintained traditional commitments to domestic equipment suppliers, often benefit from government subsidised R&D, and have built up a dominant position in services, in a bid to defend against foreign competition.

(ii) Rivalry at home and early to internationalise abroad (e.g. US and UK); Anglo-American paradigm of regulatory reform based on open markets and privatisation. As in the aerospace and airline industries, European governments are pursuing a more or less implicit agenda to turn their former PTTs into national champions. The experience of early domestic rivalry encouraged AT&T and BT to innovate and reduce prices at home, and to be the first PTOs to embark on international expansion abroad. Expansion abroad provided opportunities to extend their global reach, quick to establish an international reputation with large corporate customers, enter new geographical markets and diversify into new products and services. Yet there were costs incurred in being a first mover, such as the misplaced emphasis on vertical integration, as well as the high restructuring costs of shedding labour for home countries.

(iii) Continental mercantilism involving the promotion of a national PTO in domestic and international markets (e.g., France, Germany, The Netherlands and Sweden); to prepare their national PTOs for global competition from inside a sheltered home market. Under the umbrella of state support and guidance, France Telecom has become a leader in the provision of a range of high quality services.

Despite these differences, however, what unites the various national governments is a "Janus-faced" approach to telecommunications policy: All national governments accept or advocate the virtues of competition and open markets, while actively seeking to further their nation's particular interest by encouraging the rise of national champions.

Source: Huisink and Davies (1997)

Conclusions based on empirical study of effectiveness

Effectiveness

We answered the effectiveness question by taking an empirical perspective on the effectiveness of national champion policies using data from the Forbes 500 International and the Fortune Global 500 lists. We concluded that:

- Not every national champion may be in these lists, but it seems safe to say that most companies listed qualify as national champions (although not all of them fit our definition in the sense that they may have arisen without deliberate government action).
- The number of companies listed per country is strongly correlated with GDP.
- The World Economic Forum's Growth Competitiveness Index has some residual explanatory power, suggesting that general policies aimed at improving a countries' competitiveness can be fruitful for the emergence of national champions as well.
- There are no indications whatsoever that countries that are actively aiming to create national champions host more large companies than other countries. There is some indication that labour-political arguments to protect national champions are indeed valid.

Our conclusion based on theoretical consensus and our analysis is that a national champion policy may well be effective for an individual firm, but it is probably not effective for a country as a whole. Further research is needed to study the question of what policies of policy mix is most effective when breeding a national champion. The scope of our research did not include this question.

Conclusions based on the case studies

Company specific observations on policy effectiveness: four case studies

Complementary to the general observations on the effectiveness of national champions policy, we analysed four European companies as cases to test the effectiveness of specific policy instruments in terms of *benefits to the individual national champion and its shareholders*. The companies were selected following a practical set of criteria: a European company, from a variety of European countries – thus covering a variety of government approaches –, having a logical and also relatively strong competitor in the Netherlands, and operating in different industries.

The results of the analysis of these four cases are summarised below.

Case 'Royal Mail'

The British government did not pursue an active national champion's policy. Hence, the existence of Royal Mail as a national champion must be considered to be a coincidence. Overall government policy has been partly effective. Government policy directed at the 'provision of over the counter services' has indeed prevented the closure of a large part of Royal Mail's rural network and it has prevented job losses. It has also created X-inefficiency. The provision of 'over the counter services' in rural areas may have upheld a feeling of national pride, because Britain is still providing these services. On the contrary, it may also have affected national pride negatively as the company is lagging behind in the introduction of new services.

Whether the effect of subsidising (trial projects for) new technologies has been effective remains to be seen as few of these projects have matured. The question whether the VAT exemption has been effective or not, is not relevant in this respect since it was not related to a national champion policy goal. The exemption is a relict from a previous regulatory age and it does not serve a goal anymore. The VAT exemption has had an important side-effect on competition in the UK postal market. Basically, the VAT exemption has given Royal Mail a competitive advantage on a large part of the market. This has prevented a deep penetration on the UK postal market by Royal Mail's competitors. The side-effect of the subsidies for the rural network and the technology development seems to be negligible. Finally, the VAT exemption may have allowed Royal Mail to faster penetrate foreign markets. This penetration may have captured rent from the foreign markets if local incumbents are inefficient.

Case 'Telefónica'

The Spanish government's policy to create a national champion out of Telefónica has not been effective in terms of the company's performance on stock markets. However, the Spanish government's general policy with respect to Telefónica appears to have been successful, since its stock price reflects the fortune the company had in missing the UMTS train downhill. Telefónica has been successful in its strategy to become a strong player in Latin America. It is innovative by exploring the vertical integration with broadcast content by the takeover of Endemol. However, further research (that is beyond the scope of this study) is necessary to find out to what extent Telefónica's strong position is due to government action and to what extent it is due to other factors. Another question to address in future research deals with the magnitude of the rents extracted from Latin America. Lastly, many Spaniards may feel pride with respect to their telecommunications company.

Case 'Sanofi'

The French government did pursue an active national champion's policy: The mandated merger of Sanofi and Aventis created a national champion that exercises market power – at home and on foreign markets. Jobs in France were saved, 'contre coeur' the opinion of analysts. From the point of view of Sanofi's shareholders, the direct loss of the merger amounts to around € 9 billion. This is only partly offset by the gain of Aventis' shareholders, around € 3.7 b. Obviously, the fact that Sanofi-Aventis becomes a pharmaceutical giant, or the fact that Sanofi gains control of it, does not alter these facts.

The pressure from the government to keep R&D in France as well as the pressure to keep all plants working (while analysts argue half of them are redundant) raises questions about the effect of political intervention on the efficiency of the resource allocation in the economy. The French government seems to trade off short-run politically-desirable goals (employment, national pride, keeping a strategically important industry on the territory) for long run economic efficiency (missed X-efficiency due to government intervention).

Case 'Siemens'

In summary, it can be concluded that both generic industrial policy and specifically granted subsidies by the German government over the longer history have positively affected Siemens' performance in the past. However, it is difficult to assess the exact contribution of state policy to this performance, let alone its contribution to general economic welfare. Siemens is a remarkable innovative company. It is not impossible that the fact that Siemens Netherlands is also among the most innovative companies in the Netherlands is due to that.

The effect of the labour market subsidisation has reduced the transaction costs of lay-offs and hiring in the cyclical fluctuations of employment. It has affected productivity growth negatively, and by implication has lead to a dent in competitive position. The effect of R&D subsidies has probably been positive. Siemens operates on the technology frontier.

General conclusions of the case studies

As there is probably some self selection in the cases (we only picked national champions and not 'national losers') it is difficult to fully prove the hypothesis that government policy to create or preserve national champions is effective and efficient. When deducing overall conclusions this sample selection has to be taken into account. Furthermore it should be noted that the sample is small, and it has been found to be extremely difficult to completely disentangle the causal chain of events, leading to the national champion's current position, and of the part that government action had in this. Nevertheless some tentative general conclusions can be drawn. The findings are summarised in the Table below.

Table 1: Comparison of the results of the cases

	Royal Mail	Telefónica	Siemens	Sanofi-Aventis
Financial performance of the company	Has been making losses during the last years	Apparent success	Outperforming	Outperforming
Related Dutch company	TNT	KPN	Philips	Organon, the pharmaceuticals division of Akzo Nobel
Footloose or geographically based	Geographically based	Geographically based	Footloose	Footloose
Existence	Since 1635	Since 1884	Since 1847	Sanofi since 1973
National champion policy	Not explicit (1) State aid & subsidies; (2) VAT exemption	Not explicit (1) Protection from hostile takeover; (2) Light-hand regulation	Explicit Generic measures and targeted subsidies: (1) Public support for industrial finance; (2) Labour policy; (3) R&D support	Explicit Arranged marriage; deterring Novartis from bidding on Sanofi
Counterfactual	No aid or VAT exemption	No intervention in KPN takeover, strict regulation	No subsidies	Merger with Novartis
Effects in short term in home country	Aid has prevented closure of outlets. This has generated three positive effects: continued rural service levels, economies of scale & scope, rural jobs; VAT exemption has given RM a competitive advantage	Apparent success as measured by stock prices; Protection from takeover has facilitated expansion in Latin America; Light hand regulation has lead to welfare loss in Spain (too expensive services); Success and	Labour policy has dampened cyclical fluctuations, reduced transaction costs; R&D policy may have had short-term small effects (majority of innovations in industry only temporarily generate significant competitive advan-	Securing of jobs, with potentially negative effect on efficiency; effects on prices of drugs unknown; effects on shareholder value of Aventis and Sanofi negative

	Royal Mail	Telefónica	Siemens	Sanofi-Aventis
	for winning clients	growth of company may contribute to national pride	tage)	
Effects in long term in home country	Aid has prevented RM to perform at the technology frontier as it has not felt the need to restructure and to introduce new technologies; VAT has given RM competitive advantage, raising barriers to entry		Labour policy has retained unproductive employment; R&D policies have probably contributed to the value creation of Siemens, and has helped bring Siemens to the technological frontier	Implications for investor climate uncertain; plants with R&D kept open with uncertain effects on long term efficiency; DG Competition likely to be on the close watch to French industrial policy
Effects in short term on NL competitor	TNT may be disadvantaged in its attempt to win market share in the UK due to VAT exemption	None	None	None
Effects in long term in on NL competitor	TNT may benefit from continued X-inefficiency of rival in competition for foreign market share; TNT is disadvantaged due to lower cost level; Aggregate effect in NL seems negligible	Prevention of take-over of KPN by Telefónica in hindsight good for KPN, but unintentionally so; KPN may benefit from X-inefficiency due to light-hand regulation	Philips may have benefited from its own competitive advantage due to continued low productivity of Siemans. Siemens Netherlands is innovative too, perhaps due to innovative character of the company as a whole	Effects on drug prices likely small, as effects on efficiency are uncertain, effects on competitive position of AKZO Nobel and Organon uncertain, probably small because of niche differences
Conclusion	RM is not performing at the technological frontier. Its VAT exemption, has delayed competition in the UK, which has affected consumer welfare negatively. There is no evidence that RM has extracted significant rents internationally	Telefónica operates on the technological frontier. Prices on Spanish market are probably too high, so consumer welfare is too low. Investments in Latin-America are judged to be risky. It is unclear whether or not Telefónica has extracted rents internationally	Siemens operates on the technological frontier. It has benefited from R&D policies. The labour protection policies may have reduced Siemens' competitive position. The net effect on welfare is unclear. Siemens has not extracted rents abroad as R&D has been disseminated across the worldwide Siemens corporate network	Sanofi operates at the technological frontier. Sanofi Aventis shareholders have lost shareholder value. Drug price effects unknown. Retention of plants and R&D employment potentially negative for optimal allocation. The net welfare effect at best unclear for France. The forced merger has not extracted rent abroad as Novartis shareholders have benefited

The variety of policy instruments adopted all seem to have had a positive effect on the position of the company itself. All four companies have achieved its dominant position on the market at least partly because of the government interventions. Siemens has been able to reach the technological frontier, Royal Mail has been able to continue to serve more customers and maintain and extend market share, and Telefónica has extended its market share in Latin America. Sanofi and Siemens are financial outperformers, though the forced merger itself has destroyed value for the Sanofi-Aventis shareholders.

We also see that in each instance the aid has lead to some X-inefficiency or above-efficient marginal costs. Sanofi has kept open R&D facilities in France, Siemens, Royal Mail and Sanofi have maintained employment that apparently is unproductive at the margin. Telefónica's above-efficiency marginal costs are transferred into too high regulated tariffs. The consumers in each of the four countries pay the price of that. In theory the net effect of the improved position of the company and the loss of consumer surplus should be negative. The rough calculations we could conduct are slightly ambiguous, but they do not point clearly at the contrary.

Our findings do not suggest that the four national champions, or in any event the aid by the four governments has lead to rent extraction in the Netherlands. The advantage Siemens has in technology is distributed across the World through the global corporate web of Siemens. Competitive advantage in the short run over e.g. Philips will be offset by the longer run efficiency disadvantage Siemens will incur through its maintained above-efficiency productivity. The same holds for Royal Mail. TPG is widely regarded as the most efficient listed postal company in the world. The – perhaps too high – drug prices of Sanofi will in general hold globally, but drug prices still are a local affair, so these rent effects will be diluted. The fact that Telefónica did not acquire KPN may after all not have been bad for the Dutch citizens, as KPN has by itself conducted a large rationalisation.

Overall conclusion

With regard to the research questions we conclude the following;

⇒ National champion policy can be effective in the sense that it can be beneficial for the company in question. Evidence shows that temporal government intervention can help a company to achieve dominance, certainly in the short to medium term. As the evidence of all four cases point at the same direction, apparently, the odds of being successful are fair. It is furthermore possible to lift a company towards the technological frontier (see Siemens), although – as is the case with R&D stimulation policy in general – success is not guaranteed (see Royal Mail).
However, on the basis of an analysis of data from the Forbes 500 International and the Fortune Global 500 lists we conclude that a national champion policy may well be effective for an individual firm, but it is probably not effective for a country as a whole. For instance, there are no indications whatsoever that countries that are actively aiming to create national champions host more large companies than other countries. There is some indication that labour-political arguments to protect

national champions are indeed valid. On the other hand our analysis of cluster effects and employment effects indicates that governments should not foster national champions, they should promote human capital in the home country and stimulating competition.

⇒ In general national champion *policy* does not create welfare. It leads to X-inefficiency and/or market dominance, and thus to above-efficiency marginal costs, which the consumers will have to pay. The net effect of the redistribution of enhanced shareholder value and reduced consumer surplus tends to be negative.
Strategic trade policy can only improve market outcomes when it is aimed at addressing market failures (e.g., on the capital market (private lenders might not be prepared to finance an infant industry) or the labour market (labour market inflexibility).

⇒ The Dutch welfare does not seem to have been affected negatively to a substantial degree due to national champion policy in neighbouring countries. The Dutch economy does not seem to suffer significantly if another country actively stimulates a national champion. The Netherlands do not have to be overly concerned if a national champion abroad – as in our definition – is supported.

Governments who actively pursue a national champion policy implicitly or explicitly assume that such a policy is 'good for the economy'. As with all government intervention the burden of proof of the effectiveness and efficiency of national champion policy lies with the government. That is, from an economic perspective why governments should be able to justify their intervention and demonstrate that it is welfare increasing. In this research we have found no evidence that national champion policy is indeed effective or efficient. That conclusion is based on a survey of scientific literature, knowledgeable press, public business information, the four cases and economic analysis. The conclusion provides a general view. At the level of the individual firm national champion policy can be effective in certain ways. At the macro level national, generally speaking, champion policy is neither efficient nor effective.

1 Introduction

Do governments succeed in fostering national champions? And where governments do stimulate national champions, do citizens benefit *from national champions policy? Or would public funding of alternatives generate higher returns to social welfare?*

There appear to be substantial differences in strategic economic policies between countries regarding the nurturing of large companies, or "National Champions". In some countries the attention of the government is aimed at achieving the optimal market structure, where the existence of an oligopolistic market is the natural result of the cost structure of production of the particular commodity or service and the size of the market. An oligopolistic market structure with one or a few large companies can occur naturally, because it is economically optimal to have that particular number. This holds for natural monopolies, such as certain network companies (like high-voltage electricity transmission) that have a natural reason to be headquartered in the home country. But it also holds for several other companies that have historically grown into a very strong position , but with a much less clear linkage to the home country.

In the 1980s, the Dutch government abandoned specific industrial policy. In other countries the fostering of national champions does seem to be the result of deliberate policy aimed at having a large company on their territories, since the presence of these companies in the home country is considered to generate economic benefits (like incremental employment or positive external effects). France and Germany are known to pursue active policies supporting the development of very large companies.

It is not obvious which of these two fundamentally different approaches to industrial policy creates the highest economic welfare in the long run. The Dutch Ministry of Economic Affairs retained PwC Economics and SEO Economic Research to conduct a study into the efficiency of having national champions policy, and into the effectiveness of policies stimulating the development of national champions. This report aims at providing a balanced view on the advantages and disadvantages of policies stimulating the development of national champions.

As far as we know there does not exist a comprehensive study on the efficiency and the effectiveness of national champion policy. The current political debate contains numerous implicit and emotional arguments. With this study, the Ministry wishes to nourish a debate based on rational arguments addressing the basic question:

- 'what does a national economy miss by not actively fostering national champions, compared to other countries that do?'
- 'what does a national economy loose if other countries actively foster national champions, while the national government does not?'
- 'will countries that actively foster national champions be able to extract rents from a foreign economy?'

When answering these questions we focus on the Dutch economy and government. The outline of the report is as follows. In chapter 2 we elaborate on the research questions. In chapter 1 we provide a framework to assess the effectiveness and efficiency of policies aimed at creating national champions. Section 3.1 discusses the concept of a national champion itself. Section 3.2 looks into the effectiveness of government policies in general. Section 3.3 discusses various ways in which governments can promote their national champions and briefly considers their effectiveness (a more detailed analysis of the effectiveness of some of these measures will follow in the case studies). In chapter 4, a tentative framework is developed to analyse the costs and benefits of policies aimed at creating national champions. Chapters 5 to 8 describe four case studies, i.e., Royal Mail, Telefónica, Sanofi and Siemens. Conclusions based on theory and practice (the four cases) and the summary are included as chapter 0 of the report.

2 Research question

The central research question addressed in this report is:

To what extent can strategic *economic behaviour of governments, aimed at the creation and preservation of (existing) national champions, contribute to national wealth?*

With *'Strategic economic behaviour aimed at creating and preservation of (existing) national champions'* we refer to financial or non-financial governmental policies, aimed at one company that has its head-office in the home country, with the explicit objective to strengthen this company in such a way that it is able to remain or become a formidable international player. The national champion is successful and viable, in the sense that it will, in term, operate on the "technological frontier", and is able to do so without governmental support.

'*Contribute to national wealth*' implies that the net contribution to wealth of the home country, in terms of Gross Domestic Product (in the medium and long term), is positive. Net contribution implies that the situation *with* the governmental support is compared with the situation in which the government *did not* create a national champion, other things being equal.

In other words, the objective of the study is to analyse the *effectiveness and efficiency* of *temporal* government intervention aimed at helping a company to establish *sustained* international dominance that contributes to GDP.

The central research question breaks down into two key elements, relating to the *effectiveness* and the *efficiency* of policy aimed at creating national champions. Various sub-questions are grouped around these elements:

1. Can temporal government intervention help a company achieve sustained dominance? If so, how and under which circumstances? What are the odds of being successful? This question is about the *effectiveness* of policy aimed at creating national champions. Sub-questions are:
   - Is it possible to lift a company to or near the technological frontier with the use of governmental intervention? Or, is it possible to keep an existing national champion on or near the technological frontier?
   - What are the characteristics of companies that can become or continue to be a national champion?
   - What are the opportunities and risks when a government picks out a national champion?
   - What kind of intervention is worthwhile?

2. Does such policy contribute to welfare? If a national champion is successfully created or preserved, does this pay off? If so, how about the policy in general (i.e. when the chance of success in 1 is taken into account)? This question relates to the efficiency of conducting national champions policy, with the following sub-questions:

- Under which circumstances are the benefits of such an operation greater than its costs?
- What are the characteristics of markets in which these interventions do contribute to the national prosperity / are worthwhile?

Although the concept of national governments trying to create or keep national champions is very old (box 2.1), there is not much literature on the subject. The welfare effects of national champion policies, for instance, are not described in the literature.

BOX 2.1 A short history

Mercantilism is economic nationalism for the purpose of building a wealthy and powerful state. Adam Smith coined the term 'mercantile system' to describe the system of political economy that sought to enrich the country by restraining imports and encouraging exports. Mercantilism viewed the economic system as a zero sum game, a gain by one party was a loss by another. This system dominated western European economic thought and policies from the sixteenth to the late eighteenth century. The goal of these policies was, supposedly, to achieve a 'favorable' balance of trade that would bring gold and silver into the country.

A famous example of Mercantalism is the increased port duties on foreign vessels entering French ports and provided bounties to French shipbuilders (by Jean-Baptiste Colbert, the minister of finance under Louis XIV from 1661 to 1683). Another well-known example are the Navigation Laws of 1650 and 1651 that prohibited foreign vessels from engaging in coastal trade in England and required that all goods imported from the continent of Europe be carried on either an English vessel or a vessel registered in the country of origin of the goods. Navigation policies by France, England, and other powers were directed primarily against the Dutch, who dominated commercial marine activity in the sixteenth and seventeenth centuries.

Modern economists accept Adam Smith's insight that free trade leads to international specialization of labour and, usually, to greater economic well-being for all nations. But some mercantilist policies continue to exist when national governments foster national champions.

Based on: LaHaye (2005).

3 Framework

This chapter provides a framework to assess the effectiveness and efficiency of policies aimed at creating a national champion. For that purpose, the first section discusses the concept of national champions. As a sideline we describe today's German and French official position regarding industrial policy, in response to recent economic trends. Sections 3.2 and 3.3 look into the effectiveness of such government policies. First, we give an empirical account of the distribution of the largest companies across the Globe. This aims to answer the question, which general factors determine the number of global players a country hosts. Subsequently, we discuss the various ways in which governments can promote their national champions and briefly consider their effectiveness.

In section 3.4, we turn our focus from effectiveness to efficiency. A framework is established to analyse the costs and benefits of policies aimed at creating national champions. A more detailed analysis of the effectiveness and efficiency of some of these measures will follow in the case studies in chapter 4 and further.

3.1 What is a national champion?

"National monopoly? *Mais non*, that's our national champion, quite a different thing."

– The Economist, Dec. 9th 2004

The term "national champion" is used frequently to describe large exporting or multinational firms. The large company may achieve economies of scale, reducing overall costs of production and increasing profitability relative to smaller firms. Better coordination of production processes can also increase the company's responsiveness to market opportunities thus capturing better deals and raising the average price of the goods and services sold. The resulting additional profitability of the firm itself will flow through in the home country as: improved profits for shareholders and higher taxes paid to the government. The activities of a large company can directly benefit other firms in the domestic industry through "spillover" effects, such as the development of a skilled workforce, the diffusion of benefits of research and development by the large firm and facilitation of international trade, to the extent that other domestic firms are able to benefit from the large firm's international linkages through business alliances or other means.

A national champion can be loosely defined as "a company that has considerable market power at a European or world-wide scale, with at least its head-office established in the home country." This definition includes a wide variety of companies, with very different underlying economics. For the Netherlands, examples that seem to fit this definition are: Philips, Akzo-Nobel, Shell, ING, ABN-Amro, ASML, Amsterdam Airport Schiphol, Port of Rotterdam, DSM, Unilever, Ahold and Heineken. From this definition we derive one single characteristic of such companies: an international player with market power beyond the borders of its own country.

This definition is too broad for the purpose of testing the hypothesis that government policy aimed at preserving national champions is effective and efficient. We therefore adopt the following definition:

A national champion is a company that has considerable market power at a European or world-wide scale, with at least its head-office established in the home country, that operates near or on the technological frontier (that is to say: innovative and dynamic) and has become *a national champion or has preserved its position as a national champion as a consequence of deliberate government intervention.*

National champions exist – by our definition – in (at least) oligopolistic markets, where it is possible to exercise market power (note that companies cannot exercise market power in a (fully) competitive market with numerous (potential) producers. This section specifies further characteristics and dimensions of national champions.

Footloose vs geographically based

Clear examples of *geographically based* companies are network infrastructures (such as electricity grids, telephone companies, and railways). In most cases that will mean that also the services on these infrastructures and other geographically defined services (electricity supply, railway carriers) will be geographically rooted. These services have to be produced locally to meet demand, regardless of the level of concentration and competition in the sector, and the ownership structure. The size of the railway network and the electricity grid in a country will hardly if at all depend on the existence of national champions.

These network sectors and other geographically based companies are often subject to potential market failure such as abuse of market power (due to economies of scale and network effects), positive external effects (economic spillovers), negative external effects (land use and planning, pollution). In addition, the availability and security of supply of such services is often of strategic interest. In any case there are numerous arguments that have led governments to intervene strongly in the business of the companies, and often even nationalise those industries in the late nineteenth or early twentieth century, or to take the lead in investment.[3] Since the 1980s, a growing number of these sectors have been liberalised or privatised, often encouraged or obliged by European legislation. This opened the way for a process of internationalisation and consolidation in sectors that until then had been structured on a national basis, and could lead to the emergence of a limited number of national champions.

Footloose companies include high-tech industries, chemicals, insurance and banking (financial services), and food processing. Prominent examples in other countries would be the car and the aircraft industry, and hardware and software industries (Intel, Cisco, Microsoft). These companies produce goods or services locally, which are exported to the rest of the world. A country's demand for such a product or service could in principle entirely be produced abroad. Just like the network sectors and other infrastructures mentioned above, these sectors mostly experience substantial economies of scale (e.g. the aircraft industry), or network effects for consumers (e.g. software industry) and industry complementarities (clustering). Their geographical location however is often a historical

[3] For a historic discussion, see chapter 2 in: Poort *et al.* 2003: *Publieke belangen in private handen,* NYFER, Breukelen.

contingency. Economies of scale and network effects can make their presence durable, while the fact that a substantial part of their output is exported to foreign markets makes them lucrative to the national government, in view of its alleged positive external effects.

To sum up, some of these national champions have no a priori reason to be located in a particular country (e.g. Nokia, Philips and many other industrial companies) whereas other national champions are naturally headquartered in their home country: these are mainly harbours (Port of Rotterdam) and other network industries (gas, electricity and telecom networks and railways), and companies related to natural resources (De Beers, headquartered in South Africa; mining companies). Given the specific features of the latter, and given our research purpose, it makes sense to focus on footloose companies rather than geographically based companies.

Age

Many national champions are the result of the industrial policies that followed the War's devastation. Some of these champions were therefore created several decades ago and in a very specific context. These are arguably of a lesser interest for this research.

Geography

We will look at European companies.

European vs national

Traditional national champions are "world-beating locals" that still exist (Fiat or Daimler-Chrysler, Vivendi) and which still occasionally appear (e.g. Nokia). As opposed to these examples, there is a new small group of European-wide champions, such as defence contractor EADS, bio-science giant Aventis (now merged with Sanofi) and steel powerhouse Arcelor, which are the result of strong state intervention. All of these have in common to have received huge cash injections from the German, and especially, the French government.

It should be noted that in this study we have taken the perspective of individual countries, i.e. have looked at the effects of national policy for a national champion on the home economy and the rest of the world. Theoretically there is no reason why the general conclusions would not extend to a case of European policy towards a European champion, and its effects on the European economy versus the rest of the world. A case in point could be Airbus. The economies of scale in the airplane industry are such that it can be argued that the optimal firm size is even larger than a European country, and Airbus is the result of growth to the efficient size. The market for larger aircraft has effectively developed into a global duopoly with Boeing. Whether further concentration could perhaps even reduce aggregate marginal costs is a theoretical one, because it is widely accepted that the societal global costs of (potential abuse of) market dominance would become far too high.

French vs German model of government intervention[4]

The French and the German official industrial policy positions are stereotypes of two schools of thought. Within the traditional national champions there are many that can be described as the product of an artificially sustained monopoly, and are or have been typically subsidised: notable examples are French and Italian companies, such as Alstom, Fiat, several countries' shipbuilding sectors, BNP and other French banks. Many of these companies are said to be inefficient, and interestingly, some of these industries have undergone a liberalisation process (not least urged by European Commission policies), and the companies involved have sometimes risen to the challenge and become more-or-less modern companies, which are competing in a broader market: Fiat, Renault, Citroën in the car sector, Air France, Total and Elf etc. Nonetheless, they have become what they are because the State had a pivotal role in their making.

German industrial policy has been characterised by a less ambitious enabling role, based on generating the appropriate industry conditions for companies to flourish.[5] In particular, industrial policy was focused on creating the right conditions in the labour and the capital markets: the labour market has been strongly regulated (e.g. binding industry-wide agreements, state-imposed high-level labour conditions), and the state has played an active role in creating a banking system able to provide sufficient long-term capital to industrial companies (Landesbanken). In this latter case, a case study will demonstrate how a German national champion (e.g. Siemens) has benefited from these broad industrial policies.[6]

Regulated vs unregulated and other "special" industries

Regulated industries in a natural way lead to "local champions", as regulation tends to perpetuate a monopolised market, thereby almost inevitably creating a large company. Such a company can become a national champion in the sense defined above if it manages to expand beyond its own borders: Electricité de France is an obvious example with its acquisitions in Germany, the UK, Italy and elsewhere in Europe. Some industries have been perceived traditionally as strategically important, which has lead to a special treatment. The car industry is an example: through the historical use of quotas (up to 2000), the local producers were protected from external competition, and this lead to or, at least, contributed to the creation of national champions (Fiat, Renault, VW etc).[7] Anti-dumping duties were used in similar way to keep under control Japanese imports in the consumer electronics sector. The coal and steel sector and the defence sectors also have a flavour of special industries, deserving special treatment.

4 Of course, this is related to the traditional classification of financial systems in market-based, bank-based and state-based, with the UK, Germany and France as quintessential examples. The UK does not generally pursue active industrial policies in the sense in which Germany and France do. Note, however, that in the US, (another example of a market-based system) the defence sector has been largely sustained and developed by the procurement of government orders.

5 In Germany, a more hands-on approach has been limited to the shipbuilding sector, the coal and iron industry and the electronics firm AEG.

6 One other interesting type of German industrial policy has been R&D support. In the 80s, the German government developed a number of programs to boost R&D spending in several industries (microelectronics, industrial technology etc). The target group of these policies was the *Mittelstand* sector though, so the relevance for national champions seems limited.

7 One interesting by-product of this is the increase in FDI that resulted, as foreign (Japanese) companies started to produce locally.

Classical and Evolutionary theoretical approaches in a nutshell

Mainstream *classical economic* theory argues that national champion policy instruments helps the company, in the sense that it reduces its costs, increases its profits, helps to increase market shares, or stimulates technological advance, etcetera. According to the same theory, under normal circumstances, national champion policy is effective for the company itself. However the help generally also causes either market dominance or X-inefficiency to occur or persist, and the consumer (both home and abroad) will pay the price of the above-efficiency marginal costs. National champion policy will thus cause a welfare loss in the home country. In addition, it causes a redistribution of welfare from the consumers to the shareholders (and other stakeholders) of the company. Additionally the result of the policy may be that market share abroad increases. Rents may be extracted from the higher prices charged to foreign customers, for instance if commodities are exported. The net effect of the welfare loss at home and the rents extracted from abroad is ambiguous.

The *evolutionary economics* school of thought argues that there are economic benefits in specifically stimulating national companies (1) to reduce transaction costs in evolutions, including cyclical fluctuations, and (2) to create specific rents associated with production with considerable positive external effects, such as R&D spillovers. For instance, in his book 'Competitive advantage of nations' Porter concludes that the role of the government when trying to improve the competitive position of its nation in global competition is "acting as a catalyst and challenger; it is to encourage – or even push – companies to raise their aspirations and move to higher levels of competitive performance […]". According to Porter governments must encourage companies to raise their performance, stimulate early demand for advanced products, focus on specialized factor creation and stimulate local rivalry by limiting direct cooperation and enforcing antitrust regulations.

3.1.1 Natural versus national champions

Government interference is by no means a necessary condition for becoming a national champion as defined in its broader sense. Rather, national championship is a matter of market share, turnover, profit or growth rates. Companies can become national champions by being efficient or innovative, and in fact a large deal of competition policy is about bridling natural national champions. Think for instance of the Microsoft anti-trust cases and of merger control in general.

In the media and academic literature, however, the concept of national champions has a connotation of being a pet project of politicians. The term 'national champion' is used instead of terms such as 'multinational', 'large company', or 'market leader', whenever government intervention lies at the basis of this position. In a similar vein, this report focuses on the efficiency and effectiveness of government intervention aimed at the creation of national champions. All of the case studies in this report will therefore contain elements of government intervention in support of a national champion.

However, this interventionist connotation should not draw our attention from the fact that from a business and economic point of view, national champions can emerge without intervention. Those 'natural champions' can provide a benchmark that is helpful to assess the effectiveness and the costs and benefits of national champion policies. We also found evidence in the literature that government action may well have a contrary effect (see box 3.1 for an example).[8] In the words of Strange (1998): "[…] all contrary attempts to use state policies to protect and promote the competitiveness of firms deemed to be national champions have miserably failed. In Britain, there was the doomed attempt by the Wilson government in the 1960s to protect ICL as British national champion in computers and electronics. […] Then there was the sad story of British Leyland, a state contrived merger of Morris Austin with Leyland trucks that still failed to keep up with the American and Japanese. […] Nor did repeated attempts and state subsidies save one of Britain's leading shipbuilders Swann Hunter from closure." (pp. 102-103).

BOX 3.1: The European semiconductor industry

Through the 1970s and early 1980s, the EC Member States engaged in a variety of support programs for their native computer, semiconductor, and information technology firms. In the end, these policies were counterproductive, delaying rather than encouraging structural adjustments that were essential for long-term competitiveness. Member State designs to promote national champions, when firms themselves were already forging links with partners of mutual convenience throughout the world, were doomed to failure.

In the European semiconductor industry, public encouragement of inter-firm cooperation and high levels of public support (first by national governments and then from the EC) were not successful in inducing firms to go where they did not wish to go. To develop internationally competitive national or European firms would have required a "tough love" policy that combined financial support and brokering of alliances with an insistence on restructuring and vigorous product-market rivalry. European governments offered only love, and for a time diverted their home firms' attentions inward rather than outward in a way that slowed down unavoidable structural change.

Source: Martin (1996)

3.2 Champions: a first empirical perspective on effectiveness

Some countries actively try to create or protect national champions, while other countries refrain from 'picking winners', and focus on improving the business climate in general to increase welfare. If national champion policies are generally *effective*[9], a possible result is that countries that pursue such policies host a relatively large number of champions[10]. Effectiveness however, is not necessarily reflected in a large number of champions: national champions policy could deliberately be aimed at

[8] Another unsuccessful example is described in Chiang (1999). In 1996 the Taiwanese Aero Industry Development Center was transformed from a military organization directed by the Ministry of National Defence into a government-owned corporation supervised by the Ministry of Economic Affairs. So this defence champion also became a commercial champion, expected to lead the commercial aircraft industry into a new era. However, it did not live up to that expectation due to a global scale of the industry and the complex proprietary technological systems.

[9] In this section we disregard the question whether such policies are *efficient*.

[10] A country can also have a relatively large number of champions for other reasons, like a favourable business climate or locational advantages.

only a limited number of companies – for instance because of fiscal restrictions – and still be effective in terms of stimulating the national champion and improving its international market position. In fact, national champions policy aimed at a large number of national champions may be less effective as the restricted budget is to be spread over a larger number of national champions, thereby lowering the financial benefit to each individual national champion.

National champions policy's effectiveness, should therefore also be measured in terms of the economic performance of the individual national champions. To this end, we analyse the effect of national champions policy on the firms' individual performance in the four case studies described in chapters 5 to 8. In this chapter, we limit the analysis to the number of national champions.

A way to investigate this expectation is by looking at the world's largest companies, viewed from an objective criterion such as total revenues. Magazines *Forbes* and *Fortune* publish such lists on a yearly basis.

3.2.1 Data

The *Fortune Global 500* lists the 500 largest companies in the world that publish financial data and report part of all of their figures to a government agency.[11] This means that some private firms and state-owned firms, that would qualify when judged from their total revenues, are not listed.

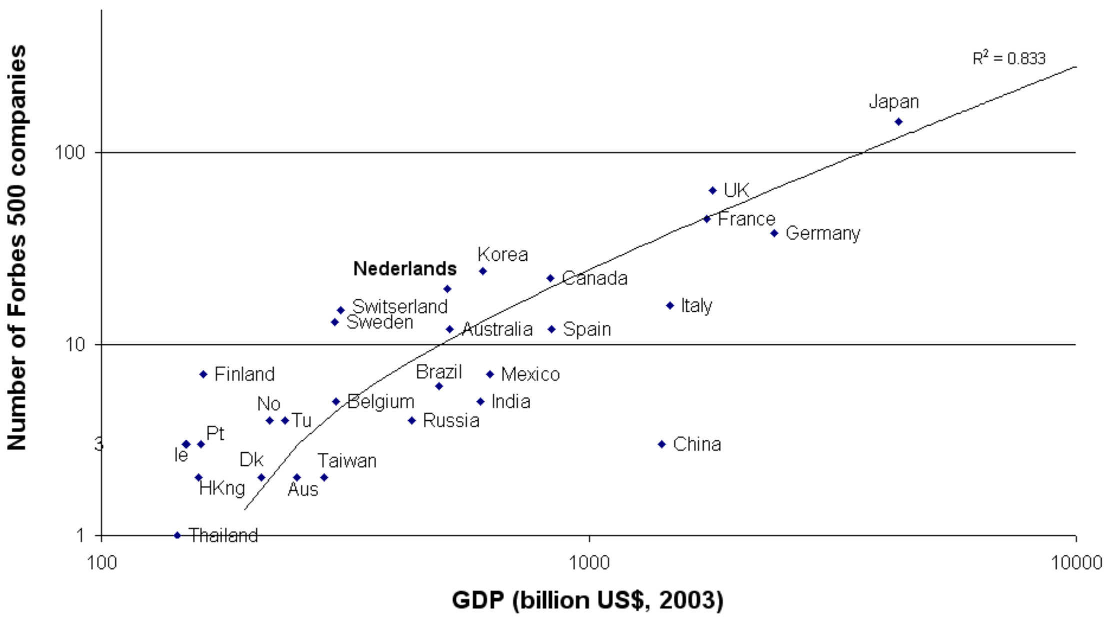
The *Forbes International 500* gives the largest *public* companies headquartered outside the US.[12] In most of our analysis below we use the latter list, because excluding the US – which makes up more than half of the *Fortune 500*, gives more profile to the data for the other countries. An interesting difference between the two lists, is that *Forbes* localises companies by the formal address of their headquarters. Thus, Bermuda boasts no less than seven *Forbes 500* companies, such as the consultancy firm Accenture. *Fortune,* on the other hand, locates such companies by their executive offices, which for Accenture is in the United States.

3.2.2 Results

The dominant variable to explain the number of Forbes 500 companies in a country is GDP, as is shown in Figure 3.1.

11 www.fortune.com. The 2004 list is used, providing data that refer to fiscal year 2003.
12 www.forbes.com. The 2004 list uses revenue figures over the latest reported fiscal year.

Figure 3.1: Number of Forbes 500 companies is largely determined by national GDP



Note: GDP data from World Bank (2005); GDP Taiwan from www.gio.gov.tw; Companies registered in more than one country are equally divided among the nations (for example Unilever is one half localised in Britain and one half in the Netherlands)

GDP by itself explains 83% of the variation in the number of Forbes 500 companies per country. We have used various additional variables to explain the resulting variation in this graph, such as corporate tax levels, size of government, AT Kearney's *Globalization index* and The World Economic Forums *Growth Competitiveness Index*. The latter is a composite index using both statistical data and data from surveys about the economic situation, institutions and adoption of new technology in a country. Only this variable proved significant, in a statistical model as shown in table 3.1. Note that the GCI gives a ranking, which countries with a lower ranking perform better – hence the negative sign in the regression.

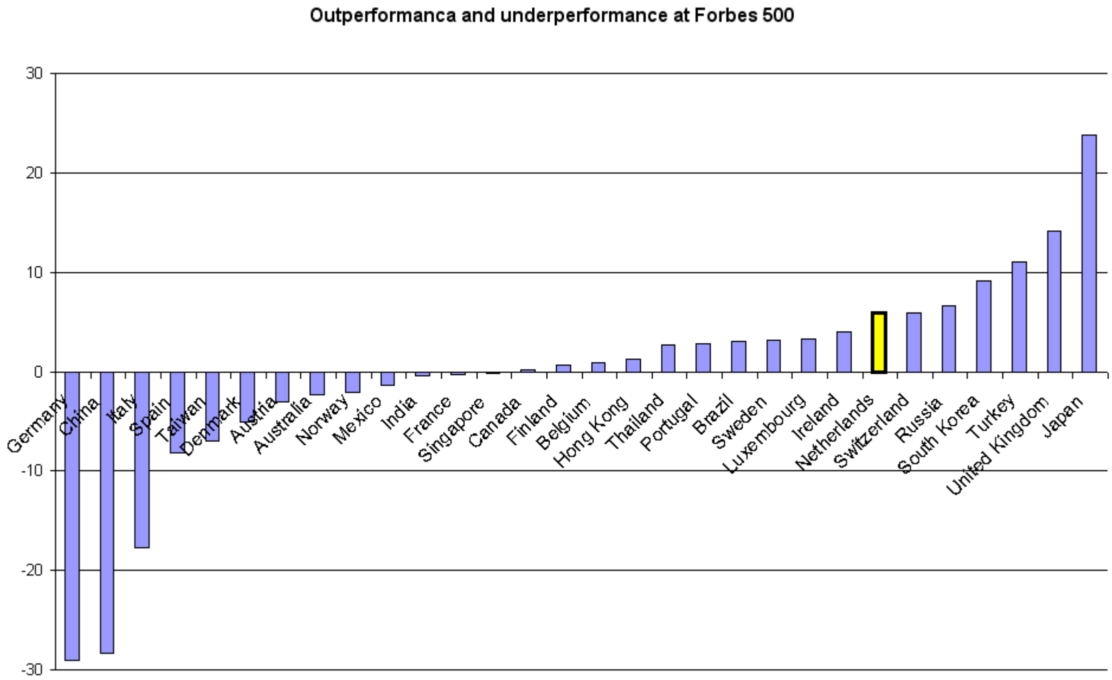
Table 3.1: Model explaining the number of Forbes 500 companies per country

	Coef.	Std. err.	t	P>t	[95% Conf. Interval]	
GDP (billion US$)	0.0284	0.00224	12.70	0	0.0238	0.033
Growth competitiveness index 2003	-0.24	0.11	-2.31	0.03	-0.46	-0.03
Constant	2.02	3.71	0.55	0.59	-5.57	9.62
Number of observations = 31; adjusted R^2 = 0.85						

Figure 3.2 displays the residual variation, i.e. the difference between the actual number of Forbes 500 companies in a country, and the number as predicted by the model in table 3.1. This figures confirms the observation that could be made from figure 3.1, namely that without a national champions policy, the Netherlands hosts more Forbes 500 companies that can be expected from GDP (and the

Growth Competitiveness Index), while Germany in particular performs poorly by this standard. France – also actively pursuing a national champion policy – is no out-performer either.

Figure 3.2: Number of National champions in a country not explained by model 3.1



Note: as a result of model specification, these residuals can be larger than the actual numbers

A similar picture is achieved by simply dividing the number of Forbes 500 companies by GPD, as is shown in figure 3.3: the Netherlands has one of the largest numbers of listings per 100 billion US$ GDP.

The observations above generally hold if the Fortune 500 list is used instead of the Forbes 500. Figure 3.4 is similar to 3.3 but uses Fortune 500, and adds the total consolidated revenues instead of the number of companies in the list. France performs slightly better in the Fortune 500 list, and so does China. This is probably the result of including a number state-owned or semi-public enterprises that fit the criteria of Fortune. A striking observation from this figure is, that the Fortune 500 companies in the Netherlands, Switzerland, and Luxembourg have higher total revenues than the country's total GDP.

Figure 3.3: Number of national champions per 100 billion in GDP

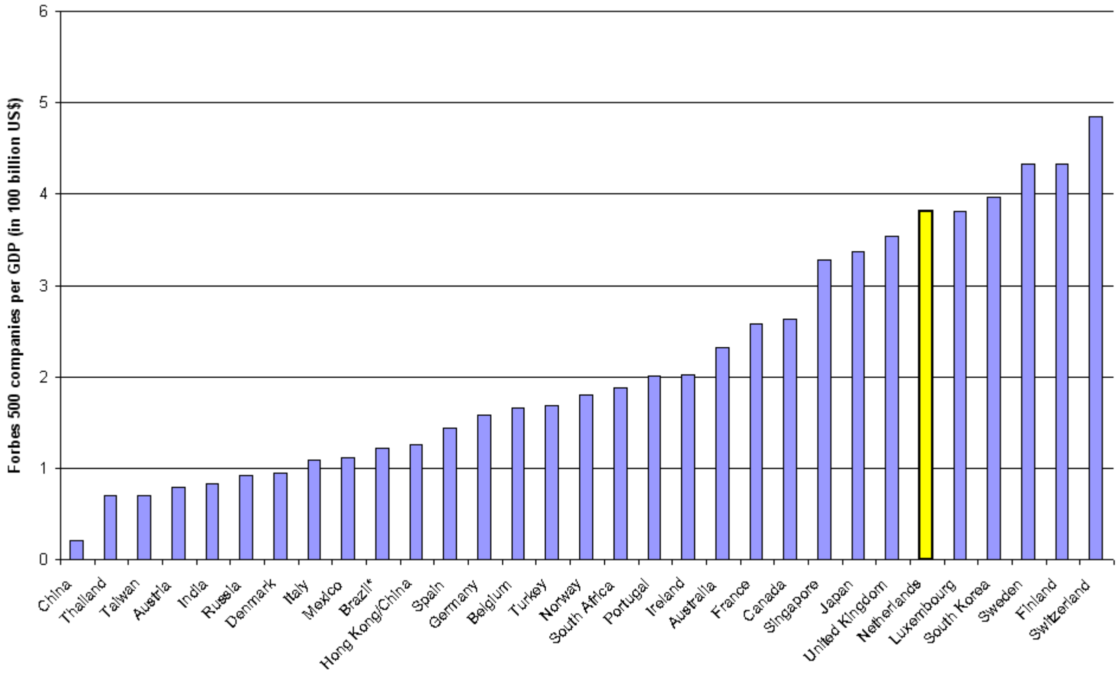


Figure 3.4: Combined Fortune 500 revenues can be larger than national GDP

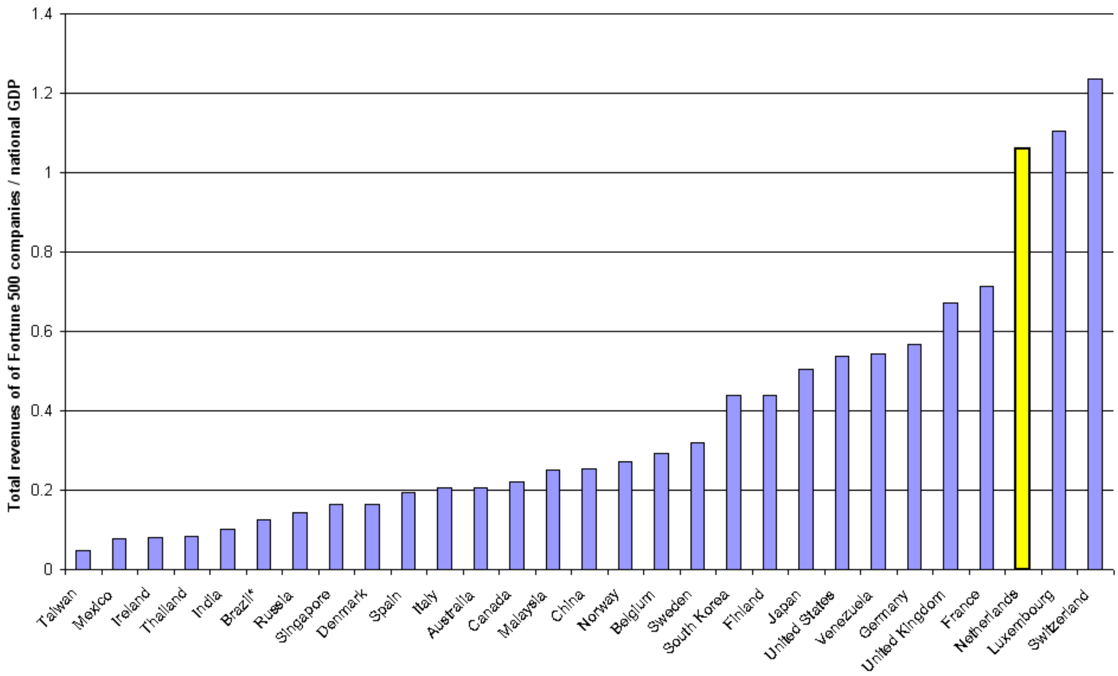
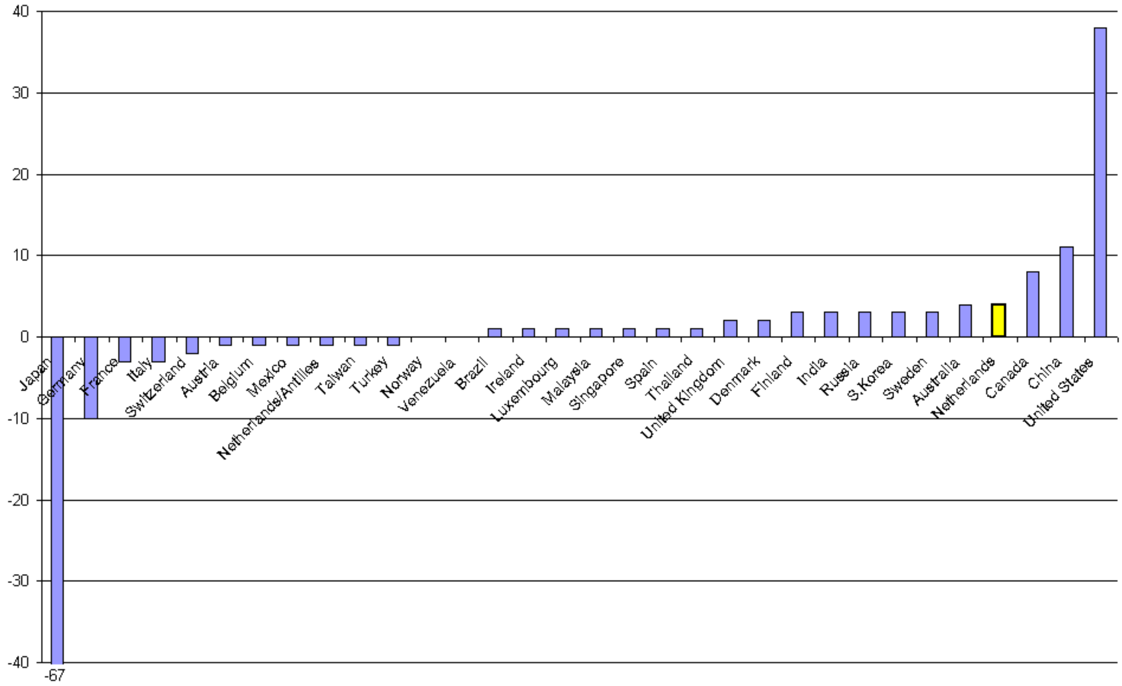


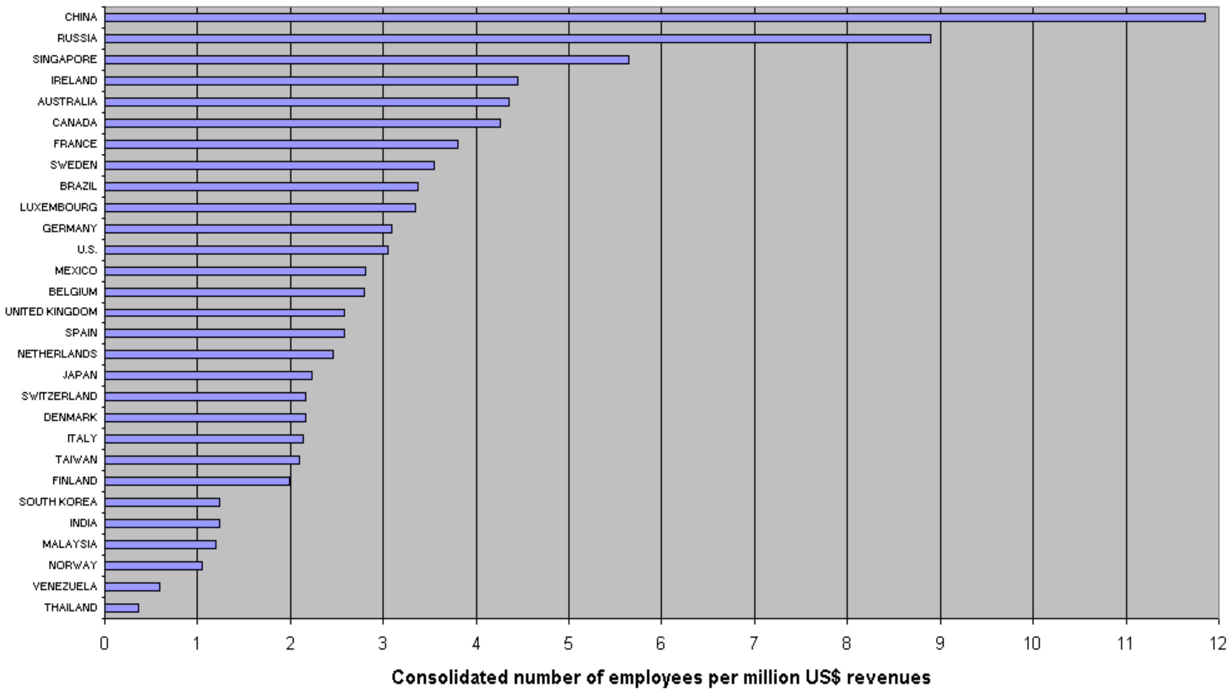
Figure 3.5 gives the changes in the Fortune 500 lists over the last decade. The United States has been the most aggressive climber, followed by China, Canada, and the Netherlands. Japan, Germany, France and Italy have been losing ground.

Figure 3.5: Change in the number of Fortune 500 companies between 1993 and 2004



To conclude, figure 3.6 gives an impression of the differences in labour intensity of Fortune 500 companies between countries. Numbers refer to global revenues and global staff. The larger this ratio is for a country, the stronger are the labour-political arguments to protect national champions. From this perspective France and Germany both score relatively high compared to the Netherlands and – surprisingly – Italy.

Figure 3.6: National champions and number of employees



3.2.3 Conclusions

Empirical analysis using data from the Forbes 500 International and the Fortune Global 500 lists warrants the following conclusions:

- Not all national champions are necessarily recorded in these lists, but it seems safe to say that most companies listed qualify as national champions according to our definition of section 3.1 (although not all of them fit our definition in the sense that they may have arisen without deliberate government action).

- The number of companies listed per country is strongly correlated with GDP.

- The World Economic Forum's *Growth Competitiveness Index* has some residual explanatory power, suggesting that general policies aimed at improving a country's competitiveness can be fruitful for the emergence of national champions as well.

- There are no indications whatsoever that countries that are actively aiming to create national champions host more large companies than other countries. There is some indication that labour-political arguments to protect national champions are indeed valid.

3.3 An overview of policies

A government can take various kinds of action if it wants to promote national champions. Basically, almost any *generic* policy that improves the competitiveness of a country as a whole will in theory be beneficial for national champions: low corporate taxes, good infrastructures for transport, energy and communication, good education and health care, institutions, political stability, etc. The empirical analysis in the last section showed that a high ranking on the World Economic Forum's *Growth Competitiveness Index* correlates with a large number of *Forbes 500* companies.

The focus of this study, however, is on policies that support *specific* national champions. A scan of business literature on the topic reveals a number of specific strategies:

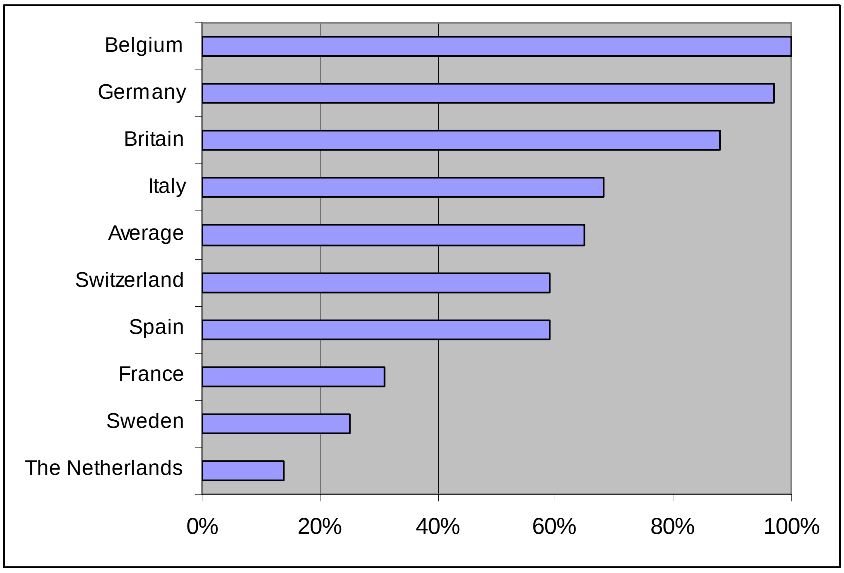
1. Financial constructions that protect against foreign take-over or merger (including share issue and state participation);
2. Mandated mergers or take-over of national companies;
3. State aid and subsidies (including fiscal leniency or exemptions);
4. Government acting as a launching customer of a company's technology (including procurement);
5. Removing or imposing specific trade barriers.

Actually, regulations that alter the costs incurred by businesses could also be considered to be subsidies. We do not examine these in this report. Below we describe the strategies and give recent examples.

3.3.1 Financial constructions that protect against foreign take-over or merger

We will discuss two types of financial constructions that protect against foreign take-over or merger: golden shares and certificates. The state has various other instruments to participate in companies or to protect against foreign take-overs after a share issue (priority shares, multiple voting rights, voting right ceilings, ownership ceilings and so on). According to a study prepared for the Association of British Insurers (ABI) only two thirds of leading European companies operate a democratic policy of one-share one-vote. The study, which examined the capital structure of companies in the FTSE-Eurofirst 300 index, showed that companies use a wide range of structures that distort equal voting rights and make management less accountable to shareholders. These structures occur in most markets but are widespread in France, the Netherlands and Sweden. In the Netherlands 86% of the companies analysed feature exceptions to the 'one share – one vote' principle (25% in Sweden and 31% in France; see figure 3.7).

Figure 3.7: Companies applying the 'one share – one vote' principle



Source: ABI/Deminor Rating (2005)

Golden share

In case of privatisation of a state-owned company shares are issued and state participation often entails a golden share. A golden share is a single share in a company that has special voting rights such that it can outvote all other shares in certain circumstances. It implies that the government retains a very small share of the company's ownership in order to retain control over corporate governance, take-overs or foreign participation and hence, indirectly performing a regulatory role in the post-privatisation era. So these priority shares are issued to the benefit of the government of the country in which the company is incorporated.

Sometimes specific laws are issued that give the state certain disproportionate powers comparable to the ones conferred by a golden share. German carmaker Volkswagen's management is protected by such special constructions. [13]

French oil company *TotalFina-Elf* is another example. After Elf was privatised in 1994, the French government kept a golden share, giving it the right to veto any attempt to buy more than 10% of its shares. When its French competitor TotalFina proposed a bid in 1999, Finance Minister Straus-Kahn said that he would not object it, but made clear that a foreign counter-offer would not meet such equanimity.[14] Likewise, the Norwegian government controlled companies Norsk Hydro and Statoil blocked Elf's attempted take-over of Sage Petroleum, a listed Norwegian firm.

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13 Volkswagen, the car manufacturer that started as a State-owned company under the Third Reich, was privatised in 1960. A 1970 amendment prevents a shareholder from acquiring more than 20% of the voting rights and gives shareholders with 20% of the voting rights a blocking minority. The law also reserves two seats on the company's Supervisory Board for the Land of Lower Saxony, which, with approximately 20% of the voting rights, is the largest shareholder. The State itself would remain entitled to two seats as well on the simple purchase of two shares in the company.

14 French Dressing, in: *The economist*, 8-7-1999.

The European Commission has raised strong concerns about these practices as a breach of the free movement of capital. In 2004 the Commission opened talks with Germany asking the government to repeal the VW legislation as the combination of restrictions on shareholding with automatic public representation were contrary to EU law on freedom of establishment and free movement of capital. According to the Commission, these provisions dissuade potential investors or bidders and is a restriction on cross-border direct investments. Germany has so far refused to amend the Law, with the argument that it is necessary to maintain employment in a depressed sector. Germany's case will not be helped by the UK's recent announcement that it will dispose of its golden share in the airport services operator BAA after a Court ruling in May 2003. But there are more similar cases in which the court ruled that golden shares held by the Spanish government in Telefónica, Repsol, Endesa, Argentaria and Tabacalera and by the French government in TotalFina-Elf were in breach of EU law.

Certificates

Dutch companies have an additional way to protect them from hostile take-over, even without direct government intervention. This is called the certification of shares (or depositary receipts) and means that the property rights are separated from the rights to control and vote. These share certificates are a typical Dutch instrument. [15] Most other European countries do not have certificates, but instead have voteless shares. The shares are held by a foundation which issues depositary receipts – which are the financial instruments sold on the market. The board of directors of this foundation may have links with the company thus helping entrench the position of the management. Holders of depositary receipts wishing to exercise voting rights need to request a voting proxy from the foundation. Where no such request is made, the foundation will exercise voting rights. Given the low participation of individual shareholders in the general meetings of most Dutch companies, the influence of such foundations can be very high. Depositary receipts in the Netherlands are issued by about 24% of Dutch companies analysed (ABI, 2005).[16] The Dutch government has not used the structure however to protect companies from international participation or takeover.

3.3.2 Mandated mergers or take-over of national companies

The 'arranged marriage' seems to be a French speciality (see box 3.2). In 2004, Finance Minister Sarkozy played a central role in an acquisition that launched the second largest pharmacy company world wide. The Raffarin government does not choose to sell state-owned companies (as did the preceding two governments). It rather chooses to dilute the capital and enter into alliances between state concerns and – as if by definition – French companies. The French hope to create European champions of French origin. An example of this strategy is the acquisition of the French-German pharmacy Aventis by the small but financially strong French company Sanofi-Synthelabo (cf.

[15] Even though Belgian companies have the legal possibility of issuing depositary receipts following Dutch law, none of the Belgian companies analysed by ABI has done so.

[16] In the Netherlands, the newly issued Tabaksblat Code of corporate governance has a positive effect on multiple voting rights. Until a few years ago, use of depositary receipts was widely applied and the voting rights of their holders were limited to – usually – 1% of the share capital irrespective of their participation in the share capital. Holders of depositary receipts could exchange them for voting shares up to 1% of the share capital or could ask for voting proxies up to 1% of the share capital. All companies analysed have gradually eliminated these restrictions.

chapter 7). Subsequently, Sarkozy developed plans to save Alstom in a similar way. His plan was to force Areva, a state-owned competitor to take over Alstom or parts of it.[17]

In general, liberalisation and privatisation in network sectors, ports, and airports can prompt a government to consider a policy aimed at creating a national champion. A national champion could extend its power by liberal mergers and acquisitions, and by penetrating foreign market by setting up production locally.[18] The effectiveness is enhanced if the symmetrical process of foreign champions-to-be are not stimulated in the same way by their local government.

BOX 3.2: France's old boys network

An instrument to protect or create national champions that is encountered in France, is mandated national consolidation. A company is saved from bankruptcy – or equally unwanted, foreign take-over – by a merger with another French company. This can be a matter of state coercion, as in the case in the Alstom and Avensis cases. Also, a foreign take-over may be blocked, whereas a national take-over is approved.

In some of these cases, the authorities seem to lack formal power to mandate such decisions. So how do they do it? A possible explanation for this French approach are the close ties between business leaders on the one hand and higher bureaucrats and politicians on the other. The French system of the *Grandes écoles* was primarily established to train the bureaucratic and political elites. Yet more often than in most other countries do enrolees switch between the two during their careers.

Brezis and Crouzet (2002) speak of 'the take-over of large French companies by the "state nobility"'. In 1981, 37% of the leaders of the CAC 40 companies consisted of former civil servants. By 1997, this number had increased to a striking 55%. The majority (44%) of this group graduated at the most prestigious *École Normale d'Administration* (ENA), even though only 10% of its enrolees work in the competitive sector.[19] From 1980 onwards, 35% of French ministers had attended ENA.[20] One could conclude that both government and large companies in France are run by class-mates.

3.3.3 State aid and subsidies (including fiscal leniency or exemptions)

State aid is a way to support a national champion. "The history of industrial policy shows that European national governments have not passively accepted the closing of firms, but rather have devised state aids to rescue some of the losers. Indeed, Europe has a tradition of rescuing national

17 Apart from this amounting to a possible violation of state-aid rules, Areva's boss Lauvergeon allegedly opposed this plan, for the reason that it would delay Areva's privatisation. See: The Alstom affair, in: *The economist,* 6-5-2004.

18 In Dutch Parliament, such policies were most notably considered regarding the creating a Large-scale Production Company (*Grootschalig productiebedrijf GPB).* It was thought desirable by some to merge the four largest players in the Dutch market in anticipation of competition at a European scale. In the paper *Structuurverandering elektriciteitssector,* the Minister of Economic Affairs stressed the importance of having a large national production company that could face international competitors. Eventually, this strife was unsuccessful as no agreement could be reached between the companies involved.

19 Brezis & Crouzet, 2002.

20 Brezis & Crouzet, 2004.

firms in trouble, though in some industries the decline in the number of firms has been accepted, particularly for low-technology industries made up of small firms. Still, it is state aid of various sorts that explain why Europe has 12 manufacturers of industrial boilers or 16 manufactures of electric locomotives compared to two firms in these two industries in the United States."[21]

State aid distorts fair and effective competition between companies in member states and harm the economy in the long run. That is why state aid is only allowed in Europe under certain conditions (see appendix). Article 87(2) gives some mandatory exceptions from the basic prohibition in article 87(1). Article 87(3) states the discretionary exceptions (regional, horizontal and sectoral aid). Though the EC treaty does not define state aid per se, the European Commission and the European Court of Justice have interpreted the concept widely. The rules have been applied to state grants and other less obvious forms of public 'financing' such as grants, tax relief (fiscal leniency such as tax breaks, tax exemptions, special deductions, et cetera), interest relief, state guarantees or holdings and the government provision of goods and services at below market rates (such as free advice). From the point of view of economic efficiency, a production subsidy is probably the most benevolent interpretation of state aid as it expands the output of firms thereby reducing the oligopolistic distortion.

The general economic justification for state aid is the existence of some type of market failure. Horizontal aid targets market failures that affect firms independently of their location or sector or activity. The market failure may relate to underinvestment in innovation or to financial market imperfections, thereby affecting the ability of small firms to grow from the fringe of an industry to its core of established firms.

Alternatively, subsidies can be justified when they compensate a specific service obligation imposed by the government. An example is the fact that the State-funded German postal service, Deutsche Post, is obliged to maintain an expensive, nation-wide network of post offices and therefore has higher costs than its competitors (the same applies for many other national players, like the Dutch TPG and the French La Poste). In March 2001, when the European Commission asked Deutsche Post to provide its parcel services at a fair price, it recognised that part of Deutsche Post's costs came from this obligation. As a result, it only asked Deutsche Post to set its prices to cover the extra cost of providing parcel services, over and above the cost of maintaining this network (i.e. the incremental cost).

The central question is how a government knows it invests in a national champion and not in a lame duck without initiative or innovation? This question was raised in the Financial Times by EU's competition Commissioner Kroes. She proposed to seek more limits on EU governments' subsidies. She immediately received quite a lot of criticism from EU member states like Germany, France, Spain and Britain. Her German colleague Commissioner Günter Verheugen publicly questioned Kroes' ideas and even went one step further and pleaded for relaxing merger rules in order to facilitate the creation of large European champions, just like the success story of Airbus. Kroes' reply leaves no room for discussion on the creation of champions whatsoever: "the idea behind industrial champions is from the past". She adds: "Governments often like to bask in the gratitude of

21 Peck, 1989, pp. 290-291.

employees and voters when they rescue lame-duck businesses, and the lamer the duck the greater the gratitude."[22] The national subsidies in the EU fell quite sharply during the late 1990s boom – from a total of €67 billion in 1997 to €52 billion in 1999 – and since then more slowly, by about €1 billion a year. In 2002 – the year for which the most recent figures are known – total State aid granted by the fifteen Member States was estimated at €49 billion. In absolute terms, Germany granted the most aid (€13 billion) in 2002 followed by France (€10 billion) and Italy (€6 billion).

Table 3.2: Total state aid per EU member State

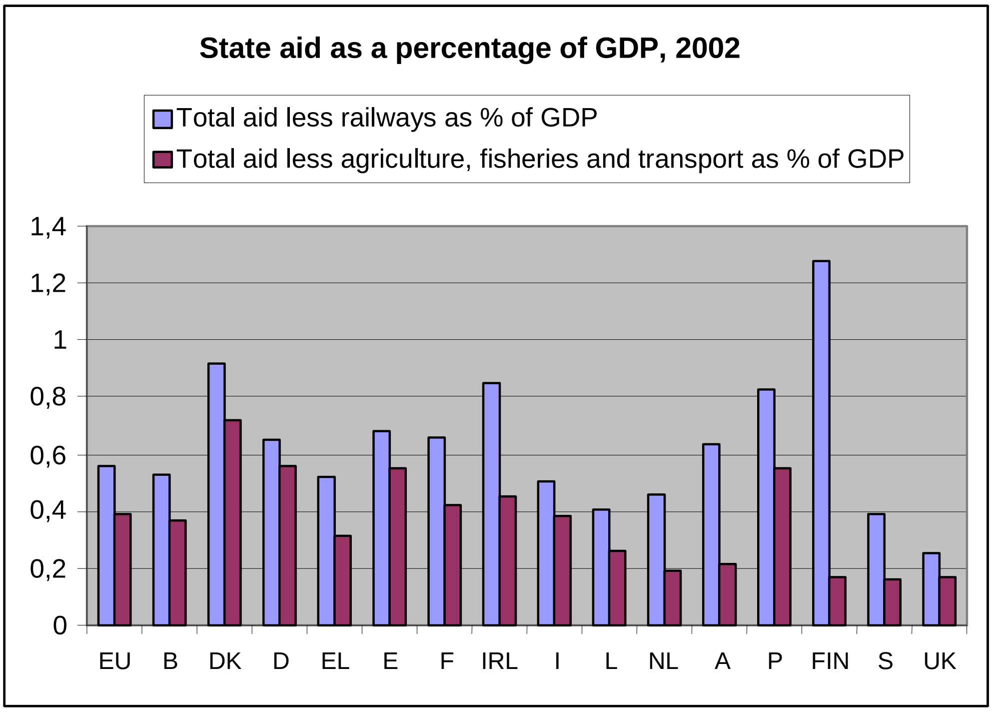
	EU	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Total state aid excl. railways in billion €	48,8	1,3	1,6	13,3	0,7	4,3	9,7	1,0	6,0	0,1	1,9	1,3	1,0	1,7	1,0	3,9
Total state aid excl. agriculture, fisheries and transport in billion €	34,0	0,9	1,3	11,4	0,4	3,5	6,2	0,5	4,5	0,06	0,8	0,5	0,6	0,2	0,4	2,6

Source: Commission of the European Communities (2004)

In the graph below we see that state aid amounted to 0.56% of EU Gross Domestic Product (GDP) in 2002. This average masks significant disparities between Member States: the share of total aid to GDP ranges from 0.25% in the United Kingdom to 1.28% in Finland. The high proportion in Finland can be explained by the relatively large amount of aid to agriculture which represents around 85% of total aid in this country. Indeed, due to the particularities associated with aid to agriculture and fisheries, it is worth looking at total aid less these sectors. This new indicator produces a rather different ranking of Member States. For example, such aid in Finland represents only 0.17% of GDP, one of the lowest rates in the Union and well below the EU average of 0.39%. Germany, Spain and Portugal (each with around 0.55%) and Denmark (0.72%) lie well above the average.

22 Financial Times, 26/1/2005, p. 12.

Figure 3.8: State aid as a percentage of GDP, 2002



State aid as defined under Article 87(1) EC Treaty that is granted by the fifteen Member States for all sectors except railways and has been examined by the Commission. In contrast to previous editions of the Scoreboard, the total excludes aid to the railway sector (see section 1.4). All data are quoted at constant 2000 prices.

Source: Commission of the European Communities (2004)

The strategy that was finally chosen in the Alstom case mentioned above, provides a subtle example of state-aid. In 2003, the French government already provided Alstom with aid in the form of debt. In 2004, this aid package was made irreversible by a debt-equity-swap to save the company from bankruptcy once more.[23] Box 3.3 provides some other examples of (il)legal state aid.

Although it is not proven, the downward trend of total state aid is without a doubt to a large extent due to the EU antitrust legislation, and the increased attention and proficiency of the DG-Competition to detect and substantiate claims of illegal state-aid. It is certain that the effectiveness will further increase, leading to a continued decrease of aid as one of the instruments of member states to foster national champions.

[23] The Alstom affair, in: *The economist,* 6-5-2004, Creating Euro giants, in: *The economist*, 20-5-2004.

BOX 3.3: State Aid

Illegal: state aid to German, Austrian and French banks
The German and Austrian *Landesbanken* obtained State guarantees from their governments protecting them from bankruptcy. These guarantees allowed the public banks to grant loans on more favourable conditions than their commercial competitors. After an investigation of the guarantees, the European Commission concluded that the guarantees constituted illegal State aid and negotiated their phasing out with the German and Austrian governments. A similar decision was taken with regard to a guarantee by the French government to the public financial institution Caisse Dépôts et Consignations (CDC) to support the commercial banking activities of CDC. The Commission also demanded the phasing out of the guarantee, allowing CDC to adjust its operational and legal environment to operate under the same conditions as its competitors.

Illegal: SCI system
In the late 1990s, the Dutch authorities granted SCI Systems a generous aid package to build a factory for the assembly of PCs for Hewlett-Packard in Friesland. In February 2001, the European Commission found that this aid broke the rules on regional investment aid. These rules prevent authorities from having an expensive subsidy race to attract mobile investment projects and the jobs they could bring to their region. Such races would be costly for taxpayers and undermine cohesion objectives because richer authorities could continuously outbid poorer ones. In August 2002, the company paid back € 1.7 million to the Dutch authorities.

Legal: training aid to Fiat
The European Commission approved training aid amounting to € 38 million for the Italian car manufacturer Fiat to improve the knowledge of workers whose jobs were at risk due to rationalisation measures and who needed training to adapt to changes in production processes and demands. The European Commission is generally favourable towards training aid measures.

Legal: R&D aid to Motorola, Philips and St Microelectronics
In 2003, the Commission approved aid in the amount of € 293 million for a joint research project of the three companies to develop new technology for first prototypes of integrated circuits with nano-metric dimensions. The aid was approved for research in all stages, i.e. fundamental, pre-competitive and industrial research. The project led to a substantial increase of research personnel as well as the increase in R & D expenditure.

Source: European Communities, 2004.

3.3.4 Government acting as a launching customer of a companies technology

This seems to be the German way to support national champions. An example is the toll system for trucks, from which DaimlerChrysler and Deutsche Telecom benefit substantially.

The preference of governments, in their own purchases, for domestic over foreign suppliers constitutes another means of stimulating national champions. Since about 1970 the EC has been committed to eliminating preference for domestic countries in public purchases. Even so, only in a minority of cases of public procurement is now awarded to forms from other member states.[24] This history is significant, not so much for public procurement alone, but as a demonstration of how difficult it is to overcome national nepotism. Governments are to think European, not Italian, French or German. Given the EU procurement rules, the government cannot explicitly favour specific (national) suppliers over others.[25]

3.3.5 Removing or imposing specific trade barriers

Removing trade barriers can be a way to achieve a first mover advantage. An example that illustrates this is the open skies agreement between the Netherlands and the US, from which both KLM and Schiphol Airport have demonstrably benefited immensely. This agreement which dates from 1992 lies at the foundation of Schiphol's strong position as Europe's fourth-largest airport, despite its small home market. The Dutch open skies arrangement annoyed the European Commission, other Member States, and some American carriers and labour unions. The Commission was displeased at the unilateralism of the Dutch action, which it felt undermined the prospects for successful negotiation with the US at Community level.[26]

On the other hand governments often choose to impose trade barriers. This is done on a national basis but also on a EU-level: "The single market must first offer an advantage to European companies. This message we must insist upon without hesitation.".[27] For instance, in energy and transport markets, France and Germany are notorious for conducting a policy of pushing liberalisation in other member states' markets, while being reluctant to open up their own.[28] This is referred to as asymmetric liberalisation. The shape of domestic deregulation differs in each of the EU-member states, and has been an area of controversy. National monopolists in France will try to keep its domestic stranglehold for as long as possible (post, water and electricity sector). In 2004, the European Commission intervened when the French and German gas companies Gaz de France and Ruhrgas allegedly refused to allow the Norwegian gas producer Marathon access to their gas networks. Both the French and the German companies subsequently offered to improve access to their respective networks, allowing customers in France and Germany to benefit more effectively in future from the opening of the gas markets to competition.

Technical regulations and standards are still another device that protects national firms. An example is the Italian Pasta Purity Law, which requires pasta to be made entirely of durum wheat, and thus effectively excludes pasta from other countries. Another example is the French national standardisation body that sets specifications for tiles that effectively exclude Spanish and Italian

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24 Peck, 1989, p. 293.

25 These rules are based on the European Procurement Directives, Council Directive 93/37/EEC of 14 June 1993, concerning the co-ordination of procedures for the award of public works contracts.

26 Staniland (1997).

27 Speech by Umberto Agnelli, Italian industrialist, April 14th 1988, to the Royal Institute of International Affairs, London.

28 Another important barrier – both in terms of launching cross-border activity and in terms of the administration and location of that activity – is believed to be differences in company law and tax system.

products because non-confirming tiles cannot be used in public buildings and because most French architects insist on using tiles that meet national specifications.[29]

3.3.6 Further issues related to policy instruments

Defensive and offensive policies

The six policies mentioned above can broadly be distinguished in *defensive* or *protectionist,* and *offensive* policies. Imposing trade barriers for foreign entrants and taking a golden share against foreign take-over are obviously defensive. Putting effort in removing a specific trade barrier, for instance by negotiating a profitable open-skies agreement, qualifies as offensive. Giving state aid, fiscal leniency and acting as a launching customer can be both defensive and offensive: it could be aimed at helping a company to survive or at helping it to become a dominant player.

Creating Euro giants, *The economist*, 20-5-2004

Can national champions work? Sometimes, but only in exceptional circumstances. Air France and Renault, two national champions that are now prospering having almost gone bust, are examples of successful state bail-outs, says Ms Sachwald. But in general, any artificial promotion of national champions tends to hinder the development of a successful corporate sector, says Colin Mayer of the Said Business School in Oxford. Far better to create the right environment, as per the Lisbon strategy, through deregulation, competition and so on.

French Dressing, *The economist,* 8-7-1999

National deals (mergers) are easier to pull off. Between 1990 and 1999, 80% of cross-border bids collapsed without a deal, compared to 60% of take-over attempts between firms from the same country. (Success rate 20% vs. 40%) So even if you are no chauvinist, it often makes sense to start with national mergers before moving on to international ones, as these cross-border bids are more difficult to pull off.

Domestic deals add more value. Investment bank J.P. Morgan looked at 116 mergers and found that total returns of domestic deals were 7% greater than those from the stock-market as a whole. On the other hand, improvement for cross-border European deals was only 4,7%.

General versus specific instruments

A general policy may be deemed less distortive in respect of the effects on incentives (and hence competition) than more specific policy. The specificity may either refer to regional policies or to activity-specific, firms-specific and industry-specific policies.

When subsidising or otherwise supporting a specific company to become (or stay) a national champion, the risk that this support will be categorised as state aid is rather high. This risk decreases when the whole sector in which the company operates is supported. Governments should, therefore,

29 Emerson, 1988.

spread their aid as widely as possible by making risk capital, research and innovation subsidies available across the board instead of focussing on specific sectors or companies. The more 'horizontal' the state aid, the less likely it is to distort competition by favouring one sector or company at the expense of others.

3.4 Efficiency of national champions policies; The extraction of rents

Hardly any literature is available on the subject of the efficiency of national champion policies.[30] Most of the literature deals with state aid and the effect of state aid on competition. A dominant perspective is that the fostering of national champions distorts competition by definition because the market outcome is influenced by accompanying government action. This line of thinking also materialises in the Market Economy Investor Principle (MEIP) test.[31] This test tells whether a transaction or series of transactions constitutes illegal state aid. It is based on the principle that a government should expect returns from its subsidy that a market investor would find acceptable for an equivalent investment. MEIP has been a cornerstone of state aid control since 1984 but is currently a hot topic of debate.[32] This literature is not very useful here as it is not based on a welfare perspective.

The framework we develop below is based on general economic theory. The academic literature we did find was quite negative about the efficiency of actively pursuing a national champion policy.[33] Below we give two references, one from the very early days of economics and the other of recent date.

Adam Smith, in his 'The Wealth of Nations', made a number of important criticisms of what he called the 'mercantilist doctrine'. First, he demonstrated that trade, when freely initiated, benefits both parties. Later on, this concept was formalised in the 'Ricardian model' of comparative advantage.[34] Second, he argued that specialization in production allows for economies of scale, which improves efficiency and growth. Finally, Smith argued that the collusive relationship between government and industry was harmful to the general population. While the mercantilist policies were designed to benefit the government and the commercial class, the doctrines of laissez-faire, or free markets, which originated with Smith, interpreted economic welfare in a far wider sense of encompassing the entire population.

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30 For instance, Parker (1999) describes the choice between policies designed to support small and medium size enterprises versus policies designed to foster national champions. However this article does not deal with welfare effects; instead it focuses on the optimal policies towards SMEs.

31 Slocock, 2002.

32 E.g., Pilsbury et al (2004).

33 One exception is Finon (2001) who defends the French government that, compelled by the 1996 European Directive 96/92, undertook a minimal reform of the organisation of its electricity industry, while preserving the boundaries of the incumbent company. The reason for that is, however, not based on an analysis of welfare effects. Instead Finon based the analysis on cultural aspects (attachment to public property of the nuclear equipment, weak belief in the virtue of the competition).

34 David Ricardo (1817), *On the Principles of Political Economy and Taxation.*

Collie has published various studies on state aid. He developed an oligopoly model in which firms that would otherwise have the same marginal costs receive state aid in the form of a production subsidy. In 2002 (p. 216) he cites from earlier work: "Countries compete with each other in a negative sum-game of individually rational, but collectively wasteful subsidies to industry, spurred by the prospect of poaching each other's profits on imperfectly competitive markets." Collie emphasises the "fundamental importance of the opportunity cost for the welfare analysis of state aid". For instance, national champion policies are financed by distortionary taxation so the opportunity cost of government revenue exceeds unity. Another important potential welfare cost is a subsidy war between countries. Therefore, a multilateral prohibition of subsidies will increase the welfare of all countries (given an oligopoly with products that are close substitutes). If products are sufficiently differentiated there may be circumstances in which a multilateral prohibition of subsidies will have negative welfare effects as it does not give rise to a subsidy war (i.e., a prisoner's dilemma type of outcome). In markets where products are highly differentiated, state aid could have a positive effect on the welfare of both domestic and foreign economies, as the negative effect of the subsidy on the profits of foreign firms may be outweighed by the positive effects on consumer welfare generated by prices and increased overall output. This result is less likely to hold when goods are more substitutable, implying that state aid (or strategic trade policies) can be harmful when price competition is particularly intense (a competitive market).

However, Collie shows that for plausible values of the opportunity cost there is a strong case for prohibiting a benevolent form of state aid even when governments are welfare maximizers. "Obviously", he adds, "if governments do not maximize welfare and/or they use less benevolent forms of state aid (for example, subsidies to fixed costs that keep inefficient firms in business) the case for the prohibition of state aid will be strengthened."

Given these (classic) economic insights we will now try to describe five principal mechanisms through which rent extraction of national champions can take place: (1) exercise of market power, (2) scale and scope effects, (3) the removal of X-inefficiency, (4) technological innovation/dynamic efficiency and (5) employment effects. In practice this means that we are looking for exceptions on the general economic insight that national champions policies are inefficient. Note that for this study we have chosen a definition of a national champion as a company that exists as a consequence of conscious government intervention. The discussion presented here is therefore linked to government action.

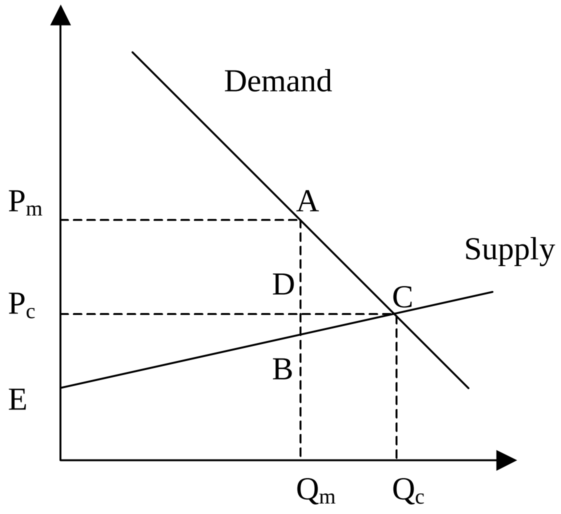
1. The national champion exercises market power

A national champion may exercise market power on both its home market and in foreign markets. In both cases the national champion will be able to capture rent. We will discuss both cases in turn.

On the home market

On the home market this rent capture has an unambiguously negative effect on welfare, which is known as the dead-weight loss. The dominant firm will make more profit per unit of sales, but overall consumers will pay too much for too little, compared to the efficient allocation. This situation is depicted in figure 3.9 of the supply and demand function on the home market. The areas between the supply and demand curves are maximized at the competitive price, P_c, and the competitive quantity, Q_c. In case the national champion has market power on its home market and charges price, P_m, the national champion will extract rent equal to area P_mADP_c. The total producer surplus on the home market is equal to P_mABE. The deadweight loss, i.e. the loss in welfare, is equal to area ABC.

Figure 3.9: The effect of market power on welfare



On foreign markets

If the national champion is able to capture rent on foreign markets, the foreign country will suffer a loss in welfare, which is again equal to the area ABC in that country. The home country of the national champion will benefit from the rent, P_mADP_c, the national champion can extract abroad.

Notice that the period over which the rents are being captured will depend on the extent to which the market power can be sustained. As long as the market power of the national champion is not eroded, its rents will not be eroded. Reasons why market power may be eroded over time are several: (i) new entry; (ii) expiration of patents; (iii) substitution on the demand side, etc.

These effects, however, are dependent on the way in which foreign demand is met by the national champion: exports, foreign direct investment, foreign local production, etc.

An important aspect of the extraction of rents as a result of market power is the distribution of rents. Governments that are not satisfied with the distribution of rents sometimes use retaliation strategies, which undermine the sustainability of rents. As retaliation is not a mechanism, it is discussed in specific terms in the cases.

2. Scale and scope effects

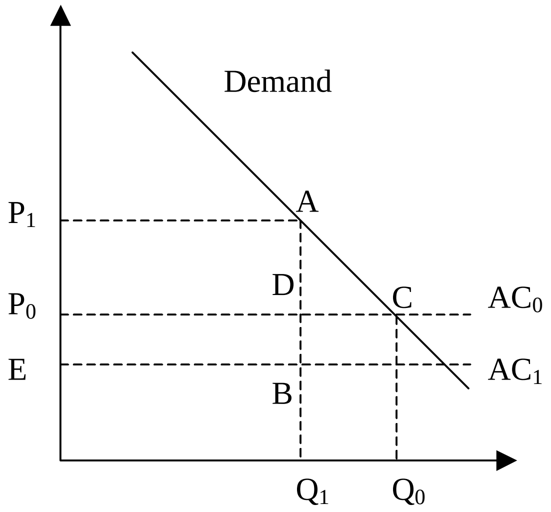
The creation of a national champion from two or more smaller companies (a mandated merger) may lead to scale and/or scope effects.[35] This will allow the national champion to extract rent from both its home and foreign markets. Notice that the capture of rent will only be temporary as the national

[35] Another way in which scale or scope effects may be attained is by autonomous growth, like the penetration of foreign markets.

champion's competitors can follow suit and merge as well in pursuit of the same scale and scope effects. Moreover, as the creation of the national champion lowers costs, this rent capture is good for welfare, both at home and abroad.

However, this result depends on the assumption that market power is unaffected by the merger, and aggregate cost decreases are passed on to the consumers. If it is not, the results under (1) apply. The effect on welfare is then ambiguous. This situation is depicted in Figure 3.10. Suppose before the merger average costs are AC_0, whereas after the merger they are AC_1. The cost savings resulting from the merger are given by the area P_0EDB. If market power increases as a result of the merger the deadweight loss to society is given by the area ADC. Whether the merger is positive or negative for welfare then depends on the relative sizes of theses areas. Notice that a merger may be positive for the world economy as a whole and negative for importing countries. The latter suffer from the deadweight loss and do not profit from the reduced costs.[36]

Figure 3.10: Welfare effects of a merger



3. The removal of X-inefficiency

X-inefficiencies arise because competitive pressures are weak and firms can operate below their production frontier. This may occur in sectors in decline that carry large amounts of excess capacity. Economic efficiency requires that resources be transferred out of declining industries and into sectors where they can find productive use. Sectoral aid implies the danger that subsidies granted with the intention of easing the transfer of resources out of a declining sector will instead be used to delay inevitable and socially desirable adjustment.

[36] From figure 2 it cannot be judged whether a merger is actually good for welfare as it assumes that average costs will remain unchanged in the absence of the merger. If this is not the case and average costs would have fallen in a number of years by internal growth as well (the line AC_0 shifting down), the merger may actually be bad for welfare on the mid term (the area P_0DBE would become smaller and the area ADC would become larger). The issue at stake is whether the cost savings of the merger are realized faster than the cost savings by internal growth. (Viscusi et al, 1995)

If incumbents are inefficient, entrants, among which foreign national champions, may capture a rent on the incumbents market. Notice that this rent is again temporary, as the incumbents X-inefficiency will typically be removed which will erode the rent. Moreover, it is good for welfare as consumers benefit from the increased competition and lower prices.

4. Technological innovation/improving dynamic efficiency

Government policy may be directed at technological innovation, which may give a company a first-mover advantage. This may allow the company to extract a (temporary) rent both in its home and foreign markets. The effect on welfare in the home market is ambiguous and depends on the costs of government policy and its benefits: the net increase in welfare in the home market and the capture of rent in foreign markets. The effect of welfare in foreign markets depends on the question whether there are competitors present in the foreign market. If not, the welfare effect is positive, as the foreign country can profit from the technology push (free ride). If there are competitors present, they will loose market share, and the welfare effect will be ambiguous.

Another effect of the stimulation of technological innovation (connected to national champions policy or not) is that it may create spillover effects. These spillover effects must be corrected for the opportunity cost of the resources employed. The opportunity cost measures what the resources would have earned in the absence of the government policy of stimulating technological innovation. An example may make this clear. Suppose the government invests € 1 billion in order to stimulate technological innovation and suppose that the gross spillover effects are € 3 billion. However, suppose that the opportunity cost of the resources employed, capital and labor, is € 2.5 billion. The net welfare effect is then negative at € –0.5 billion.

ELABORATE: AGGLOMERATION OR CLUSTER EFFECTS

Another positive effect that is sometimes named in discussions on national champions policies is agglomeration or cluster effects. Footloose activities could have large economies of scale or network effects, which could be very lucrative for an economy. Externalities could occur in terms of a thriving cluster of complementary economic activity around a national champion. The emergence of such clusters exhibits path-dependency as a result of network effects and economies of scale: once a cluster of economic activity is established (e.g. Silicon Valley), this equilibrium is very stable because of the transaction costs and co-ordination that would be involved in finding a different equilibrium. Thus, path-dependency is a consequence of network effects and economies of scale that can give rise to positive external effects and could accordingly reward national champion policies. However, based on literature in clustering and geographical economics[37] we argue that a national champion policy is not efficient in order to attain cluster effects.

Hoen (2001) puts it very clearly: "Empirical analyses show that the presence of a skilled labour force is the most important determinant for clusters. […] Competition is a necessary factor for a cluster to be successful, since it enhances the competitiveness and innovativeness of firms. Especially strong competition from foreign rivals can be very fruitful […]. Most authors argue that the government should provide for the infrastructure which makes the emergence of clusters possible. Since clusters need skilled labour and competition, a good cluster policy may be no cluster policy at all. Instead, the government should look after a system of universities that produces a highly educated and skilled workforce, and stimulate competition by opening markets for foreign competitors. These policy options support the most important cluster determinants and will therefore support the emergence of clusters."

In conclusion, clustering effects may well be a side-effect of national champion policies, but the emergence of a cluster is very rarely envisaged, and these effects could have been achieved at lower cost by less specific policies such as improving education and stimulating competition.

5. Employment effects via control over foreign employment

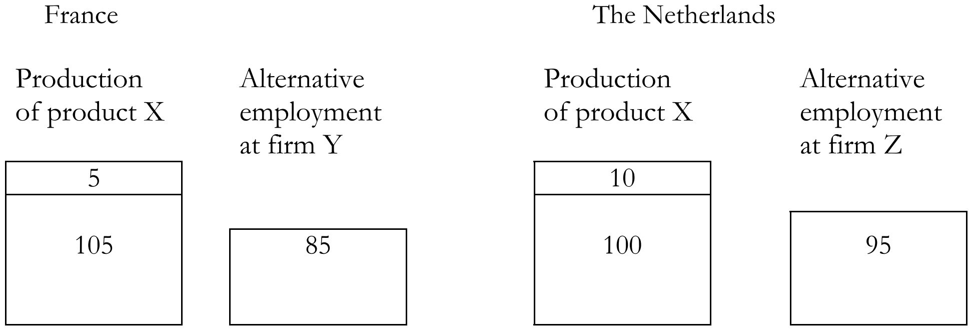
National champion's policy can also affect employment in home and foreign countries, because the control over foreign employment is located with the headquarters of the national champion. For example, a French national champion may shut down a production facility in a foreign country instead of a similar production facility in France despite the fact that the facility in France is less efficient.[38] For the foreign country this may mean a loss in welfare, whereas for the home country this results in a smaller increase in welfare. However, as the example below illustrates, closing the facility abroad does not necessarily imply a welfare loss (because it may well be the second best solution).

Let us take the imaginary example of a French company with production facilities in the Netherlands and in France, both producing X. The columns below present prices, consisting of added value of 105 and a surplus of 5 for the French production facility and of added value of 100 and a surplus of 10 for the Dutch facility. If the French company closes down the French production facility, the

[37] E.g. Porter (1990; 2004), Krugman (1991).

[38] If the facility in France was more efficient, this would of course be the right decision from a welfare point of view.

French worker will find alternative employment at firm Y (no surplus; added value of 85).[39] In much the same way, the Dutch worker will find new jobs at firm Z (no surplus; added value of 95).



Case 1: Price remains 110, French company has some degree of market power

Dutch facility is closed, Dutch workers move to Z	French facility is closed, French workers move to Z in the Netherlands (and do not stay in France!)	Both is optimal if French worker are willing to work in the Netherlands (international labour market flexibility)
Welfare = 95 + 110 = 205	Welfare = 95 + 110 = 205	

Case 2: Price drops to 100, French company does not have market power

Short term

Dutch facility is closed, Dutch workers move to Z	French facility is closed, French workers move to Z in the Netherlands (and do not stay in France!)	In the optimum welfare is 100 + 95 = 195 (given no restrictions exist on the international labour market)
Welfare = 95 + 100 = 195 (note: outcome is sustainable)	Welfare = 95 + 100 = 185 (note: French company loses 5; outcome is not sustainable)	<u>Conclusion</u>: If efficiency does indeed increase at French facility the outcome can be optimal in both cases (Dutch or French facility is closed). However, there is a difference in terms of distribution of benefits.

Long term

Dutch facility is closed, Dutch workers move to Z; and in the long run the French facility is closed too	Dutch facility is closed and French start producing as efficient as the Dutch used to produce
Welfare = 95 + 85 = 180	Welfare = 100 + 95 = 195

39 This entails transition costs, which are once-only by nature. In case French workers will have to find new employment, these transition cost have to be borne by the French. When Dutch worker get laid off, then the Dutch pay the cost.

3.4.1 Intermezzo: The scientific literature on employment effects

Of the false tenants of mercantilism that remain today, the most pernicious is the idea that imports reduce domestic employment. But the revenue that the exporter receives must be ultimately spent on exports of – for instance – the Netherlands, either immediately or subsequently when Dutch investments are liquidated. We therefore described employment effects in more detail.

Reich (1990) posed an interesting question to his fellow Americans: "Who is US? Is it IBM, Motorola and General Motors? Or is it Sony, Philips and Honda?". His answer was the American workforce, the American people, but not particularly the American corporation. After all, Reich states, it is false to assume that it is these corporations that will invest on "our" (the US) behalf. He gives two contrastive examples to make his point. Corporation A, headquartered north of New York, is run by American directors, owned mostly by American shareholders. But its employees are largely non-Americans, and the product sold to its customers are largely made in its factories abroad. Corporation B is headquartered abroad, directed and owned by non-Americans. But most its employees, including those working in R&D, were found in the US. Its products are sold there but also exported, sometimes to the country where it is headquartered.

Reich's analysis teaches us that governments should promote human capital in the home country rather than favouring national companies. Our short discussion of cluster effects above gives the same insight as Reich. Later work, by for instance Nohara & Verdier (2001), supports this analysis. French providers of IT services have had considerable success both in their own domestic market and in the wider European market, not as a result of the national champion policy (which failed accoriding to the authors) but a a result of a very active higher education policy and national research strategy. This strategy produced a supply of particularly valuable competences which feed the IT sector.

Griffith et al. (2004) also provide evidence in support of Reich's analysis. They examine the relation between foreign ownership and productivity in Britain. Their results show that both in production and service sectors, establishments that are part of British-owned multinationals are larger than those that are part of foreign-owned multinationals. This is not surprising of course, as the former are operating in their home country. However, British-owned establishments have *lower* labour productivity than those that are foreign-owned. This may be linked to the fact that foreign multinationals are operating outside their home market, and this may require them to possess some additional advantage in order to be able to compete effectively. The observed differences in labour productivity are mirrored in differences in investment per employee, and the intensity with which intermediate inputs are used. This suggests that labour productivity differences are not only due to differences in technical efficiency, but also differences in input usage and scale effects. These differences were also found in the service sector, although the differences were smaller. Also, Griffith and her colleagues found foreign multinationals undertake a substantial amount of British R&D in many sectors, which provide a potentially important source of knowledge spillovers to domestic-owned establishments. This R&D activity is probably motivated by technology sourcing or it is meant to adapting products to the local market.

In short: governments should not foster national champions, they should promote human capital in the home country and the government should not favour employment generated by national-owned companies. On the contrary, the study by Griffith et al. shows that foreign-owned companies may generate even 'better' employment.

3.5 To conclude

This chapter provides a framework we will use to test the hypotheses that government policy to create or preserve national champions is effective and efficient.

First, we defined a national champion as a company that has considerable market power at a European or world-wide scale, with at least its head-office established in the home country, that operates near or on the technological frontier (that is to say: innovative and dynamic) and has become a national champion or has preserved its position as a national champion as a consequence of conscious government intervention (so we excluded natural champions).

Based on a first empirical perspective on the effectiveness of national champion policies using data from the Forbes 500 International and the Fortune Global 500 lists we concluded that:

- Not every national champion may be in these lists, but it seems safe to say that most companies listed qualify as national champions (although not all of them fit our definition in the sense that they may have arisen without deliberate government action).
- The number of companies listed per country is strongly correlated with GDP.
- The World Economic Forum's *Growth Competitiveness Index* has some residual explanatory power, suggesting that general policies aimed at improving a countries' competitiveness can be fruitful for the emergence of national champions as well.
- There are no indications whatsoever that countries that are actively aiming to create national champions host more large companies than other countries. There is some indication that labour-political arguments to protect national champions are indeed valid.

Next, we identified five instruments often used by governments that actively pursue national champions. Of course a government can take various kinds of action if it wants to promote national champions. Here we focus on policies that support specific national champions.

1. Financial constructions that protect against foreign take-over or merger (including share issue and state participation);
2. Mandated mergers or take-over of national companies;
3. State aid and subsidies (including fiscal leniency or exemptions);
4. Government acting as a launching customer of a companies technology (including procurement);
5. Removing or imposing specific trade barriers.

In section 3.1 we defined a national champion as a company that exists as a consequence of conscious government intervention. When testing the hypothesis that such policies are efficient, we look at the possible rents that can be extracted. In order to identify these rents we need to know how they come about, in other words we need to identify the mechanism through which of national champions can take place. This section described these mechanism. Rents can be extracted as a consequence of market power (abroad and at home), scale and scope effects, the removal of X-inefficiency, improving dynamic efficiency and employment effects via control over foreign employment.

Our discussion of cluster effects and employment effects indicates that governments should not foster national champions, they should promote human capital in the home country and stimulating competition.

4 Costs and benefits of national champions policy

Chapters 5 to 8 describe four case studies we conducted to test the hypotheses that government policy to create or preserve national champions is effective and efficient. In this chapter we describe the selection of the cases (4.1) and the research methodology used in the case studies (4.2).

4.1 Selection of cases

Based on discussion with the steering committee we selected four cases to test the hypotheses mentioned above. To explain the selection process, here follow some examples, with their classification according to the criteria listed in section 3.1. All of them fulfil the requirement of being European (as opposed to American or Asian); from the point of view of their age and origins, all (but, possibly, EDF) seem reasonable.

Table 4.1: Some examples of national champions

Company	Footloose or Geographic	European or National	Country	Regulated / special industry or Other
Aventis (or Rhone-Poulenc)	Footloose	European	French	Other: chemical
Sanofi-Synthelabo	Footloose	Global	French	Other: pharmaceutical
EADS	Footloose	European	French	Special: aerospacial/defence
Airbus	Footloose	European	French	Special: aerospacial/defence
Siemens	Footloose	National	German	Other: electronics
EDF	Geographic	National	French	Regulated: electricity
Alstom	Footloose	National	French	Other: manufacturing
Renault	Footloose	National	French	Special: car industry
Volkswagen	Footloose	National	German	Special: car industry
Euro Disney	Footloose	National	French	Other: tourism
BNP Paribas (or Credit Agricole)	Footloose	National	French	Other: banking
Deutsche Bank (or Dresdner Bank)	Footloose	National	German	Other: banking
Deutsche Post	Geographic	National	German	Regulated: post
Royal Mail	Geographic	National	British	Regulated: post
Airport/flag carrier cluster (i.e., Schiphol)	Footloose w.r.t. transfer passengers / geographically based activity (w.r.t catchment area)	National	i.e., the Netherlands	Special: infrastructure and transport
Fraport AG	Geographic	National	German	Other: international airport business
Telefónica	Footloose	Global	Spanish	Regulated: telecom
Arcelor	Footloose	European	French	Special: steel

We took the following seven companies as potential cases and looked at them in closer detail:

1. Royal Mail (was selected, see chapter 5);
2. Electricité de France (was not selected);
3. Fraport (was not selected);
4. Telefónica (was selected, see chapter 6);
5. Sanofi-Synthelabo (was selected, see chapter 7);
6. Siemens (was selected, see chapter 8);
7. German and French banks (was not selected).

The box gives some further information on the cases we did not select.

BOX 4.1: Three potential cases

Electricité de France
EDF is obviously a successful company, network utility, comparable to the Dutch electricity utilities, geographically based, with a recent history of state-aid problems. EDF has traditionally held a monopolist position, guaranteed by the French State that held the market closed. There seem to be different forms of state sponsoring: from the legal protection that it enjoyed for many years, to tax relieves (e.g. in 2003 EDF was asked to pay back €889m that it had received in the form of a tax subsidy) and direct subsidies (EDF enjoyed for years a unlimited state guarantee, which was ended by 31 December 2004). The expansion that EDF has done (EDF owns London Electricity, Seeboard and SWEB in Britain as well as billions' worth of stakes in Italy, Spain and Germany) is based on an opportunistic behaviour: the British, German etc markets were open to competition, while the French wasn't. Though now classified under the normal corporate regime, 70% of EDF is still in state hands.

Fraport
In 2001 Fraport Airport received a listing on the Frankfurt stock exchange. The core business of the company is operating Frankfurt airport. Frankfurt airport is an important international hub in continental Europe and Germany's largest airport. The company's focus lies among others on growth. The future growth potential of the company depends on the realization of their plans in respect to airport expansion. The company wants to expand the runway system by adding a new landing runway.
The company has received government grants related primarily to investments for the apron area at Hahn airport. Investment grant amounted to DM 32.8 million (2000). No further disclosure was given. The company's activities are similar to those of the Dutch airport company Schiphol. Differences are that the Schiphol is currently wholly owned by the government and is not (yet) a listed party. Fraport airport does not disclose substantially on regulation but is certainly bounded by government regulation in respect to their aviation business (the German Air Traffic Admission Rules). The company is geographically based for the company's infrastructure is most dominant in the Frankfurt area. Nevertheless the company has subsidiaries outside their home country as well, which would indicate a footloose status.

German and French banks
With respect to government aid to German and French major international banks no information has been found in publicly available resources (except for information on and jurisprudence from the state aid cases). Deutsche Bank, Dresdner Bank, BNP Paribas and Credit Agricole can be compared with ABN AMRO and ING. Over time the German Government has subsidized the Deutsche Landesbanken and Sparkasse by lending to these banks at interest rates far below market rates. This policy is prohibited by the European Commission and pay back of the illegal state aid has been ordered. (The impact of these paybacks will be nullified due to re-injecting the pay back amounts as equity).

4.2 Research methodology in cases studies

We used a step-by-step plan as a blueprint for the cases studies. The five steps are described below. In the case studies we did go into the question of legitimacy of the state aid of other policy instruments.

Step 1: Introduction

In each case study we start by describing why the company in question is or is not a national champion. We then shortly tell something about the policies pursued. Subsequently, the alternative is given that we use to describe the welfare effects of the national champion policy (i.e., no subsidy, another merger). Clear project alternatives are essential. Project effects can be defined as the differences between a development with the project (the project alternative: specific actions are taken to create a national champion) and without the project (no-project alternative: no actions are taken to create a national champion).

Step 2: Government policy and possible effects

The national champion policy is described in detail as well as possible effects.[40] Depending on the case at hand we address questions as: what are the effects on the national champion and rivals in terms of: (a) changes in costs of production, (b) changes in marginal profitability of projects, (c) altering pricing practices, (d) product variety and quality, location choice? What is the effect on consumer welfare? Does the policy lead to an output expansion? What are the static versus dynamic effects?

An important effect of the distortive effect on competition causing firms to set output and pricing levels inefficiently, keeping inefficient firms in the market, discouraging entry by efficient companies or encouraging entry by inefficient firms, and distorting investment and research and development decisions. In terms of market characteristics, distortions are most likely to be significant if (OFT, 2004):

[40] We do not include the effect on the balance of trade here. On an national scale, a national champion may in theory contribute to an improved balance of trade, with consequential improvements in the overall standard of living. However, for this to be the case the incremental increase in exports attributable to the presence of the national champion firm would need to be large. The benefits might be offset to some extent by upward pressure on the exchange rate.

1. The market is concentrated, i.e. if there are relatively few firms operating in the market affected by the subsidy,
2. There is a large degree of product differentiation,
3. The firms in the market are of markedly different sizes,
4. There are barriers to entry,
5. Firms in the market compete on research and development,
6. The policy is firm specific,
7. The policy entails larger financial amounts (absolute or relative to cost),
8. The policy lasts longer (ongoing versus one time subsidies),
9. The policy benefits larger companies (subsidising a large firm may increase its advantage and might be expected to reduce competition).

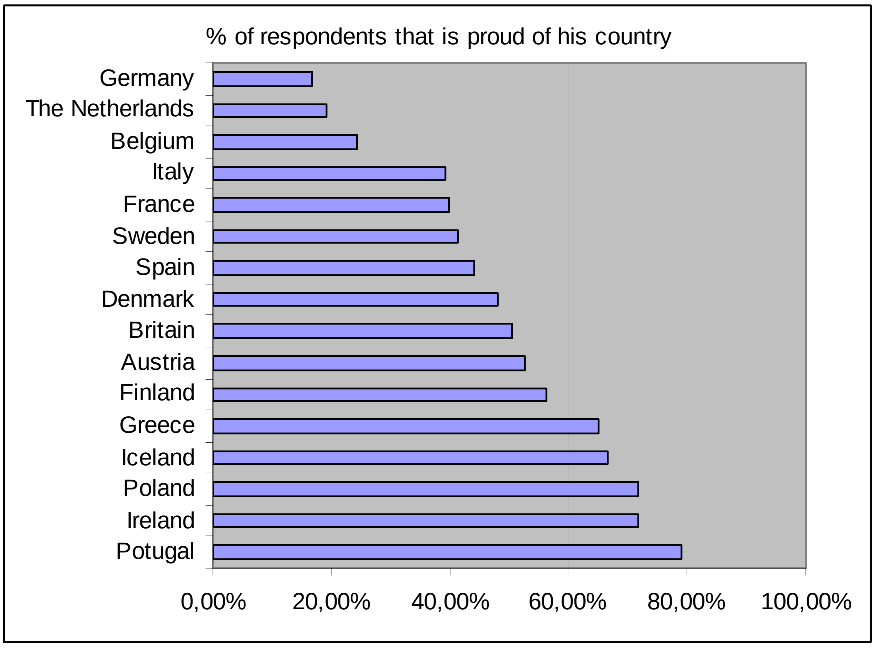
Some of the possible effects are not purely rational. According to some a risk of not fostering national champions – where other countries do actively support their champions – is that most Dutch firms will fall in foreign hands and that in times of a downturn these foreigners will lay off Dutch workers before they start re-organizing their national divisions. Dutch workers experience more job insecurity as a result. [41] Moreover, the feeling of national pride may disappear when the large national companies fall in foreign hands. This is what happened in Belgium. So national champions may be important to achieve some kind of social and national unity.

National pride

It is sometimes stated that the reason that the Dutch are not actively fostering national champions is caused by their lack of national pride. Figure 4.1 shows that the Dutch are indeed not particularly proud of their country. On the other hand the same applies to Germany, a country that is famous for its active policy towards national champions.

41 Recent Dutch examples are (1) the imminent closing of the establishment of Atoglas in Leeuwarden (producer of synthetic material, 130 employees) which is owned by the French company Fina, that wants to relocate the activities to France, and (2) the imminent closing of the cement factory ENCI in Maastricht as requested by the Belgian parent company.

Figure 4.1: National pride differs remarkably between countries



Source: European Values Studies

Step 3: Is the national champion policy effective?

Here we look into the effectiveness of the policy and the sustainability of the positive effects. A possible cost of a national champion policy is the chance of retaliation or the occurrence of a 'subsidy war'. This would render the extraction of rents less sustainable. Brander and Spencer (1985) show that countries may get caught up in 'subsidy war' in an attempt to give domestic firms an advantage that allows them to steal their rivals profits. Another example is retaliation in the form of a national ban on products from a particular country. Like the now famous war on bananas, in which the US has imposed tariffs of 100% on a wide range of European imports, because it says the EU is continuing to favour banana exporters in the Caribbean and Africa over American companies operating in Latin America. The airplane industry is another example of retaliation. Former president Clinton threatened in 1998 to go to the World Trade Organization if the European Union moved against Boeing's acquisition of McDonnell Douglas. "I am concerned about what appears to be the reasons for the objection to the Boeing-McDonnell Douglas merger by the European Union", the US president said, "and we have some options ourselves when actions are taken in this regard." The President was apparently referring to retaliatory trade sanctions against Europe, such as putting U.S. tariffs on European planes.

Step 4: Is the national champion policy efficient?

In step 4 we focus on welfare effects and use the analytical framework described in section 3.4.

Step 5: Conclusion

In step 5 we draw conclusions about the effectiveness and efficiency of the national champion policy and we try to link these to the Dutch counter parts of the companies in the cases studies?

4.2.1 Data

In three of the four cases we work with stock prices. Not all national champion are quoted on the stock exchange, but most of them are in the official lists. For those national champions which are not quoted on the stock exchange it is very difficult to come up with figures we can use in an effectiveness study. We therefore adhere to share prices as an approximation. Below we describe that share prices give a robust impression of the performance of national champions.

Share prices

Information on share prices can be used to examine the effectiveness – and possibly also the efficiency – of the National Champions policy (Is the National Champions policy effective? If so, is it also efficient?). This method is based on the valuation of the companies, and aims at finding a relation between government supported activities of a National Champion and changes in welfare.

The main hypothesis behind this method is that the government support should lead to higher welfare. One of the components of welfare is the producer surplus of the National Champions. Share prices of (these) companies can be used as a quantitative and objective measure of this surplus. In this sense, the question concerning the effectiveness of the National Champions policy can be supported by the question whether or not a company in a country with the National Champions policy has higher share price than a National Champion in other countries that do not support their national champions. An advantage of this method is that a quantitative causal relation might be found between the support measure and welfare.

In the field of financial economics, share prices are viewed upon as a measure for the market expectations of future profits. In order to measure the effectiveness of company management, or developments in the direct surroundings, event studies are often carried out. An event study correlates the development of the share price before, during, and after the event has been announced. 'The market' reacts on this announcement by re-adjusting the expectations on future profits, and this in turn is reflected in a change in share price on the efficient capital market. Comparisons of these effects from different companies can be analysed based on the quotation-profit relation. In this sense, the effects of several types of announcements such as acquisitions, financing, R&D breakthroughs, management change, investigations by regulatory bodies, environmental licences, etc. can be examined.

On forehand we suppose that the increase in quoted value as a result of the National Champions policy is a good measure for the increase in welfare. However, it is only one component of the total change in welfare as a result that of the policy measure.

$$\Delta \text{ Welfare} = \Delta \text{ Producer surplus NC} + \Delta \text{ Producer surplus other companies} + \Delta \text{ Consumer surplus}$$

The increase in quoted value can be seen as a measure for the increase in producer surplus of the National Champion itself, i.e. the first term of the equation above. The quoted value does not take into account the second order effects within a country. Those effects are incorporated in the other terms of the equation, and are evident through several different mechanisms such as a decrease of competition as a result of higher prices, underproduction, suboptimal allocation of labour and R&D, etc. The general question, whether total welfare increases or decreases as a result of the National Champions policy cannot be answered by solely looking at the partial effect of the share price of a National Champion. However, it is a good, robust indicator for one of the components of welfare (producer surplus of the National Champion), which we will substantiate below.

Share value and welfare

According to basic financial theory, the share value equals the expected cash flow generated by the company in the future discounted against a certain interest rate[42]. When the profit-maximising behaviour is analysed in basic single-period market models, the maximisation of profits over multiple periods is equal to maximising share holder value in economic sense[43]. As a result, it can be concluded that the increase is equivalent to an increase in producer surplus.

There are many studies available in the financial-economic literature which focus on the reaction of capital markets to announcements. Even though these studies generally aim at testing the efficient market hypothesis[44], they offer insight on the effect of various incidents on the share value of companies. In many of theses studies, the increase in company value is designated as an increase in welfare. In the introduction we have indicated that this is only one element of the effects on welfare because effects on competition which are relevant in this context are often not discussed in these studies. That is however not necessary, as in many 'event-studies' the news announcement is not related to competition issues, and thus the secondary effects are small in comparison with the first order effect. As noted earlier, that is not the case: the national Champions policy has an effect on other players as well, so the share value of the national Champion is important, but not the only component of the change in welfare resulting from the National Champions policy.

According to financing theory, a change in shareholder's value (shareholder's value per share) equals the invested capital plus the present value of all future economic profits[45]. This economic profit in a certain period is equal to the operating income after taxes less a norm result which is calculated based on the invested capital multiplied by the weighted average cost of capital (WACC).

$$Economic\ profit = \big((1-T)*EBIT\big) - WACC*invested\ capital$$

$T = effective\ tax\ rate$
$EBIT = Earnings\ before\ interest\ and\ taxes$
$WACC = Weighted\ average\ cost\ of\ capital$

42 See e.g., Brealey & Myers (2002), Damodaran (1996) and Copeland et al. (1990).
43 See Dobbs (1999).
44 A financial market is efficient when all relevant and available information is absorbed in the prices of the financial titles at all times. The basic thought of the market efficiency hypothesis is that information is instantly and efficiently absorbed in prices and that the market, therefore, can't be beaten.
45 See for instance Stewart (1991); this economic profit is equal to the producers surplus.

If investors think that a new (policy supported) investment can generate a higher yield that the norm yield, then the difference is economic profit. The increase in the (present value of) the economic profits will subsequently lead to an increase in the shareholder's value and the share price.

Since the market – according to the efficient capital theory – discounts all effects from an event in the share price, like the national Champions policy, the difference in quotation before and after the announcement can be used as a measure for the integral effect on the producer surplus.

Conclusion

The model discussed above treats the relation between government support and the ability for companies to create welfare. In our view, it is defendable as a meaningful way to estimate the direct benefits of government support by analysing the development of share values of national Champions as well as its competitor in The Netherlands (or another country) in response to the announcement of government supported investments.

This provides us with a quantitative assesment – order of magnitude at least – of one the components of a CBA: the direct benefits of the concerning company. And alternitavely the direct costs for the competitor in The Netherlands.

5 Case study 1: Royal Mail

5.1 Introduction

Royal Mail Group plc is a public limited company wholly owned by the Government, with annual sales in excess of £8 billion and more than 200,000 employees. The company focus lies on providing hundreds of services to meet (new) demands – from electronic billing to banking, from warehousing to customer returns.

Through their trusted brands, they reach everybody every working day in mail, parcels and express services and Post Office branches. Currently they are reinventing their business to meet the changing needs of our customers and the demands of competition. The goal is to be the world's leading postal service.

Activities in relation to Dutch companies

The company's activities are similar to those of the Dutch postal company TPG. Differences are that the company is wholly owned by the government and faces tighter regulation than TPG in the Netherlands and Deutsche Post in Germany.

Footloose of geographically based

The company is geographically based for the company's mail infrastructure is most dominant in the UK.

National champion

Royal Mail is considered a national champion, because it holds a virtual monopoly on the UK postal market for which a license is needed:[46]

> *'Although entry by competitors to Royal Mail has been broad in scope, it has not been particularly "deep" in terms of the volumes handled. The September 2004 proposals showed that competitors operating in the licensed area handled a total volume equivalent to about 0.3% of the regulated market in 2003/04 by revenue. The most recent data* suggests *this is increasing. During the first three quarters of 2004/5, new entrants carried 0.6% of the licensed market by revenue (or 0.7% by volume).'*

Moreover, in September 2004 Postcomm identified four legal barriers to entry which might have frustrated the achievement of effective competition. Hence, it is likely that Royal Mail holds a firm grip on the licensed part of the UK postal market. The headquarter of Royal Mail is located in London. It may thus be considered to be a national champion.

[46] Postcomm, 2005, Tackling Barriers to Entry in Postal Services: Final Decisions and Recommendations, pp iii.

However, its existence as a national champion must be considered to be a coincidence as the British government never pursued a national champion's policy.

5.2 Government policy and possible effects

Royal Mail may have benefited from two types of government policy within the United Kingdom: (1) state aid and subsidies and (2) a VAT exemption. Both types of government policy are described below in more detail. It is unclear whether the objective of the UK government has been to create a national champion by means of these policies. The primary goal of the first type of aid (state aid and subsidies) received by Royal Mail has been to 'help Britain's eight and half thousand rural post offices to continue to provide access to services in rural areas' and to 'give Post Office Ltd the financial freedom to pilot new and innovative ways to provide access to services in rural areas'.[47]

The VAT exemption appears to be a relict from a previous regulatory age: since a number of its major customers, e.g. financial institutions, were VAT exempt, Royal Mail did obtain a VAT exemption as well. However, both policies may have had (unintended) side-effects that helped Royal Mail to defend its home market and to expand abroad. We will discuss these possible side effects at the end of this paragraph.

State aid and subsidies

On December 2nd 2002, the UK government approved a £450 million support package (717 million euro) for the years 2004-2006 in order to safeguard the future of rural post offices. In return the government requires Royal Mail to maintain its rural network.[48] The support is given pending a government decision about the future of the rural network. Table 5.1 contains more detailed information about the support package.

Table 5.1: Government funding

Type of funding	2003/2004	2004/2005	2005/2006
Maintaining income levels	£ 66 million	£ 66 million	£ 66 million
Funding of front line services	£ 79 million	£ 74 million	£ 74 million
Innovative fund	£ 5 million	£ 10 million	£ 10 million
Total funding	£150 million	£ 150 million	£ 150 million

Source: DTI Postal Services Directorate – 2 December 2002 Press Release.

Of the yearly £ 150 million, £66 million is used to maintain subpostmaster's income levels, £ 79 million is used to fund front line services (£ 74 million after 2003) and £ 5 million (£ 10 million after 2003) is used to develop innovative, modern methods of delivering services. Examples are mobile and satellite post offices, the co-location of post-offices in existing business premises, like pubs and hairdressers and the modernisation of existing premises.

47 Government Delivers £ 450 million to rural post office network, 2 December 2002 Press Release, DTI Postal Services Directorate.

48 A rural post office is defined as a post office serving a community of less than 10,000. Currently there are about 8,500 rural post offices.

The support package is financed by using gilts (past dividends and cash generated by the business).

On September 16th 2004, the government announced a new government support package to help rural post offices. The new package, up to £ 300 million, extends the existing package to 2007/2008.

Other means of recent state aid are:[49]

- £ 210 million to fund merger and modernisation of urban branches;
- £ 15 million in England (and proportional sums in three other UK countries) for improvement grants in urban deprived areas from 2002 to 2006;
- £ 2 million to help keep open rural branches at risk of closure from 2002;
- £ 25 million to trial touch screen information booths in 2001;
- Part funding in order to set up universal banking service from April 2003.

Fiscal leniency or exemptions

Competition on the UK postal market is distorted in favour of Royal Mail, because the company has been exempted from VAT. Since some of its largest customers, e.g. financial institutions, are also VAT exempt, they cannot recover the VAT charged by alternative operators. This has given them a disadvantage of 17.5%.[50]

Possible (side-)effects

The UK government provided state aid and subsidies to Royal Mail in order to restructure Royal Mail's rural network in order to safeguard 'over the counter services' in rural areas. Side-effects of this policy may have been:

- Upholding a feeling of national pride because Royal Mail is still providing 'over the counter services' in rural areas;[51]
- The extraction of rents on the UK market through economies of scale and scope;
- The prevention of job losses in rural postal outlets. This might have resulted in reduced pressure on Royal Mail to cut costs, and thus X-inefficiency.

The UK government also subsidised the development of new technologies in order to replace a part of Royal Mail's rural network with more cost-effective services. A possible effect of this policy is that Royal Mail might use these technologies to penetrate foreign markets.

49 Postcomm, 2003, Post Office Networks Abroad, December 2003.

50 Postcomm has recommended to the UK government that Royal Mail's VAT exemption should be lifted.

51 These 'over the counter services' include: (i) access to payments of state pensions, tax credits and benefits; (ii) access to cash through banking services; (iii) dispatch points for letters and parcels; (iv) sales of postage stamps; (v) renewal of licenses such as TV licenses; (vi) bill payments to utilities; and (vii) government information and services specified in service contracts between Post Office Ltd and individual Government departments.

Finally, Royal Mail benefited from a VAT exemption. The effect of this exemption might have been the creation of a (legal) entry barrier on the UK market. This might have made entry by Royal Mail's competitors more difficult.

Next, we will analyse the effectiveness and efficiency of 'national champion policy' with respect to Royal Mail. However, as all available evidence suggests that the UK government never intended to create a national champion,[52] it would be methodologically unsound to evaluate the effectiveness and efficiency of national champion policy with respect to Royal Mail, as this would ascribe any side-effects of policies directed at other objectives to a non-existent national champion policy.

It is possible, however, to evaluate any side effects government policy might have had on the competitive position of Royal Mail both on its home market and on foreign markets. Notice that it is not possible to evaluate the efficiency of government policy with respect to these side-effects, as the costs related the side-effects cannot be separated from the costs of the policies described at the beginning of this section.

5.3 Is the national champion policy effective?

In this paragraph we study the side-effects of government policy with respect to Royal Mail. This is done by comparing the current position of Royal Mail with the counterfactual where Royal Mail had not benefited from government policy with respect to its rural network and had not been VAT exempt for delivering postal services to financial institutions.

We will also study whether the polices adopted by the UK government can be justified by means of their primary objectives. If so, this will strengthen the case that these polices were not about creating a national champion.

Government policy with respect to Royal Mail can be subdivided into three broad categories. The first category are the subsidies linked to the provision of 'over the counter services' in rural areas. The second category are the subsidies linked to the introduction of new technologies, like the modernisation of urban branches, trials with touch screen information booths and the setting up of a universal banking service.[53] The third category is the VAT exemption Royal Mail has enjoyed until now. We will now discuss the effects of these three types of government policy in terms of the welfare effects listed above.

Government policy: subsidies for the provision of 'over the counter services' in rural areas

First, we will discuss whether policy by the UK government has been effective in preventing the closure of rural branches. What would have happened if the UK government had not subsidised the rural network of Royal Mail? According to a report by NERA, Royal Mail is currently making

52 We will discuss whether or not government policy of the UK government was effective with respect to its stated objectives. If so, this strengthens the view that policy of the UK government was not about creating a national champion.

53 Although these first two categories are both subsidies we will treat then separately as the welfare effects and their channels differ.

a loss on almost 90% of its rural outlets.[54] NERA notes that the smaller the outlet – in terms of the customer base – the higher its losses are. Given that the average postal outlet in the United Kingdom is currently serving a customer base of only 3,457 inhabitants, which is much lower than the customer base per outlet in the Netherlands and Germany (6,500 inhabitants per outlet), it is likely indeed that Royal Mail is making losses on a large part of its rural network.

If the UK government had not subsidized the rural network of Royal Mail, it is likely that the losses on its rural network would have forced Royal Mail to shut down a large part of its rural outlets or to replace them with more cost-effective alternatives. Examples of these cost-effective alternatives are: reduced service outlets, agencies or mobile services. This is especially so, since the Post Office has been writing red figures over the last years. This means that cross-subsidization within the Post Office was no option. Hence, government policy has been effective in the sense that it prevented Royal Mail from shutting down a large part of its rural network. A consequence of this is that job losses have been postponed for a number of years (employment effect).

The effect of retaining its dense network of rural outlets on national pride remains unclear. On the one hand people may feel proud that the rural network of Royal Mail is one of the densest in Europe. On the other hand, many may feel that the provision of services by Royal Mail through its (rural) network is outdated and the company is technologically not very advanced.

Was government policy justified? Well, according to NERA the social benefits outweigh social costs for 80% of all rural outlets. Hence, from an economic point of view there seems to be a valid argument that these outlets should be subsidized in some way or another, at least temporarily. This seems to be exactly what the British government is currently doing: temporarily subsidizing rural outlets, until the current network of rural outlets is replaced by a more cost effective network. Hence, the conclusion must be that the objective of the policy of the UK government to safeguard the access to 'over the counter services' is justified. Moreover, there is no evidence to suggest that the UK government ever wanted to create a national champion.

The policy of the UK government to safeguard access to 'over the counter services' in rural areas might have had s number of side-effects that have strengthened the position of Royal Mail both at home and abroad. However, in their reaction to Postcomm's consultation document none of Royal Mail's competitor's have raised this issue.[55] It is therefore safe to assume that its side-effect on competition, if any, is small.

Government Policy: subsidies for the introduction of new technologies and services

A sizeable amount of state aid has been given by the British government in order to experiment with new technologies (£ 70 million in total) and to modernise urban branches (£ 210 million in total). To date it is unclear whether the state aid directed at the introduction of new technologies has been effective as most of these projects are still underway. Moreover, it may very well have been the case that technological development would have gone faster if the requirement to run a

54 NERA, 2003, *Cost-Benefit Analysis of Rural Post office Branches: A final Report to the Postal Services Commission*, London. All confidential figures have been deleted from the report.

55 See the reactions on the competitive market review held by Postcomm. These can be downloaded at http://www.postcomm.gov.uk/Departments/SubSection.asp?ID=221.

large rural network would have been lifted and replaced by a requirement to keep services available for rural customers. Royal Mail would have had to absorb the losses of its rural network and would have had a particularly large incentive to introduce new technologies and services at a fast pace.

Was government policy justified? The answer to this question cannot be given, as we do not have insight into the costs and benefits of developing these new technologies.

There seem to be no anti-competitive side-effects from this policy. The technologies are being developed for the home market and since Royal Mail does not have outlets in foreign markets, it cannot be used abroad.

Government Policy: VAT exemption

The VAT exemption is a relict of a previous regulatory age. Its objective was therefore not to make a national champion of Royal Mail. It has, however, generated an important side-effect in the sense that Royal Mail obtained a competitive advantage on its home market.[56] Arthur D. Little has estimated that 'for competitors to win market share from Royal Mail they would need to offer average price discounts of around 20% to persuade customers to switch.'[57] According to Postcomm, the effect of the VAT exemption is likely to be underestimated, because 'volumes from VAT exempt customers such as banks and financial institutions (which account for 43% of volumes from these customers) are very advantageous to building critical mass and scale compared to other market segments such as single piece items'.[58] Hence, it is safe to conclude that Royal Mail has enjoyed a competitive advantage on its home market compared to the case where it had not been exempted from VAT.

The VAT exemption has prevented Royal Mail from loosing market share to its competitors more quickly. This policy is, therefore, contrastive with the pro-competitive strategy of the British government. Hence, it still enjoys the advantages of low cost due to economies of scale. This will mean that Royal Mail has been able to extract a rent from its home market and that the competitive pressure to reduce costs will have been minimal (see also box 5.1). Both effects are bad for welfare.

The profits generated by the VAT exemption may have allowed Royal Mail to faster penetrate foreign markets. During recent years Royal Mail has indeed expanded considerably in a number of countries, mainly by setting up companies offering parcel services. Table 5.2 provides an overview of these companies within the EU countries.[59] An interesting question is whether the subsidies from the British government has allowed Royal Mail to extract rents these foreign markets. This may happen if: (i) Royal Mail has market power in any of the foreign markets; (ii) Royal Mail can realise economies of scale without the rent being 'regulated away'; or (iii) Royal Mail can profit from the incumbents X-inefficiency. It is unlikely that Royal Mail has been able to capture rent as a result of market power or economies of scale as its foreign activities are too low

56 Postcomm, Tackling barriers to entry, Final decisions and recommendations, March 2005.
57 Postcomm, Tackling barriers to entry, Final decisions and recommendations, March 2005, 2.21.
58 Postcomm, Tackling barriers to entry, Final decisions and recommendations, March 2005, 2.22.
59 A full list of subsidiary undertakings is available from the Royal Mail's Registered Office and will hopefully arrive shortly.

in order to exercise market power or to profit from economies of scale. However, Royal Mail may have been able to capture rent, because the incumbents are inefficient.

Table 5.2: Principal subsidiary undertakings and associates

Company	Country	% holding	Principal Activity
German Parcels Beteiligungs GmbH	Germany	100	Parcel services
Extand SA	France	100	Parcel services
Pakke Trans A/S	Denmark	100	Parcel services
Nederlandse Pakket Dienst B.V.	Netherlands	100	Parcel services
Direzione Gruppo Executive S.p.A.	Italy	100	Parcel services
G3 World Wide Mail N.V. ('Spring')	Netherlands	24.5	Mail services

Source: Consignia, Annual Account 2001-2002 and Royal Mail Annual Account 2003-2004.

5.4 Is the national champion policy efficient?

The efficiency of national champions policy cannot be determined as it is unlikely that the British government conducted the policies described in paragraph 5.2 with the aim to establish a national champion. Box 5.1 analyses whether government policy at the provision of 'over the counter services' in rural areas has been efficient.

BOX 5.1: The efficiency of government policy aimed at providing 'over the counter services' in rural areas

Whether or not government policy aimed at the provision of 'over the counter services' in rural areas was efficient is a question, which is difficult to answer. First of all, there is the issue whether the services provided by the rural network could have been provided more cheaply, i.e. more cost effective. One may think of the introduction of new technologies and services, like mobile post offices and door step services, which may cost less, with an affordable loss of service level.[60] This argument is particularly relevant for post offices – 20% according to NERA – for whom the social benefits do not outweigh their costs. In this view, the prevention of job losses has been bad for welfare. Second, the reorganization of Royal Mail's rural network seems to be a lengthy process as the British government will have been subsidizing Royal Mail's rural network for (at least) five years before any decision on the future of the network will have been taken, let alone be implemented. During this process there will be a welfare loss for that part of the network which is according to the study by NERA not cost effective. Third, government policy to prevent the closure of rural outlets might have kept any X-inefficiency in place.[61] This arises because firms can engage in two kinds of arbitrage in order to reallocate its expenses. Both of these will result in X-inefficiency. First, the firm can engage in accounting arbitrage: labor, raw materials and other inputs are imputed to an activity for which they are not used. The second way to arbitrage is to set transfer prices for intra firm deliveries at the wrong level. For Royal Mail this may amount to (i) to allocate costs from its more competitive divisions to its rural outlets; and (ii) the general office might allocate its best people to the divisions that face the most competitive conditions (not to the rural outlets and the divisions that are reorganizing the rural outlets). This will have resulted in the firm not minimizing its total cost.

Finally, a number of countries have reorganized their rural outlets without giving subsidies to the firm in question. Among these countries are Denmark, Finland, Germany, the Netherlands and Portugal (see Table 5.3). The incumbents in these countries are apparently absorbing the losses on their rural network. This will give them a large incentive to reorganize their rural network. It is, however, unclear to what extent they are compensated implicitly for these losses, for example, by less strict regulation on other activities.

5.5 Conclusion

The British government did not pursue an active national champion's policy. Hence, the existence of royal Mail as a national champion must be considered to be a coincidence.

Overall government policy has been partly effective. Government policy directed at the 'provision of over the counter services' has indeed prevented the closure of a large part of Royal Mail's rural network and it has prevented job losses. It has also created X-inefficiency.

The provision of 'over the counter services' in rural areas may have upheld a feeling of national pride, because Britain is still providing these services. On the contrary, it may also have affected national pride negatively as the company is lagging behind in the introduction of new services. Whether the effect of subsidizing (trial projects for) new technologies has been effective remains

60 If state aid has led to a delay of the introduction of new services, the introduction of new technologies will also have been delayed.

61 Laffont, J.J., and J. Tirole, 1999, *A Theory of Incentives in Procurement and Regulation*, MIT Press.

to be seen as few of these projects have matured. The question whether the VAT exemption has been effective or not, is not a relevant in this respect as the exemption is a relict from a previous regulatory age and it does not serve a goal anymore.

The VAT exemption has had an important side-effect on competition in the UK postal market. Basically, the VAT exemption has given Royal Mail a competitive advantage on a large part of the market. This has prevented a deep penetration on the UK postal market by Royal Mail's competitors. The side-effect of the subsidies for the rural network and the technology development seems to be negligible. Finally, the VAT exemption may have allowed Royal Mail to faster penetrate foreign markets. This penetration may have captured rent from the foreign markets if local incumbents are inefficient.

Table 5.3: International comparison of post offices and regulation

Country	Number and type of outlets		Number of inhabitants per outlet	Recent restructuring	State aid		Explicit Universal Service Obligations
	Full Service	Red. Service or Agencies			Annually	One time	
Austria	2327	100	3337	650 outlets closed		€150m	?
Belgium	1352		7692	Modernised in 2001-02	?		?
Denmark	375	673	5153	Declining number of outlets	No subsidy		?
Finland	297	1103	3714	Outlets are transformed into agencies	No subsidy		?
France	14155	2910	3510	Modernisation completed in 2000	85% tax relief from local taxation		?
Germany	12800		6445	Network remodelled: ± 8000 outlets converted into agencies	No subsidy		12000 outlets in 2007; rules exist for location
Ireland	96	1687	2243	Reducing outlets to 46 by 2005 and converting rural offices to agencies		€12.7m	?
Italy	13787		4200	Relocating of offices		€439m	?
Netherlands	430	2065	6533	Increasing number of outlets to 3100, e.g. by converting full service into reduced service outlets	?		95% of population within 5 km of outlet; in rural areas 85%; Outlet required if >5000 inhabitants in residential area otherwise substitute required. Per 50,000 inhabitants additional outlet required
Norway	302	1146	3177	Converting full service outlets into reduced service outlets or agencies	€41m		1 outlet in each municipality
Portugal	1074	2758	2740	Increasing number of agencies	No subsidy		?
Spain	1837	3879	7400	?	Yes, but unknown		?
Sweden	400	4000	2045	Reconverting full service outlets into reduced cost outlets and agencies	€75m		Postal service to the door for elderly and disabled; Offices for cashier services
United Kingdom	17239		3457	Urban post offices reduced by a third; Further restructuring is awaiting decision by government	€265m	€374m plus funding for set up of univ. bank	Across UK 95% of population within 5 km of outlet; In urban areas 95% within a mile of outlet; In each postcode are, 95% of population within 10km of outlet

Source: Postcomm, Post Office Networks Abroad, December 2003.

6 Case study 2: Telefónica

6.1 Introduction

Telefónica is the Spanish largest multinational company in terms of profits and market capitalisation. The company has a market cap of almost € 58 billion[62] which is 95% of the Spanish Telecom and 16.8% of the total Spanish market capitalisation (I.G.B.M.).

Telefónica held the telephone monopoly in Spain previous to the liberalisation of the Telecom market from 1924 to the end of 1998. Until 1997 monopolies were established in every EU Member State, except for the UK where liberalisation started in the 1980s, and liberalisation was completed in most States on January 1998. In Spain liberalisation was postponed till 1st December of that year.

For the first three years of the liberalisation, the market was very dynamic thanks to three factors: globalisation, technological developments and players' reconfiguration. The company's operating revenues, net income and earnings per share have increased steadily through 1990-2003. The operating profit margin and the return on capital employed were lower in the first half of 2003 than they were in 1997. However, this is more likely to be caused by the economic slowdown than by the liberalisation of the market as efficiency gains were observed in the first two years of the opening of the market and a slight recovery was observed in 2003.

Activities in relation to Dutch companies

The company's activities are similar to those of the Dutch telephone company KPN. Differences are that the company faces less tight regulation than KPN in the Netherlands and that the company has gotten involved in the content industry by the take-over of Endemol.

Footloose of geographically based

Originally the company was geographically based for the company's telephone infrastructure is most dominant in the Spain and Latin America. During the last decade it has moved in the direction of a footloose company, e.g. by the take-over of Endemol.

National champion

Telefónica may be considered to be a national champion because of three reasons. First, the company has considerable market power on the Spanish wired telephone market on which it faces light regulation only. Second, the company is operating on the technological frontier as it is trying to merge wires with content. Third, its headquarter is located in Madrid. The Spanish government has actively sought to create a national champion and has been actively involved in its management during the time Telefónica wanted to take over KPN.

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62 As to September 2003

6.2 Government policy and possible effects

Constructions that protect against take-over or merger[63]

As of 1987 the government held 21% of Telefónica's shares , whereas day-to-day operations were under government control. In March 1996 the 'Partido Popular' won the elections and promised to privatise Telefónica. During January-February 1997 Telefónica was privatised through a Public Offering (PO). However, the government retained a 10 year golden share in order to preserve government influence on some strategic decisions.

After the complete privatisation, dispersion of Telefónica's shares increased substantially. This was a direct result of the 1997 (and 1995) PO's in which small investors obtained discounts of 4% (employees 8%). Moreover, the share holders were eligible for fidelity bonuses: they could obtain one share for every 20 shares bought, provided that the investor did not sell its shares one year after the PO. In addition, the government created a 'hardcore' of financial investors, the banks Banco Bilbao, Vizcaya, Argentaria and La Caixa, holding approximately 5% of shares each.

In this way the government sought to minimise the influence of shareholders on the company. This was further strengthened by three decisions taken at an extraordinary meeting of shareholders on 24 June 1997. It was decided that: (1) a candidate for the Board of directors must have held 1,000 shares of Telefónica for at least three years before nomination, unless at least 85% of the members of the Board agreed to remove that condition; (2) in order to become Chairman a candidate must have held a position in the Board of directors for at least three years, unless at least 85% of the members of the Board agreed to remove that condition; (3) no shareholder could issue votes for more than 10% of the total votes.

All these measures made it virtually impossible for a hostile takeover to succeed, leaving the managers a high degree of discretion to determine policy. Moreover, the state could veto a number of strategic decisions anytime, and it has threatened to do so in order to block the announced merger with KPN. Even in the rare case that a hostile takeover would succeed, the shareholders would find it difficult to change the Board of Directors and its Chairman.

State aid and subsidies

From 1996 to 2003 there have been no formal price caps, rates being annually decided on an ad hoc basis.[64] Recently, Telefónica obtained approval in order to increase its subscription price, towards the flat tariff as in the US. This forecloses competition for pure service providers.

Lobbying

Finally, Telefónica pursued an aggressive take-over policy and received government support (lobbying) in order to successfully take over telecommunications companies in Latin-America.

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63 See Trillas (2002) and Bel and Trillas (2003).

64 The light regulation might still be in place. Unfortunately, no literature can be found to confirm this.

Effects of national champion policy

The national champion's policy by the Spanish government may have resulted in the following effects:

- The capture of rents on the Spanish market because of the light regulation of Telefónica's wired telephone business in Spain.
- Economies of scale and scope as the telephone markets in Spain and Latin America are closely linked;
- Economies of scope from the take-over of Endemol.
- National pride because Telefónica is an internationally successful company

If successful each of these effects except the last one, will result in the capture of rent.

6.3 Is the national champion policy effective?

In this paragraph we study the effectiveness of the national champion's policy pursued by the Spanish government with respect to Telefónica. This is done by comparing the current position of Telefónica with the counterfactual in which the Spanish government would not have pursued a national champion's policy. In the counterfactual the Spanish government would not have intervened in the merger between KPN and Telefónica.

Effectiveness of government policy65

In order to judge whether the government policy with respect to Telefónica has been successful we look at the development of stock prices of Telefónica over the period 1995-2005. Ideally, we would like to compare this with the development of stock prices in the counterfactual: How would the stock price of Telefónica have developed in case the Spanish government had not pursued a national champion policy. The counterfactual stock price is, however, not available. Therefore, we compare the development of the stock prices of Telefónica with the development of stock prices of several other European telecommunication companies: KPN, Deutsche Telekom, Vodafone[66], Telecom France, British Telecom and Telecom Italia. This boils down to making the assumption that the stock price development of Telefónica in the absence of national champion's policy can be compared to the stock price development of the other European telecommunication companies. This may seem a bold assumption, but it can actually be defended as follows. The Spanish government could have adopted the policies of any of the other governments. In addition, it could have adopted no national champion's policy whatsoever (the case of Vodafone). For the Spanish national champion's policy too be effective the stock price of

65 See Trillas (2002) and Bel and Trillas (2003).

66 Despite the fact that Vodafone has a different point of departure (installed based in fixed infrastructure), a comparison between Vodafone and Telefónica is instructive since the management's strategy is endogenous. After all, Telefónica could have pursued the same strategy as Vodafone and become an exclusively mobile company (notice that, in 1995, the mobile business was not booming). Telefónica could have sold their fixed telephone division.

Telefónica should have outperformed the stock prices of all other companies. For if not, the Spanish government would have been better off by adopting the policy of the foreign governments or no policy whatsoever.

Notice that for the comparison to make sense it does not matter that other European companies supply a different combination of services than Telefónica. This holds also for the comparison of the stock prices of Telefónica and Vodafone. For, in the absence of intervention by the government including the lobbying for the takeover of Latin American telecommunications companies, Telefónica could have become a company that almost exclusively sells mobile services (except for its non-mobile services in Spain of course). That the company has not done so, is not an exogenous factor, but a conscious decision by either the Spanish government and/or Telefónica. And this decision may have been the wrong thing to do.

Even if stock prices are a relevant measure for rent extraction, two things have to be kept in mind. First, the rents telecommunications firms are able to extract have been substantially reduced by their payments for UMTS-licenses. Table 6.1 shows that firms have invested rather asymmetrically in UMTS licenses. Not only does the number of licenses differ between firms, but some firms have paid much more for their licenses than other firms, mainly because they have invested in different countries. The top investor is Vodafone, followed by France Telecom and Deutsche Telekom. In particular, Telefónica has only invested in four licenses. Out of these four licenses, the license in Spain has been obtained at a very low price. Telefónica's stock price will therefore have been affected less by the collapse of the Internet/UMTS bubble than the stock prices of the other companies.

Table 6.1: Investments in UMTS licenses by the telecommunications companies

Country	Price of UMTS license (in euro per capita)	Telecommunications company						
		VOD	BT	TI	FTE	TEF	KPN	DT
UK	655	**	**		**			**
Germany	620	**	*		*	*	**	**
Italy	255	**		**	**	*		
Netherlands	175	**	**		**		**	*
France	168	**			**			
Austria	105	**		**		**		**
Belgium	45				*		*	
Portugal	40	**			*			
Denmark	n.a.				*			
Spain	13	**				**		

Source: Jehiel and Moldovanu (2001), ITU- website and companies websites, Janssen et al. (2001).

Explanation: **Investment without partners *in joint venture with other companies

It is a mood question whether one should correct stock prices for the number of UMTS licenses obtained. One argument against correction is that the companies were themselves responsible for the investment. Hence, one should look at the historical stock price development without corrections. One argument in favour of correction is that the internet bubble was unforeseen. Put more sharply, did the management of Telefónica foresee the internet bubble or was it just lucky 'to miss the UMTS train' downhill. One argument supporting the latter is that Telefónica did bid

€ 6.05 billion at the UK auction, but that its bid was unsuccessful (Jehiel and Moldovanu, 2001).[67] Moreover, it obtained its license for the Spanish market at a bargain of € 0.084 billion (as did Vodafone) and it did bid in a consortia in both Germany and Italy. On the other hand, Telefónica did indeed pursue a defensive strategy in the UMTS-case; Telefónica invested large amount of money in Latin America and Endemol. Still Telefónica was quite lucky in the UMTS battle: if they would have won the UMTS license in the UK, Telefónica would have to debit € 6 billion on a capitalisation of 58 billion euro.

So the argument that Telefónica was just lucky to miss the UMTS train downhill seems to be stronger than the argument that all managerial decisions were taken with a more or less perfect foresight. Thus stock prices should be corrected for investments in UMTS licenses in order to judge whether government policy with respect to Telefónica has been successful.[68] Note, however, that even without this correction, Telefónica's results are commensurable with Vodafone's position indicating that the government policy was not too effective.

Figure 6.1 shows the development of the stock prices on the NYSE of seven European telecommunications companies: Telefónica, British Telecom, Deutsche Telekom, KPN, Telecom Italia, Vodafone, France Telecom and KPN. Most of the these companies also received some sort of national champion support by their governments. But the Spanish support to Telefónica was much more extensive.

Stock prices in March 2005 have been normalised to 100. The figure shows that Telefónica has outperformed all European competitors except Vodafone by up to 600%.[69] The performance of Vodafone and Telefónica has been roughly on par. However, Vodafone invested much more in UMTS licenses than Telefónica did. So corrected for UMTS related investments, one might conclude that Vodafone (which has not 'benefited' from government policy) has outperformed Telefónica. Given the large differences, however, between the stock price development of Telefónica and the other European companies, it may still be the case that Telefónica has outperformed the other European telecommunications companies. However, the degree to which Telefónica has outperformed is less than Figure 6.1 seems to suggest.

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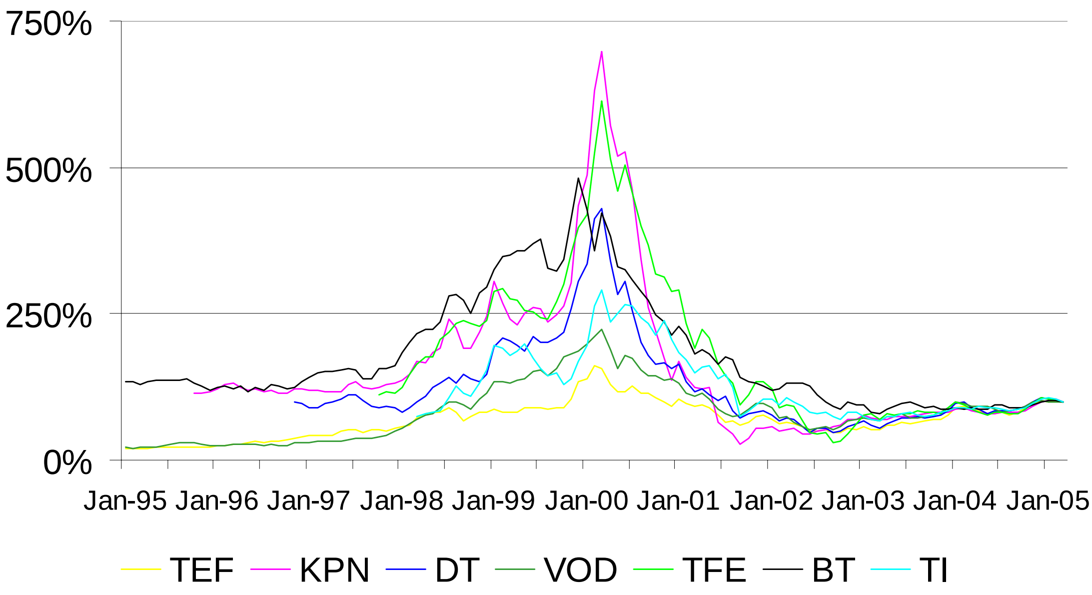
67 This bid is just marginally lower than the bids of British Telecom (6.65 billion euro), Deutsche Telekom (6.6 billion euro) and France Telecom (6.76 billion euro), but substantially lower than that of Vodafone (9.84 billion euro).

68 That is not to say that other factors during this ICT peak were not important (i.e., the hype surrounding the mobile market and large take-over in the telecommunication sector). We could, however, not isolate and measure these other factors as we could with the UMTS licences.

69 This can be seen by the difference in starting points. The lower the starting point the better the performance on the stock market.

Figure 6.1: Stock price development of Europe's major telecommunication companies

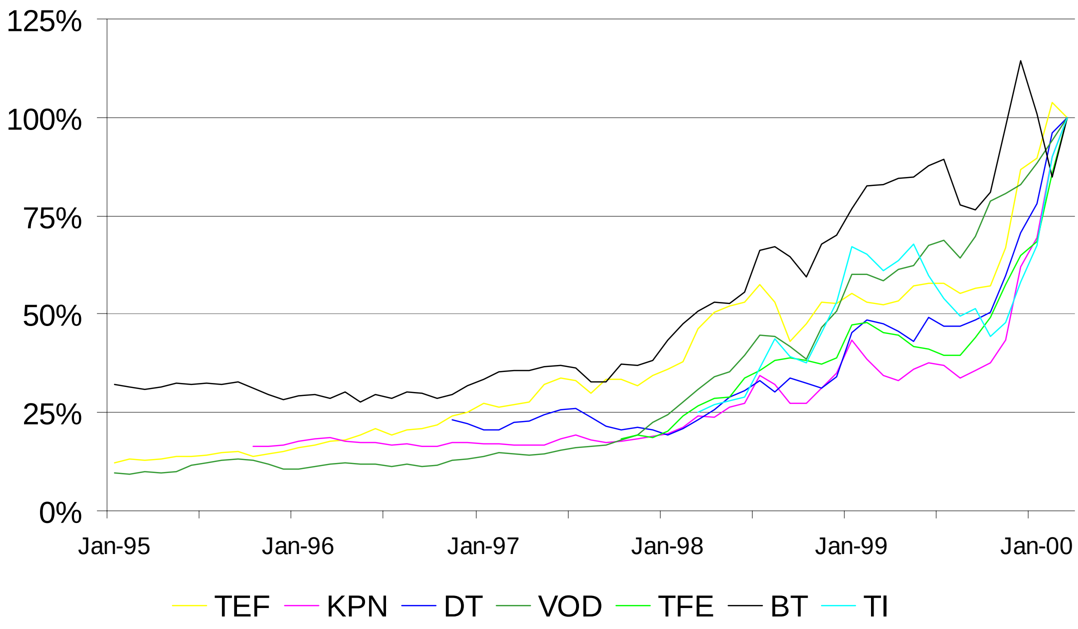


Based on :data from www.yahoo.com. Note that quotations of all firms where not available over the whole period. Figures have been corrected for 'the unbundling of shares' en 'the unbundling of companies'

This is supported by the fact that the margin by which Telefónica outperformed the other companies is much smaller if one looks at stock price development between 1995 and 2000 (before the Internet/UMTS bubble exploded). Figure 6.2 highlights the development of stock prices between 1995 and 2000. The figure shows clearly that only British Telecom has been performing substantially worse than Telefónica. The other companies seem to have performed comparable to Telefónica over this period.

Second, stock prices may differ between firms, because rents are higher in the home market. One reason why rents in home markets may differ, is that regulation of the incumbent differs between countries. Companies facing strict regulation in their home markets may be expected to have lower rents than companies which face less strict regulation in their home markets.

Figure 6.2: Development of stock prices between 1995 and 2000



Based on :data from www.yahoo.com. Note that quotations of all firms where not available over the whole period. Figures have been corrected for 'the unbundling of shares' en 'the unbundling of companies'

Regarding the effectiveness of the national champion's policy of the Spanish government, the conclusion must be that Telefónica did not systematically outperform all other European telecommunication companies. It was simply lucky to have missed the UMTS train downhill. Even when we decide not to correct for the UMTS bubble, we see that Telefónica has not outperformed Vodafone. Hence, its policy of investing in Latin American companies and content (Endemol) is not judged to be more successful by stock markets than Vodafone's investment in mobile services including UMTS licenses. Since Telefónica – in the absence of the Spanish government national champion's policy – could have invested exclusively in mobile services as well, the national champion's policy has not been effective. However, its uncorrected stock price is such that Telefónica appears to be a very successful company. Hence, many Spaniards may be – mistakenly – proud on 'their' company. In that sense, the national champion's policy may have been effective.

The takeover of Endemol by Telefónica in March 2000 was seen as a key example of economies of scope. It was thought that by this takeover content could be merged with wires and that this would be very profitable. At the time Telefónica paid € 5.5 billion for Endemol. Whether the takeover did result in economies of scope is difficult to judge as it is difficult to access the cost structure of Telefónica. However, the economies of scope may be (much) smaller than previously suggested as Telefónica has declared that Endemol does not belong to its core-activities anymore. Moreover, Telefónica is currently planning to list Endemol (again) at the stock exchange although it will retain a 51% interest.[70] Moreover, there are rumours that Telefónica is planning to sell Endemol completely.[71]

6.4 Is the national champion policy efficient?

In order to judge whether government policy with respect to Telefónica was efficient we determine its welfare effects on the following two dimensions. First of all, the protection against a hostile takeover has allowed Telefónica to pursue a long term investment policy without the risk of a hostile takeover. Telefónica has used this opportunity – backed by active lobbying by the Spanish government – to takeover a number of telecommunications companies in South America. Has the protection against hostile takeovers had a sizeable effect on welfare? The answer must be negative. Government policy has not been effective in this respect, hence, it has had no or only small benefits. However, its costs were negligible as well. Putting costs and benefits together, this means that it is unlikely that there has been a sizeable effect on welfare with respect to the policy of protection against a merger or take-over.

Second, the light regulation of Telefónica on its home market will have meant that Telefónica has been allowed to extract rents from its home market. This will have led to unequivocal loss in welfare compared to the case in which Telefónica would have been regulated more strictly by the Spanish government or regulator.

Overall, the conclusion must be that the intentional welfare effects of the national champion's policy pursued by the Spanish government were negative.

6.5 Conclusion

The government policy of creating a national champion out of Telefónica has not been effective as measured by its performance on stock markets. Moreover, the light regulation of the company on its home market has led to welfare losses. However, government policy with respect to Telefónica appears to have successful, because its stock price reflects the luck the company has had in missing the UMTS train downhill. Hence, many Spaniards may feel pride with respect to their telecommunications company. Telefónica. However, further research (that is beyond the scope of this study) is necessary to find out to what extent Telefónica's strong position is due to government action and to what extent it is due to other factors. Another question to address in future research deals with the magnitude of the rents extracted from Latin America.

70 Het Financieel Dagblad, 1 March 2005, Spaans Telefónica mikt op beursgang Endemol.
71 Het Financieel Dagblad, 26 January 2005, Telefónica bereid om Endemol te verkopen, en Het Parool, 20 May 2005, Berlusconi aast op Endemol. According to the latter publication Mediaset finds the sales price of € 3 billion too high.

7 Case study 3: Sanofi

7.1 Introduction

Sanofi-Synthelabo was formed in 1999 when Sanofi merged with Synthelabo. Sanofi was a French pharmaceutical company created in 1973. Synthelabo was the pharmaceutical division of L'Oréal, the world's leading company in cosmetics and beauty. L'Oréal purchased Synthelabo in 1973 to pursue ambition in the pharmaceutical field.

During the year 2004, the Group Sanofi-Synthelabo and Aventis merged to create Sanofi-Aventis. After the merger, the Sanofi-Aventis group has become number 1 (by sales value) in Europe and number 3 worldwide – behind GlaxoSmithKline and Pfizer – in the pharmaceutical industry with about 100,000 employees worldwide. It has operations in more than one hundred countries worldwide. Consolidated sales amounted € 25 billon in 2004.

The group's principal activities are the research, production and distribution of pharmaceuticals in several therapeutic areas: central nervous system, cardiovascular/thrombosis, oncology and internal medicine. The company has built a 50-drug pipeline, with nearly half of the candidates in clinical trials. In Europe, Sanofi-Aventis is focusing on its generic drug business.

Activities in relation to Dutch companies

The activities of Sanofi-Aventis are similar to the Pharma division of Akzo Nobel, which is an international company active in three main fields: Pharma, Coatings and Chemicals. The headquarters are located in The Netherlands, US and Sweden. Total net sales in 2004 amounted to 12.7 billion, 25% of which were Pharmaceuticals revenues of 3.2 billion. It has operations in over 80 countries and employed 61,450 people (19,390 employees at the Pharma business unit).

Although Akzo Nobel is usually listed under Chemicals for industry classification purposes, its pharma business of € 3.2 billion while the former Sanofi-Synthelabo group had sales of € 8 billion in 2003.

Footloose or geographically based

The company is footloose with 26 manufacturing plants world-wide.

National champion

Sanofi-Aventis may be considered to be a national champion, above all because its merger was orchestrated by the French government. Furthermore, the leading position in Europe and third position world-wide in the pharmaceutical industry and its headquarters in France.

BOX 7.1 The merging of Sanofi-Synthelabo and Aventis

- January 2004
  Both companies, Sanofi-Synthelabo and Aventis had struggled in 2003 to compete with pharma giants like Pfizer and GlaxoSmithKline. Sanofi had spent months investigating how it might effect a strategic combination with Aventis, which had sales two-and-a-half times larger than Sanofi's. By January 2004, Sanofi's chairman and chief executive, Jean-Francois Dehecq, was 'ready to acquire rather than being acquired'. His bankers had already contacted regulatory bodies in Europe and US and put in place a credit facility commitment by Merrill Lynch and BNP Paribas. Sanofi-Synthelabo launched its hostile € 48.5[72] billion bid for Franco-German rival Aventis. Sanofi offered five Sanofi shares plus € 69 in cash for every six Aventis shares (the latter were worth € 59.62 at Sanofi's January 23 close, a premium of 3.6% over Aventis' closing price of € 57.55). Alternatively, shareholders could also choose a swap of 34 Aventis shares for 35 Sanofi shares (an option worth € 68.22 at January 23 closing price) or € 60.43 in cash for each Aventis share. Sanofi launched an "emotional" ad campaign two days after and ran double-page ads in such major publications as Le Figaro, using a sick child to imply the merger was critical to French healthcare. Aventis considered the bid "ridiculous" and claimed they would be wanting a 40% to 50% premium to begin with the negotiations. It also objected that while Sanofi shareholders would be gaining the benefits of the Aventis worldwide infrastructure, jobs would be at risk at its French and German plants.
- March 2004
  Aventis planned to introduce a "white knight" and rumours of talks with Novartis appear in the French press. However, because Sanofi's bid had such strong support from the French government, non-French partners were reluctant to get involved. The AMF (Autorité des Marchés Financiers – French stock market regulator) asked Novartis to pronounce itself over its intentions and the company responded on March 12 it had not yet come to a decision. The French government's involvement became more drastic at this point. The government claimed that an Aventis based in France was more likely to keep its research base and employment in France. On March 17, the Prime Minister recurred to France's national interest argument and the need of being prepared for a mass production of vaccines in the event of a bioterrorist attack.
- April 2004
  In the beginning of April, Aventis and Novartis entered into negotiations for a potential transaction. Novartis proposed a demerger leaving the vaccines business in France to meet the government's concerns. On April 13, Sanofi, to ensure success of the deal and satisfy any regulatory objections, sold two of its lesser-known drugs to Britain's GlaxoSmithKline. On April 19, Aventis filed suit against Sanofi in the Federal Court in New Jersey alleging that, among other issues, the offer was in reality a "pre-emptive move to counter a potential business disaster" in the patent litigation over Plavix. The Plavix litigation gave Aventis' advisers an opportunity to ask for protection by the introduction of "Plavix warrants": In the event of a negative ruling against Sanofi over the Plavix patent litigation-which would slam Sanofi's revenues, Aventis shareholders would receive extra Aventis shares. But French regulator AMF opposed the use of the warrants, saying it was an unfair hurdle for Sanofi.

[72] Figures on the amount of the initial and successive bid offers slightly differ across sources. The numbers provided in this report are based on data from *Corporate Control Alert* (June 2004, Volume 21, No.5).

The weekend of April 23 to April 25 was decisive. Under heavy pressure from the French government, Novartis withdrew from the fray. There was a lot of uncertainty and Sanofi had to increase the offer to € 55.3 billion to get the recommendation from the Aventis board. After the agreement was announced on April 26, Aventis CEO Igor Landau resigned, but he still sits on the board of the renamed Sanofi-Aventis. Sanofi CEO Dehecq now runs the company, which is headquartered in Paris. Based on a standard of five Sanofi shares plus € 120 in cash for every six Aventis shares, investors could elect an all-stock, all cash or mixed option, which will be adjusted to ensure that 71% of the offer is in shares and 29% in cash. However, Sanofi shares fell 7% on April 26 imputing a deal value of € 51 billion. Novartis stock rose by 4.4% on that day.

7.2 Government policy and possible effects

The French government says the loss of certain sectors would considerably weaken the French economy and should not leave the country such as the technology for high-speed trains, transport, pharmaceuticals, biotechnology, electronics and defence industries, the food industry and the energy sector. The former minister of Finance Nicolas Sarkozy stated: 'A great country like France […] couldn't just have banks, insurers and tourism.'[73] The French plans to stimulate big innovative industrial projects are part of a renewed European debate on national (or European industrial) champions. The main recommendation of the report on industry policy from 5 January 2005[74] is the establishment of an industrial innovation agency that should fund large national champions in innovative areas such as nanotechnology, biotechnology or renewable energies. In principle, the agency funds would also be opened to other European companies.

The general mainstream economic view of this revived government intervention in French business is negative, because it maintains inefficiencies that are negative for wealth in the long run. The academic economic reasoning having been settled in the 1970s and early 1980s, is repeatedly highlighted by the Anglo-Saxon financial press. The French argue that this view is only viable under heroic assumptions on the perfect functioning of markets. Their arguments in favour of the promotion of industries include politically sensitive external effects and spin offs, such as employment and innovative power, some of which could be beneficial for wealth in the long run. It leaves to be demonstrated which of the two views is the preferred one, as measured in wealth terms.

The French position has received severe criticism from political and economic directions. With the merger between Sanofi and Aventis – in the words of former Brussels Commissioner Frits Bolkestein – France has made a "pathetic" return to the dustbin of failed economic policies.

73 Business Week, *'France's industrial power trip: Paris can't stop interfering with the economy – and that's bad new for Europe'*,29 November 2004.

74 Conseil d'Analyse Economique (CAE), *Désindustrialisation, Délocalisations*, 2005 – Jean-Louis Beffa, *Pour une nouvelle politique industrielle*, 2005.

Some say that […] what really underlies the champions debate is traditional and predictable French self-interest.[75]

Mandated mergers or take-over of national companies

The French government used the "national champion" argument when it attempted to push through (with success) Sanofi-Synthelabo's hostile bid for then Franco-German drug maker Aventis. Novartis was told by the French government that it wouldn't be a welcome bidder (see the box 7.1 for details).

Possible (side) effects

By orchestrating the merger between Sanofi and Aventis the French government tried to safeguard (French) jobs in the pharmaceutical industry and to build a strong European and global player in terms of economy of scope, scale and skill. Side-effects of this policy may have been:

- Feelings of national pride e.g. "grandeur";
- Political and electoral effects – keeping up the equilibrium;
- Spillover effects (know how and innovation, research and education).

7.3 Is the national champion policy effective?

Successful Performance

- Since the August 2004 close, the shares of Sanofi-Aventis have outperformed the global pharmaceuticals sector by more than 15%. Its 2004 sales rose 10% to €25.4 billion.
- Six of the group's drugs – three of which came with Aventis, including Lovenox and Allegra (the first and third best-sellers) – topped €1 billion in sales last year.
- According to the Sanofi-Aventis' "Information Meeting of 1st March 2005", there are expected "synergy targets" of €960m before tax at the end of 2005 and €1,600m before tax at the end of 2006. In this regard, some analysts have argued that it is not yet clear how these savings will be achieved given the pressure from the French and German governments not to eliminate too many jobs. The combined company will have 26 manufacturing plants world-wide, around twice as many as it needs according to some analysts. It also will have to decide what to do with Aventis' marketing and research units in New Jersey (US). The bulk of these jobs may be relocated to France. A commitment to artificially keep employee figures leads to a trade-off between economic efficiency and adequate resource allocation on the one hand, and employment savings on the other.
- Expected growth of pro-forma EPS comparable to that of 2004 (excluding major adverse events and on the basis of an exchange rate of €1=$1.25)

[75] The Economist, *'Bravura nonsense – National champions'*, 22 May 2004

- Analysts' estimates are optimistic and forecast a relatively steady sales and EBIT growth up till 2011. EPS are also expected to experience an annual growth during the next six years.

Table 7.1: Summary Earnings Estimates – Sanofi-Aventis (2002)

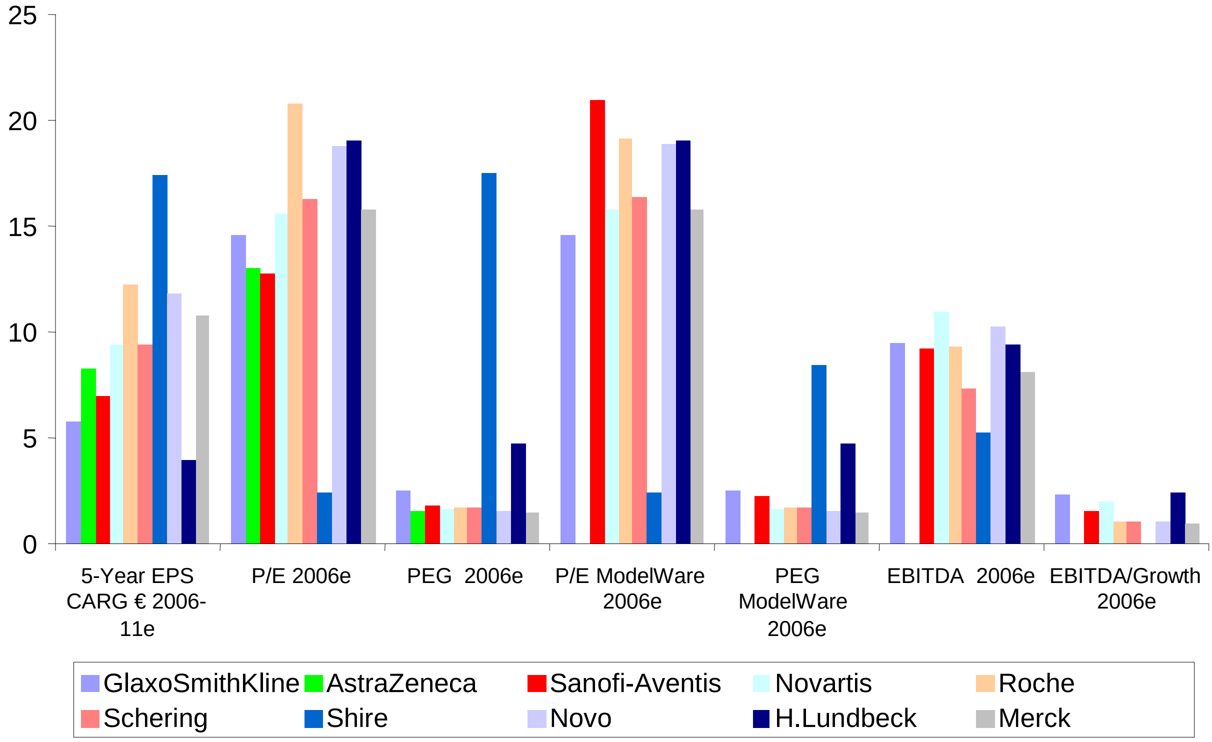
Sanofi-Aventis: Summary Earnings Estimates, 2002-11e

(€ millions, except per share data)	2003	2004	2005e	2006e	2007e	2008e	2009e	2010e	2011e
Sales	**24,296**	**25,418**	**27,438**	**29,120**	**29,319**	**30,378**	**32,558**	**34,743**	**36,888**
Sales Growth (%)		4.6	7.9	6.1	0.7	3.6	7.2	6.7	6.2
EBIT	7,254	8,163	8,997	9,856	10,055	10,472	11,341	12,050	12,609
EBIT Growth (%)		12.5	10.2	9.6	2.0	4.2	8.3	6.3	4.6
EBITDA	7,487	9,048	9,986	10,997	11,348	11,922	12,948	13,818	14,539
EBITDA Growth (%)		20.8	10.4	10.1	3.2	5.1	8.6	6.7	5.2
EPS Pre-Exceptionals	**3.29**	**3.89**	**4.53**	**5.07**	**5.27**	**5.60**	**6.18**	**6.69**	**7.12**
EPS Growth (%)		18.3	16.4	11.8	4.0	6.2	10.4	8.2	6.5
EPS Post-Exceptionals	0.72	1.27	2.61	3.10	3.25	3.53	4.05	4.50	4.87
EPS Growth (%)		75.2	106.4	18.7	4.9	8.4	14.9	11.1	8.2
ModelWare EPS	1.43	1.93	2.61	3.10	3.25	3.53	4.05	4.50	4.87
DPS	1.02	1.20	1.41	1.57	1.63	1.74	1.92	2.07	2.21
Valuation Multiples									
P/E	19.8	16.7	14.3	12.8	12.3	11.6	10.5	9.7	9.1
PEG	1.76	1.73	1.77	1.82	NA	NA	NA	NA	NA
P/E (ModelWare)	45.6	33.7	24.9	21.0	20.0	18.5	16.1	14.5	13.4
PEG (ModelWare)	2.30	2.11	2.17	2.22	NA	NA	NA	NA	NA
EV/EBITDA	13.5	11.2	10.1	9.2	8.9	8.5	7.8	7.3	7.0
EV/EBITDA Per Unit of Growth	1.39	1.50	1.51	1.60	NA	NA	NA	NA	NA
EV/Sales	4.16	3.98	3.69	3.47	3.45	3.33	3.11	2.91	2.74
Key Financial Ratios									
Gross Margin (%)	76.2	76.2	76.6	77.4	77.5	77.8	77.9	78.0	77.9
EBIT Margin (%)	29.9	32.1	32.8	33.8	34.3	34.5	34.8	34.7	34.2
R&D as % Sales	30.9	15.6	15.7	15.8	15.6	15.6	15.7	15.8	15.9
Net Cash Inflow/(Outflow) for Year	(2,708)	(888)	180	(240)	(244)	(278)	24	232	2,389
Net Debt/(Cash) on Balance Sheet	(3,010)	13,536	11,856	10,097	7,841	5,619	3,095	(137)	(2,525)

Source: Morgan Stanley

The graph on the next page represents Sanofi-Aventis' valuation while comparing it with that of the peer group. According to analyst recommendations (50% buys, 37,5% holds, 12,5% sells), the stock's total return is expected to exceed the average total return of the peer group on a risk-adjusted basis over the next 12 months. It is, however, difficult to justify this statement on the basis of the figure below: other than in Morgan Stanley's ModelWare variables, Sanofi-Aventis scores about average in all other indicators.

Figure 7.1: European pharmaceuticals valuation summary



Source: PwC/SEO based on data from Morgan Stanley

* ModelWare is a proprietary framework for financial analysis by Morgan Stanley.

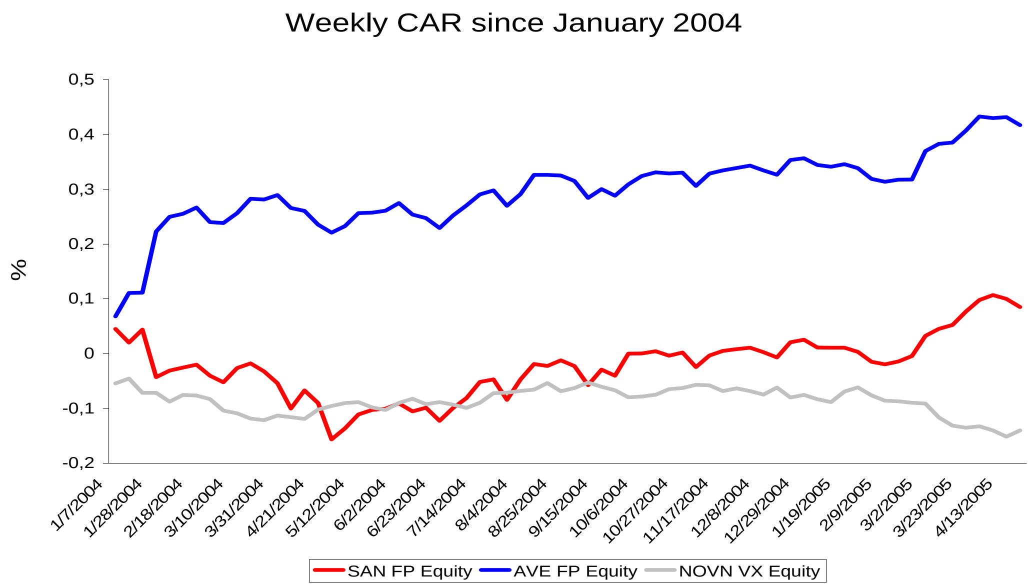
* The Dutch Akzo Nobel is not represented within the peers in analyst reports as pharma is only one of its three business units and this company is included under chemicals for industry classification purposes.

On other matters, there are high expectations about the impact Sanofi's R&D team will have on driving an improvement on Aventis' research. Nevertheless, top-line growth during 2004 was driven by two drugs, namely Aventis' Lovenox and Sanofi's Plavix, the company's best sellers that are at risk from court suits in the US. The risk of losing Plavix's patent trial was possibly, according to analysts, already accounted for in the share price paid at the time of the merger. However, the outcome of the trials for Lovenox and another drug from Aventis, is expected to still have a significant impact of the company's value. Although Sanofi-Aventis was able to shore up sales for Allegra, its third biggest seller, in the third quarter of 2004, annual sales were down nearly 6.9% as it loses market share fast to generic competitors. To conclude, the large expected benefits are still uncertain, but may well materialise. It is however unlikely that this conclusion would have been markedly different under the other merger, as then the long term current paths would also have been continued.

Stock prices

In order to judge whether the merger has been successful one might look at the development of the stock prices. Stock-price performance and analysts' estimations seem to signal a positive impact of the merger for the new merged entity. Cumulative abnormal returns (CAR) – i.e. cumulative stock returns after subtracting market index[76] returns – since January 2004 have been positive. Nevertheless, Sanofi's stock price fell at different event dates during the merger negotiation period.

Figure 7.2: Weekly CAR since January 2004



Source: PwC/SEO based on data from Bloomberg

The day the bid became public, Sanofi's share price fell while Aventis' stock outperformed its peers. While the increase in Aventis' price simply reflects the premium offered by Sanofi, Sanofi's own decrease indicates unequivocally that shareholders thought the acquisition was destroying (their) value. The day that Novartis appeared as a potential bidder, Aventis' share price rose as well, under the expectation of a yet better offer.

76 Bloomberg European Pharmaceuticals has been used as market index.

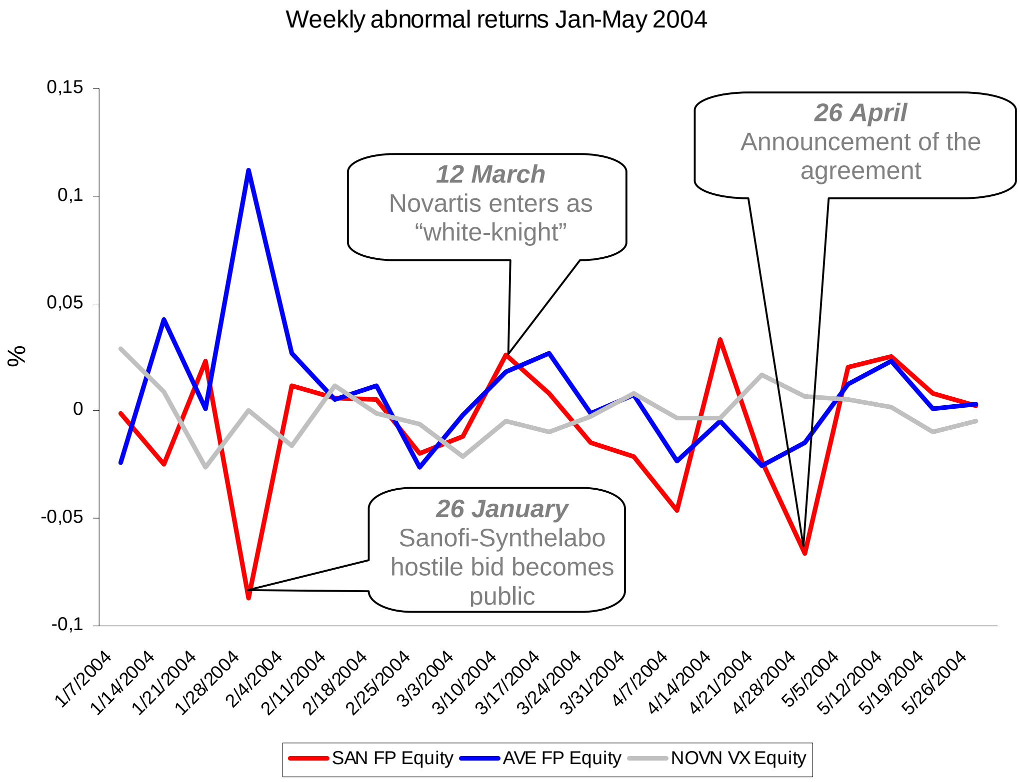


Figure 7.3: Weekly abnormal returns Jan-May 2004

Source: PwC/SEO based on data from Bloomberg

The table on the next page is a rough approximation to the gains and losses that accrued to Sanofi's and Aventis' shareholders as a direct consequence of the bid announcement and deal announcement events. For these two major events, we have taken a four-day event window (two trading days before and two trading days after the event announcement). Below we have compared the companies' values before, at and two days after the day of the announcement.

Table 7.2: Rough approximation of the gains and losses that accrued to Sanofi's and Aventis' shareholders

	Sanofi				**Aventis**			
	Share price	Outstanding shares (ml)	Shareholder value (ml)	**Value loss / gain**	Share price	Outstanding shares (ml)	Shareholder value (ml)	**Value loss / gain**
Bid announcement								
22 January	62,05	732,85	**45.473,34**		56,60	802,60	**45.427,16**	
26 January	54,50	732,85	39.940,33	-5.533,02	59,25	802,60	47.554,05	2.126,89
28 January	55,50	732,85	40.673,18	732,85	60,50	802,60	48.557,30	1.003,25
Subtotal				*-4.800,17*				*3.130,14*
Deal announcement								
23 April	55,59	732,85	40.739,13		66,25	802,60	53.172,25	
26 April	52,05	732,85	38.144,84	-2.594,29	62,60	802,60	50.242,76	-2.929,49
28 April	49,77	732,85	**36.473,94**	-1.670,90	60,80	802,60	**48.798,08**	-1.444,68
Subtotal				*-4.265,19*				*-4.374,17*
Total 22-1 till 28-4				**-8.999,40**				**3.370,92**

The table illustrates that the merger destroyed nearly € 9b of Sanofi's shareholders' wealth, or 20% of the initial shareholder value, whereas Aventis' shareholders realised a total gain of around € 3.3b. We can conclude that the French government intervention:

- Lead to a substantial transfer of wealth from one set of shareholders to the other – all within France, for what that is worth;
- Lead to a **net** loss of value of around € 4.7b, more than 10% of the value of Sanofi and about 5% of the combined value.

Fears of retaliation

Notwithstanding the secured jobs the question is what repercussions the merger and the overall attitude towards creating national champions will have on the French economy. Will foreign investors punish France? And should they?

The Sanofi-Aventis deal was forced the day before Jean-Pierre Raffarin, the French prime minister, had scheduled a meeting with an international group to promote the attractiveness of France for foreign investments. In an interview with the Wall Street Journal Europe Raffarin said that "foreign investors shouldn't be worried, quite the opposite.

Gone are the days when the French government would intervene dogmatically in all cases in the affairs of publicly traded companies. We will only pay special attention when we think the loss of certain sectors would considerably weaken the fabric of the French economy. The most obvious sectors seem to be the following: transport in the largest sense of the word, pharmaceuticals, biotechnology, electronics and defence industries, the food industry and the energy sector. Our strategy is to keep France especially attractive for certain key factors for the future of France in term of jobs, strategy and technology."[77]

Furthermore Raffarin says in the interview that "we need to guard against companies that brutally shift jobs abroad, based on short-team, opportunistic views. Our duty is to make sure employment laws are respected and to move toward a Europe in which all countries have reasonably harmonized their level of corporate taxes. We've proposed granting corporate tax breaks in France and have budgeted for a significant reduction in companies' social charges."

Some analysts support the risk of retaliation[78,79], others say that "investors have short memories, especially when there's the prospect of making money in continental Europe's second-biggest economy. France's big problem with attracting investment hasn't changed: investors doubt its growth prospects and they have little expectation that much will be done to improve them."[80]

7.4 Is the national champion policy efficient?

Since the merger, Sanofi-Aventis stock price has outperformed the industry. Note, however, that this does not say anything about the French government's actions. The relevant counterfactual is what the performance of Aventis-Novartis would have been.

A merger with Novartis?

As put forward in the introduction Sanofi-Synthelabo was struggling with tough competition from Pfizer and GlaxoSmithKline. Sanofi had to merge with one of its smaller competitors to survive.

Regarding Novartis, there is no basis to argue that it is any worse off without Aventis, as it matched robust sales growth with improved operating profit margins and a big improvement in its bottom line. Novartis looks well balanced, with strong sales growth from its four top drugs, a positive contribution from smaller Swiss affiliate Roche, and good growth at much of its consumer health business. Sandoz, Novartis' generics unit, had a difficult third quarter because of tough comparisons and writedowns. But in the long-term, Novartis looks set fair to benefit from a strong proprietary drugs portfolio facing few patent challenges as well as its own generics and over-the-counter activities. It does not look entirely unrealistic to say that Novartis ended up better off not getting the deal.

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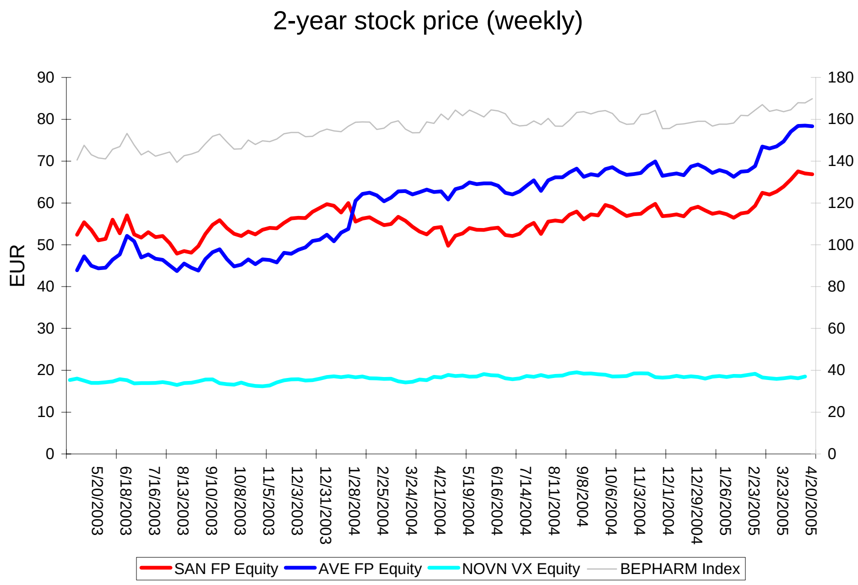
77 Wall Street Journal Europe, *Raffarin stands by 'national champions'*, 23 September 2004.

78 Reuters News, *Should investors be wary of interventionist France?,* 9 May 2004

79 Wall Street Journal, *Sanofi to swallow Aventis in a deal set at $ 65 billion*, 26 April 2004. In this article a chief investment officer at Kellner DiLeo Cohen & Co. (owner of Aventis shares) says that "there's no better way to discourage investment in your economy than to deter foreign companies from bidding for French companies. Ultimately the victim is the French economy".

80 International Herald Tribune, *Fighting for national champions*, 30 April 2004.

Figure 7.4: 2 year stock price (weekly)



Source: SEO/PwC based on data from Bloomberg

Establishing a cause-effect relationship between the merger and the success of the company is far from clear. Sanofi-Aventis benefited from Chiron's inability to deliver flu shots in late 2004. Sales of Sanofi-Aventis' own flu vaccine were a third higher in 2004, rising 70% in the fourth quarter of the year from 2003.

On top of that, the outcomes of all three trials will go a long way to determining whether the merged Sanofi-Aventis is viewed a success. The merger's backers could argue that a loss of Plavix reinforces the deal's wisdom by providing justification for reducing Sanofi's dependence on a single drug. By broadening its sales range, Sanofi hoped to become less dependent on any single product. But a second loss, of such Aventis drugs as Allegra and Lovenox, will leave the merger looking far less smart.

Analysts believe a loss of the U.S. Plavix patent is already priced into Sanofi-Aventis shares and a surprise victory would give them a bounce. However, any loss of the Allegra or Lovenox patents is not fully accounted for, analysts say, because the court cases are further away and the generic challenge looks weaker.

Efficiencies

From a merger of Sanofi with Novartis the French economy itself would not have benefited: jobs lost in France and restraints on spillover effects. On the other hand, the interference of the French government has lead to a less efficient (bigger) company which keeps all plants running.

Without a merger Sanofi probably would have been crushed by the other bigger competitors in the long run. Furthermore, the future for the drugs portfolio of Sanofi (without Aventis) looked grim, with the mere dependence on one drug.

7.5 Conclusion

The French government did pursue an active national champion's policy: The mandated merger of Sanofi and Aventis created a national champion that exercises market power – at home and on foreign markets. Jobs in France were saved, 'contre coeur' the opinion of analysts.

From the point of view of Sanofi's shareholders, the direct loss amounts to around € 9 billion. This is only partly offset by the gain of Aventis' shareholders, around 3.7 b. Obviously, the fact that Sanofi-Aventis becomes a pharmaceutical giant, or the fact that Sanofi gains control of it, does not add nor subtract to these facts. Interestingly (though not very significantly), Aventis spent € 109 million defending itself against the hostile bid.

The pressure from the government to keep R&D in France as well as the pressure to keep all plants working (while analysts argue half of them are redundant) raises questions about the effect of political intervention on the efficiency of the resource allocation in the economy. The French government obviously trades off short-run politically-desirable goals for long run economic efficiency.

Patent loss risk has increased for former Aventis shareholders because while Sanofi's Plavix is likely to lose the trial, there are more optimistic expectations on Aventis' drugs trials (on the other hand, analysts estimate that Plavix trial's expectations were probably already incorporated in the share price at the time of the merger). Besides, a merger with Novartis would have created a yet larger pharma giant. We find no evidence that Novartis' shareholders were in any way harmed by the whole process.

French business credibility and international politics have resented (e.g. with EU Commission and Germany). Investors are reluctant to invest under interventionist policies and this episode – which is 'not an exception' – may negatively impact future developments in French industry. However, there are some short-term political gains and employment losses in France have been reduced if compared with an acquisition by the Swiss Novartis. Although the potential effect on pharmaceutical prices for French consumers has not been analysed, there is no reason to believe that consumers are better-off than in the case of a Novartis-Sanofi combination.

The implications of this particular merger instead of the alternative for its Dutch competitors AKZO Nobel and possibly Organon are probably very limited at the most. It is unlikely that the particular merger has affected the competitive position on the niche-type markets substantially more than would have happened under the alternative. The niche-character also makes that possible negative X-inefficiency effects for Sanofi will have limited impact on the competitive position on the combined market.

8 Case study 4: Siemens

8.1 Introduction

Siemens is an international conglomerate active in the field of electrical engineering and electronics. The company was founded in 1847 when Werner von Siemens constructed the pointer telegraph. Headquartered in Germany, Siemens employs some 430,000 staff in more than 190 countries. In 2004, sales of € 75.2 billion were achieved resulting in a net income of € 3.4 billion. Siemens is active in the following areas:

- Information and communications:
  - Supply of telecommunications equipment and services
  - Consulting, systems integration, management and operation of IT infrastructures
- Automation and control: full-range supply of automation and installation systems, integration of systems and solutions for industrial plants and infrastructure projects;
- Power: manufacture, systems integration and related products and services for power utilities and industry customers;
- Transportation: railway solutions for mass transit (railway engineering, maintenance, project and finance management etc.), automotive electronics (VDO Automotive);
- Medical: development and supply of innovative products and professional services in the healthcare field;
- Lighting: manufacture of lighting products (Osram).

In addition, Siemens offers finance and real estate services and is active in the field of household appliances through its affiliate BSH Bosch and IT manufacture of computers in Europe through its affiliate Fujitsu Siemens Computers.

Post-war development has turned Siemens into a really internationally operating conglomerate: initially the vast majority of revenues was generated in Germany. Currently, Germany accounts for less than a quarter of total revenues.

Activities in relation to Dutch companies

Siemens is a peer of the Dutch Philips, both being large international conglomerates in the electronics sector. Their activities in the areas of Medical and Lighting are especially similar.

Footloose or geographically based

Siemens is a footloose company with offices and plants in more than 190 countries.

National champion

Based on its size, wide area of expertise, global presence and headquarters in Germany, we consider Siemens as a national champion for Germany. Siemens clearly benefits of the government policy, but is not depending on it. Therefore we might say that Siemens is a mixture of a natural champion and a national champion.

8.2 Government policy and possible effects

State aid and subsidies

As mentioned previously, German industrial policy – in the past – has focused on enabling the appropriate industry conditions for companies to flourish. State intervention is directed at support for a complex institutional infrastructure that helps a broad spectrum of companies respond to pressure from international competition by providing them with the skills, financial and technology resources needed to pursue quality-competitive strategies[81].

Three general forms of state intervention are defined (Vitols, 1996):

- Public support for industrial finance;
- Public policies for a skilled labor force; and
- State support for industrial research and development.

Public support for industrial finance has mainly been focused on the development of the banking system's capacity to supply long-term finance to a broad spectrum of companies[82]. The proportion of long-term loans (loans with an original maturity of four or more years) to non-banks provided by the large joint-stock banks expanded from 4% in 1950 to 59% in 1993. Long-term lending by the credit cooperative sector also expanded dramatically, from 7% of total loans to non-banks in 1950 to 70% in the mid-1990s[83].

Labour market policy plays an important role in supporting competitiveness of the German industry. As labour market regulation creates a labour constraint limiting the employers' flexibility in the remuneration and dismissal of labour, a potential competitive disadvantage for the industry is the result.

Vitols (1996) indicates that public policies have mitigated these effects in two ways. First, the upgrading of the training system has increased the skill level of the labour force, thereby increasing the flexibility in the use of labour within the firm. This effect is illustrated by the fact that relatively high hourly labour cost in Germany are at least partly compensated by higher levels

81 Annual level of subsidies in Germany has increased substantially from an estimated DEM 62 million in 1980 to a peak of more than DEM 150 million in 1994, partly as a result of East Germany joining West Germany. The level of subsidies has declined subsequently. (DIW, 1999).

82 With the exception of post-war reconstruction, state targeting of credit to specific sectors has been limited to low interest loans and loan guarantees for financing restructuring plans in the shipbuilding and steel industries (Vitols, 1996).

83 Vitols (1996) based on Deutsche Bundesbank data.

of productivity when compared to countries like the US, UK and Japan. Secondly, a number of public programs including short-term work subsidies and early retirement pensions have the effect of mitigating the potentially negative effects of cyclical fluctuations and structural change typical of manufacturing. Public funds are provided to supplement the wages of workers who have been reduced to part-time work due to temporary decreases in demand.

A third key industrial policy area for the state is involvement in industrial R&D and innovation. The state played an important role in the post-war expansion of R&D expenditure in Germany[84]: on the one hand by supporting an external, public and quasi-public R&D infrastructure, on the other hand by boosting the internal innovative capacity of firms.

In the 1960s and early 1970s the federal government established large projects focusing on the development of a small number of key technologies. In the mid 1970s, about 80% of the Ministry of Research an Technology's industrial research funding went to fifteen large companies. Later, technology policy shifted towards increasing the innovative capacity of industry as a whole. For 2004, federal funds totalling almost € 10 billion have been made available for education and research (source: BMBF).

Recent developments

France is not alone in bucking the EU programme (see box 8.1). Germany, too, talks of building national champions, though it is less baldly ambitious about promoting purely German ventures than France.[85] [86] Notwithstanding the temporary anger of German chancellor Schröder on the Sanofi-Aventis deal, both Paris and Berlin share the view that Europe needs to build powerhouses that are able to compete in a fast-paced global economy with giants from the United States and Asia, in order to protect national industries from foreign predators and prevent job losses. For example, Schröder called on Germany's big banks (in May 2004) to push ahead with mergers in a bid to create a German-controlled global player.

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84 R&D expenditure in Germany increased from 1.3% of gross national product in 1962 to 2.9% in the late 1980s (Vitols, 1996).

85 Newsweek, *What could they be thinking? France riles neighbour Germany with its efforts to promote 'national champions' companies*, 21 June 2004.

86 The Economist, *Creating Euro giants – Industrial policy*, 22 may 2004. France and Germany launched their new plan on May 13th (2004), when they declared an intention "to formulate a joint industrial policy aimed at creating a framework for mergers and joint ventures between major German and French corporations."

BOX 8.1: EU policy

In recent years, industry leaders and politicians alike have voiced their fears about the EU's manufacturing base moving out of Europe to benefit from cheaper labour, lower social costs and more flexible regulation in the East (countries such as China and India). On 20 April 2004 the Commission published a new Communication 'Fostering structural change: an industrial policy[87] for an enlarged Europe', which examines the competitiveness of Europe's industry, assesses the existence and scale of the risk of de-industrialisation[88], and proposes specific solutions.

In order to support the process of structural change in the EU, the Commission has outlined a set of specific measures:

⇒ Regulatory framework: burdens on industry must be reduced to the bare minimum of what is strictly necessary to achieve the objectives of regulation and a balance must be struck between industrial competitiveness and the need for regulation
⇒ Community policies: synergies must be better exploited to improve the policies' impact on industrial competitiveness. The focus should be on developing a knowledge-based economy and strengthening cohesion in an enlarged Europe.
⇒ Combination of policies at sectoral level: the EU must continue to develop the sectoral dimension of industrial policy while ensuring that its sectoral policies are strengthening industrial competitiveness.

Possible effects

The effects of the policy interventions are threefold:

- Dampening of cyclical fluctuations of unemployment, thus avoiding transaction cost losses. The welfare consequences will have been moderately in size;
- Stimulation of relatively unproductive employment, leading to a low competitive position on the Global market. It is generally believed to have substantial negative effects in the long run;
- Stimulation of R&D. The R&D multiplier effect – on German soil – is unknown, but could be large in the case of Siemens' products. Apart from some first mover effects, they will possibly be short-lived, as the results of the R&D efforts can be transposed to companies abroad, owned by Siemens.

The international competition will have benefited from the continued low productivity development.

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87 Industrial policy is horizontal in nature and aims at securing framework conditions favourable to industrial competitiveness. The general principles of EU industrial policy date from the Communication 'Industrial Policy in an open and competitive environment: guidelines for a community approach' of October 1990.

88 The [..] analysis indicates that there is no proof of a generalised process of de-industrialisation. The EU is facing a process of structural change at various levels, but the ongoing process of resource allocation from manufacturing industry to services should not be confused with a process of de-industrialisation.

8.3 Is the national champion policy effective?

Successful Performance

Siemens has published an investor information package in 1999. In this package Siemens sets out its positioning for the different business activities. The table below illustrates that Siemens has been able to build a leading position in its different markets.

Table 8.1: Siemens' position in various markets

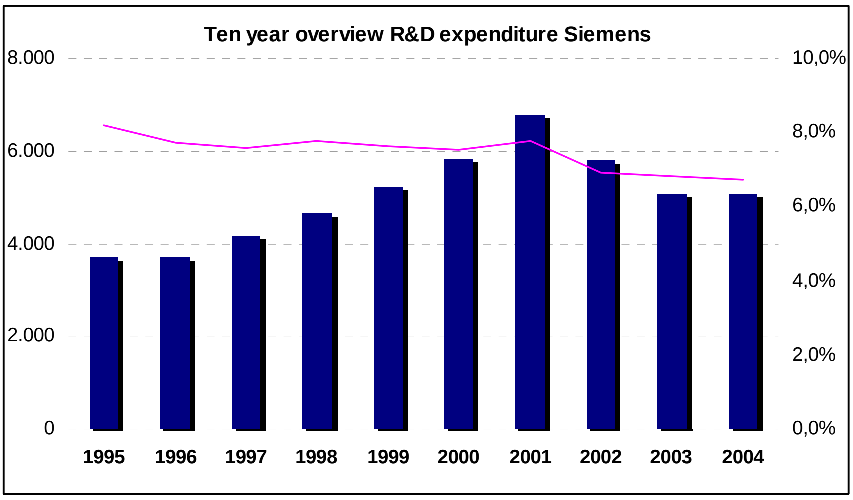
	Sales 1999 (in € million)	Ranking* (based on 1998)	Main competitors
Information and communications	25.682	3 or less	Lucent, Nortel
Automation and control	16.729	1 or 2	Mitsubishi, ABB, Honeywell, GE
Power	11.182	2	GE, ABB
Transportation	6.237	2 or 3	Alstom, Delphi, Bombardier
Medical	4.080	1	GE, Philips
Lighting	3.659	2	Philips, GE

* Businesses are divided in subgroups, ranking can therefore be different for subgroups.

The activities of Infineon, a successful part divested in 2000, are not taken into account in this overview (see below for more details on this company). For the purpose of this case study, we concentrate on the influence of R&D policy on the development of Siemens. Given the nature of the company's activities, R&D can be considered a pivotal element to the company's success.

The importance of innovation is illustrated by international patent statistics: the company holds the largest number of international patents in Germany, it is number two in Europe and among the top ten in the US market. In 2004, an amount in excess of € 5 billion was spent on R&D. In the table below, an overview of annual R&D expenditure over the last ten reported years is given.

Figure 8.1: Ten year overview R&D expenditure Siemens



Source: Siemens investor relations, amounts in € million, right-hand axis shows R&D expenditure as a % of revenues.

The level of R&D is constantly in excess of Siemens' level of profitability. R&D amounts to some 7-8% as a percentage of sales. On the basis of the information concerning R&D policy in Germany, it is likely that Siemens has profited from direct and indirect industry support. As mentioned earlier, about 80% of the Ministry of Research and Technology's industrial research funding went to fifteen large companies in the mid 1970s. However, it cannot be determined to what extent Siemens has received possible subsidies and what the direct relation has been between granted subsidies and the development of the company.

For Infineon Technologies AG ("Infineon"), more detailed information with regard to R&D and related state aid is available. Siemens divested a 29% stake of this affiliate in 2000, generating proceeds in excess of € 6 billion. The Infineon case is explored in the next paragraph.

Infineon

Infineon designs, develops, manufactures and markets semiconductors and complete systems solutions used in various microelectronic applications, including computer systems, telecommunications systems, consumer goods, automotive products, industrial automation, control systems and chip card applications.

Infineon operates as a subsidiary of Siemens AG with effect from April 1, 1999. Prior to that date, it formed the Siemens Semiconductor Group, being actively involved in the development, manufacture and marketing of semiconductors since 1952. As such, Infineon has inherited from the Siemens Semiconductor Group a strong base of technology expertise and experience in the semiconductor industry.

Currently, Infineon is a leading semiconductor company with sales of some $ 9 billion ranked fourth place after Intel, Samsung and Texas Instruments[89]. In terms of worldwide DRAM revenue Infineon ranks fourth with a market share of some 14%[90]. This market share has grown from approximately 3% and 9% in 1996 and 2000, respectively. DRAM revenues are primarily driven by PC memory applications (currently some two-thirds of the total DRAM market).

Obviously, the semiconductor industry is both very price sensitive and R&D intensive: success within this industry is mainly driven by innovation focused at improving the price/performance ratio of different (memory) applications. In the table below an overview of annual R&D expenditure for Infineon is given.

Table 8.2: Overview R&D expenditure 1998-2004

Amounts in euro	1998	1999	2000	2001	2002	2003	2004
R&D	637	739	1.025	1.189	1.060	1.089	1.219
% of	20,1%	13,0%	14,1%	28,1%	26,3%	21,1%	19,8%

Source: Siemens

It can be argued that Siemens Semiconductor Group has profited from German industrial policy in general and from granted subsidies in particular. As mentioned earlier, about 80% of the Ministry of Research and Technology's industrial research funding went to fifteen large

89 Source: Gartner (December 2004), company presentation March 2005.
90 Source iSuppli (March 2005), company presentation March 2005.

companies in the mid 1970s. In addition, Infineon's prospectus issued in 2001[91] shows subsidies being granted in the period 1998-2001. The vast majority of these subsidies have been granted by German governmental institutions. In the table below an overview is given of granted subsidies in the period from 1998 to 2001.

Table 8.3: Subsidies granted 1998-2001

Amounts in € million	1998	1999	2000	2001 – first half
Interest subsidies	41	41	63	
Research and Development	42	33	41	30
Other	14	18	11	5
Total	**97**	**92**	**115**	**35**

Interest subsidies reflect amounts received from the German federal state of Saxony in respect of a manufacturing facility in Dresden. Research and development subsidies relate to a large number of individual projects. Other subsidies relate to production activities in respect of facilities in Dresden and Porto.

Granted subsidies account for some 10% to 15% of annual R&D expenditure in the period from 1998 to 2000. In this industry, characterised by both heavy competition and constant innovative forces, Infineon has been able to more than quadruple its market share in the last decade. Active industrial government policy seems to have played a facilitating role for Infineon to be able to develop leading edge technology at highly competitive pricing. This aid might just have been enough to provide Infineon with sufficient competitive advantage over competitors who did not receive any help –and who ended up losing market share. This is especially true in a market characterised by heavy R&D investments, low margins and fierce competition.

In March 2000 Siemens raised more than € 6 billion by selling 29% of the shares in Infineon, valuing all Infineon shares at € 21 billion. It can be argued that the active public policy to encourage R&D and innovation in Germany has contributed to the development of Infineon and thus has led to material value creation for Siemens and its shareholders, as well as to creation of jobs, taxes and, in general, welfare.

8.4 Is the national champion policy efficient?

German industrial policy is primarily (aside from recent developments) aimed at supporting different industries in general in order to create a business climate in which companies can flourish. Three types of general support are distinguished: finance support, R&D support and labour policy. In addition, specific projects and/or specific companies have received subsidies in the past for the purpose of developing its business. It is mentioned that in the mid 1970s some 80% of R&D subsidies was granted to 15 major companies. Although further detail on these subsidies is not given, it is likely that Siemens has profited to some extent from these granted

[91] Prospectus of Infineon Technologies AG issued in March 2001 in relation with the public offering of 52,174,000 shares.

subsidies. Later, subsidies from German governmental institutions have focused more on smaller companies.

For Infineon, the semiconductor business in which Siemens has sold an interest of 29% in 2000, a detailed overview of subsidies for the period 1998-2001 is given. This overview shows that Infineon in this period has received subsidies ranging from 10% to 15% of its total, annual R&D expenditure. Given Infineon's market share gains in this period and the proceeds for Siemens in relation with its sold Infineon shares, it can be argued that active industrial policy in Germany has contributed positively to value creation for Siemens.

8.5 Conclusion

In summary, it can be concluded that both generic industrial policy and specifically granted subsidies have positively affected Siemens' performance in the past. However, it is difficult to assess the exact contribution of state policy to this performance, let alone its contribution to general economic welfare.

The effect of the labour market subsidisation has reduced the transaction costs of lay-offs and hiring in the cyclical fluctuations of employment. It has affected productivity growth negatively, and by implication to a dent in competitive position. The effect of R&D subsidies has probably been positive.

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Appendix: Aids granted by States

Article 87

1. Save as otherwise provided in this Treaty, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the common market.

2. The following shall be compatible with the common market:

a. aid having a social character, granted to individual consumers, pro vided that such aid is granted without discrimination related to the origin of the products concerned;
b. aid to make good the damage caused by natural disasters or exceptional occurrences;
c. aid granted to the economy of certain areas of the Federal Republic of Germany affected by the division of Germany, in so far as such aid is required in order to compensate for the economic disadvantages caused by that division.

3. The following may be considered to be compatible with the common market:

a. aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment;
b. aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;
c. aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest. However, the aids granted to shipbuilding as of 1 January 1957 shall, in so far as they serve only to compensate for the absence of customs protection, be progressively reduced under the same conditions as apply to the elimination of customs duties, subject to the provisions of this Treaty concerning common commercial policy towards third countries;
d. aid to promote culture and heritage conservation where such aid does not affect trading conditions and competition in the Community to an extent that is contrary to the common interest;
e. such other categories of aid as may be specified by decision of the Council acting by a qualified majority on a proposal from the Commission.

Article 88

1. The Commission shall, in cooperation with Member States, keep under constant review all systems of aid existing in those States. It shall propose to the latter any appropriate measures required by the progressive development or by the functioning of the common market.

2. If, after giving notice to the parties concerned to submit their comments, the Commission finds that aid granted by a State or through State resources is not compatible with the common

market having regard to Article 92, or that such aid is being misused, it shall decide that the State concerned shall abolish or alter such aid within a period of time to be determined by the Commission.

If the State concerned does not comply with this decision within the prescribed time, the Commission or any other interested State may, in derogation from the provisions of Articles 169 and 170, refer the matter to the Court of Justice direct.

On application by a Member State, the Council may, acting unanimously, decide that aid which that State is granting or intends to grant shall be considered to be compatible with the common market, in derogation from the provisions of Article 92 or from the regulations provided for in Article 94, if such a decision is justified by exceptional circumstances. If, as regards the aid in question, the Commission has already initiated the procedure provided for in the first subparagraph of this paragraph, the fact that the State concerned has made its application to the Council shall have the effect of suspending that procedure until the Council has made its attitude known.

If, however, the Council has not made its attitude known within three months of the said application being made, the Commission shall give its decision on the case.

3. The Commission shall be informed, in sufficient time to enable it to submit its comments, of any plans to grant or alter aid. If it considers that any such plan is not compatible with the common market having regard to Article 92, it shall without delay initiate the procedure provided for in paragraph 2. The Member State concerned shall not put its proposed measures into effect until this procedure has resulted in a final decision.

Article 89

The Council, acting by a qualified majority on a proposal from the Commission and after consulting the European Parliament, may make any appropriate regulations for the application of Articles 92 and 93 and may in particular determine the conditions in which Article 93(3) shall apply and the categories of aid exempted from this procedure.

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