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## **Acronyms**

### **D**

DG TREN – Directorate General Transport and Energy

### **E**

EACI – Executive Agency for Competitiveness and Innovation

EBRD – European Bank for Reconstruction and Development

EIB – European Investment Bank

EU – European Union

### **I**

IMF – International Monetary Fund

### **L**

LGTT – Loan Guarantee Instruments for Trans-European Transport Projects

### **O**

OECD – Organisation for Economic Cooperation and Development

### **P**

PPI – Private Participation in Infrastructure

### **T**

TEN – Trans-European transport and energy networks

### **W**

WFG – Waterborne freight grants

WWII – World War II

# **“Practices, trends and fiscal implications of publicly financing transport services and infrastructure”**

## **INTRODUCTION**

### **Objectives**

Good infrastructure makes the movement of goods, services and people more efficient. To sustain such a competitive transport system, substantial investments are required that are based on a selection of priority criteria. To identify priorities, a discussion of financial sources and shared responsibility between the public and private sector appears to be essential. There are a few characteristics of transport financing:

- transport infrastructure competes with other forms of public expenditures;
- investment capacity of companies increases with the income generated by public projects;
- the accumulated experience of public-private partnerships<sup>1</sup> within the EU shows effective forms of risk sharing and assembly of financial tools<sup>2</sup>;

The objective of this consolidation study is to provide an overview of the existing financial tools for transport infrastructure and services within the European Union, including DG TREN programmes, TEN-T support in cooperation with the European Investment Bank, EBRD’s financing of transport projects and EU Structural&Cohesion funds<sup>3</sup>. The study looks at public and private involvement in such projects. It consists of analysis of recent trends and practices as well as any fiscal implications, and a short case study of the Japanese business practice.

### **Target stakeholders**

- Policy makers for analysing investment strategies;
- Policy and Financial analysts;
- Transport operators for evaluating their possibilities to be involved in infrastructure projects;
- Transportation professional organisations for doing research;
- Consultancies

### **Glossary terms**

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<sup>1</sup> Partnerships are distinguished from contractual relationships in World Bank’s documents. Partnerships entail clear overall objectives without much details. The main costs include: dealing with conflicts, endless discussion and exploitation.

<sup>2</sup> “Mid-term review of the White Paper on European Transport Policy”, Conference, Dec. 2005, Brussels

<sup>3</sup> For the purposes of this study, other programmes are only mentioned without much details

The *rational allocation of resources* is an important component of the distribution process of public funds. To acquire it, infrastructure projects are usually expected to meet economic and environmental criteria of viability<sup>4</sup>. Public funds are allocated through grants or financial aids for a specific project. Often two or more agents contribute to the same project for different objectives. Sometimes decision-makers have to match multiple objectives to ensure a rational allocation. In order to find a solution to this difficulty, the public authorities usually search for project selection criteria that will optimise only the public policy objective functions.

As part of this process is the European experience of involving private companies in long-term public transport projects. *Public-private partnership* within the EU is a way for mutual benefits in the transport sector. Private participation contributes to the effective use of resources. Similarly, public guarantees on private initiatives improve the capacity of companies to attract long-term capital investments. It supports long-term economically advantageous infrastructure projects that could not be done purely by the commercial companies. Also it improves the capacity to develop new financing structures and technological initiatives.

The literature on public-private partnerships develops frameworks of how to involve the private sector in the *provision of public goods*<sup>5</sup>. In practice, the private investments play a significant role for providing public goods. The diagram below illustrates the EU Investment Process in transport projects as clearly the public grants (financial assistance) together with the capital market's instruments provide the needed financial capital.

## **TERMS:**

Rational allocation of resources

Provision of public goods

Public-private partnership

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<sup>4</sup> McGuire, M., H. Garn "Problems in the Cooperative Allocation of Public Expenditures", *The Quarterly Journal of Economics*, Vol.83, No1, 1969, The MIT Press

<sup>5</sup> Besley T., M. Ghatak "Government versus Private Ownership of Public Goods", *The Quarterly Journal of Economics*, Vol. 116, No 4, 2001, The MIT Press

## Approach

The EU investment process in transport projects relies on two main streams of capital flows – public programmes and private investment – combined together they set up the basis for public-private partnerships. The diagram summarises this process:

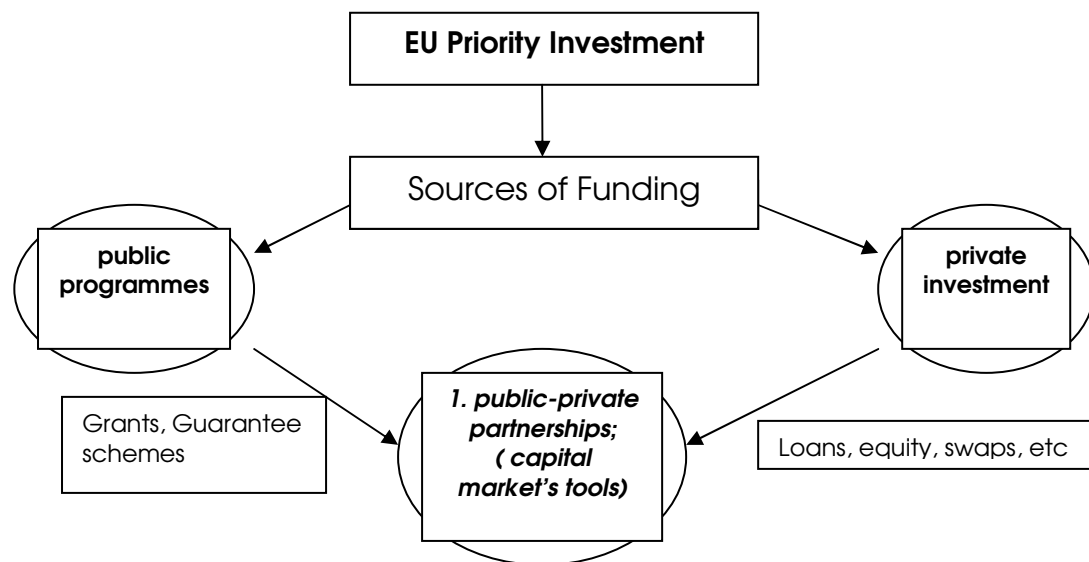


Fig.1: Transport Projects Finance

If it is looked in detail, each of the streams consists of a variety of financial tools, for instance, all EU public programmes allocate resources for projects under different schemes:

- A. grants awarded without a basic act following a call for proposals;
- B. grants awarded without a call for proposals;
- C. grants awarded by virtue of basic act for the specific programmes in the fields of - Marco Polo, TENs, Competitiveness and Innovation, Galileo and certain actions under the Seventh Framework Programme<sup>6</sup>.

These EU public investments cover all project scopes:

- mega projects (ports, roads, airports);
- small and medium-sized projects (renovation of existing facilities);
- research and development;
- projects related to transport (communications, logistics).

<sup>6</sup> EU, Commission Decision COM (2008), 2014

In addition, private investments come mainly through different channels of the capital market to provide the necessary finance. These are:

- loan schemes, risk facility funds, treasury products, and others;
- off-budget sources (fees and charges);
- various investment and infrastructure funds, pension funds.

Following this approach, the study reviews firstly the existing financial tools in terms of:

- 1) main characteristics of the programme – public or private
- 2) current trends – budgets, costs of completion, etc.
- 3) fiscal implications

Then it concludes the need for increasing the level of available funding from all sources in result of the gap between investment expectations and allocated resources. Finally, it recommends collective actions from the public and private sector to deal with the continuing constraints in the governmental expenditures.

## **Financing Transport Services**

*Available funding from DG TREN programmes for transport services is €450 million from 2007 till 2013<sup>7</sup>. In 2007 the total EU contribution was nearly €50 million to all Marco Polo projects including all member-states while in 2006 was only €19 million. On average there will be approximately €65 million per year for the next 6 years. DG TREN has progressively pursued different types of partnerships with the private sector as a means of gaining access to additional resources, as well as to capitalise on the private sector's efficiency and ability to innovate.*

### **DG TREN Schemes**

This section intends to present recent trends in DG TREN programmes for supporting transport services in terms of available funding. “Marco Polo” scheme is a major financial support for the maritime sector. “Motorways of the Sea” and “Traffic avoidance” have been covered by the Marco Polo scheme under the management of the Executive Agency for Competitiveness and Innovation (EACI). Also national governments support the transport sector via local schemes. These combined financial tools demonstrate the EU commitment to sustain its transport services competitive.

DG TREN programmes vary in terms of financial significance and actions supported. In result of recent changes, Marco Polo programme has been extended until 2013 covering specific activities such as modal shift, traffic avoidance, common learning, catalyst actions and motorways of the sea. It grants financial assistance for improving

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<sup>7</sup> [http://ec.europa.eu/transport/marcopolo/home/home\\_en.htm](http://ec.europa.eu/transport/marcopolo/home/home_en.htm)



the environmental performance of the freight transport system. Actions funded under this scheme have to be international in geographic scope – these include aid for actions within a few EU member-states. It rewards projects demonstrating a real environmental benefit. The total aid granted for a project does not exceed 50% of eligible costs<sup>8</sup>. The programme budget is €450 million until 2013. The budget for 2008 is €57,422,000<sup>9</sup> while in 2007 about €50 million were invested in differing actions:

Table1: Total EU contribution, 2007

Modal shift actions	€31,960,427
Catalyst actions	€7,826,249
Common learning actions	€2,083,095
Motorways of the Sea	€6,800,000
Traffic avoidance	-
<b>Total</b>	<b>€48,669,771</b>

Source: [http://ec.europa.eu/transport/marcopolo/projects/projects\\_en.htm](http://ec.europa.eu/transport/marcopolo/projects/projects_en.htm)

“Motorways of the Sea” is innovative in terms of logistics, technology, methods, equipment, products, infrastructure or services. This action aims at encouraging very large volume, high frequency intermodal services for freight transport by short sea shipping, including combined freight-passenger services as appropriate, or a combination of short sea shipping with other modes of transport. Its budget for 2008 is €20 million. The financial assistance is maximum of 35% of the total expenditure necessary to achieve the objectives of the action<sup>10</sup>. In 2007 only one proposal achieved funding: Ro-Ro services from Belgium via France to Spain. The grant was nearly €7 million.

In addition to the DG TREN contribution, there are also national programmes to finance transport services in Europe. The Swiss transport policy is based on distinct objectives for modal shift and shows clearly the power of policy tools. Protection against negative effects due to heavy traffic includes measures such as transfer of transalpine freight transport from road to rail and denial of road capacity. There is an explicit modal shift target in the traffic transfer act; namely, to reduce the number of heavy goods vehicles crossing the Alps by road to a maximum of 650,000 per year until 2009. Subsidies are in the range of CHF 350 million per year (about €220 million)<sup>11</sup>.

German authorities are committed to delivering high quality services. In Germany the financial state aid for terminal construction has stimulated the implementation of new intermodal services. Subsidies can be up to 85% of the investment including land acquisition, necessary infrastructure, buildings, equipments and costs of planning<sup>12</sup>.

<sup>8</sup> Regulation (EC) No 1692/2006 of the European Parliament and of the Council

<sup>9</sup> EU, Commission Decision COM (2008), 2014 Concerning the 2008 work programme for grants and contracts in the fields of transport and energy

<sup>10</sup> Regulation (EC) No 1692/2006 of the European Parliament and of the Council

<sup>11</sup> Federal Office of Transport, Switzerland, “Swiss Transport Policy: Shift from road to rail”

<http://www.greens-efa.org/cms/default/dokbin/187/187280.pdf>

<sup>12</sup> <http://www.bmvbs.de>

In the UK, the Department for Transport allocates waterborne freight grants (WFG), which assists companies with the operating costs of running water transportation instead of road. The funding in 2007 was £20 million to support freight transport<sup>13</sup>.

In result, both the national authority and the EU administration provide public funding for the transport services in Europe. However the finance is limited to few millions annually and usually the application procedures are complex. “Marco Polo” case study demonstrates some of the difficulties that companies may experience in the process of establishing a start-up business with financial assistance from the EU.

## **MARCO POLO CASE STUDY**

### **INTRODUCTION**

Private company’s position is that Marco Polo subsidies are not sufficient to provoke a significant transport modal shift.

Marco Polo limits the subsidy for a project to the minimum of one of the three following values:

- 1/ 1 € per 500 Kilo Ton shifted
- 2/ 35% of the eligible costs (operating)
- 3/ the loss of the project during the first five years

Normally a project that is a start-up will fall under the first value. The grants are based on the calculation of 1€ per 500 Tons/Kilometre shifted.

If we consider 850 km of road avoided with a load unit of 15 tons this becomes 12,750 tons/kilometre of road traffic avoided that results in 25,5€. We consider the rate for such sea leg could be around the 800 to 900€, it means a mere 3% saving assuming all other conditions are met.

If we compare this level of subsidies with other initiatives like the Italian “*ecobonus*” that covers from 15 to 30% of the sea rates we clearly see Marco Polo grants are not the key to support the launching of new services.

Another problem was related with the obligation to return the grants if the targets submitted in the funding request were not reached. This was a double penalty to the operator whose project wasn’t successful.

We did believe that the grant was helping successful services to improve slightly their results in the first years but actually it did not.

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<sup>13</sup> <http://www.dft.gov.uk/pgr/freight/waterfreight>

## REAL EXPERIENCES

CASE 1: In 2003, an alliance of two shipping companies planned a Short Sea services from the North of France to a northern Iberian port. The Marco Polo subsidy was granted for €2 million subject to achieving the cargo targets for the first three years. The forecasted losses for the first year were close to €6 million. The subsidy process was abandoned and the project was discarded.

CASE 2: In 2006 a project was submitted to the Marco Polo program, in this case, the link was to be established between the Iberian peninsula and south of England. In this project the ship was a ROPAX ship aiming to capture accompanied cargo and targeting passenger and their cars to improve the profitability of the new service while spreading the risks on two differentiated markets.

The subsidy was for €2 million, the forecasted losses for the three start-up years were €9 million.

The project was launched in May and ran for 9 months, the decision was taken to withdraw the service as the results were not in line with the expectations, basically the gross margin fell €3 million short and operational margin was – €8.2 million vs the - €3.3 million forecasted for the first year. Again, the losses in the first year were 4 times bigger than the expected subsidy, so when the subsidy was confirmed it did not change at all the decision to cancel the project.

These two cases show the Marco Polo program was not the main driver to launch, nor a reason to continue a short sea project. An interesting research could be to identify how many new services, of a significant size, were actually launched after a Marco Polo subsidy was granted and how often it just came to support an already existing initiative.

In this context, it is recognisable that any additional public involvement in stimulating the short-sea services around the European coast will be a burden to the DG TREN budget, especially in time of government constrained environment due to the financial crisis. But it has to be mentioned that the existing public provision seems to be insufficient to encourage private companies to dedicate additional resources and start-up a new business service. It is more likely to find a solution to this problem if the public and private sectors act collectively and increase the investments via further development of public-private partnerships.

## Financing Transport Infrastructure

*Available funding from traditional sources falls short of the investment needs of the EU transport sector. The necessary investments in TEN infrastructure are expected to reach €300 billion by 2013 and a significant financial gap in public resources is anticipated to appear. Under these conditions, one way is to mobilise private investment in infrastructure projects or investigate mechanisms for generating more resources from off-budget sources.*

The main traditional sources of funding for transport infrastructure include allocations from national and EU budgets, domestic and foreign loans, and official development assistance such as structural and cohesion funds. In recent years, governments find it very difficult to meet these funding needs and try to diversify the sources of finance. The public-private partnerships have played an important role in this process as well as capital markets' financial instruments.

The present section intends to provide an overview of recent trends in the financing of EU transport infrastructure and the innovative financial arrangements that have emerged. For instance, TEN-T programme in cooperation with the European Investment Bank's financial instruments, EBRD's financing and co-financing, and the EU Structural&Cohesion funds for transport infrastructure. All these existing public and private capital for funding infrastructure illustrate the variety of financial tools that can be applied for maintaining competitive transport system. From this perspective, the analysis might be of interest to:

- Policy makers, Investment funds, Infrastructure funds, Policy and financial analysts, Consultancies and Transportation professional organisations.

Table 2.1 summarises the EU funds and investment needs in the area. The World Bank estimates that investment of about 7% of GDP annually was required for transport infrastructure in developing countries. In developed countries, the investment was less, about 4% of GDP per year<sup>14</sup>. In general, there is a significant shortfall in infrastructure investment in many countries.

Table 2.1: Available public funds and investment needs

EU programme	year	budget (€)	costs of completion (€)
TEN-T	2008	nearly 1 billion	-
TEN-T	2007 - 2013 2007 - 2020	-	300 billion 600 billion <sup>15</sup>
<u>Structural funds</u> (not only for transport needs)	2007 – 2013	277 billion	-
<u>Cohesion funds</u> (not only for transport needs)	2007 - 2013	70 billion	-

Source: EU documents

<sup>14</sup> Fay M., T. Yepes, "Investing in infrastructure: what is needed from 2000 to 2010?", World Bank Policy Research Working Paper 3102, Washington DC, 2003

<sup>15</sup> EC Delegation, "The Trans-European Transport Network: new guidelines and financial rules", Conference, Warsaw 2003

Table 2.2: Available resources from financial institutions and private investors

bank	year	budget (€)	costs of completion (€)
EIB ( already provided)	2003-2007	45 billion of loans	-
EIB	2008-onwards	1 billion loan guarantee scheme	-
EBRD (already provided)	1992-2004	3.5 billion	11.2 billion
Private investors	2008-onwards	expecting 130 billion <sup>16</sup>	

Source: [www.eib.org](http://www.eib.org) and [www.ebrd.com](http://www.ebrd.com)

## I. TEN-T programme

The Trans-European Transport Network promotes the economic, social and territorial cohesion of the Union. It grants aid for transport infrastructure of European significance in the rate of 30%. The scheme funded 270 international ports, 210 inland ports, traffic management systems, navigation and user information system, 330 airports, roads and rail tracks since it started operating. Its financial viability is based in part on revenues, tolls or other user-charges. It facilitates greater participation of the private sector, especially for investments where there is a high level of revenue risk in the early operational period.

By 2020 the total costs of completion of TEN-T projects<sup>17</sup> amount to €600 billion. €220 billion were for priority projects, of which €80 billion went for the most technically and financially mature proposals by 2006. The new financial instruments of the EIB add €1 billion of capital contribution to the existing budget for TENs<sup>18</sup>. The budget for 2008 is €810, 852, 600 for TEN-Transport and approximately €35 million for loan guarantees.

However, the evaluation of these projects says that the main problem of TENs is the mismatch between TEN-T objectives and the financial means available from the EU. The insufficient funds make the completion of these projects very difficult<sup>19</sup>.

To improve the financial viability of TEN-T projects, the European Commission and the EIB launched new instruments to finance European transport network that cover the risk. Several guarantee schemes and venture capital are also able to leverage a substantial quantity of resources without too much risk for the public sector in result of the sharing it among different parties. Debt financing (loans, bonds, securitisation) has become an important source of finances for transport projects.

<sup>16</sup> OECD, "Infrastructure to 2030: Mapping policy for electricity, water and transport", Volume II, 2007 Paris

<sup>17</sup> For the purposes of this study, we exclude TEN-E projects which may be classified as transport projects but are funded as energy infrastructure (for ex. pipeline infrastructure)

<sup>18</sup> Information on: [http://ec.europa.eu/ten/index\\_en.html](http://ec.europa.eu/ten/index_en.html) and <http://www.eib.org>

<sup>19</sup> EC Delegation, "The Trans-European Transport Network: new guidelines and financial rules", Conference, Warsaw 2003

The new loan guarantee instrument (LGTT) aims to facilitate investment in TEN-T projects by improving the ability of borrower to service debt during the initial period when there are no traffic revenues. Under the LGTT the EIB will accept exposure to higher financial risks than under its normal lending. The risk capital is jointly provided by EIB and the European Commission in favour of commercial banks which will provide the stand-by liquidity facility in addition to the usual project finances. This liquidity facility can be drawn by the project company in case of unexpected reduction of income during the “ramp-up”<sup>20</sup> period of operation. If at the end of the availability period there are still amounts outstanding under the liquidity facility (interest, etc.), the LGTT guarantee can be called upon by the providers of this facility, the EIB would pay out them and then become subordinated creditor to the project. Once EIB is creditor to the project, the debt will be repaid on a cash sweep basis or on a fixed reimbursement payments<sup>21</sup>.

The LGTT scheme is in addition to the other two financial instruments tailored for TEN-T projects. The Risk Capital Facility offers risk capital to investment funds that provide equity for TENs, while availability payment schemes can benefit from a construction cost based grant during the operational, post-construction phase of the project.

In 2007, the EIB lent €41.4 billion to the 27 members of the EU, of which 20% were allocated to transport projects. It raised €55 billion on the capital markets for its financing activities via 236 bond issues denominated in 23 different currencies. The table below demonstrates the amount of individual loans allocated to the 27 members for transport purposes only.

Table 3: Individual loans provided within the EU from 2003 to 2007 (€ million)

<b>country</b>	<b>transport projects of common interest</b>
Belgium	255
Bulgaria	1 160
Czech Republic	1 310
Denmark	576
Germany	1 882
Estonia	-
Ireland	999
Greece	2 152
Spain	13 750
France	3 500
Italy	5 085
Cyprus	-
Latvia	-
Lithuania	64
Luxembourg	382
Hungary	1 277

<sup>20</sup> “ramp-up” – cover the period from the completion of the project until the 5th anniversary

<sup>21</sup> MEMO/08/12, Brussels 11th, January 2008

Malta	-
Netherlands	360
Austria	1 318
Poland	3 025
Portugal	1 766
Romania	1 200
Slovenia	694
Slovakia	175
Finland	608
Sweden	726
United Kingdom	2 222
EFTA	551
<b>Total</b>	<b>45 037</b>

Source: EIB, Annual report 2007

The European Investment Bank is a significant source of financial capital for transport projects within the EU and partner countries. In comparison with Asia, the Asian Development Bank and Japan Bank for International Cooperation have developed different loan schemes for transport infrastructure whereas the China Development Bank is a large source of bond financing.

## II. European Bank for Reconstruction and Development (EBRD)'s transport projects

EBRD finances infrastructure projects in economies of Central and Eastern Europe, south-eastern Europe and the Commonwealth of Independent States. The EBRD is the largest lender for urban transport projects, where the municipal governments are mainly the sponsor of these projects financed by the Bank. Globally, the private investments in infrastructure development grew dramatically in the 90s.

By the end of 2004 the EBRD has undertaken 108 projects with an average financing of €33 million each year. Port projects represented 3% of all those projects and shipping&water transport – 7%. Port investments were €97.2 million, while investments in shipping and shipbuilding were €259.1 million until 2004. 54 of the projects included an element of cofinancing – EBRD contributed €1.7 billion while cofinancers contributed a further €3.7 billion (EIB, EU, IMF, etc)<sup>22</sup>.

However, projects differ widely in the extent of private sector participation as well as in the form of such private involvement, which ranges from participation with no private risk-taking to full privatisation, in which the private investor assumes all commercial risks. For some projects there are sovereign guarantees for the loan that the municipality takes, which involves the presence of additional public actors. The evaluation of project performance indicates that private participation without commercial risk tends to increase the completion probability of a project. Also

<sup>22</sup> EBRD, Transport Operations Policy 2005-2008, [www.ebrd.com](http://www.ebrd.com)

sovereign guarantees reduce delays but decrease financial discipline<sup>23</sup>. Summing up, the EBRD experience illustrates that the presence of private parties is beneficial because they transfer know-how. Therefore, the focus should be on the public-private partnerships.

The EBRD commitments to transport sector was €617.9million in 2007, which is 17% more than in 2006. The bank provided its first loans for a project to modernise infrastructure at the Port of Durres (Albania) in co-financing with the EIB and the EU; and the Port of Illichivsk in Ukraine. It also invested in the Port of Ploče's bulk terminal in Croatia and in Russia's Rosmorport to help them operate on a more commercial basis. In the shipping sector, financing was provided to upgrade the fleet of Ukraine. As governments' capacity to finance large transport projects decreases, the EBRD encourages greater involvement of private parties in Bulgaria, Romania, central Europe, Russia and Western Balkans. The EBRD provides a wide range of financial products for use in public-private transactions – loans, equity, guarantees and treasury products (for ex., interest rate swaps).

Data from the Private Participation in Infrastructure (PPI) database of the World Bank shows that, in Asia the private sector made investments in 362 transport projects until 2005 at the value of more than €40 billion, as roads and ports drew most of the investments<sup>24</sup>.

### **III. EU Structural and Cohesion Funds**

The other source of governmental support within the EU are the structural and cohesion funds. They provide development assistance and focus on:

- cross-border cooperation
- transnational cooperation
- interregional cooperation

The Structural Funds were created to help those regions within the EU whose development is lagging behind.

The Structural Funds aim to:

- develop infrastructure, such as transport and energy;
- aid regions affected by industrial decline;
- support the development of rural areas;
- extend telecommunication services;
- provide training for workers;
- combat long-term unemployment;
- disseminate the tools and know-how of the information society;
- promote research and development;

The EU Structural Funds consist of four individual programmes as the one that supports the maritime development and public transport projects is European Regional

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<sup>23</sup> Dobrescu G., Friebel G., Grosjean P., K. Robeck "The determinants of performance in building infrastructure in transition economies", EBRD paper No106, March 2008

<sup>24</sup> <http://ppi.worldbank.org>



Development Fund. In the UK, the funding mainly goes to projects relating to ports development and maritime business networks. In Ireland, ERDF supports road development, public transport and quality bus corridors. The aid covers up to 40-50% of the expenses on a project. The new budget is €277 billion until 2013.

The Cohesion Fund was established in 1993 to complement the Structural Funds. It was intended to help the EU's poorer countries prepare for economic and monetary union. At that time, the four Member States whose GNP per capita was less than 90% of the EU average - Greece, Ireland, Portugal, and Spain - originally qualified for the fund. Today, the Cohesion Fund covers projects in all new Member States: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Romania, Slovakia, and Slovenia.

The Cohesion Fund assists individual projects in the fields of environment and transport infrastructure e.g., roads, ports, airports, water supply, and waste water treatment projects. For instance, Ireland was qualified for these funds from 1993-2003. The main projects included the upgrading of main rail corridors including the cross-border route to Belfast, an extension of the DART service in the Dublin area, and the re-development of Heuston Station in Dublin.

Irish seaports projects from the 90s included the Cork Passenger Ferry, dredging at Waterford Port, and Roll On/Roll Off Berths at Dublin Port.

The new period runs from 2007 to 2013 with €70 billion budget. Most EU funding is not paid directly by the European Commission but via the national and regional authorities of the Member States<sup>25</sup>.

Similar development funding goes to neighbour countries of the EU via EuropeAid, the office of EU external aid programmes that ensures the development assistance goes worldwide. The office manages the aid instruments financed by the Community budget and the European Development Funds. EuropeAid is engaged in supporting infrastructure policies, investment and services in developing countries<sup>26</sup>.

All these funds are often used in cooperation with financing from EIB or EBRD. In the face of continuing government budget constraints, it is expected that private participation in the transport sector will be sustainable. The public-private partnerships as well as debt financing have offered new innovations in infrastructure financing. And while the actual amount of future investment needs may still be debated, there is a great need to increase the availability of funding from all possible sources. Greater reliance on off-budget sources requires an use of financial tools for borrowing from the market and also equity participation by the private sector. This instrument is unlikely to be used in the new market circumstances, but it will be utilised at a lower growth rate in the future. The EU fiscal stimulus packages will contribute to the rise of infrastructure investments.

Stanford's Collaboratory for Research on Global Projects estimated that more than 72 new infrastructure funds had been introduced since 2006 and that more than €120

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<sup>25</sup> Grants of the European Union – Introduction to EU funding

<sup>26</sup> [http://ec.europa.eu/europeaid/index\\_en.htm](http://ec.europa.eu/europeaid/index_en.htm)

billion (\$160 billion) had been raised for infrastructure investments globally for the last two years<sup>27</sup>. The huge pools of private sector capital managed by pension funds and insurance companies, are of considerable potential interest to such investments. Alone in the OECD area, pension funds amount to €13.5 trillion (\$18 trillion). They might provide a large amount of private investment in the transport sector as a long-term and low-risk initiative.

## CONCLUSIONS

Current funding levels fall short of the future investment expectations, and without larger government budget allocations, the existing public provision alone may not be sufficient to meet the demand.

To effectively engage the private sector and have a stable infrastructure development in the EU, the policymakers have developed an appropriate legal and regulatory framework, a suitable risk-sharing mechanism, transparent processes and provision of incentives.

The challenge now is establishing an improved framework in order to diversify the traditional sources of financing. This includes:

- Better use of off-budget sources (user fees and charges);
- Promote low-risk financial innovations (loan guarantee schemes, risk facility funds, and others);
- Secure long-term private investment in infrastructure.

To deal with all these new issues of recent time, the policymakers will have to consider a wide array of measures on a policy and regulatory level. Therefore the management of infrastructure projects is crucial at this juncture.

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<sup>27</sup> [http://crgp.stanford.edu/news/global\\_projects\\_the\\_rise\\_of\\_infrastructure\\_funds.html](http://crgp.stanford.edu/news/global_projects_the_rise_of_infrastructure_funds.html)

## **CASE STUDY: JAPANESE BUSINESS PRACTISE**

*In Japan transport infrastructure has been developed primarily via user payments. Even for services that operate under the budgetary system, the user pay principle is still valid to a certain degree. However, in recent years this principle has been debated in terms of limitations, in particular, how well it reflects the characteristics of externality. If external effects are taken into consideration, this means that then costs of transport infrastructure should be shared by all beneficiaries in a wider sense. In this respect, it is also necessary to increase the public financing when it is justifiable.*

Historically the changes in the size of public investments in infrastructure have been varying in response to the changes in economic planning. There had been changes in the contents of public expenses too. The economic plans before the 1960s show that resources were distributed to maximise the economic growth via concentration of infrastructure investment<sup>28</sup>. The economic plans from late 1960s were aiming to improve the regional disparity and deteriorating living standards. Japanese economists explain this with the fact that the WWII did not cause many damages and the ratio of public spending from GDP varied between 0.02 and 0.14 in the period of 1885-1945 (from Meiji era). In fact, the real GDP was high after the war because of already existed infrastructure<sup>29</sup>.

The objective of this case is to give a perspective of the Japanese practice to finance maritime infrastructure as the focus is on the private investments. The existing business practices will be explored as the public funding will be also discussed when it is entangled with the private financial sources. The case study looks at Japan's big steelmakers and their investments in transportation. It aims to provide policy-makers, policy and financial analysts, consultancies and professional organisations with structured information about the topic.

Recently, coastal services account for about 40% of the domestic cargo transportation, transporting nearly 80% of important industrial materials (steel, cement, petroleum, etc.) to support the Japanese economic growth<sup>30</sup>. Shipping along Japanese coastal line is a 1.5 trillion yen industry (about £6.5 billions)<sup>31</sup>. What makes the shipping prosperous is the long-established business practice in Japan that manufacturers transport their products all the way to the doors of their customers. The transportation costs are calculated in the products' prices, therefore, to minimise production costs manufacturers combine coastal shipping with trucking.

There were 3,700 small companies that competed for a piece of the coastal traffic. To protect small businesses, entry is restricted; shipping fees are regulated and the balance between supply and demand is observed. These usually maintain the coastal fees at a high level. A number of joint management companies have been established to coordinate the management of coastal vessels. Operator – shipowner distinction has

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<sup>28</sup> New Long-Term Economic Plan (1958-62) reinforced public investments in modernisation of transportation capacity

<sup>29</sup> Japan Bank for International Cooperation, Fujimoto K., "Infrastructure for development in the 21st century, JBIC Review No3

<sup>30</sup> Ministry of Land, Infrastructure and Transport, Annual report 2007, Japan

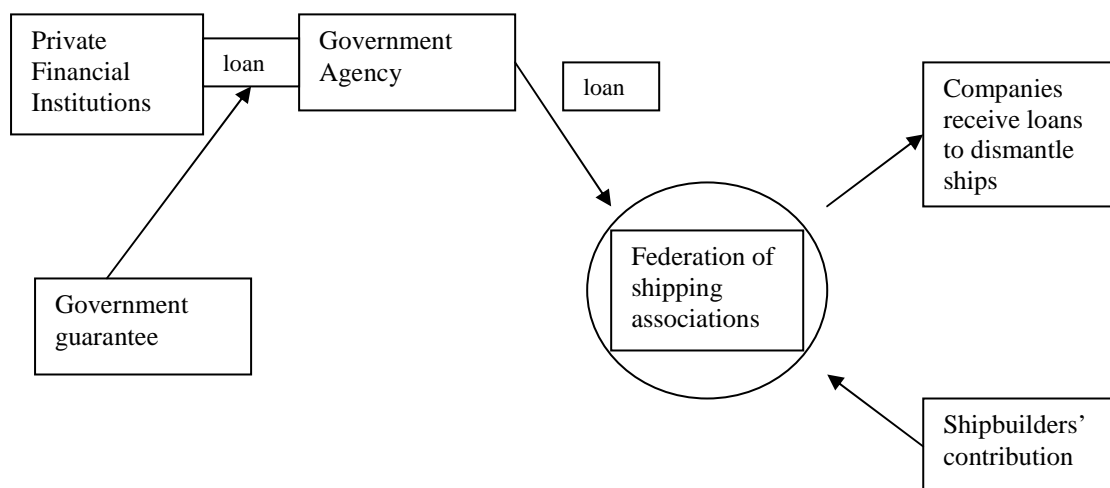
<sup>31</sup> Diamond, "Realignment of the Coastal Shipping Industry", March 2002 Japan

been eliminated since 2002. This forced many operators to either shut down or merge with their competitors to reduce costs. In 2006, the coastal entities reached the number 3,183 as 99.6% of them were medium or small-sized enterprises<sup>32</sup>.

Japanese corporations play an essential role in financing the coastal services. Nippon Steel Corp invests billions of yen per year in improving and strengthening its distribution infrastructure – some of them via its daughter company Nippon Steel Engineering Co. Transportation and storage steel products did cost the company 87.5 billion yen in 2007. Delivering steel products from its mills to domestic users costs JFE Holdings, Inc.<sup>33</sup> up to 100 billion yen annually. The big business invests in coastal infrastructure and vessels as there are provided guarantees from the national government too.

The financial schemes with governmental support usually involve private and public bodies – for instance, private financial institutions, Japanese national agencies, Japan federation of shipping associations, and companies. The shipbuilders such as Nippon Steel, Sumitomo Corp, JFE Holdings, Mitsui Engineering and Shipbuilding Co, etc. play a vital role in this process as they contribute to the repayment of the loans, no matter that they do not receive subsidies directly. In 2005, the Coastal Shipping Business Law was partially revised in order to strengthen the organisational control within shipping operators in terms of obligations for safety control procedures. Many small and medium-sized operators applied for these subsidies in 2006 and 2007. The total subsidies granted by the government were 122.7 billion yen, while 52.1 billion yen was contributed to the national government by the owners of 668 vessels<sup>34</sup>.

**Fig. 2 Outline of a national financial scheme**



<sup>32</sup> Ministry of Land, Infrastructure and Transport, Annual report 2006, Japan

<sup>33</sup> JFE Holdings, Inc. is a merger of NKK Corp and Kawasaki Steel Corp

<sup>34</sup> Ministry of Land, Infrastructure, Transport and Tourism 2007

There is limited public funding for maritime infrastructure in Japan. Apart from the government guarantees on loans, another form is the Special Account. This is created as part of the general government budget restricted to a special purpose.

The representative special accounts in Japan are the Special Account for Airport Improvement, the Special Account for Road Improvement and Special Account for Port Improvement. Their budgets are based on the revenue payments by the users of this infrastructure, except in the case of Port Improvement account where the main source of revenues are the receipts from the general budget. Because of this, Japanese economists argue that the principle of funding ports development is not transparent in terms of sharing costs<sup>35</sup>.

The private investment supports the development of maritime infrastructure and vessels significantly. In detail, Nippon Steel Corporation has a total of 86 berths for domestic shipping at its steelworks – Yawata, Hirohata, Muroran, Oita, Kimitsui, Nagoya, Hikari, Sakai, Kamaishi and Tokyo, including six “all-weather” berths. Three more were being under construction. Almost all of the steelworks in Japan are located on the coast, and hence, the coastal shipping plays an important role in transporting steel products to major stocking points where shipments are transferred to trucks for delivery to users. The steel industry transports 61% of their products by ship and rail; and 39% by truck for delivery distance of 500km and over<sup>36</sup>. Nippon Steel Corp uses shipping and railway services for the transportation of 95.6% of their steel products:

**Table 4: Nippon Steel Products Shipment** (million tonnes)

	1 <sup>st</sup> quarter	1 <sup>st</sup> half	3 <sup>rd</sup> quarter	4 <sup>th</sup> quarter	2 <sup>nd</sup> half	<b>TOTAL</b>
2006	7.59	15.42	7.96	8.13	16.09	<b>31.51</b>
2007	7.89	16.04	8.23	8.63	16.86	<b>32.90</b>
2008	8.08	Approx 16.50	-	-	-	

Source: Nippon Steel Corporation; Consolidated Operating Performance, Financial Results for the First Quarter of 2008FY, July 2008, [www.nsc.co.jp](http://www.nsc.co.jp)

The Corporation utilises the services of its own vessels. In addition, Nippon Steel and China Steel Corp of Taiwan started combined transport in 2007 using vessels owned by Nippon Steel Shipping Co., Ltd. Their agreement is for a cooperation of vessel facility utilisation<sup>37</sup>.

Nippon Steel had invested about 30 billion yen in improving their domestic logistics infrastructure in the 1990s; having included 6.5 billion yen for four all-weather berths, 13.8 billion yen for four automated warehouses. The same tendency toward vertical integration continues even when it invests abroad. USIMINAS in Brazil, an equity-method-applicable company of Nippon Steel announced their investment plans of \$14.1 billion up to 2012 in capacity expansion. This includes an acquisition of 850 thousand

<sup>35</sup> Japan Bank for International Cooperation, Hiroataka Yamauchi “Characteristics and cost sharing of transport infrastructure”, *JBIC Review* No 3, 2008

<sup>36</sup> Ministry of Land, Infrastructure, Transport and Tourism

<sup>37</sup> Nippon Steel Corp, Annual Report 2007

square meters in Baia de Sepetiba, a port area in the Rio De Janeiro State for constructing a shipping terminal<sup>38</sup>.

The other steel producer, JFE Steel Corp (JFE Holdings) ships and rails 67% of its products<sup>39</sup>. Its steel factories are located on the coast at Chiba Bay/Tokyo Bay, Mizushima Port, Chita Bay, Keihin (Tokyo Bay) and Fukuyama. Before the merger of NKK Corp and Kawasaki Steel Corp, Kawasaki itself had been investing in equipment and facilities related to transportation and physical distribution at the rate of about 2 billion yen per year until early 90s. Then there had been a shift in company policy under which only investments with the highest effect were followed.

Sumitomo Metal Industries, Inc. focuses on steel sheets, tubes and pipes. Its factories are located on the coast at Wakayama, Osaka, Tokyo. Sea transport accounts for about 90% of all domestic deliveries that Sumitomo offers annually. Internationally, in 2004 it signed an agreement for shared allocation of vessels with the ThyssenKrupp Steel Group to improve distribution efficiency of raw materials on a global scale<sup>40</sup>.

Mitsui Mining Company Ltd. owns six private piers that provide berths for large vessels. Coal and raw materials are unloaded and transported to the industrial zones. Dedicated port facilities to Mitsui are located in Kyushu (Hibikinada district, Wakamatsu). The company invests in transportation, port and cargo handling facilities<sup>41</sup>.

In summary, all Japanese corporations affiliated with hundreds of other companies (*keiretsu* type) have established vertically integrated structures and covered areas such as financial services, electronics, natural resources, chemicals, transportation and logistics, trading, etc. They invest in transport infrastructure/services in order to satisfy their clients with the best customer service. There are well-established traditions in this area. The rationalisation of the distribution systems in Japan began in 1960s and meant to turn the delivery of goods into a highly efficient system. It is also an important area for cost-cutting of production expenses.

Summing up the case study, the primary investments in the sector are private as the public funding is limited to the government guarantees on loans and the special account system. As mentioned earlier, the cost burden of infrastructure should be shared between direct beneficiaries and those who enjoy positive externalities. Internalising the external effects will not only contribute to fair sharing of cost burden but also will increase the efficiency of resource allocation. The effort needs to be directed toward reaching consensus for introducing a desirable mechanism. From this point, since the coastal shipping is an environmentally-friendly mode and provides positive externalities (reduce road congestion and accidents), it may benefit from additional public funding in the future.

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<sup>38</sup> Nippon Steel Corp, Newsreleases, [www.nsc.co.jp](http://www.nsc.co.jp)

<sup>39</sup> JFE Group, Business Report 2008

<sup>40</sup> Sumitomo Metals, Annual Report 2007, Environment Volume

<sup>41</sup> [www.mitsui-mining.co.jp](http://www.mitsui-mining.co.jp)

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