THE ECONOMIC IMPACT OF CARRIER LIABILITY ON INTERMODAL FREIGHT TRANSPORT

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1 BACKGROUND

Until quite recently freight transport carrier liability systems developed along unimodal lines, notably maritime (encapsulated in the Hague Convention of 1924, and amended by Visby in 1968), air (Warsaw Convention of 1929), road transport (CMR Convention of 1956) and railways (COTIF/CIM from 1980). This reflected the way freight was mainly moved – on a unimodal basis. More recently freight is increasingly seen as part of a transport supply chain which often involves intermodal transport. The recognition of this role of intermodal transport prompted the Multimodal Transport Convention, 1980. Whilst its recommendations were not adopted in its original form, it has been followed by the emergence of regimes such as the UNCTAD/ICC Rules from 1992 and the FIATA FBL model from 1996. Both of these are based on a network of the unimodal liability regimes. However, even these network liability regimes are plagued by uncertainty – in particular the actual liability depends on the ability to identify the mode and/or place within the transport supply chain where loss/damage occurred.

The Communication on Intermodality and International Freight Transport (COM(97) 243) declared that a lack of uniform carrier liability arrangement is an impediment for further development of freight intermodalism in the European Union. A group of learned experts, sponsored by the European Commission (1999), recommended a non-mandatory uniform liability arrangement as a means to overcome the lack of uniform liability impediment. The experts' proposal was discussed at an EC organised meeting in January 1999, when it was proposed that as a sensible step towards the underlying economics of the situation should be quantified.

Following the introductory section this paper turns to outlining the stakeholders of the freight transport supply chain, the different carrier liability regimes and their relationships. This is followed by details of a pan European survey on stakeholder characteristics concerning cargo values, loss and damage levels, use of insurance and knowledge and experience of carrier liability in section 3. Section 4 details the friction costs of carrier

liability and an accounting framework to quantify estimates of the friction cost of carrier liability. The final section gives estimates of friction costs of carrier liability of various journeys and the potential reduction in cost following harmonisation of conditions to facilitate intermodal transport.

2 FREIGHT TRANSPORT SUPPLY CHAIN

2.1 Alternative Arrangements of Moving Freight

Freight forwarders play a prominent role in organising freight movement. Often they are referred to in legal jargon as 'the principal' and provide the shipper with a single contract; in this case they are also referred to as an intermodal transport operator (ITO) and provide the shipper with one contract perhaps covering the use of more than one mode. Some freight forwarders act as agent, i.e. effectively providing an out-sourcing service to the shipper to choose the best combination of modes to move the freight – for a multi-leg journey the shipper would end up with a series of contracts.

Where a shipper decides on the mode(s) used, the key issue is whether it will be a uni-modal or intermodal journey. While the carrier liability terms and conditions of say the road mode are different from those of the rail mode, uncertainty of the liability is only applicable in the case of intermodal transport. In the case where an intermodal transport operator is used the shipper will benefit from having to deal with only one counter party, i.e. the intermodal transport operator, should something go wrong. However, intermodal transport operators by and large employ a liability regime, such as FIATA FBL, which is based on the network principle and hence the limit of liability is not pre-determined – it will vary depending on where, and whether, the source of damage or loss is identified. Where the shipper employs several unimodal carriers to form an intermodal transport chain, it is his responsibility to deal with the carriers in order to ascertain who is responsible for the loss/damage.

Some shippers rely entirely on the carrier's liability to cover any loss/damage. Others insure the cargoes moved with "all risk" cargo insurance. Cargo insurance allows the shippers to insure the value of the goods above the base level(s) provided by the carrier(s) and, because the insurer is responsible for pursuing claims, to reduce their administrative burden in the event of a claim.

2.2 Stakeholders and Liability Regimes

From the possible arrangements of moving goods, the stakeholders of the transport supply chain can be summarised as:

- The shipper (as sender and receiver of the goods);
- The freight forwarder;
- The carrier(s); and
- The insurer (for both carrier liability and cargo insurance). Intermediaries such as brokers are included under this heading.

In addition with intermodal journeys there are the terminal operators and even infrastructure operators, e.g. Railtrack for railways in the UK. Figure 1 illustrates the stakeholders of an intermodal transport supply chain.

In the EU transport liability regimes that exist at a national level are governed by the individual national case law, rules and regulations. However the principles of carrier liability for cross-border freight have evolved over the years and are governed by a series of international conventions. These international conventions are enshrined in national laws.

In the EU countries the following forms the carrier liability of the main unimodal modes:

- Warsaw Convention for air transport;
- Hague Visby for maritime transport;
- COTIF/CIM for railway transport; and
- CMR for road transport.

Inland waterway, although relatively important in the EU, was not governed by an international carrier liability regime until the CMNI convention of 1999 was introduced. The UNECE (2000 April) provides a comprehensive summary of the different carrier liability regimes.

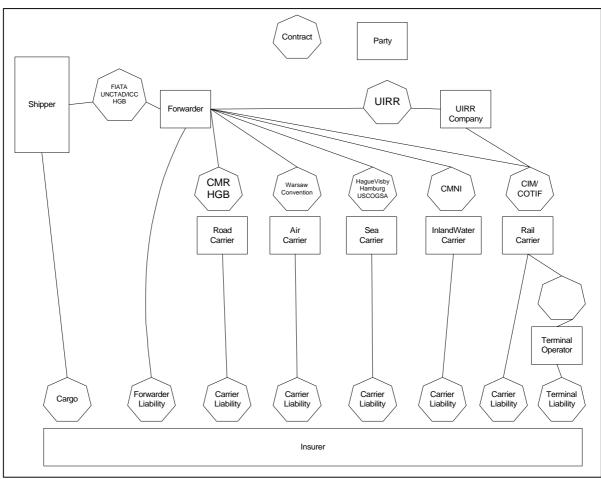


Figure 1: The interrelationships between stakeholders and liability contracts

There are two extreme liability regimes that might be used with multimodal freight transport:

- The *network (or chameleon) liability system* whereby the existing mandatory rules governing unimodal carriage will apply when 'loss, damage or delay' occurs on that particular mode; and
- The *uniform liability system* whereby the same rules apply throughout the duration of the contract whichever mode is used.

In practice under a network system the carrier still has considerable flexibility in establishing new rules and exemptions – for those stages where no mandatory rules exist (warehousing, inland water for instance) and for non-localised damage (when the leg of the transport where damage occurred cannot be determined). Consequently because of these modifications reference is made to *a modified network system*.

Attempts to develop a compromise between the two extremes led first to model rules drafted by the International Chamber of Commerce (ICC) in the 1970s, followed by the 1980 UN Multimodal Convention which aimed for a uniform liability system. The Convention still remains inoperative. In 1992 the UNCTAD with the ICC (International Chamber of Commerce) set up rules, which integrate the unimodal liability regimes into a network of rules, for governing the liability of moving goods by intermodal means. These UNCTAD/ICC rules are embodied in the FIATA FBL model by the International Association of Freight Forwarding Associations. The FIATA FBL or the national variances, eg BIFA in the UK, are widely adopted by freight forwarders. The BIMCO (Baltic and International Maritime Council) Multidoc 95, which is also based on a network structure, is guite widely used in the Scandinavian region, although the level of usage is believed to be way below that of the FIATA FBL (UNECE, 2000 September). Another important liability regime related to intermodal transport in Europe is that adopted by the UIRR companies. The UIRR conditions are closely related to the CIM conditions. Table 1 summarises the key liability terms of freight forwarders and multimodal transport operators.

| | FIATA Model Rules | UNCTAD /ICC Rules | |
|---|---|--|--|
| DATE | 1996 | 1992 | |
| PERIOD OF APPLICATION: | From taking the goods in charge until delivery | From taking the goods in charge until delivery | |
| CONTRACT OF CARRIAGE | Bill of Lading Transport Document | MT document evidences MT Contract | |
| BASIS OF LIABILITY | Presumed liability for loss and damage | Presumed liability for loss, damage and delay (if declaration of interest of timely delivery has been accepted by MTO) | |
| DELAY IN DELIVERY | In no event be liable for loss following from delay unless expressly agreed in writing, | In no event liable for loss following from delay unless expressly agreed in writing. | |
| LIABILITY FOR INDIRECT OR CONSEQUENTIAL LOSS (see below) | In no event liable for indirect or consequential loss such as, but not limited to, loss of profit and loss of market. | Consequential loss or damage other than loss of or damage to the goods | |
| LIMITATIONS OF LIABILITY | Not exceeding 2 SDR/kg gross weight of the goods unless a | 2 SDR/kg or 666.67 SDR/package 8.33 SDR/kg if no | |

| | larger amount is recovered from a person for whom the Freight Forwarder is responsible. Delay: not exceeding the remuneration relating to the service giving rise to the delay. | carriage by sea/water Delay, consequential loss 1 x amount of freight Limit of unimodal Convention if loss/damage localised |
|---|--|---|
| EXTENSION OF THE RESPONSIBILITY - HIGHER LIMITS OF LIABILITY | Not addressed | By agreement fixed in the MTO document |
| NOTICE OF CLAIM | Non apparent loss or damage - 6 consecutive days after handing over | Non apparent loss or damage - 6 consecutive days after handing over 9 months after (supposed) delivery or after 90 days (treatment of the goods as lost) |
| OTHER PROVISIONS | No insurance will be effected except upon express instructions given in writing. | MTO has to add clauses on:- routing, freight and charges, liens, both-to- blame collision, general average, jurisdiction, arbitration and applicable law |

Consequential loss may include costs of waiting time, cost of replacement transport, stoppage or delay in production, non-use or delayed use of the goods transported, and even loss of reputation or market share.

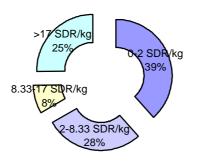
Table 1: Carrier liability regimes for freight forwarders and multimodal transport operators

Within this list perhaps the major difference between unimodal regimes is in Limitations of Liability. However even the UNCTAD/ICC rules retain a difference between maritime and other modes.

3 LOSS AND DAMAGE AND CARRIER LIABILITY

To appreciate the economic implications of freight transport carrier liability it's important to understand shippers' experience of the level of loss and damage and the associated insurance cost. The information for this analysis is not readily available outside insurance companies, and to fill this information gap surveys of shippers, forwarders, carriers and insurers were carried out in 2000, yielding over 100 responses from a variety of countries in the EU.

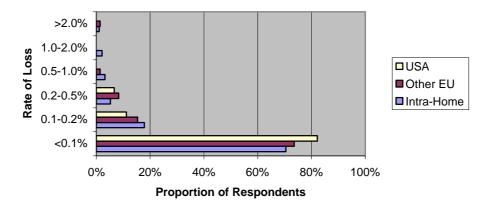
Figure 2 gives the distribution of cargo values of the shippers who responded to the study survey. This shows that a very high proportion, ie one quarter of respondents, report shipments with a value of over 17 SDR/kg (about 23 Euro/kg), while 67 per cent report a value within the carrier liability limits of the CMR Convention (carrier liability applicable to cross-border road mode) of 8.33 SDR/kg (about 11 Euro/kg).



Cargo Value as % Responses

Figure 2: Cargo value

Figure 3 shows the loss and damage characteristics of responding shippers. Most respondents (82 per cent for movements to the USA, 74 per cent for movements to other EU countries and 71 per cent for interhome movements) as highlighted in figure 3 indicated rates of losses of below 0.1 per cent of cargo value or consignments. This also includes some cases where no losses are reported for the year surveyed. Another finding from the survey showed that in the comparison of rates of loss and damage for different carrier types, the rate of loss of own transport and road carriers is slightly higher, particularly for intra-home-country movements.



Loss as a Proportion of Cargo Value

Figure 3: Level of loss and damage

As far as litigation concerning claims was concerned, a very high proportion of respondents (93 per cent for USA, 91 per cent for other EU countries and 91 per cent for intra-home countries) indicated levels of less than 1 per cent of claims. The low level of litigation could be due to the use of cargo insurance by shippers to mitigate risk of loss and damage. Typically the cargo insurer will deal with claims against carriers if appropriate.

A large proportion of respondents indicated that they take cargo insurance cover for all their cargo. This level is highest for movements to the USA, 81 per cent of those responding taking cover for 91 to 100 per cent of their freight. This figure is 64 per cent for both intra-home-country movements and those to other EU countries. The results indicate that as shipments are sent further afield from the home territory, the likelihood of shippers taking cargo insurance becomes higher. According to an authoritative USA study, USA shippers also have a higher propensity to buy cargo insurance for international shipments. It would appear that distance creates uncertainty and the use of cargo insurance is a means to mitigate the risk. Another major reason is the low liability limit provided by the Hague Visby and USCOGSA rules used by maritime carriers -2 SDR/kg (about 2.7 Euro/kg).

Shippers taking out cargo insurance are not simply drawn from a selected group of high cargo value shippers. Indeed the survey results indicate that the lower value cargo shippers are just as, if not more, likely than the highest cargo value shippers to buy cargo insurance. The highest proportion of respondents pays premium rates of less than 0.1 per cent of their cargo value. This level is 57 per cent of the respondents for intrahome, movements, 53 per cent for movements to other EU countries and 56 per cent for movements to the USA.

4 FRICTION COST CHARACTERISTICS

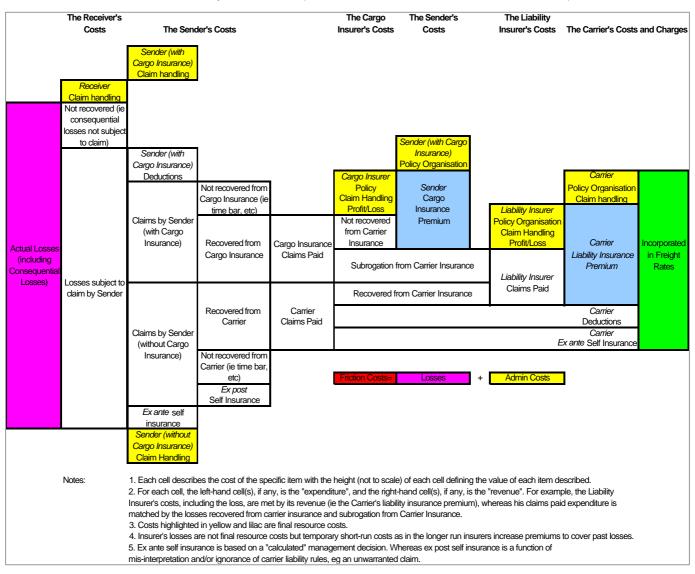
The total resource, or friction cost, of cargo and carrier liability can be exemplified in an accounting framework as shown in figure 4. This shows the complex inter-relationships of the key stakeholders' costs that derive from the underlying risk of loss and its associated insurance.

At the left hand side are the actual losses (loss, damage, delay and other consequential losses) incurred by a set of shippers and receivers during a period of time. Additional friction costs are incurred by these parties pursuing claims in the form of administrative costs. Claims against insurers (under liability or cargo insurance) are less than total losses due to self insurance. Shippers effectively self insure in two ways; *ex ante* as a result of calculated management decision related to uncovered losses under the terms of the policy (if any). And *ex post* due to misinterpretation and/or ignorance of carrier liability rules that emerge after a claim has been made. The comparison of columns 4 and 5 also demonstrates that claims paid will fall short of claims when it is revealed that some claims are not covered by the insurance policy. Others will fail due to an inability to provide sufficient evidence within the set time scale.

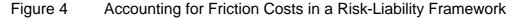
Although many insurers provide both carrier liability and cargo insurance they are differentiated in the diagram to demonstrate their different roles and the inter-relationship by way of subrogation of claims paid from the carrier liability insurer to the cargo insurer. The carrier elements combine both carriers' and forwarders' friction costs as most freight forwarders are effectively performing the carrier function. This keeps the diagram more transparent by excluding the sub-contracting chain (which may be even more complex with the introduction of terminal operators).

The Cargo Insurer's column shows that claims paid by a cargo insurer are paid partly by the cargo insurer and partly by the carriers' insurance via subrogation. The level of cargo insurers' premiums is the sum of claims paid and the administrative costs of policy and claim handling. The shipper also incurs administrative costs concerned with policy arrangement (as well as that related to claim handling).

The last three columns are concerned with carriers' insurance and show that the carriers' insurance premium is the sum of claims paid (directly or via subrogation) and the liability insurers' administrative costs (policy organisation, claim handling and an element of profit/loss). Finally, it is possible to say that the set of costs that need to be recovered in the carriers' freight charges is the sum of three elements - the insurance



premium, the administrative costs of insurance and those claims paid that are not covered by insurance (ex ante self insurance and deductions).



The estimate of the total friction costs emanating from risk in this system can be made in two ways. First, it can be seen that the total costs to the shipper are -

- The cargo insurance premium,
- The carrier liability costs incorporated in freight rates,
- The shipper's (sender and receiver) administration costs plus
- The shipper's self insurance costs.

Alternatively, the friction costs can be seen as equivalent to

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- The actual losses *plus*
- The administration costs of all the stakeholders the shipper (sender & receiver), carrier and insurers – in response to the risk of these losses

The latter is probably more helpful as it demonstrates the cost shares of the different stakeholders in the supply chain, and is the approach adopted in the following discussion. Either way these friction costs that are incurred by the shipper also represent the friction cost to the ultimate stakeholder, the consumer.

5 ESTIMATING TOTAL FRICTION COSTS

The loss rate (including damage, delay and consequential losses) is a key driver in the determination of friction costs. It should be noted that the full costs of these may be underestimated in the survey. The only losses that are included in the figures that follow are those that were considered worthy of a claim. Costs stemming from a delay (or at least those stemming from a small delay) often do not fall within the terms of an insurance agreement. The values derived from shippers summarised earlier do not allow a precise estimate of the loss rate as responses were in the form of ranges (over 70% replied in the range *'less than 0.1%*). Further consideration of some of the higher figure and discussions with insurers lead to an assumption of an average figure in the range 0.05% to 0.07%.

5.1 Shippers

Friction costs are directly (i.e. not through freight charges) incurred by shippers in the form of any premiums for cargo insurance, uncovered losses (either ex ante or ex post) and administrative costs. The survey indicates a high use of cargo insurance irrespective even where the value of goods is low. Supplementary analysis indicates cargo insurance coverage of the order of 75% for both intra-national and inter-EU freight and 80% for North Atlantic freight. Actual premium rates vary with the risk of cargo being moved. Analysis of figures in terms of typical journeys suggests an average rate of 0.06% for National movements with a rather higher figure of 0.09% for Intra-Europe. In the case of North Atlantic movements the figure is estimated as similar to National movements.

Interviews with shippers suggest that they, except for some large businesses, are poorly informed about their administration costs of organising cargo insurance policy (sender and receiver) and claims handling. Nor are they usually aware of the self-insurance costs incurred be they *ex ante* or *ex post*. This is not surprising as the rate of loss/damage is very small in relation to overall transport costs and hence many shippers include these administration tasks and costs as part of other activities.

The administrative costs of shippers with cargo insurance appear to be of the order of 15% of the cargo insurance premium paid. Much of these costs relate to claims handling with policy organisation forming a very small element. No comparable figures are directly available for shippers without cargo insurance. However estimates derived from insurers operating characteristics suggest that the comparative figures for these shippers without cargo insurance would be about 10-percentage point higher than that for shippers with cargo insurance.

5.2 Forwarders

Friction costs are incurred by forwarders in the form of premiums for carrier liability insurance, uncovered losses (either *ex ante* or *ex post*) and administrative costs. A small survey of UK, German and French forwarders based on over 6 million consignments revealed wide differences in experiences. This is perhaps not surprising considering the forwarders differed in their mix of national and extra-national work, the use of different modes and the proportion of LCL (less than container load) traffic. The range of answers found is shown in the table 2.

| | Range |
|--|-------------|
| Claims for 'loss, damage or | |
| delay' | 0.05 - 0.15 |
| (% of consignments) | 40.00 |
| | 10 - 60 |
| For Loss (%) | 35 - 85 |
| Damage (%) | 5 |
| Delay (%) | 500 4500 |
| | 500 - 4500 |
| Average claim (Euro) | 150 050 |
| Madian waight (kg) | 150 - 650 |
| Median weight (kg) | 04 20 |
| Claims gaing to litigation (0()) | 0.4 – 3.0 |
| Claims going to litigation (%) | <1 – 10 |
| Cargo incurance arranged $(%)$ | <1 - 10 |
| Cargo insurance arranged (%) | 30 - 75 |
| Estimated cargo pat incured by | 50 - 75 |
| Estimated cargo not insured by owner (%) | |
| | |

 Table 2: Range of statistics found in forwarder survey

All interviewed forwarders purchase liability insurance. If the forwarder acts as a carrier then additional premiums are charged. Premium rates of 0.3-0.4% of turnover were reported and are not out of line with insurers' typical figure of 0.4%. However, one forwarder – with a good claims record and relatively high deduction level - reported paying as low as 0.1% of turnover.

Like shippers most forwarders claimed to have little difficulty, and therefore incurred minimal cost, to organise the liability insurance. Some forwarders de-centralise claims handling and so were unable to establish precisely the administration costs related to claims handling. Others gave the administration costs as between 20% to 60% of premium paid; the high figure relates to the very low premium case above. Figures of between 30 and 34% are adopted in the following calculations for the different journeys.

5.3 Carriers

Friction costs are incurred by carriers in the form of premiums for carrier liability insurance, uncovered losses (either *ex ante* or *ex post*) and administrative costs. Interviews were carried out with road, maritime, inland waterway, rail and intermodal operators. The survey information indicates most carriers, except (ex-) state-owned ones, purchase liability insurance. Premium rates vary by mode, origin-destination and claims record. The premium rates paid range from a low of 0.01% to over 1.0% of freight charges for a maritime container and road carrier respectively. However, figures of 0.05% for air, 0.1% for rail, 0.2-0.5% for road (depending on intra- and inter- national), 0.3% for inland water and 0.4% for UIRR carriers are more typical. For land based operations a figure between 0.25 and 0.3% is adopted; a substantially lower figure of 0.1% is chosen for the maritime container movement (which only contributes partly to the Extra-Europe journey).

Not surprisingly carriers are less forthcoming with figures for administrative costs because some do not know and some are unwilling to elaborate on grounds of company confidentiality. However from the available statistics provided by the more helpful carriers, the administration costs are 18-25% of the premium paid. On claims paid that are borne by carriers (rather than insurers) available figures indicate a range of 25-32% of premium paid.

5.4 Insurers

Friction costs are incurred by insurers in the form of administrative costs associated with arranging insurance and handling claims. Other intermediaries in these processes – brokers and underwriters – are

included in this generic heading. Insurers play two key roles in the supply chain. On the one hand they offer cargo insurance to shippers in order to mitigate the latter's risk and administration costs. On the other they insure carriers to mitigate the latter's liability. In the context of this study insurers need to be differentiated into cargo insurers and liability insurers because they are associated with different supply-chain stakeholders; shipper and carrier respectively.

Three vital pieces of information from insurers are required to complete the friction cost picture. First, the proportion of cargo insurance premium received that is used for paying claims to the shipper. This is of course dependent on the operating costs – sales, underwriting, claims handling, profit, etc – of cargo insurers. Second, the equivalent figure for carrier insurers. And third, the proportion of the claims paid to a shipper by his cargo insurer that is subrogated from the carriers' liability insurer.

It appears that both cargo and liability insurers have very similar cost profiles. A substantial proportion of the operating costs relates to brokerage and profit. Although there are many mutual liability insurers (e.g. the P&I clubs) cargo insurance is mainly provided by shareholder insurance companies. One insurer, who provides both cargo and liability insurance, also indicated that liability insurance is generally more competitive and hence less profitable. In broad terms the operating costs of cargo and carrier insurers are respectively about 40% and 30% of premiums received.

Insurance companies are exceedingly reluctant to reveal the subrogation rates from carrier insurance to cargo insurance. The level of subrogation is strongly influenced by two facts. First, some insurers providing both liability and cargo insurance do not pursue claims against themselves. And second, the administrative costs for recourse for small claims are proportionally too high to be worthwhile. A well-organised shipper with cargo insurance mentioned a rate of just over 10%. One source in Germany and an authoritative US document (US DOT, 1998) reporting on Europe suggest a rate of about 20-30%. A figure of 20% is chosen for the calculations.

5.5 Total Friction Costs

In order to illustrate the share of friction costs in the total transport costs of moving a consignment three markets are referred to:

- National;
- Intra-Europe (i.e. including Eastern Europe); and
- Extra-Europe (within this market a transfer between Europe and North America).

The figures in these examples refer to an average for all modes. National and Intra-Europe movements include road, rail and inland waterway movements. National refers to journeys to longer than average journeys and those concerned with trunking rather than local distribution.

Table 3 shows the basic assumptions made about the average journey by a consignment in these three markets. The value of the consignment (which influences the cargo insurance premium and the value of losses) is the product of the value density of the goods and the consignment size. The value of an Intra-Europe consignment is estimated at nearly double that of a National at 24,780 Euro. Not surprisingly the Extra-Europe journey, which includes 2 land-based journeys, 2 transfers, the highest freight charges. The other vital assumptions are the length of journey and the freight rate which together define the total freight charge (which determines the level of carrier liability premiums). The individual figures are based on evidence from various sources including *EU Transport in Figures*, 1999.

| Type of journeys | | | |
|---|----------|--------|------------|
| Input | Intra- | Intra- | Extra- |
| | National | Europe | Europe |
| Cargo value (euro/kg) | 1.38 | 1.77 | 1.78 |
| Consignment size (tonnes) | 10 | 14 | 12 |
| Journey length (km) | 150 | 800 | 500+5500 |
| Freight charge (€) | 180 | 800 | 600+1000 |
| Loss rate (% cargo value) | 0.05 | 0.07 | 0.05, 0.05 |
| Cargo insurance premium rate (% cargo | | | |
| value) | 0.06 | 0.09 | 0.06, 0.06 |
| Cargo insurance administration, sales, | 40 | 42 | 42 |
| profit costs (% premium) | | | |
| Cargo insurance claims paid subrogated | 20 | 20 | 20 |
| from liability insurance (% claims paid) | | | |
| Carrier liability insurance premium rate (% | | | |
| freight charge) | 0.25 | 0.3 | 0.25, 0.10 |
| Forwarder liability insurance premium rate | 0.4 | 0.4 | 0.4 |
| (% freight charge) | | | |
| Liability insurance adminstration, sales, | 30 | 32 | 32 |
| profit costs (% premium) | 00 | 02 | 02 |
| Carrier and forwarder administration costs | 30 | 30 | 30 |
| (% premium) | 00 | 00 | |
| Carrier and forwarder deductions (% | 20 | 20 | 20 |
| premium) | 20 | 20 | 20 |
| Shipper with cargo insurance (% | 75 | 75 | 80 |
| shippers) | 15 | 15 | 15 |
| Shipper with cargo insurance | | | |

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| administration costs (% premium) | | | | |
|---|----|----|----|--|
| Shipper without cargo insurance | 25 | 25 | 25 | |
| administration costs (% premium) | | | | |
| Shipper using forwarder (% shippers) | 75 | 90 | 90 | |
| Table 3 Assumptions Used for Three Journeys | | | | |

Combining these ratios and basic journey/consignment characteristics using the logic described in Figure 4 leads to the derivation of the individual stakeholders' friction costs for the typical journeys – intranational, intra-Europe and extra-Europe in Figure 5.

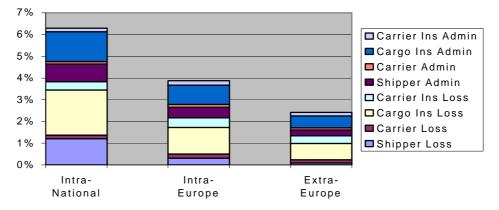


Figure 5 Friction Costs of Risk as a Percentage of Transport Costs

Just over 6% of the freight charges for the National journey can be attributed to the friction costs of risk and the insurance arrangements surrounding it. This figure falls to under 4% for the Intra-Europe and about 2.5% for the Extra-Europe journey. The difference can be almost entirely explained by the lower ratio of transport costs compared to the value of the consignment (which affects losses). The largest proportion of these losses is borne by the cargo insurer. The share of administrative costs in these totals is between 40 and 45%. Administrative costs of the insurers are somewhat over 50% of the total.

The contribution of risk and liability arrangements to the price of the goods in the consignments is less than 0.2%. This is not the share in the price to the final consumer. The value of the consignment refers to (in part) intermediate products and excludes any retailer margins. Thus the final figure can be expected to be considerably lower.

5.6 Potential Impact of Harmonisation of Carrier Liability Regimes

One study (European Commission, 1999) suggests "...it is clear that substantial costs associated with claims handling and litigation could be avoided by both cargo interests and operators (or their liability insurers), if

the legal-liability framework were simpler and less fragmented." Another source (Diana Faber, 1996) suggests "The best way forward would be to abolish all the individual Conventions and introduce one which would govern all transport contracts, by whatever means of transport and whether unimodal or multimodal. This may mean legal expenditure in the short term, while precedents are established for the construction of such a Convention, but in the long term it would save costs."

These and others are looking for contracts that:

- 1. provide 'strict and full' insurance for the cargo throughout its journey (regardless of its value) thus possibly removing the need for cargo insurance; and
- 2. greater harmonisation across modes on issues such as notice of loss, time bar, exemption from liability, liability for delay thus removing at least some of the uncertainty inherent in the current system.

It is difficult to see how introduction of a 'strict and full' liability regime, e.g. "Invoice+10%" proposed by the Intermodal Transport and Carrier Liability Study, will significantly reduce the actual loss and damage incurred in moving freight. With greater simplicity and clarity, and full liability, shippers could do away with cargo insurance and hence there may be reduced administrative costs. However in contracts based on Hague-Visby the liability exclusion conditions are so extensive that cargo insurance could still be judged desirable.

Assuming a regime which persuades more shippers not to take cargo insurance, the relevant question is what business processes are eliminated thus leading to lower friction costs? It would appear that the main gains would be the avoidance of brokerage cost and some duplications of insurance administration. However evidence of loss still has to be provided and claims against the carriers still have to be pursued - by the shippers instead of by the cargo insurer. In this new situation the cost of pursuing claims could rise as shippers are less experienced than cargo insurers in handling claims. Also shippers might attempt to pursue more claims (in terms of cases) than cargo insurers (who pursue a low proportion) and, curiously from a friction cost perspective, this means that total administrative costs would actually increase. If cargo insurance is taken out to avoid the 'hassle' of claims, then cargo insurers could still perform this function or new intermediaries might emerge to assist shippers.

Strict and full liability on balance might therefore lead to some reduction in the administrative friction costs, though the potential for reduction may not be as large as some proponents suggest. Another means for reducing friction costs is greater harmonisation of conditions among the international conventions resulting in common legal positions across the EU. Selected EU countries, such as Austria and German, have recently introduced harmonised carrier liability regime for intra-national transport irrespective of modes, except sea transport.

Harmonisation of conditions would remove uncertainty associated with network regimes. This would help to reduce claim costs. Whether the take-up of cargo insurance increases or decreases would depend on the limit of liability adopted and the exclusion conditions. As pointed out earlier the use of cargo insurance can lead to an overall reduction in friction costs as claims may not be pursued with such diligence under a cargo insurance regime.

Interviews with shippers, forwarders, carriers and insurers suggest that the savings from removing these three types of uncertainty, and hence eliminating time and cost consuming resolution of claims (with possible litigation), would not amount to more than 20% of administrative costs. Most of the benefit would accrue in the first instance to forwarders and insurers, the two parties mainly concerned with the pursuit of claims. As far as intermodal transport in the EU is concerned, therefore, this saving amounts to not more than 50M Euro per annum (based on a maximum total friction cost of 600M Euro).

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