



**TOPIC 2**  
MARITIME  
TRANSPORT (SIG)

## **THE DEVELOPMENT OF A NEW MARITIME POLICY, USING THE ECONOMIC IMPACT STUDY (EIS) METHODOLOGY: THE CASE OF THE DUTCH SHIPPING SECTOR**

**CHRIS PEETERS**

Policy Research Corporation N.V. and  
University of Antwerp, RUCA  
Jan Moorkensstraat 68, B-2600 Antwerp, BELGIUM

**KRIS DEBISSCHOP**

Policy Research Corporation N.V.  
Jan Moorkensstraat 68, B-2600 Antwerp, BELGIUM

### **Abstract**

It is demonstrated how the "Economic Impact Study" is applied to aid in the formulation of a new Dutch shipping sector, as well as to assess the full economic impacts of various policy options as regards this sector.

## **INTRODUCTION**

The shipping sector in the European Union (and the Netherlands) has gone through important structural changes in the last few decades. These changes have resulted from the emergence of a number of new shipping nations, some of which have open registers, and the shifting of shipping activities to other regions (eg the Far East). Both developments have led to increasing global competition, between traditional shipowners who operate under the flag of a Member State and those who have shifted their registration outside Europe.

Registration in an open register allows the shipowner to realize substantial savings in the costs of operation (inter alia in wages and taxes). This competition is considered to be the main threat for a sustainable growth of the European shipping sector. Another threat may stem from the fact that public authorities in the various Member States of the European Union (including the Netherlands) may underestimate the importance of a favourable home base for the competitiveness of European shipping companies. The strengths of this home base can be expressed in terms of fiscal policy, manning and safety regulations and soft as well as hard infrastructure.

The traditional shipping countries, such as the Netherlands, are therefore confronted with important public policy choices. In order to develop alternative policy scenarios which would allow to create a favourable home base for shipping companies, it is necessary to analyze in more detail the present situation of the shipping sector. This analysis should combine a quantitative and a qualitative approach. The quantitative approach should allow a rigorous assessment of the direct and indirect economic impact of the shipping sector, and provide insights that are indispensable when policy issues need to be addressed. In this paper, it is demonstrated how the Economic Impact Study (EIS) methodology is applied to aid in the formulation of a new Dutch maritime policy that would allow to improve the competitiveness of the Dutch merchant fleet. Moreover, the use of the EIS within this quantitative approach allows the evaluation of the effects of different policy measures. The qualitative approach supplements this evaluation with important information on the structure of the sector and the interactions with other actors in the shipping market, such as public authorities, ports, forwarders and multimodal transport operators, shipbuilding companies, and insurance companies.

This dual approach implies the creation of a coherent and integrated shipping policy based upon the concept of *sustainable value added*. It is demonstrated that the establishment of a second register is not necessarily the only solution to maintain the viability of the Dutch national fleet (and the various fleets of the traditional shipping nations). It is shown that the creation of a 'competitive' first register could be a very appropriate alternative. The present maritime policy in the Netherlands requires a drastic change, given it is no longer to be considered effective. The past and present shipping policy were almost exclusively oriented towards the Dutch flag and did not take into account the shipowners that manage (foreign flagged) vessels from within the Netherlands. Moreover, the shipping policy did not fully recognize the important structural changes the shipping sector has gone through. Hence, the direct and indirect economic impact of the Dutch maritime and shipping sector, in terms of value added, employment and backflow to the government is now declining considerably (Peeters et al. 1994a, 1994b). In this context, it is expected that not only the value added related to the operation of the sea-going vessels would be lost, but also the value added of the maritime activities ashore. The new maritime policy for the Dutch shipping sector which is proposed in this paper, comprises clear and 'straight forward' policy measures. Although the required budget is relatively low (f 160 million extra per year), the economic effects of the new maritime policy in terms of value added, employment and net income for the government are expected to be very positive (Peeters et al. 1994a, 1994b). There are three reasons for this.

*First*, the policy proposal is to be viewed as a long-term policy. Its simplicity and transparency will allow it to become well known and easily understood internationally. The new policy therefore aims to attract foreign shipping companies. *Second*, the proposal will considerably improve the competitiveness of the Dutch maritime and shipping sector. *Third*, extensive facilities

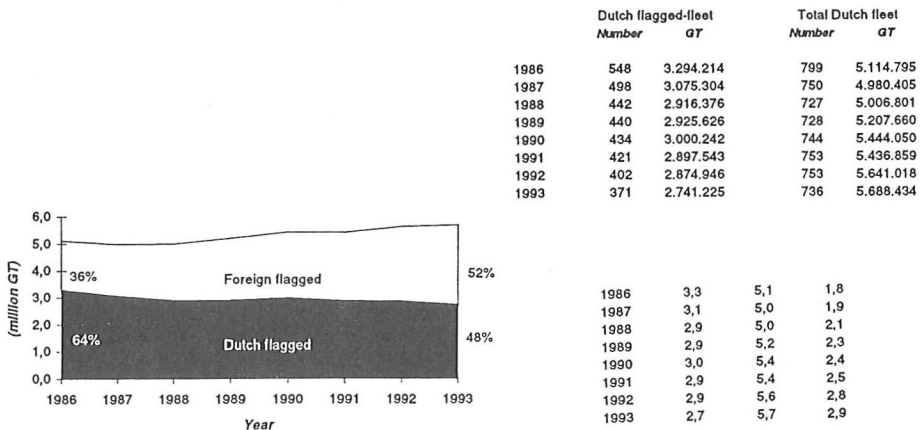
are presently available in the Netherlands, as regards maritime infrastructure and human resources. Moreover, a strong clustering between the shipping sector and the rest of the Dutch maritime sector and economy, is observed. The expected positive effects of a new 'offensive' policy for the Dutch shipping sector, will therefore generate important multiplier effects on other economic activities in the Netherlands, such as shipbuilding, shipping related industries, service industries, etc. (Peeters et al. 1994b).

## THE RATIONALE FOR A NEW MARITIME POLICY IN THE NETHERLANDS

As compared to most of the other EU Member States, the Netherlands have so far pursued a rather effective shipping policy. Until 1987, the number of ships flying the Dutch flag remained relatively unchanged. A modern subsidization policy was pursued, requiring various criteria and procedures in order to attain the policy objectives. The most important policy objectives were (and still are):

- the maintenance of the fleet operating under the Dutch flag (and the preservation of Dutch employment);
- the development of a young, modern and specialized fleet.

These policy objectives should have led to a competitive and efficient shipping sector, thereby ensuring the further development of the maritime know how. Until 1987, these policy objectives were largely achieved. The Dutch flagged fleet was rejuvenated, modernized and specialized. For the 'Small Merchant Fleet' (vessels less than 4,000 GT), this process could be observed in particular for complex sea-going vessels, such as reefer ships, chemical tankers and cattle ships. For the 'Large Merchant Fleet' (vessels above 4,000 GT), specialization and modernization took place for multipurpose ships and full container ships. One of the most important subsidy schemes, in casu the 'Investeringspremieregeling voor de Zeescheepvaart (IPZ—Investment Stimulating Scheme for the Shipping Sector)', allowed, until 1987, to avoid flagging out through the improvement of the operating conditions of the Dutch shipping companies (see Figure 1) (Peeters et al. 1994b).



The importance of the Dutch flagged-fleet in the total Dutch fleet is declining. The share of the Dutch flagged-fleet in the world equalled 0.7% in 1993. In 1958, this percentage amounted to 4%.

Figure 1 Evolution of the Dutch flagged-fleet and the total Dutch fleet

'Flagging out' implies the registration of ships under lower cost registers, such as the open registers. Registration under an open register allows the shipowner to realize substantial savings in the costs of operation, inter alia in wages and taxes. In most maritime nations, corporate taxes for

shipping companies are not levied, or can be reduced to a negligible level. Moreover, lower cost registers show a great flexibility as regards manning conditions. Manning costs can be reduced considerably because salaries can be paid at local level. In most cases, it is observed that the flagging out of ships is followed by the flagging out of (all) management activities, mostly to avoid important tax payments (ie 'full flagging out').

The past and present subsidization policy for the Dutch shipping sector (eg the investment stimulating measures such as IPZ and, more recently, ISZ and WSZ) have slowed down the flagging out (of ships). However, since 1987 the number of ships flying the Dutch flag is decreasing. Recently, a number of important shipping companies have also moved management activities to other countries. As a result, the economic significance of the Dutch shipping sector is declining. The operating conditions of ships flying the Dutch flag are no longer competitive as compared to ships registered under a flag of convenience. It is however striking to observe, in the period 1986-1993, a growth of the Dutch fleet including foreign flagged vessels but with Dutch interests. In terms of gross tonnage, the tonnage of this fleet increased from 5.1 million GT in 1986, to 5.7 million in 1993. This is due to the increasing number of foreign flagged vessels in the fleet, which leads to the conclusion that the Dutch flag is no longer competitive (Peeters et al. 1994a, 1994b). Another important problem as regards the present 'modern subsidization policy', is its implementation through complex administrative procedures, putting the Dutch government unintentionally in the place of the entrepreneur-shipowner. The Dutch government has attempted to *influence* the structure of the Dutch flagged-fleet. As a result, important market segments were excluded of operating under the Dutch flag (eg no subsidies were granted for investments in vessels with low complexity such as bulk carriers). In addition, it was/is not possible to pursue an investment strategy which is not in accordance with the business cycle. Government intervention in maritime affairs has thus increased. This constitutes a problem given the (Dutch) government does not have at its disposal all the required *managerial* market knowledge (Peeters et al. 1994b).

The past and present Dutch shipping policy did/does not only consist of investment stimulating measures. Since 1988, various manning facilities have been developed to reduce the manning costs of Dutch shipping companies. The total effect of these facilities, namely the '35%-regulation', the 'integrated crew composition' and the allowance of 'cheap' shipmates, represents a reduction of 24% to 30% (depending on the ship type) on overall crew costs. The reduction has led to an improvement of the competitiveness of the Dutch shipping sector, but is still insufficient. In this context, it has been calculated that another 23% to 28% reduction of the manning costs is required to be competitive with an international second register such as the Norwegian International Ship register (NIS) (Peeters et al. 1994b). The high crew costs, as compared to other foreign registers weaken the competitive position of the Dutch shipowners with ships flying the Dutch flag. Flagging out of the ships (followed by a flagging out of management activities) is then considered to be the only feasible solution for a sustainable improvement of the operating conditions of sea-going vessels.

## **AN EXTENSION OF THE PURSUED POLICY OBJECTIVES: THE CONCEPT OF SUSTAINABLE VALUE ADDED**

It is recommended to reformulate the above mentioned policy objectives. The almost exclusive orientation towards the Dutch flagged-fleet has ignored an important part of the shipping sector. Hence, the present shipping policy does not guarantee a sustainable development in the Netherlands of shipping and maritime activities. The Economic Impact Study (EIS, see infra) has allowed to calculate that the Dutch flag accounts for only 30% of the total net value added created by the Dutch shipping sector (f 1.85 billion in 1994, including the effects of investments in new ships ordered from Dutch shipbuilders). The other 70% is created directly and indirectly through management activities ashore. The present shipping policy therefore covers only 30% of the total net value added generated by the Dutch shipping sector (Peeters et al. 1994b).

The activities as regards the operation of sea-going vessels are closely related to the management activities ashore. Considering the conclusion that the present shipping policy is no longer effective, it is clear that the other 70% of the value added is also negatively affected.

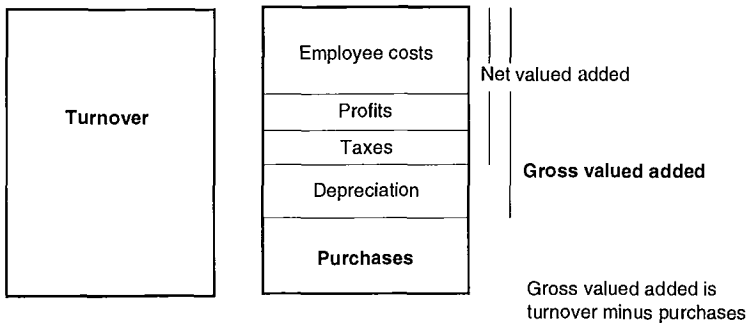


Figure 2 Composition of value added

A maritime policy which takes into account the full 100% of the value added of the Dutch shipping sector, in casu the Dutch flag and the management, is recommended. The main objective of such a maritime policy should be formulated as follows (Peeters et al. 1994b):

the creation of sustainable value added (and employment) through the stabilization and further development of maritime activities in the Netherlands.

This value added consists of direct value added created by the maritime sector and indirect value added which results from the purchases of shipping companies and the national suppliers of the maritime sector from the rest of the Dutch economy. By reformulating the objectives of public policy, the criterion to assess effectiveness should be adapted. Given the new policy objective, success or failure of public policy should be measured on the basis of the value added which arises as a result of the public policy, according to a credible causal link. In this respect, the creation of sustainable employment should be viewed as an additional criterion. It is, however, important to observe that a mere increase of employment does not necessarily result in an increase of sustainable value added. A balanced composition of the value added is required for sustainability (see Figure 2).

## THE ECONOMIC IMPACT STUDY (EIS) TO ASSESS THE ECONOMIC SIGNIFICANCE OF THE DUTCH SHIPPING AND MARITIME SECTOR

The development of a new maritime policy for the Dutch shipping sector must be built upon in-depth knowledge of the economic structure and significance of the sector.

Until now, no unambiguous, comprehensive method has been developed to assess the total economic impact of the maritime and shipping sector on the socio-economic system of the Netherlands. There are several reasons for this:

- in most cases no consistent, reliable and comparable time-series are available;
- the collection of the necessary data is fraught with many difficulties:
  - the information often cannot be collected within the available time span;
  - the data are not comparable across time periods;
  - the data are too aggregated;
- most economic studies only analyze the direct impact of a sector. They are usually based on national accounts, and largely ignore the intersectoral links between industries. Often, the analysis of the direct effects is limited to the effects generated within the sector itself, and does not account for the full economic impact of the sector.

To assess the economic significance of the Dutch maritime sector, a robust methodology was developed allowing (Peeters et al. 1994a, 1994b):

- a. to alleviate these data collection problems and
- b. to assess, on an accurate and methodologically substantiated basis, the *full* economic significance of the Dutch maritime sector (and sub-sectors of the sector such as the inland navigation sector, the port sector, the dredging sector, the shipbuilding sector and the shipping related industries).

This methodology took the form of an *Economic Impact Study* (EIS). To measure the full economic impact of the maritime sector on the Dutch economy, common socio-economic criteria were identified, such as:

- sustainable value added (and the structure of value added);
- employment;
- value added per employee;
- backflow to the government (and the structure of backflow to the government, such as taxes, social security payments,..);
- contribution to the balance of payments;
- multipliers, power of dispersion and sensitivity of dispersion;
- ...

The application of the EIS methodology resulted in accurate information on the economic significance of the Dutch maritime sector for the period 1986-1993 and on the composition of the direct and indirect value added generated by the sector. In addition, the direct and indirect impacts of the maritime sector as regards employment and backflow to the government (eg taxes) were calculated. The indirect effects result from purchases from the (national) suppliers of the shipping sector. For the accurate assessment of the direct and indirect economic impacts of the maritime sector on the Dutch socio-economic system, a logical and internally consist framework was required. This framework used the Input-Output table of the Netherlands. The Input-Output table provides important information on the inter- and intrasectoral relations (clustering) of all sectors.

### **The 'bottom-up' method**

The Input-Output tables used required a number of modifications in order to analyze the Dutch shipping and shipbuilding sector in terms of relevant sub-sectors. For the sectors under study, modifications were necessary which are part of the bottom-up method (Peeters et al. 1994a, 1994b). Rows and columns for other sectors do not generally need to be modified. The bottom-up method starts from data on the cost structure and the sales structure, at the level of the individual firm. This allowed to create and to analyze sub-sectors which were relevant to the policy issues to be analyzed in the context of maritime policy making. The constraints of predetermined sectoral classifications or inconsistent definitions were thus avoided. In general, the following steps are required when applying the 'bottom-up' method:

- investigation of the various data collection methods used by the statistical agency;
- investigation of the consistency of the various data that are needed in the analysis;
- assessment of the reliability and completeness of the data;
- if the available data are deemed unreliable or incomplete, the necessary data should be collected, either exhaustively or on the basis of stratified samples.

The bottom-up method is *labour-intensive*. However, former Belgian and Dutch experiences of the authors suggest that the alternative approach, the so-called top-down method is likewise very expensive. The top-down method starts from available aggregated data, which are then decomposed according to various (sometimes very elaborate) ratios to obtain the desired level of disaggregation. The major drawback of the top-down method is its limited reliability. In most cases the dividing ratios can be questioned. In the analysis of transport policy issues, such as the economic significance of the Dutch maritime and shipping sector and the development of a new public policy for these sectors, full agreement on the accuracy of the data is essential. Hence, it is obvious that the 'bottom-up' method is the only correct approach to be applied.

For the in-depth sectoral analysis of the Dutch shipping sector and its sub-sectors for the period 1986-1993, the possible economic impact of the shipping companies on the economy was determined. This economic impact of a shipping company depends upon the number of ships under its management and/or ownership, and on the scope of its activities. The Dutch shipping sector was thus divided into sub-sectors with the following main characteristics (Peeters et al. 1994b):

- Dutch flag, Dutch management;
- foreign flag, Dutch management;
- Dutch flag, foreign management;
- foreign flag, foreign management.

The Dutch shipping sector and its sub-sectors were defined on the basis of these criteria, using the 'bottom-up' method. For this purpose, the following steps were required:

- the compilation of a List of Ships owned and/or managed by a Dutch shipping company. For each ship the following characteristics were recorded:
  - name of the ship;
  - manager;
  - legal owner;
  - actual owner;
  - flag;
  - gross tonnage;
  - type.
- on the basis of the Lists of Ships, Lists of Shipowners were compiled. Each owner was characterized by the number and specific types of ships under management and/or in ownership;
- finally, the Lists of Ships and Shipowners were used to define various sub-sectors of the shipping sector on the basis of the above characteristics. Shipowners having the same characteristics with regard to the number of ships managed from within the Netherlands and/or under a Dutch flag were grouped into one sub-sector.

Once the different sub-sectors were defined, the cost and sales structure of every sub-sector needed to be determined. The data on the cost and sales structure of the individual companies, gathered through an extensive field research, were then aggregated for every sub-sector. The refined Input-Output tables obtained by implementing the 'bottom-up' method, served as the basis for the computation of the total, direct and indirect economic significance of the Dutch maritime sector as a whole and its sub-sectors. In order to determine this direct and indirect economic impact, an appropriate method was developed, based upon modern Input-Output analysis: the *cumulated costs approach* (Peeters et al. 1994a, 1994b). This approach allowed the detailed analysis of the intra- and intersectoral relations between the Dutch shipping sector, its sub-sectors and the other sectors in the economy, as well as the correct assessment of the indirect socio-economic impacts of the sectors investigated. Much attention was devoted to avoiding to count parts of the economic impacts twice.

### **The results of the Economic Impact Study (EIS) for the Dutch shipping sector**

The Economic Impact Study showed a direct *gross* value added of the Dutch maritime sector of f 10 billion, for 1992 (the maritime sector consists of the following sectors: shipping, shipbuilding, dredging, shipping related industries, inland navigation, forwarding and maritime warehousing) (Peeters et al. 1994b). The direct value added equalled 2% of the GNP. This percentage increased to 2.7% when the indirect value added of the maritime sector was included (f 3.8 billion). The contribution to the GDP of the Dutch *shipping* sector is clearly declining. In 1987, the contribution amounted to 0.60% of GDP; in 1992 0.46% (including the direct and indirect economic impact of

the shipping sector on the Dutch shipbuilding sector). The present shipping policy could not prevent this downward evolution (see Figure 3).

The total value added of the Dutch shipping sector appeared to be largely generated by the sub-sectors grouping the shipowners whose fleet is largely flying the Dutch flag and managed from within the Netherlands. It was recommended to pursue a shipping policy covering the 100% of total value added, instead of only the 30% related to the operation of sea-going vessels. In 1994, the shipping sector represented 11,689 direct jobs (of which 5,970 Dutch seafarers and 3,052 foreign seafarers) and 8,079 indirect jobs. Taking into account the employment that is induced by orders of the Dutch shipping sector from the Dutch shipbuilding sector, total employment amounted to 22,781 jobs. However, total employment of the Dutch shipping sector has considerably fallen, as shown in Figure 3 (Peeters et al. 1994b).

	Gross VA (f mln.)	Net VA (f mln.)	Backflow (f mln.)	Employment (individuals)	% of GDP
1986	2636	1909	795	29354	0.66%
1987	2403	1698	757	27068	0.60%
1988	2589	1891	775	26077	0.63%
1989	2551	1888	763	23800	0.58%
1990	2437	1738	743	24143	0.52%
1991	2726	2007	867	23359	0.55%
1992	2355	1637	727	21053	0.46%
1993	2447	1733	765	21251	-

The total socio-economic impacts of the Dutch shipping sector imply the impacts generated through the:

1. operation of sea-going vessels
2. management of sea-going vessels
3. purchases from Dutch suppliers (indirect impacts)
4. orders of sea-going vessels from Dutch shipbuilding companies

The GDP is defined as the total value added of the Dutch economy (at market prices), minus VAT, taxes on investments and net indirect taxes on import.

**Figure 3 Total socio-economic impacts of the Dutch shipping sector**

The backflow to the government consists of the following components:

- employer social security contributions;
- employee social security contributions;
- employee income taxes;
- corporate taxes;
- other taxes such as environmental taxes, etc.

The direct and indirect backflow to the government generated by the Dutch shipping sector equalled f 695 million in 1994. The backflow to the government related to the exploitation of sea-going vessels flying the Dutch flag, amounted to f 218 million. Management activities ashore generated f 477 million of backflow to the government or f 596 million when all the impacts of the shipping sector on the Dutch shipbuilding sector are taken into account. This led to a total backflow of f 814 million. About 70% of this amount originated from management activities ashore.

## **THE RATIONALE FOR A (NEW) PUBLIC POLICY FOR THE DUTCH SHIPPING SECTOR**

In which respect does the shipping sector differ from other sectors to justify the development of specific policy measures for this sector? Five arguments can be given which altogether prove the specificity of the Dutch shipping sector (Peeters et al. 1994b):



1. the direct and indirect economic significance of the Dutch shipping sector is considerable (see EIS results and Figure 3) and sustainable. The preservation of these important socio-economic impacts only requires some simple policy measures, *and*;
2. the competitiveness of the Dutch shipping sector is seriously affected by the introduction of low cost registers such as open registers. The purpose of the introduction of open registers is, for most countries, not the development of maritime activities but rather the acquirement of foreign currency. Manning conditions, safety standards and fiscal policy are flexible. In most maritime nations (60% of the world gross tonnage), corporate taxes for shipping companies (and income taxes for seafarers) are not levied or can be reduced to a negligible level, *and*;
3. the use of sea-going vessels is footloose, *and*;
4. the operation of sea-going vessels is footloose. 'Flagging out' of ships is rather easy. Hence, a shipowner could, beyond government intervention, improve his competitive position by registration under a flag of convenience which allows to realize substantial savings in the costs of operation (inter alia in wages and taxes). Delocalisation of shipping and maritime activities would have considerable impacts on the Dutch economy.

Before starting to develop concrete policy answers and assessing the outcomes using different scenarios to strengthen the competitive position of the Dutch shipping sector, it is useful to identify the present shipping policies in other maritime nations. These policies differ considerably, as demonstrated by the examples below:

- the British policy tries to minimize public interventions in the operation of the shipping sector;
- the Netherlands pursue an active support policy with investment grants and personal tax allowances;
- Denmark has introduced a second register (DIS);
- Greece pursues a specific shipping policy (including, inter alia, a tonnage tax).

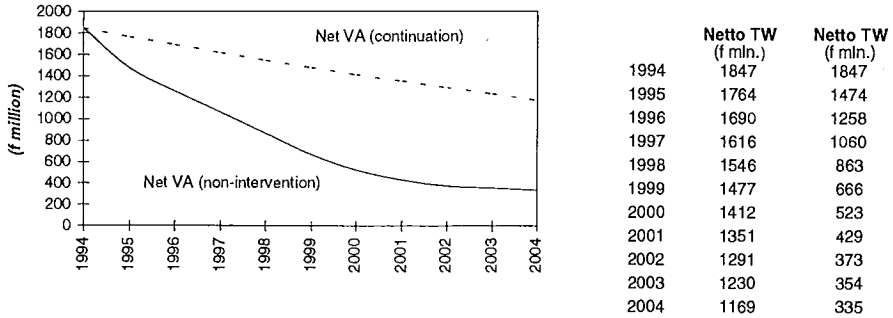
The different policy options do not necessarily reflect the same objectives. Subsequently, new objectives for a future public policy with respect to shipping should be set out first. After all, it is of little use to formulate public policy answers without setting out the goals this policy should lead to.

Once the objective of *sustainable value added* was identified, several public policy options were developed. In general terms, four main options were considered:

- a. *a non-intervention policy*: the public authorities try not to influence market competition which is ruled by supply and demand;
- b. *a sheltering policy*: public authorities try to shelter the national shipping sector from international market competition. This can be done through the reservation of freight, the regulation of transport to and from the country, subsidies...;
- c. *a level playing field policy*: public authorities support national shipping companies by reducing a number of competitive (cost) disadvantages in order to enable them to compete on the international market;
- d. *the creation of an international register*: public authorities relax fiscal, manning and other regulations for a part of the national fleet. The ships are still registered in the country, but are subject to a special legal regime in order to enable them to compete on the international market.

In this paper, the results of two different policy options calculated, with the EIS methodology, are described below. The first policy option is the absence of a public policy for the Dutch shipping sector (ie non-intervention policy), the second policy option the continuation of the present policy (ie ineffective attempt to achieve a level playing field). For each of the policy options, a drastic loss of value added, employment and backflow to the government is expected (see Figure 4). In Peeters et al. (1994b), a detailed description is given as regards the application of the 'bottom-up' approach—again through the combination of both accurate quantitative and qualitative information—to obtain a rational estimate of the socio-economic impacts of the various policy options.

5. at the national as well as at the supranational (EU-) level, the importance of an own, modern merchant fleet is emphasized for strategic, economic, environmental, safety and employment considerations. A competitive ship register is then required.



A non-intervention policy implies that a specific shipping policy is no longer pursued. The backflow to the government decreases to f 155 million in 2004; employment decreases to 3,676 individuals.

**Figure 4 Evolution of net value added (VA) in the case of a non-intervention policy and a continuation of the present shipping policy**

On the basis of the EIS results, the qualitative in-depth analysis of the Dutch shipping sector as well as the in-depth analysis of the effectiveness of the former and present shipping policy, a new integrated maritime policy, going beyond the boundaries of the shipping sector and the present flag oriented policy, was proposed by the authors of the paper (Peeters et al. 1994b). *First*, it was argued that the international context of the shipping sector should be taken into account fully. *Second*, attention should be given to both the Dutch flag and the management activities ashore. Here, the socio-economic clustering between the shipping sector and the rest of the Dutch maritime sector and economy, and the important share (70%) of management activities in total value added should be explicitly recognized. The proposed policy is directed toward shipping companies, already located or to be located in the Netherlands, precisely as a result of the new maritime policy. Here, the shipping companies should be defined in functional terms. Transport activities (by ship), management activities, charter activities for sea-going vessels or private pilotage and towing-services should be considered as activities of a 'shipping company'. A prerequisite for success for the new maritime policy is that direct government intervention is kept to a minimum. The government should create a framework which allows to develop maritime activities at competitive operating conditions. The new integrated maritime policy for the Dutch shipping sector can be visualized as an *Octagon for the new maritime policy for the Dutch shipping sector* (see Figure 5). The Octagon consists of the following corner stones (Peeters et al. 1994b):

- Fiscal policy (1)
- Manning (1)
- Shipbuilding (2)
- Quality/Safety/Environment (3)
- Financing (4)
- Training (4)
- Research (4)
- 'The Netherlands: Maritime Nation' (4)

Each of the corners is crucial to attain the policy objective of *sustainable value added*. If one (or more) of these corner stones is disregarded, the new maritime policy can be expected to become

considerably less successful. However, within the Octagon, priorities among policy measures within the Octagon were recognized (the highest priority is indicated with (1), down to (4)).

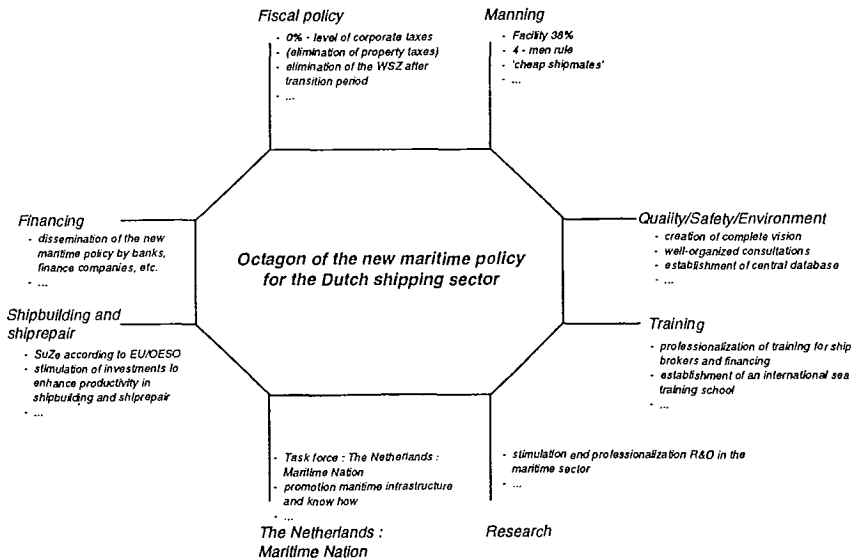


Figure 5 The most important policy measures within the 'Octagon'

The highest priority should be given to fiscal policy and manning. These two aspects largely determine the competitiveness of shipping companies and thus whether or not ships would be flagged out. In addition, the government should only intervene in fiscal policy and manning issues through substantive rather than marginal measures in order to maximize potential effects. As regards *fiscal policy*, it is proposed to introduce (Peeters et al. 1994b):

- a 0% level of corporate taxes for shipping companies (which are defined according to the above definition), *or*
- a combination of a lower level of corporate taxes (eg 15%) and free depreciation.

By introducing these policy measures (required budget: f 30 million per annum), the present investment stimulating scheme, namely the 'Wet Stimulerend Zeescheepvaart' (WSZ), would become redundant. The WSZ is, however, still important for a number of Dutch shipping companies as regards the financing of new vessels and the reduction of operating costs. Therefore, it is recommended to maintain an investment premium for a *transition period of two years*. The WSZ should then be restricted to the investment premium part. As a consequence, the fiscal facility initially included in the WSZ, would become redundant in view of the above policy measures.

It was already mentioned above that the manning costs should be reduced considerably in order to operate Dutch flagged-vessels, (with Dutch seafarers) at competitive levels. In this respect, the following policy measures are proposed (required budget: f 85 million per annum) (Peeters et al. 1994b):

- 'Facility 38%': an increase of the percentage of the 'table loan', according to the 'Wet belasting- en premiefaciliteit voor de zeevaart 1995', from 19% to 38%. This percentage was

- empirically determined. This policy measure would imply a complete exemption of income taxes (normally paid by the shipowner) for Dutch seafarers;
- b. '4-men rule': it should be allowed to use more foreign seafarers on Dutch flagged-ships if, on average, per ship 4 EU- (read Dutch) seafarers (cook and trainee(s) not included) are employed, and if it does not lead to forced dismissals. The captain should have the Dutch nationality;
  - c. the employment of foreign shipmates should always be allowed.

These manning-rules should only be applicable for Dutch flagged vessels.

*'The Netherlands: Maritime Nation'*

Considering the historical clustering between the Dutch shipping and shipbuilding sector, attention should be paid to the specific policy measures for the shipbuilding sector. On the basis of an in-depth analysis, it was concluded by the authors that no adaptations were required (Peeters et al. 1994b).

The present 'Subsidieregeling Zeescheepsnieuwbouw' (Subsidization Scheme for the Shipbuilding Sector, SuZe), should be maintained as long as subsidization schemes in other countries remain valid (required budget: f 40 million in 1994, then decreasing).

The efforts of the shipbuilding sector should be increased through the stimulation of investments aiming to enhance the productivity of the shipbuilding and ship repair sector (estimated budget: f 20 million per annum).

The insights gained by the authors into the economic significance and structure of the Dutch shipping sector (and its sub-sectors) should allow a better coordinated and integrated shipping policy. This coordination and integration should also take place in the field of environment protecting policy measures, resulting in an improvement of the environmental standards for the Dutch shipping sector. In this respect, the Dutch shipping policy requires some adjustments as regards the *quality, safety and environmental issues* of shipping. These issues should however not be isolated from the rest of shipping policy, as often occurs when safety and environmental protection are dealt with. If integrated in an overall policy analysis, environmental protection and safety should become a part of maritime policy so that specific policy measures would not be in conflict with measures dealing with other aspects of shipping transport. More realistic and efficient public policies and private strategies with respect to safety and environmental protection would then become possible (Peeters et al. 1994b). Therefore, the need for an optimal and well-organized information exchange as well as formal consultations between the involved parties, should be recognized. Only recently, has the need for such a 'complete vision' as regards the quality, safety and environmental aspects of shipping been recognized at the top-level of the Shipping Inspection. Proposed policy measures in this area include, *among others* (Peeters et al. 1994b):

- the development of legislation, from this 'complete vision';
- 'extra' quality, safety and environmental requirements, in addition to the international conventions such as IMO, ILO, etc, should always be justified;
- simplification, harmonization and co-ordination of the shipping inspections. In this respect, it was recommended to set up a central database.

For the policy measures integrated in the *Octagon for the new maritime policy for the Dutch shipping sector* to be successful, the new policy should be disseminated at the international level by various economic actors such as banks, finance companies, accountants, etc. These actors should promote the Netherlands as the maritime nation par excellence. Hence, it is recommended to establish a task force, called 'The Netherlands: Maritime Nation'.

The competitive position of a sector also depends upon the level of *know how and training*. In this respect, the Netherlands have important competitive advantages, given the large maritime infrastructure and know how available. Hence, it is a prerequisite to further strengthen this competitive advantage, in accordance with the international context the Dutch maritime and shipping sector is confronted with (Peeters et al. 1994b). Therefore, policy measures are required

such as *the establishment of an international sea training school, the professionalization of training for ship brokers and financing, etc.* (estimated budget:  $\pm f$  6 million per annum). Extensive research and development efforts, such as innovation in the quality, productivity, safety and environmental aspects of shipping, could result in important competitive advantages. Hence, within the *Octagon*, it is proposed to further *stimulate and professionalize R&D in the maritime sector* (estimated budget:  $\pm f$  22 million per annum). The development of *new concepts in shipping*, eg as regards logistics, should be an important topic of research.

Finally, '*The Netherlands: Maritime Nation*' is a collective term for all the efforts the Dutch government should devote to develop and to promote the Netherlands as the maritime nation par excellence. These efforts should fit within the framework of the *Octagon* (Peeters et al. 1994b): *the establishment of a task force, which is called 'The Netherlands: Maritime Nation' to promote the development of maritime activities, given the large facilities available in the Netherlands as regards maritime infrastructure (eg the port of Rotterdam) and know how, as well as the facilities resulting from the new maritime policy, the location of international shipping organizations such as BIMCO, stock ex-change notations of international shipping funds, the organization of maritime conferences and exhibitions, etc.*

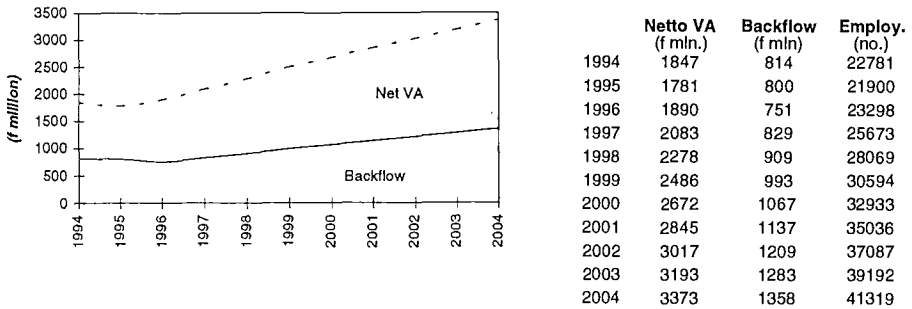
## THE ASSESSMENT OF THE SOCIO-ECONOMIC IMPACTS OF THE PROPOSED MARITIME POLICY

The development of a realistic public policy or corporate strategy without in-depth insights into the sector's situation is impossible. Moreover, it is important to assess *ex ante* the results of a certain policy orientation and of specific policy measures. In this respect, the EIS offers substantial advantages. The possible outcome of the different public policy options with regard to the shipping sector were assessed using the EIS methodology (supplemented with relevant qualitative information as regards the future strategies of the various shipping companies in the Netherlands) (Peeters et al. 1994b). The possible outcome of the policy recommendations presented in this paper were also evaluated on the basis of the EIS. For this purpose, different scenarios were constructed. The use of these scenarios allowed to assess the sensitivity of the results of the integrated set of policy measures to changes in the assumptions underlying the scenarios. Consequently, it was demonstrated that the EIS offers the policy makers an extremely effective tool for the development of realistic and "grounded" policy measures to strengthen the competitiveness of the Dutch maritime and shipping sector. The socio-economic impact assessment of the new integrated Dutch maritime policy on the basis of the EIS methodology, was combined with the qualitative information available from the in-depth policy analysis, and from a large number of interviews with important ship owners, maritime companies, banks, finance companies, tax consultants, etc regarding their strategic plans in the near future (Peeters et al. 1994b). The bottom-up method then allowed to calculate the sustainable socio-economic impacts of the proposed policy.

If the new maritime policy, as proposed in the *Octagon*, were fully implemented, the creation of net value added in the Dutch shipping sector would, on the basis of rather conservative assumptions, expected to increase with 83%: from  $f$  1.85 billion in 1994 to  $f$  3.4 billion in 2004 (see Figure 6) (Peeters et al. 1994b).

The creation of sustainable value added results in the creation of sustainable employment. It was estimated that the number of individuals directly and indirectly employed in the Dutch shipping sector will amount to 41,000 in 2004. As a comparison, in 1994 the number of individuals employed equalled 23,000. The backflow to the government would also be expected to rise: the net benefits for the government (ie backflow to the government minus required budget) will increase from  $f$  621 million in 1994 to  $f$  1.1 billion in 2004. When the economic impacts are related to the required budget, the new maritime policy would imply an improvement as compared to the present situation. In 1994, per 1 Dutch florin,  $f$ 9.6 net value added was created; in 2004 this ratio would be  $f$  14 of net value added per  $f$  1 budget required. In terms of employment, 171 direct and indirect jobs would be created per  $f$  1 million of budget in 2004, as compared to 118 jobs per  $f$  1 million in 1994 (it was, however, recommended to restrict the normative value of these ratios for

public policy because of their sensitivity to marginal changes in eg the overall allocated budget) (Peeters et al. 1994b).



The evolution of value added, backflow to the government and employment results from 3 components:

- The first component refers to the activities in the (near) future of shipowners already located in the Netherlands.
- The second component relates to the activities of foreign shipowners who manage ships from within the Netherlands.
- The third component relates to the activities of foreign shipowners, to be located in the Netherlands as a result of the new maritime policy.

**Figure 6** Socio-economic impacts of the new integrated maritime policy for the Dutch shipping sector

**CONCLUSIONS**

In this paper, a new integrated maritime policy for the Dutch shipping sector was proposed implying drastic changes (eg as regards the policy objectives to be pursued) as compared to the present subsidization policy. The main focus of this new policy is the development of an effective response to the further deterioration of the competitive power of both the Dutch flagged fleet and the Dutch maritime sector as a whole. It was demonstrated that the development of effective public policies and corporate strategies requires *both quantitative and qualitative information*. The quantitative information, provided by the EIS and the ‘bottom-up’ method, led to insights into the present and future total economic impact of the Dutch maritime and shipping sector. This quantitative information was supplemented with an in-depth qualitative analysis of both the Dutch maritime sector and the past and present shipping policy. Both the quantitative and qualitative information allowed the assessment of the outcome of the various policy options (including the proposed *Octagon*), in a rigorous way.

**REFERENCES**

Peeters, C., Debisschop, K., Vandendriessche, P. and Wijnolst N. (1994a) *Nederlandse Maritieme Sector: Economische Structuur en Betekenis (The Dutch Maritime Sector: Economic Structure and Significance)* Delft University Press, Delft.

Peeters, C., Debisschop, K., Vandendriessche, P. and Wijnolst N. (1994b) *De Toekomst van de Nederlandse Zeevaartsector: Economische Impact Studie (EIS) en Beleidsanalyse (The future of the Dutch Shipping Sector: Economic Impact Study (EIS) and Policy Analysis)* Delft University Press, Delft.