

Evaluation Report

Operations Evaluation (EV)

Evaluation of EIB Financing of Air Infrastructure

Synthesis Report



EVALUATION REPORT

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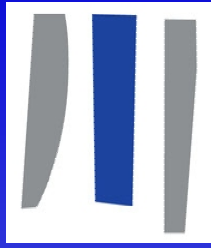
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NOTICE

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Evaluation

TABLE OF CONTENTS

| | |
|--|-----------|
| EXECUTIVE SUMMARY AND RECOMMENDATIONS | 1 |
| 1. INTRODUCTION | 5 |
| 1.1 Overview of the Air Infrastructure Portfolio | 5 |
| 1.2 Approach to the Evaluation | 6 |
| 2. AIRPORT AND AIR TRAFFIC MANAGEMENT (ATM) DEVELOPMENTS | 7 |
| 2.1 Traffic Trends in EU Member States | 7 |
| 2.2 Challenges | 8 |
| 2.3 Impact of EU Regulations | 9 |
| 2.4 Constraints | 10 |
| 2.5 The Way Forward: Systems Optimisation | 12 |
| 3. RELEVANCE/EFFECTIVENESS | 12 |
| 3.1 Relevance | 12 |
| 3.2 Effectiveness | 13 |
| 4. EFFICIENCY | 15 |
| 4.1 Airports | 15 |
| 4.2 ATM | 17 |
| 5. SUSTAINABILITY | 18 |
| 5.1 Financial Sustainability | 18 |
| 5.2 Environmental Sustainability | 19 |
| 5.3 Institutional Development Impact (IDI) | 19 |
| 6. PROJECT PERFORMANCE RATING SUMMARY | 19 |
| 7. EIB IMPACT and PERFORMANCE | 20 |
| 7.1 Pre-Appraisal | 20 |
| 7.2 Project Appraisal | 22 |
| 7.3 Project Implementation | 25 |
| 7.4 Project Monitoring | 25 |
| 7.5 EIB Additionality and Added Value (Financial and Non-Financial) | 26 |
| 7.6 Summary of Main Issues Relating to the Project Cycle and Recommendations | 27 |
| APPENDIX 1 Evaluation Criteria | |

EXECUTIVE SUMMARY AND RECOMMENDATIONS

Introduction

This report presents the findings of an evaluation of 32 airport and Air Traffic Management (ATM) projects. Twenty-one airport, and eleven ATM projects were selected for a desk review, based on internal Bank files, staff interviews and information in the public domain. Of these, thirteen airport, and six ATM projects were chosen for an in-depth review. The evaluation assessed the performance of these projects against the Bank's standard evaluation criteria¹, and the Bank's own performance; including the underlying strategies, policies and procedures followed. Projects were selected to be representative of the 82 airport/ATM projects financed by the Bank between 1990 and 2001, for a total loan value of EUR 7,174 million.

The evaluation took into account:

- Sector characteristics: including strong air traffic growth and rapidly changing air transport markets. Airport passenger traffic grew by almost 40% between 1995 and 2002 requiring expansion of airport capacity. Air traffic is expected to continue growing over the next two decades, albeit at a slower pace as European markets mature. However, the pressure on airport capacity will persist. In addition, changes in the airline industry, such as the increasing tendency to operate in airline alliances, mergers and bankruptcies as well as the rise of low cost carriers, require airports to adapt their facilities and business models continuously, e.g. by promoting the commercial potential of their location.
- The impact of EU regulations: on the free movement of citizens (Schengen), air safety, and the liberalisation of air services. These affect airport configuration and operations.
- The consequences of the EU assuming responsibility for international landing rights, and the initiatives proposed in the EU Commission's White Paper on European transport policy, e. g. a single European sky, airport capacity, slot allocation, inter-modality, and airport charges. If implemented, it will probably significantly increase competition between airports and lead to the more efficient use of airport infrastructure.
- Constraints to growth, including environmental constraints, for airports and airspace. Limits to the growth of airports have become apparent in the last decade: civil society is not willing to accept developments without appropriate mitigating measures.

The analysis concluded that the impact of the economic and regulatory environment on airports has already been substantial, and will probably increase in the future. In the past, the mismatch between increasing demand for air transport and the supply of airspace and airport capacity was usually met by physical additions to airport infrastructure. This approach is likely to meet increasing resistance from the affected population for environmental reasons, especially at the busiest airports, near the heavily populated areas of the EU. Thus the common aim of the EU air industry, governments and the EU Commission is to optimise the use of existing infrastructure. This means that investments which will increase the operating efficiency of the existing system will have first priority in the sector. If implemented, the new approach will have important repercussions on airport and ATM investment planning. The Bank must therefore be ready to face new challenges and make difficult choices.

A complementary evaluation on the EIB's investments in airlines is available at www.eib.org/publications.

¹ Relevance/Efficacy, Efficiency and Sustainability (including Institutional Development Impact where appropriate) See Appendix 1 for definitions.

Overall Project and Bank Performance

By number of projects, the Bank's airport portfolio is split: 25% hub or major international airports, 52% secondary international airports, and 23% regional airports. By lending volume, the proportions are 50%, 42%, and 8% respectively. The balance between these classes of airport suggests that the Bank's lending has taken proper account of both EU transport policies, and the airports' investment needs. Most projects were for the modernisation and expansion of existing facilities, with new airports only being funded on environmental grounds, or if the existing facilities were wholly unsuitable for modern air services.

The Air Traffic Management (ATM) portfolio is quite different. Most EU ATM investments are too small to be eligible for direct funding by the Bank. The relevant authorities have maintained and upgraded their systems on a regular basis and can fund new, incremental investments out of revenues or national budgets. For the Bank to be involved in ATM projects, they must either be for the total overhaul of outdated facilities to meet current, international standards, or based in non-EU countries where the Bank accepts smaller projects as direct operations. The ATM portfolio is therefore almost exclusively made up of projects in countries which were not member states at the time of signature.

Of the nineteen airport and ATM projects evaluated in-depth for Relevance/Efficacy, Efficiency and Sustainability, six were rated overall as "Good", seven were "Satisfactory", five were "Unsatisfactory" and one was "Poor".

With few exceptions, the Relevance of the projects was Satisfactory or better. Four airport projects had been over-designed, and one project was so radically changed that its Relevance became debatable. Most airport projects met their physical objectives, within acceptable variations, on time and on budget. By contrast, all except two of the ATM projects ran seriously late. However, once implemented, ATM projects met their operational objectives and are expected to be fully sustainable. All but one of the airport projects evaluated in depth should also be physically, financially and environmentally sustainable at the corporate level. The one doubtful case may require continuing public subsidies.

Overall, the Bank's appraisal of airport projects was satisfactory, but some areas for improvement were identified in the financial and economic methodologies. However, a new appraisal methodology for airport projects has recently been introduced which is expected to eliminate these shortcomings. By contrast, the Bank's performance in relation to ATM projects was relatively weak. In particular, the Bank did not systematically identify and mitigate implementation risks associated with weak organisations and inadequate project management.

EIB Impact and Value Added

The Bank's lending for airport and ATM projects in the EU (15) context was appropriate, being based on a sound understanding of the sector, although there was not a clearly defined sector strategy. Lending for non-EU countries was driven by the special relationships and policies between the EU and those countries.

The Bank's impact at the project level in terms of optimising policy and operational objectives was less obvious. With planning processes running into decades, and stringent environmental conditions, the Bank's potential value added on airport runway projects is limited. Similarly, on other projects, there is little need or opportunity for non-financial value added when working with highly competent EU promoters. However, even outside the EU, the Bank was rarely involved in defining the scope or timing of projects, although it often stated in its appraisal reports that a modification of the proposed project would have enhanced its value. The extended project development process, which meant that the Bank could only enter projects at a relatively late stage, and the fact that the Bank only issues recommendations at the approval stage, made it difficult to have a meaningful dialogue with Promoters. In the two cases where the Bank was

asked for its opinion before the projects were finalised, the Bank was able to contribute substantially in the form of improved project designs.

It is worth noting at this point that the Bank's new "modulated" appraisal procedures could be used to promote an earlier, more substantive involvement in projects by the Bank's sector specialists.

The weaknesses in project monitoring and follow-up noted in many projects are issues that are well known to the Bank from previous evaluations. The evaluation also found cases where the Bank did not respond to breaches of contractual obligations, particularly relating to the supply of monitoring data.

The evaluation could not quantify the financial value added by the Bank. The documentation did not offer any comparison with competing finance institutions or other benchmarks. The fact that the Bank was retained for funding, however, is indirect evidence that it was able to provide its resources on competitive terms, at least initially. In this context, Promoters which dealt directly with the Bank, i.e. without intermediation by another finance institution, appreciated its flexibility, rapidity of processing the required documentation, and favourable loan conditions, particularly the grace period and term of loan. On the whole, the Bank's participation was welcomed but there were only two cases, both outside the EU, where alternative sources of funding would not have been available and Bank participation was crucial for the success of the project. It was also noted that some borrowers substituted for EIB funds after project completion, taking advantage of lower rates from alternative financial sources.

TABLE OF RECOMMENDATIONS

| | EV Recommendation | Accepted Yes/No | Ops A/Ops B/PJ ² Comments |
|----|--|-----------------------------------|--|
| 1. | Most airport investments can only be adequately appraised by taking into account the wider context of competing airports and alternative transport investments. The Bank should therefore prepare succinct strategy reviews for regions or areas where multiple airport investments are foreseen, enabling it to develop appropriate lending priorities and maximise its value added. This approach could optimise appraisal quality without a significant increase in staff resources. (7.6.1) | PJ: Yes OpsA: N/A OpsB: N/A | PJ: The consideration of the broader context of an airport investment is already an integral part of the appraisal of airport projects. |
| 2. | PJ recently reviewed the economic analysis of airport projects and has developed a new methodology. It is recommended that this be applied systematically, and exceptions should be limited, e.g. isolated airports which are not economically justified by direct benefits, but which are justified by wider economic impacts, to be quantified and included in the economic analysis. (7.2.5) | PJ: Yes OpsA: N/A OpsB: N/A | PJ: A standardised approach has been systematically applied for a number of years. However, it must be adapted flexibly to take into account project specific details. |
| 3. | In some cases, demand growth was substantially overestimated. The use of risk analysis, or at least realistic scenario analysis is recommended, based on prudent long-term growth projections. (7.2.3) | PJ: Yes OpsA: N/A OpsB: N/A | PJ: Scenario analysis is routinely used during project appraisals. Risk analysis is usually only applied in a private sector/PPP context where there are credit risk issues to be analysed. |
| 4. | As on previous evaluations, project monitoring and completion reporting was found to be deficient in terms of quality and depth. The implementation of the combined PCR/Project Scorecard offers the opportunity to address this issue, but will only be effective with clear priority setting and management commitment. (7.4, 7.5,7.6.3) | PJ: Yes OpsA: N/A OpsB: N/A | PJ: A note on the physical monitoring of projects has been recently presented to the Management Committee. The implementation of corresponding proposals will start in 2005 and the issues will be addressed in this context. |
| 5. | ATM projects evaluated in-depth, which were mainly outside the EU, show consistent implementation weaknesses and very limited incentives for economic efficiency. Appraisals in such situations should therefore systematically include an analysis of the project management capacity, operational efficiency, and cost effectiveness of the Promoter. Consideration should also be given to using contract conditions to require weak Promoters to establish Project Implementation Units. (3.2.1, 4.2, 7.2) | PJ: Yes OpsA: N/A OpsB: Yes | PJ: The institutional and regulatory environment can be at least as important to project success as implementation capacity, and should be fully analysed during appraisal. OpsB: Accepts and takes note of these findings; it is however important to recognise that they are not representative of other operations in this sector. |

² Directorates for Lending Operations in the European Union (OpsA) and outside the European Union (OpsB), Projects Directorate (PJ)

1. INTRODUCTION

This report presents the findings of an evaluation of the European Investment Bank's (EIB) investments in air transport infrastructure between 1990 and 2001; specifically airports and air traffic management (ATM) systems. The object was to assess the Relevance/Efficacy, Efficiency and Sustainability of the investments, as well as the Bank's underlying strategies and policies, and the procedures followed. The report also addresses the net impact of EIB loans on the financing and, in particular, the quality and contribution of the Bank during project identification, preparation, appraisal and follow-up.

Setting aside the commercial activities of airports, i.e. retail outlets, catering facilities, etc., the demand for air infrastructure services is derived from the general demand for air travel. A complementary evaluation on the EIB's investments in airlines is available at www.eib.org/publications. This contains an analysis of current (2004) developments in the demand for air travel, both passenger and freight, and reviews the features of the air transport sector. A number of important characteristics were highlighted by that evaluation:

- The market continues to show consistent long-term growth, but immediate demand is both closely linked to the economic cycle and highly volatile, with large perturbations from local, regional or world events, e.g. 9/11, SARS, Iraq wars.
- The long-standing "Hub-and-Spoke" system of flight connections is being complemented by more "Point-to-Point" connections; mainly by regional airlines and new entrants. Many of these are low-cost carriers which typically use under-utilised airports, often in less-developed regions. The rapid growth of these airlines will have major implications for the sector as a whole.
- Although EU deregulation has increased competition, there are still substantial barriers to entry and exit. There is a complex regulatory framework of landing rights, bilateral arrangements, commercial alliances, etc.

The evaluation only covers civilian airports and ATM facilities; the EIB does not finance military or military-related activities, but the evaluation did take into account the effect of military air traffic operations on civilian air traffic.

1.1 Overview of the Air Infrastructure Portfolio

The Bank financed 57 airport projects during the period, for a total of EUR 6.53 billion, broken down as:

| Region | No. | Value* |
|---------------|-----------|--------------|
| EU (15) | 40 | 6,169 |
| Acceding | 5 | 140 |
| MED/Balkans | 1 | 80 |
| ACP | 9 | 91 |
| ALA | 2 | 50 |
| Totals | 57 | 6,530 |

* Value of loans signed, in EUR million

An analysis of the portfolio shows that the EIB financed:

- 14 hub or major international airports, representing 25% of the portfolio by number and 50 % by volume;
- 30 secondary international airports: 52 % by number and 42 % by volume;
- 13 primarily regional airports: 23 % by number and 8 % by volume.

Of the projects studied as part of the evaluation:

- 14 (67%) were publicly owned, 4 (19%) were private and 3 (14%) had mixed ownership at the time of appraisal.
- 17 (81%) of projects were for expansion, 1 (5%) was for modernisation with little or no expansion, and 3 (14%) were for new facilities.

- 11 (53%) of projects were primarily for the development of landside facilities (pre-departure/post arrival facilities), while 3 (14%) were primarily for airside (gates, aprons, runways, taxiways, etc.). The remaining 7 projects (33%) covered both areas.

The Bank also financed 25 ATM projects totalling EUR 644 million:

| Region | No. | Value* |
|---------------|------------|---------------|
| EU | 8 | 306 |
| Acceding | 7 | 173 |
| MED/Balkans | 2 | 40 |
| ACP | 7 | 99 |
| ALA | 1 | 26 |
| Totals | 25 | 644 |

* Value of loans in EUR million

All ATM projects were with publicly owned national or supra-national air traffic management organisations and were primarily for modernisation of facilities and the introduction of new technologies. Most investments were made outside the EU(15) and were for the complete overhaul of ATM facilities, rather than routine and incremental renewal and upgrading of equipment.

1.2 Approach to the Evaluation

The evaluation was split into two phases. The first was a desk review of 32 projects chosen from the Bank's portfolio of airport and ATM projects and financed (loans or tranches of loans signed) between 1 January 1990 and 31 December 2001. Projects had to be: physically complete and operational, with loans that had not yet been fully repaid. Projects were then selected to be representative of the portfolio, while covering as many regions and project types as possible. The project breakdown was as follows:

| Region | Airports | | ATM | |
|---------------|-----------------|----------------------|------------|----------------------|
| | No. | Value (M.EUR) | No. | Value (M.EUR) |
| EU(15) | 18 | 1,849 | 2 | 94 |
| Non EU | 3 | 94 | 9 | 167 |
| Totals | 21 | 1,943 | 11 | 261 |

The review was based on the Bank's archive files, supplemented by meetings with key staff in the Lending Operations and Project Departments, and information in the public domain. The data and information available limited the analysis to the Bank's evaluation criteria of Relevance/Efficacy and, to a limited extent, Efficiency. However, the review was also used to identify the key issues to be examined in the second phase.

The second phase was the in-depth evaluation of 13 airport and 6 ATM projects, normally including site visits for discussions with relevant personnel about the projects themselves and relations between the project Promoters and the EIB³. This phase tested the projects against all of the Bank's evaluation criteria: Relevance/Efficacy, Efficiency and Sustainability, including, where relevant, a special reference to Institutional Development Impact. It also measured the Bank's performance, including the management of the Project Cycle and its technical and financial value added.

In the report, Section 2 assesses the Bank's lending strategy for airport and ATM projects, and its project portfolio, and, in the broader context of sector trends, the regulatory environment, constraints, and prospects. The performance of projects against the evaluation criteria of Relevance/Effectiveness, Efficiency and Sustainability is presented in Sections 3, 4 and 5, with

³ 5 in-depth projects did not involve site visits, typically for reasons of staff security.

Section 6 summarising the ratings of the projects evaluated. Finally, Section 7 assesses the Bank's impact and performance in such areas as project identification and selection, project analysis, project implementation and monitoring and offers an opinion on the value added to the projects on account of the Bank's involvement.

2. AIRPORT AND AIR TRAFFIC MANAGEMENT (ATM) DEVELOPMENTS

The main factors influencing the development of airports and ATM are: trends in air traffic demand, the organisation of the air transport industry⁴, public policies and, lastly, the dynamics of technical progress in the sector. A review of the current (2004) developments in the demand for air travel, both passenger and freight, was included in the report "Evaluation of EIB Financing of Airlines", which may be found at www.eib.org/publications. The following text extends that review, but should be read for background information on the sub-sectors under evaluation, and not as a comprehensive analysis of the air transport sector.

In contrast to the airlines sector, the Bank did not carry out a strategic review of air infrastructure, either airports or ATM, during the period. However, it did make liberal use of studies available from the air transport industry and supra-national organisations, and supplemented these with *ad hoc* studies prepared in-house or by consultants. Together, these gave the Bank an overall view of the sector. Thus, for instance, the capacity constraints at Europe's hub airports were well analysed and documented. The following overview gives a synopsis of the developments, challenges and prospects for the sector, and provides the background to the Bank's activities.

2.1 Traffic Trends in EU Member States

Air traffic has exhibited strong growth since the late 1940s. In Europe, it doubled between 1990 and 2002, and the growth pattern of the airlines is reflected in the growth of airports, both within the EU(15) and worldwide. Between 1995 and 2002, airport passenger traffic in the EU(15) grew 4.6% per annum (p.a.) on average, from 616 million passengers to 846 million. Five countries showed growth substantially above the annual average: Ireland (9.0%), Italy (7.5%), the Netherlands (7.1%), Portugal (5.6%) and the UK (5.1%), while the average for the rest was 3.8%.

The five most important EU(15) countries in terms of air transport (UK, Spain, Germany, France, Italy – in order of passenger volumes) together handled over three quarters of all EU(15) airport passenger traffic. One of the reasons why these countries ranked so highly is their large population and economic strength, but the strong UK position is also due to its island nature and historic ties to Commonwealth countries and the US, which acted as traffic generators. Spain and France also undoubtedly benefited from their status as holiday destinations.

Looking at the top five airports in the EU (15) in 2002:

| Airport | Passenger numbers (000,000) | Proportion of EU (15) (%) |
|----------------------------------|-----------------------------|---------------------------|
| Heathrow (London) | 63.3 | 7.5 |
| Frankfurt am Main | 48.5 | 5.7 |
| Roissy-Charles de Gaulle (Paris) | 48.4 | 5.7 |
| Schiphol (Amsterdam) | 40.7 | 4.8 |
| Madrid | 33.9 | 4.0 |

The ranking of these airports did not change significantly between 1995 and 2002. The main exception, Orly, dropped from fourth to eighth due to the capping of aircraft movements. Considering larger conurbations with multiple airports, London and Paris have the highest traffic levels:

⁴ Defined as airlines, related service organisations, regulatory bodies, aircraft manufacturers, airports and ATM.

| Conurbation | Passenger numbers (000,000) | Proportion of EU (15) (%) |
|---------------------|-----------------------------|---------------------------|
| London ⁵ | 109 | 12.9 |
| Paris ⁶ | 61 | 7.2 |

In 2002, four EU airports counted among the ten busiest airports in the world: London Heathrow (3rd), Frankfurt (7th), Roissy-Charles de Gaulle (8th) and Schiphol (9th).

2.2 Challenges

According to Airport Council International (ACI), aircraft movements will continue to grow both worldwide and within the EU, but more slowly⁷: 3.4% p.a. over the next 20 years (freight: 4.4%, passenger: 2.8%). These estimates take into account the impact of various exogenous events, e.g. 9/11, Iraq wars, and demonstrate the resilience of the underlying demand for aviation and the continued pressure on airport capacities.

For the wider European region, the airport traffic growth trend is expected to mature over the next twenty years but still produce significant overall growth: International 3.6% p.a., domestic 2.3% p.a., freight 3.8% p.a., and aircraft movements 2.5% p.a.. Although these projections are below the world average, European airports will have to accommodate some 1.6 billion passengers by 2020, almost twice their present volume. Moreover, airfreight will more than double and aircraft movements are expected to grow by about 65% over the period. These figures mean that most airports will have to continuously adapt their landside and airside capacities to meet growing demand. In addition, changes in the organisation and regulation of air transport need to be taken into account. Increasing competition and decreasing public ownership means that airline operations must be as cost effective as possible. Airlines will seek to maximise their load factors and minimise every cost category, including aeronautical charges. For airports, this means that their aeronautical charges may not always cover the capital and operating costs for the capacity required by airlines.

The response from many airports has been to develop other revenue generating operations, e.g. airport shopping malls, parking facilities, business centres, etc., and to use that income to cross-subsidise the costs of their aeronautical activities. Over the last 10-15 years larger airports have been unlocking the commercial potential of their land-based facilities, first as a complement to their air-based activities and now as fully fledged profit centres. Worldwide, non-aeronautical revenue increased from 30% of total airport revenue in 1990 to 54% in 2001. Within the EU, the trend was temporarily interrupted by the elimination of duty free sales but recovered to 51% in 2001, mainly through the expansion of retail space and the implementation of creative marketing strategies. Correspondingly, the importance of aeronautical revenue decreased, both in relative and absolute terms. In terms of profitability there was a decline in revenues per passenger during the period in USD terms, but operating costs fell even faster.⁸

European airports were able to maintain their EBITDA⁹ results at around USD 5 per passenger (1997-2001) by increasing their efficiency, but had to invest heavily to cope with rising demand. Capital expenditure at existing airports increased during the period, from USD 5.2 per passenger to USD 6.8¹⁰, an increase of more than 30%, while earnings per passenger fell by 15%. It is therefore clear why airports are having to rely on commercial activities: less and less of their

⁵ LHR – London Heathrow, LGW - London Gatwick, STN – Stansted.

⁶ CDG – Charles de Gaulle, ORY - Orly

⁷ Airport Council International, ACI Worldwide and Regional Forecasts, Airport Traffic: 2002-2020, Geneva 2003. The forecasts are based on about 59% of total passenger traffic handled by ACI airports.

⁸ In EURO terms the declines in revenues and costs were less pronounced. Earnings per passenger actually increased slightly in EURO terms between 1997 and 2000, from 5.4 EURO in 1997 to 5.7 EURO in 2000.

⁹ Earnings Before Interest, Taxes, Depreciation and Amortization.

¹⁰ Figures are only available in US\$. If converted into EURO the result is even more dramatic because of the decline of the US\$ against the EURO during the period.

capital requirements can be funded from aeronautical revenues. However, these financial figures are heavily skewed towards the large airports. Out of some 450 member airports, the ten largest groups by revenue earned USD 9.8 billion in 2001: 60% of total revenue. The majority of ACI member airports are either marginally profitable or make losses.

However, many secondary airports have embarked on ambitious capacity expansion programmes, resulting in under-utilised capacity and financial losses. Their strategy is based on the hope that free capacity will attract traffic. At best, such a strategy is high-risk. Capacity availability is only one of many parameters in an airline's destination decision. What is certain is that too much reserve capacity increases unit costs, because depreciation and other capital costs, as well as operating costs, increase without corresponding revenues. As one successful airport manager put it "the art is to hold back investments as long as possible and to avoid large jumps in capacity without realistic prospects of a substantial traffic increase". However, particularly for smaller airports, it can be difficult to implement incremental increases in terminal capacity. This makes short term under-utilisation unavoidable. Similarly, runways cannot be built incrementally.

Changes in the airline business have had profound implications for airports, e.g. increasing airline concentration through mergers and bankruptcies, and the formation of airline alliances. Airports are having to deal with powerful partners who demand the highest quality services. Airline alliances usually demand special treatment in the areas of passenger handling facilities and coordination of timetables. As an example, the new terminal at Munich, which is a joint venture between the airport and Lufthansa (LH), is dedicated to LH and its Star Alliance partners. Successful cooperation between airport and airline offers the airport a major business opportunity, but can also create dependency by the airport on a single client. Another important change has been the rapid growth of low-cost carriers. Typically they have been drawn to secondary airports, which had a need to fill capacity. In some highly publicised cases, this has led to deals on marginal, or even unprofitable terms, in the hope that spillover effects would create a positive economic impact.

2.3 Impact of EU Regulations

Changes in the regulatory environment are playing an increasing role in re-shaping the sector, particularly within the European Union. Of particular importance are:

Free Movement within the EU: The Schengen Agreement required the physical separation of passengers from "Schengen" and "non-Schengen" countries. This meant restructuring the embarkation and disembarkation areas, something which had to be funded by the airports, with EIB assistance where appropriate.

Air safety: Additional screening of passengers and baggage has followed the increased threat of terrorist attacks. Again, this has required physical changes and investments in airports and facilities.

Air Services Liberalisation: In the past, national airlines have often enjoyed a quasi-monopoly position, supported by the national government. With the opening of the EU skies to competition, new groups of carriers appeared, in particular low cost carriers. So far, these have stimulated additional demand through the introduction of new routes and by tapping into new customer classes. The main beneficiaries of this additional traffic have been the secondary airports with spare capacity and hinterlands which are attractive for tourism, business development, etc., but major airports with similar characteristics, such as Stansted, Munich, Paris/CDG, Milan/Malpensa have also benefited. For the latter group, this traffic was a welcome contributor to overhead expenses, while for the former it has developed into their principal business. This evaluation shows that the Bank has responded well to that challenge by supporting the expansion and modernisation of these airports.

Open Skies: This relates to the European Commission's (EC's) claim to negotiate air service agreements with third parties on behalf of its Member States, particularly with the United States. It follows a European Court of Justice ruling that nationality clauses in bilateral agreements between an EU country and a third country are inconsistent with the common market, because they limit competition between EU carriers. The European Council subsequently authorised the

EC to negotiate a multilateral airline agreement between the European Union and the United States.

For the first time, EU carriers will have the right to offer their services from any EU airport without the threat of losing valuable traffic rights. Provided airport slots are available, competition between airports for long distance services could become more intense than at present. For example, it would become easier for airlines to establish secondary hubs for regional and transatlantic travel at airports with spare capacity, e.g. Brussels, Malpensa. Furthermore, there is likely to be a blurring of the “national” carrier concept which will tend to sharpen competition between airports even more. Airports will increasingly have to compete on both service quality and price.

Other initiatives: The EC’s White Paper “European transport policy to 2010: time to decide” has introduced a number of areas of development:

- Capacity – Essentially, airspace and airport infrastructures should be used more efficiently and there should only be infrastructure expansion where no alternative exists. More efficient use of airspace implies the speedy adoption of new technological solutions, which would allow a better coordination of air traffic in the sky and on the ground. This would permit closer spacing of aircraft which would effectively increase airport capacity. In this context the EC calls for “investments that target the increased operating efficiency of the system”
- Slot allocation - The rules on slot allocation should be changed in order to allow optimum use of the available slots and, eventually, a move towards greater flexibility through the use of market mechanisms, e.g. slot auctioning.
- Inter-modality - The EC believes that better inter-modality with rail could produce significant capacity gains for airports through the diversion of short haul air traffic to the railway. Studies have confirmed this effect, but also found that it would be limited to a few corridors where rail is an economic alternative acceptable to the market, e.g. Paris-Lyon, Paris-London, Madrid-Barcelona. The overall effect on reducing air traffic growth, at about 1 percentage point of the expected growth of intra-EU air traffic, is small. However, the effect might be expected to be substantially higher for some major hubs with direct high-speed rail connections, e.g. Frankfurt's connections to Stuttgart, Cologne and Düsseldorf.
- Environment – The view taken by the EC is that the population will only accept airport growth if it goes hand in hand with appropriate and internationally agreed measures to further reduce noise and emissions. In this context the EC is advocating a better integration of environmental objectives into sectoral policies.

2.4 Constraints

2.4.1 Airport Capacity

Capacity constraints at the busiest airports in Europe are becoming a key problem which, if not addressed, will hamper the future development of air transport. The nature of the constraints varies from airport to airport, e.g. the airport’s configuration, pattern of aircraft movements, air traffic control procedures, environmental regulations. Moreover, there is no standard definition of an airport’s maximum capacity. One airport may use the 40th busy hour¹¹ as the maximum acceptable level of congestion while another will work on the 10th busy hour.

Runway capacity is usually the most critical constraint for airports because of land and environmental constraints. Developments at Frankfurt-am-Main, Düsseldorf, Orly and other EU airports are being constrained by environmental objections and/or land use and planning restrictions, and airports that have reached the limit of their physical development are unlikely to receive consent to increase capacity. For the same reasons, it is equally unlikely that large green-field projects, such as Munich, will be the model for future expansion. New runways at busy

¹¹ The hour at which an airport’s terminal capacity is considered fully utilised without any decrease in established service standards. ICAO recommends designing on the basis of the 30th to 40th busiest hour of the year, as an acceptable compromise between passenger comfort and the efficient utilisation of the airport’s assets.

airports will probably be the exception in the future, and even where new runways may be built, planning and environmental considerations will mean gestation periods of many years.

Another reason for airport congestion is “bunching”, i.e. short-term peaks of flight arrivals and departures, reflecting passenger preferences for time of arrival and departure. They can also occur for operational reasons, e.g. a departure from the US in the evening will arrive in Europe in the early morning. This type of congestion is aggravated by dominant flag carriers, which still enjoy “grandfather rights”. This is the right to renew existing slots, whether they are being used efficiently or not. Slots at these times are valuable assets and new entrants have great difficulty gaining access to them. It is not unusual for an airport to consider itself congested, while at the same time it has spare capacity during off-peak hours. On this basis, almost all of Europe’s hub airports and a substantial number of secondary airports are congested at the busiest hours of the day. Attempts to reduce the bunching through better organisation, or by means of administrative rules, e.g. from the EU, have so far yielded only marginal improvements. Proposals to let the market ration capacity via the price mechanism have not yet been accepted.

Increasing the average size of aircraft could theoretically reduce the pressure on runway capacity. However, there are limits to this:

- Larger aircraft would mean larger groups of passengers to be processed on arrival and departure. This would require modifications to landside facilities and procedures.
- More passengers would have to be willing to travel at one particular time.
- Terminals might need to be rebuilt to accept the greater wingspan of the new aircraft.

Similarly, assuming the use of similar sized aircraft, an increase in point-to-point flights, at the expense of hub-and-spoke flights, would mean fewer flights in total and less pressure on runway capacity.

2.4.2 Environmental Constraints

Aircraft and airports are subject to a host of national, EU and international environmental regulations which have led to substantial reductions in aircraft noise and noxious emissions over the last decade. In its appraisals, the Bank regularly checks that projects meet the latest environmental standards. Clearly, the growth of air traffic and the ensuing expansion of capacity will have environmental consequences. The challenge is to find the right balance between the desire of the public for increased mobility and the desire of that same public to minimise the undesirable effects of that mobility. In this regard the EU Commission is advocating a more efficient use of existing infrastructure across all modes of transport, combined with a new charging model that would impose the external costs of using air transport on the user, directly.

2.4.3 Airspace and ATM Capacity

Although progress has been made in the organisation, control and management of EU airspace, the “single European sky” is still some way off. Following a peak in air traffic delays in 1991, system investments and organisational improvements, rather than investments in additional capacity, were able to reduce delays due to Air Traffic Control problems. However, since 1997, delays have again been increasing. It has been estimated that unnecessary bureaucracy and facilities contribute to costs being 60%-70% higher than those in the United States. Moreover, calculations by the EU and EUROCONTROL Performance Review Commission estimated that the annual cost of delays to airlines and their customers due to air traffic control problems was of the order of EUR 5.4 billion in 1998. The main reasons for delays are well known: the lack of a uniform, co-ordinated air traffic control system, the fragmentation of the air space along national lines, regulations governing routes in the EU and neighbouring countries, and last, but not least, reservation of air space for military purposes. In one highly congested EU country, 60% of the airspace is allocated to the military. Despite marginal improvements, the present ATM infrastructure and organisation are too often based on outdated technology, and on organisational structures and national regulations that will not be able to cope with the doubling of traffic expected in the next two decades.

2.5 *The Way Forward: Systems Optimisation*

In the past, the mismatch between demand and the supply of airspace and airport capacity was usually met by adding to existing infrastructure. However, there is general agreement that this approach will not work in future. There needs to be a paradigm shift in the technology employed, in the way airspace is organised, managed and controlled, and in the way the components of the system are integrated and cooperate. Intelligent technology and systems solutions will be required to cope with the traffic volumes. The common long-term objective of the EU industry, governments and the EC is to optimise the use of existing infrastructures and to target, as first priority, investments, which will increase the operating efficiency of the system. If implemented, the new approach will have repercussions on airport and ATM investment planning. The first priority will be to increase capacity by optimising the existing system, followed by investments for the extension of existing infrastructure.

3 RELEVANCE/EFFECTIVENESS

3.1 *Relevance*

Relevance considers the contribution of projects to EU Objectives, EIB Policies, and National Objectives.

The evaluation found that the Bank tested the eligibility of all airport projects against EU policy objectives:

- All projects in the EU were eligible for financing under point (c) of the EU Treaty¹²: Community Interest.
- Six airport projects were also eligible under point (a) for their contribution to the development of the less developed regions of the EU.
- Four projects met the eligibility criteria for the "Edinburgh Facility", which allowed the Bank to finance up to 75% of their total cost, while six projects supported the EU's aim of establishing a Trans-European network of transport infrastructure (TEN)¹³. Four airport projects were also covered by the Amsterdam Special Action Programme (ASAP).
- The eleven projects outside the EU were eligible for financing because they were projects of common interest between the EU and the non-member country through the development of transport links within the region and between the country and the EU.

The evaluation therefore found that all projects were fully eligible, with some projects satisfying multiple eligibility criteria. Conversely, the evaluation did not find evidence of the Bank seeking to use its selection policy to maximise either project Relevance or the contribution to EU objectives; an issue which has been identified in previous evaluations. The development of the EIB Corporate Operational Plan, with its identification of specific lending priorities, and the recent introduction of the "First Pillar of Value Added", which specifically addresses this issue, should help to improve the Bank's performance in this area.

Non-EU ATM projects were all eligible in terms of the relevant mandate or convention but while they had the objective of meeting relevant international standards, they had no specific policy objectives, while EU and Acceding country projects did include a specific policy objective relating to airspace integration.

EU objectives or EIB policies were only important to Promoters if a legal requirement had to be met, e.g. on the environment, or to meet the Bank's eligibility criteria. In addition to funding from the EIB, four of the airport projects evaluated in-depth also satisfied the criteria for ERDF funding.

¹² Currently Article 267, formerly Art. 130/198e

¹³ All EU (15) airport and ATM projects included in the desk review have TENs status, but the classification was only formulated under Council Decision 1692/96/EC - after appraisal for most of the projects.

Apart from meeting EU objectives, projects also have to comply with EIB policies, e.g. that its ".....funds are employed as rationally as possible...."¹⁴. The tests applied did not always prove convincingly that this criterion was being satisfied: see Section 7. The Bank has also defined a number of operational priorities, particularly:

- (a) Regional development and economic and social cohesion: Three of the in-depth projects supported this objective in a substantive manner. In addition, TENs projects should also have contributed to economic and social cohesion.
- (b) Environmental protection and improvement: Environmental impacts and mitigating measures were always carefully and systematically examined to ensure that projects were in compliance with EU rules. For one non-EU project, the Bank was instrumental in the establishment of environmental mitigation measures.
- (c) Support of EU development and cooperation policies with Partner countries: the *raison d'être* for the Bank's involvement in the funding of projects outside the EU

While it can be assumed that all state-owned airports and ATM projects support National Policies and Objectives, the same may not be true for regionally owned and privately owned airports. However, every project financed by the Bank has to receive national government assent. To that extent, it would be a reasonable assumption that there is no conflict between the project and national policies and objectives.

3.2 *Effectiveness*

Effectiveness is the measure of how well projects meet their original objectives. The evaluation identified two distinct types of project objective: Implementation/Explicit and Operational/Implicit.

Implementation/Explicit objectives relate to the physical implementation of the project, e.g. physical construction and design capacities: square metres of runway, maximum passengers handled during the busy hour, maximum hourly take-off capacity, etc. These were defined explicitly in the Technical Description, which is the Bank's definition of the project and is basis for the Bank's lending. Clearly, the *ex-ante* Technical Description is a benchmark against which a project can be measured *ex-post* (See also Section 7.4). The completed project can be compared directly with the technical description and an *ex-post* rating of effectiveness established.

Operational/Implicit objectives, were typically economic, and formed the basis of the benefit assumptions used in any Economic Internal Rate of Return (EIRR) projections. It is these objectives which define what benefits the project is seeking to achieve.

In the following analysis, the emphasis has been placed on the explicit, implementation objectives. However, it can be argued that it is the implicit, operational objectives which are the real measure of project effectiveness and that the Bank should consider introducing *ex-ante* benchmarks for the operational effectiveness of projects at appraisal.

3.2.1 *Implementation Performance*

Most airport projects were part of a medium term investment plan and most were also in conformity with their pre-defined physical targets. Promoters were normally the airport operators who were also responsible for project implementation:

- Of the 21 projects, 17 were managed publicly by various public or quasi-public administrations, and 4 privately.
- All promoters were technically competent, with the possible exception of one project. In the case of another project, neither the Promoter nor the Borrower, a special national

¹⁴ Article 20, EIB Statute

agency, had the technical competence for this type of project. Only one project was a green-field project, but the staff were experienced because the new airport replaced an existing city airport, which had to be closed.

- All except one airport administration employed their own engineers on the projects, although some also enlisted outside consulting firms for such specialist tasks as project design, construction supervision or project monitoring. This procedure is normal and considered good industry practice.

In all but four projects, the final design was adequate for current and medium-term traffic volumes:

- In two projects the original design was based on unrealistic traffic expectations.
- One project proved to be over-designed *ex-post*, but the reasons were exogenous and would have been difficult to foresee *ex-ante*.
- One project was over-designed intentionally, for fear that phased construction might prove politically too difficult to implement, even if it was economically desirable.

Six projects were implemented in accordance with their design at appraisal. Of the other ten projects, two required substantial additional improvements in terms of design, planning and physical works. This was due to changes in demand and inadequate project preparation, respectively. The Promoter of another project reduced the project scope *ex-post* by about one third, for reasons that could not be explained. A substantial part of the deletions concerned safety and ATM investment, which, according to the Bank's technical staff, were important components of the agreed project. The changes to other projects were minor.

Information on cost overruns and implementation delays could be obtained for all but four projects: in one of those cases the cost table was not adjusted after a major change in project scope. Where costs were known, four projects had cost overruns of between 15% and 27%, mainly due to project changes. Five projects were below cost estimates, based on the original scope, and the remaining projects were either on cost or had overruns of less than 10%. Only three airports registered significant delays: two to four years. However, in two of these cases the key elements were fully operational within the forecast time limit. Project implementation, therefore, was generally satisfactory. Cost over-runs were usually justified, and the impact of completion delays were limited.

Nine out of thirteen in-depth projects are operating in line with the original designs, although some also benefited from minor modifications to increase their effectiveness in areas such as safety, layout etc. Two projects in particular are worth mentioning. The first project has proved very successful because the physical investment was combined with the training of staff to be able to perform multiple functions in the new facility. This increased operational flexibility and productivity substantially and reduced unit operating cost. In the second project, the facilities were over-designed for the traffic that they were supposed to serve. Not only was this a waste of capital, but it also means that the Promoter is having to carry unnecessary Operating and Maintenance (O&M) costs and interest payments.

All ATM project Promoters were the relevant national or regional ATM organisation. All except one took full responsibility for managing their projects. The exception is a very small organisation which subcontracts its engineering to the national telecommunications company: an arrangement that works very well.

Unlike airports, ATM projects were typically part of a one-off major overhaul of ATM facilities, but they too generally met their explicit objectives. Projects were typically made up of large turnkey blocks, based on specifications and performance. The detail design was the responsibility of the supplier. When projects were fully implemented, the required performance levels were achieved.

With many contracts being awarded on a fixed-price basis, or with pre-established escalation charges, costs were generally well controlled. The main exceptions were civil-engineering elements, but these were not usually significant within the total cost of the project.

All of the ATM projects ran seriously late, with the exception of two projects. Delays of three to four years were typical, reducing the economic benefits of the projects. One project ran so late that a large part of the original project was cancelled. A new project was created to carry out the work but this again is years behind schedule. In that case, the problem was that the government was unwilling to make an unpopular decision on the siting of the project. In most other cases, delays have been due to poor project management skills, failings which were known to the Bank, and accepted by it. An option which the Bank did not pursue on any of these projects was to require the Promoter to set up a Project Implementation Unit using external specialists; something the Bank regularly does in other sectors.

With the exception of one project, all projects achieved their operational objectives. However, by international convention, both O&M and capital costs are fully recoverable from the operators of the aircraft using the ATM service, so there is little incentive to avoid over-specification on projects. Apart from limited external supervision, and the governance of the relevant Ministry or Board of Governors, the only incentive to minimise capital expenditure is the lack of available funds. Appraisals frequently referred to the projects as being based on the least-cost solutions. However, there was no verification of the specification and selection processes. Appraisal reports did not present the options which had been considered, or whether the final choice was "least cost" in terms of specification, technology or capacity.

3.2.2 *Operational Performance*

The sizing of airport investments has to be based on demand projections. In the cases of two projects, market risk was assessed inaccurately, resulting in a favourable opinion, while actual traffic has been substantially below forecasts. In one project, exactly the opposite happened. The analyst was, among other things, sceptical about the traffic potential of the airport and its economic justification, an opinion that turned out to be incorrect.

However, the analyst has to consider what scenarios are realistic. One project is located in a post-conflict country, but the Promoter's analysis, which was largely accepted by the Bank, used forecasts based on pre-conflict traffic levels. This ignored both the substantially weakened state of the country's economy and the fact that transit traffic, which had previously used the airport as an international hub, had gone elsewhere.

ATM projects need to be treated differently. The main driver in ATM projects was the need to introduce new technology to improve communications, integration with other ATM organisations, operations, and safety - rather than increase capacity, *per se*. Capacity increases were realised, but this was the main justification for relatively few projects. All ATM projects were able to handle the actual traffic once fully implemented. However, the concerns expressed in 3.2.1 on investment optimisation still apply.

4. EFFICIENCY

4.1 *Airports*

Airports have to handle the expected traffic volume at an acceptable level of quality and at a cost which is acceptable to both the airport regulator and the airline. This means balancing what is technically desirable with what is necessary to ensure financial viability. In three projects the Promoters clearly designed their facilities in such a way as to enhance profitability, e.g. increasing retail space, accepting higher levels of congestion at peak hours, and only adding capacity when it was commercially profitable. For three others, commercial considerations seemed to be secondary and resulted in oversized projects. However, where technically feasible, it may be advisable for the long-term viability of an airport to accept a reasonable level of peak-time

congestion before embarking on costly expansion programmes. The commercially successful airports reviewed in the evaluation all followed this strategy.

Only the Promoter of one project calculated an EIRR. Where other Promoters did state a level of economic profitability as a project objective, it was for the entire airport, e.g. for two projects in the form of an economic impact analysis. The Bank calculated EIRRs for thirteen out of the twenty-one projects evaluated. For the remaining eight projects the appraisal reports stated that an EIRR calculation was not necessary because the calculated FIRR was an acceptable proxy: see also Section 5.

Where the EIRR was calculated, four projects were in line with *ex-ante* predictions. One of these, was correctly identified *ex-ante* as uneconomic, but being located in a peripheral island it could reasonably be argued that the economic multiplier effects induced on the island would outweigh the project's low EIRR. In the case of another project, current passenger data suggest that the EIRR of 4% projected at appraisal will have become negative. The others all produced acceptable rates of return. Three projects had higher *ex-post* returns than the central estimates at appraisal but still below the "optimistic" case tested at appraisal.

Five projects which were relying on the FIRR proxy, significantly overestimated the economic profitability. *Ex-post* returns have been negative for three of them, due to combinations of over-optimistic traffic forecasts, over-design, and inappropriate analytical methodology. However, one of these cases is another isolated island community. The airport is the most important link to the outside world and crucial to a thriving tourism industry. It seems probable that the multiplier effects on the economic development of the island more than compensate for the negative project EIRR, but this avenue was not explored at appraisal. On the question of methodology, it is worth noting that new methodology (*cf.* text block in 7.2) has been introduced which should obviate that particular issue.

Where the FIRR was used as proxy for the EIRR, the evaluation suggested that this might be acceptable, but only if purely commercial revenues were subtracted from the total revenues. The remaining, purely aeronautical revenue would represent the monetary value airport users attribute to their use of the airport and its facilities. However, the evaluation also found that the conventional calculation of an EIRR would have been possible in all cases, despite information problems.

For financial performance, the evaluation attempted to compare the *ex-ante* and *ex-post* FIRRs of the in-depth projects, but the lack of a common basis for the FIRR calculations made this impossible. In most cases the FIRR calculation included the entire investment programme rather than that of the project, while in four cases the methodology employed to calculate the FIRR was inappropriate. The following table shows the *ex-ante/ex-post* FIRRs of the projects evaluated in depth. Where comparisons are possible, there appears to be an equal likelihood of the *ex-ante* projections being too low as too high.

Out of all the projects evaluated, only one Promoter made an estimate of the financial profitability of the project. This was through an FIRR calculation, and was only performed at the Bank's request. Other Promoters justified their projects indirectly through *pro forma* financial projections of the entire company.¹⁵

¹⁵ The problem with this approach is that the contribution of the project proper to the company's profitability cannot be measured as accurately as if the project were treated as a separate profit and cost centre.

Ex-ante and Ex-post Financial Rates of Return of the Projects Evaluated in Depth

| Project | FIRR ex-ante % | FIRR ex-post % | Comments |
|----------------|-----------------------|--------------------------|--|
| No. 1 | 8 | 12 | |
| No. 2 | n.a. | 8 (combined projects) | Inappropriate use of financial proxies at appraisal, substantial capital subsidies |
| No. 3 | n.a. | | |
| No. 4 | 5 | Negative | Lack of traffic |
| No. 5 | <1 | 4 | Entire programme |
| No. 6 | n.a. | 10-30 | Inappropriate use of financial proxies at appraisal |
| No. 7 | 7 | 16 | Entire programme, substantial capital subsidies |
| No. 8 | 4 | 3 | Substantial subsidies |
| No. 9 | 23 | 21 | Substantial subsidies |
| No. 10 | 13 | >13 | |
| No. 11 | 8 | 6 | Lower traffic charges |
| No. 12 | 5 | 1 | Inappropriate use of financial proxies, substantial capital subsidies |
| No. 13 | >10 | n.a. ¹⁾ | Entire programme, substantial subsidies |

- 1) Investment programme considered at appraisal modified and not yet completed, however the ex-post FIRR may be as predicted at appraisal.

4.2 ATM

The lack of appropriate tools meant that ATM projects were not subject to an economic analysis either *ex-ante* or *ex-post*. Methodologies exist, or are under development, in both Europe and the US but are not yet at a stage where the Bank could use them at appraisal. Typically, they focus on safety and flight efficiency. Safety benefits include the costs saved by the avoidance of collisions between aircraft in the air or on the ground, and the advice given on potential adverse weather conditions. Efficiency benefits derive from reduced flying times, e.g. by avoiding holding patterns and allowing the most effective routings to be flown.

By international convention, air traffic control fees should be set at a level which will cover O&M costs and capital costs, including the opportunity cost of own capital employed. In considering project efficiency, a key variable is the project cost, which is a function of the capability and capacity of the equipment to be installed. These parameters are normally established by the national ATM organisation in collaboration with, and to meet the standards of, international organisations such as ICAO and EUROCONTROL. However, the principle of full cost recovery means that there is no direct incentive for ATM organisations to adopt the least cost solutions to meeting those standards, nor to be operationally efficient. In one case examined in-depth, the Bank did compare the fees being charged with those of similar national ATM organisation, and

found them acceptable. However, the lack of comparability between ATM organisations makes such analyses imprecise, at best.

5. SUSTAINABILITY

The evaluation criterion of Sustainability covers physical, financial and environmental Sustainability, plus, for this evaluation, the sub-criterion of Institutional Development Impact (IDI).

In evaluating the physical Sustainability, the evaluation found that all in-depth projects had been maintained regularly and major repairs had been undertaken where required. In all cases, funds for maintenance were sufficient to support proper maintenance activities. However there may be a risk in one non-EU airport, that future periodic maintenance cannot be financed from its own cash flow: see Section 5.1.

5.1 *Financial Sustainability*

Airports

The in-depth airport projects evaluated cover two categories of investments, with some projects including elements of both: profit centres, e.g. airport terminals and car parks, and non-revenue investments, e.g. baggage handling and bus terminals. Neither category can be divorced from the performance of the airport as a whole. The evaluation therefore assessed financial Sustainability in the context of the entire airport.

Only two projects can be considered fully robust, if measured by cash flow generated from own business activities and the degree of self-financing. Two other projects are only financially viable because 57 % of the investment costs came from grant-aid. Another project should be viable by now, but the regulator did not permit the agreed increase in tariffs in a timely manner. One airport, which was profitable before the project, dipped into losses following completion of the project but is now recovering.

However, excluding the specific issues on these two projects, there is only one airport which has a serious financial Sustainability problem. This will only become sustainable if either traffic picks up substantially, or tariffs are increased to cover O&M costs as a very minimum. The airport was constructed for traffic volumes that will not be achieved for one, or even two, decades. To make matters worse, the airport management has begun to reduce tariffs to attract more traffic - without success. Other projects carry some degree of risk, although this is usually small e.g.:

- One Project has a sound cash flow, but carries some financial risk from holdings in airport companies in developing countries and unrelated to the project under consideration. The holding company's financial Sustainability is therefore less robust than the two cases above, but sound risk management systems are in place and potential problems would probably be detected at an early stage.
- Another Project, where the airport and the project are producing good financial returns and are likely to do so in the future. However, this largely depends on the country's flag carrier recovering from its own business problems.

Therefore, while there are wide variations in quality and perceived risk, all but one airport can be considered to be financially sustainable.

ATM

Theoretically, all ATM projects should be fully financially sustainable, due to their funding mechanism. However, the Promoter of two of the in-depth projects had outstanding fees to collect, equal to its annual turnover. It is trying to reduce these and the underlying problems may have been addressed, but most of these debts will have to be written off. It would be politically unacceptable for the Promoter to be allowed to fail but, if it had been privately owned, it would almost certainly have gone into liquidation.

5.2 *Environmental Sustainability*

Environmental Impact Assessments (EIAs) were carried out where required for all desk review and in-depth projects - and sometimes even if not legally required - and mitigation measures were proposed where necessary. For some, the EIA had already been carried out in the context of a previous operation or on the basis of the investment plan. For one project, in a particularly environmentally sensitive island location, the EU and the Bank required not only an EIA for the project, but also an environmental management plan for the island itself. Both were carried out and implemented in a satisfactory manner. Only one Promoter from outside the EU did not fully implement the environmental mitigation measures which had been agreed and incorporated into the finance contract. The Bank took care to ensure that the projects and other sensitive areas were in compliance with best environmental practice and in conformity with the prevailing EU and national legislation, and monitored the implementation of the agreed mitigation measures. Promoters, at least those in the EU, fully understood the crucial importance of minimising any environmental damage caused by project construction or day-to-day operations, for the general acceptance of their airports by civil society.

When considering the environmental implications of projects, the Bank's focus was on the EIA process and the mitigation of negative impacts. Less emphasis was placed on the environmental benefits. Reduced congestion, and improved routings from better ATM management, for example, have a positive environmental impact, but these improvements are rarely analysed in the Bank's appraisal reports. The Bank's approach might be seen as conservative, but it can lead to the presentation only of the negative impacts of air infrastructure projects, even where the Bank's funds will have a net positive environmental benefit.

5.3 *Institutional Development Impact (IDI)*

Within the EU, Promoters are normally fully competent and it would be unrealistic to expect any projects to generate significant IDI. The situation outside the EU is different. The Bank's involvement in one airport project had a significant impact at the company level, and in terms of the broader organisation of air transport activities in the country. At the company level the project was instrumental in changing the organisation from a centralised state run organisation into an autonomous body. At the national level, the entire set up of the civil aviation sector organisation was to be reformed. Although implementation has fallen behind schedule, once completed, the reforms may benefit not only the Promoter but also the country at large. Conversely, in another case, an ATM Project, the Bank already knew from previous projects that there were institutional weaknesses with the Promoter. Projects were consistently taking twice as long to implement as planned, with a typical delay of three to four years. In deciding to accept this situation, the Bank missed an opportunity to add value to this project through the use of recommendations or loan conditions to encourage the Promoter to address its problems.

6. PROJECT PERFORMANCE RATING SUMMARY

The following table shows the aggregate performance of all of the in-depth projects against the three core evaluation criteria:

| Criterion | Project Rating | | | |
|-----------------------|----------------|--------------|----------------|----------|
| | Good | Satisfactory | Unsatisfactory | Poor |
| Relevance/Efficacy | 6 | 11 | 2 | - |
| Efficiency | 5 | 6 | 7 | 1 |
| Sustainability | 5 | 12 | 2 | - |
| Overall Rating | 6 | 7 | 5 | 1 |

N.B. In addition to the core criteria, a total of twelve projects could be rated for IDI: See 5.3. Six projects were rated "Good", three were "Satisfactory" and three "Unsatisfactory".

Almost all projects were rated Satisfactory, or better, for Relevance/Efficacy. The Unsatisfactory projects, one inside and one outside the EU, were rated lower for different reasons and there is no evidence of a systemic problem. The situation on Efficiency is less positive. While only one EU project was rated Poor, because of very low actual demand compared with market projections, seven projects were Unsatisfactory. Four of these, mostly ATM projects, were outside the EU. The other three, all airports, were within the EU, although located on offshore islands. However, despite the relatively weak rating for Efficiency, almost all projects were expected to be technically and financially sustainable. Only two projects were cause for concern. In both cases, demand has been much lower than projected, with significant consequences for revenues.

7. EIB IMPACT and PERFORMANCE

7.1 Pre-Appraisal

Project Identification and Selection

Almost 50% of the EUR 6.5 billion airport funding was invested at eight EU hub airports. Approximately EUR 3 billion more, including EUR 1 billion for one airport, went to 28 regional airport projects, in support of EU air transport liberalisation and increasing point-to-point air travel. This amounted to 46% of total airport funding. The investments were usually part of medium or long-term development frameworks (Master Plans). The overall strategic context¹⁶ and specific Relevance of the projects was therefore well established. Although the Bank has no formal system of sector reviews for the airport sector, the evaluation found that the balance between hub and regional airports has been appropriate, with the Bank having no bias for one type of airport over another. All potential projects were considered on their individual merits.

When reviewing the point at which the Bank can reasonably get involved in a project, and hence its ability to influence project development, it is necessary to differentiate between runway projects and other airport investments. The timescales are different, as is the potential for EIB value added. Runway projects suffer from severe environmental planning and environmental constraints (*cf.* 2.4.1, 2.4.2). The length of time involved, running into decades, and the process of arriving at a solution which is acceptable to all stakeholders, make it very difficult for the Bank to have an impact. Conversely, the shorter timescale and the less contentious nature of terminal expansions, allow the Bank greater scope for involvement. This does not usually apply within the EU, where Promoters are typically highly competent, both technically and financially. However, even outside the EU, where it could have had an impact, the evaluation found the Bank did not take a pro-active approach to project identification and selection. The effect of this lack of early involvement is seen on project outcomes and the quality of the Bank's performance.

Pre-Appraisal Information

Although requests for information were sent to the Promoters before appraisal, the Bank did not insist on receiving satisfactory information as a condition of appraisal. It usually accepted a core set of technical data, e.g. project definition, project base costs, financing plan, implementation plan, but did not insist on the information required for the commercial and economic justification. When such information was not provided, the Bank attempted to obtain it at the time of appraisal through discussions with the Promoter or by other means. The advantage of this approach is that it forces a certain dialogue between Promoter and Bank which gives more opportunity for the Bank Value-Added. The downside is that it gives the appraisal team no time to reflect and analyse the information before discussing it with the Promoter.

There is clearly a balance to be struck between making information a pre-requisite for the appraisal and on-the-spot formulation of appraisal questions. For lending to developing countries, most Development Finance Institutions (DFIs) take a stronger line than the Bank on information requirements, or make multiple appraisal missions. However, the Bank mainly deals with

¹⁶ Outlined in Section 2.

projects in the EU which have been developed by competent promoters. The Bank's approach demonstrates its flexibility and appraisal efficiency, but the lack of adequate advance information reduces the possibility of discussing the economic and financial justification of the project with the Promoter. In turn this may have a negative effect on the quality of the appraisal and the assessment of project risk. Despite these problems at the beginning of the project cycle, the appraisal teams usually responded to the challenge in a professional manner, even in difficult circumstances.

Project Scope

Outside the EU, the Bank may be involved before the scope of an airport project is finalised, while, within the EU, the Promoter normally first defines the project scope and then agrees it with the Bank. The process usually runs smoothly, but there was a degree of negotiation in eight of the twenty-one projects reviewed, chiefly concerning scope changes during implementation made with or without the knowledge of the Bank. In one case, for instance, the Promoter based its planning on yearly investment programmes, rather than a discrete project. The Bank's project was selected, on a menu basis, from a pre-approved set of investments. In another case, of two successive projects with the same Promoter, a five-year plan presented to the Bank was comprehensive and designed to remove landside and airside bottlenecks, which only together would yield the desired economic benefits. However, the projects were defined and appraised as separate entities, without regard to the fact that they would only jointly achieve the full economic benefits of either investment. The Bank only felt it necessary to influence the project scope of one project; requesting the removal of a component on environmental grounds. One year later, however, the Promoter substantially reduced the project scope, to the detriment of the project and without consultations with the EIB, although that was a contractual requirement.

The scope of ATM projects is the responsibility of the Promoter, but it is usually developed in collaboration with international organisations, e.g. ICAO and EUROCONTROL. These would normally have identified operational deficiencies to be rectified, or set standards which the Promoter would have to comply with in the future. This involvement by expert bodies also limits the Bank's ability to add technical value. However, the recommendations usually refer to service capabilities, rather than capacities, which remain the responsibility of the Promoter. There are therefore still areas, particularly in the areas of organisation and management, in which the Bank can make a contribution. In one case, the agreed scope had to be changed three years into implementation when it became clear that the bulk of the project was not going to be completed in the foreseeable future.

- The Bank was involved in only two projects before implementation started. One of these could have benefited from EIB advice in terms of timing of the investments and the capacity aspects of certain facilities, but the Bank accepted the Promoter's argument that it was too late to change the plans.
- In at least five projects, the appraisal report commented on project aspects it considered weak. If accepted by the Promoter, corrective action would have strengthened the project and increased the Bank's value added. However, the points were not followed up with the Promoters and the opportunities were lost.

However, there were two projects, which were initially rejected but then financed by Bank after they were improved by the Promoters. The first was originally rejected as being insufficiently mature on technical grounds. On the second, the Bank was first asked for its opinion by another EU institution and considered the project at that stage to be economically unjustified. Later, the Bank still had reservations but decided that they were not sufficiently serious to reject the project.

7.2 *Project Appraisal*

Project Costs

An issue common to all projects is that Promoters' cost estimates are based on different criteria to those of the Bank. The Bank includes its own assessment of technical and price contingencies as a separate item in the project cost structure, while Promoters either did not plan for them at all or incorporated them in the original cost estimates. This may be for policy reasons, or be a pragmatic response to a framework constraint. In some jurisdictions, contingencies are not legally permissible, in which case it is common for Promoters to seek approval for a large enough budget at the beginning, to avoid them having to seek a supplementary budget from the government if there is a minor cost overrun or change in specifications. As for interest during construction (IDC), the Bank has no standard methodology for its calculation. For the projects examined, it was typically calculated as the likely interest on the assumed Bank loan, even where the Bank was not the only lender. The project cost estimated by the Bank at appraisal is therefore somewhat artificial and usually different to the Promoter's definition of project cost. This can lead to problems of comparability *ex-post* when the Promoter provides project completion cost information.

Demand Forecast

Of the 21 airport projects reviewed, all appraisals included, as a minimum, a market analysis and forecast of its likely evolution, geared to the estimated useful life of the project concerned. The forecasts were usually based on information provided by the Promoter and examined for their reasonableness by comparing them with past traffic trends and likely economic trends. From this information, a forecast was developed that consisted of a central estimate as the most likely case, plus low and high limits to test project sensitivities. Where the Promoter was considered experienced, the forecast was accepted unchanged. The depth of analysis was primarily a function of the information available and was not necessarily an indication of the degree of project risk.

For, the in-depth projects, the Bank estimated an average ex-ante growth rate of 5% p.a., with a high of 11.3% and a low of 2%. Ex-post, the current average growth rate is 3.2% p.a. In 50% of projects, the initial growth rate met or exceeded the Bank's projected growth rate – but then fell back to below the ex-ante projection. There were only two cases where the outcome matched the projections, both of which used the Bank's lowest rate for projections, i.e. 2% p.a. These findings suggest that the Bank should be more conservative in its projections.

Apart from taking a view on the evolution of traffic in terms of required capacity, ATM projects did not consider the impact of demand on the projects.

Risk Analysis

Traffic risks were treated systematically, but other types of risk were treated on an ad hoc basis:

- Technical risks were identified in four projects, of which one was resolved;
- Economic/commercial risks were identified on eight projects, of which, again, one was resolved;
- Financial risks were noted in four projects, and accepted as inevitable.
- Credit risks were mitigated through appropriate guarantee mechanisms: see "Project Loan and Security Structure" below.
- Three projects showed environmental risks, with a satisfactory solution being found for two;
- The outcome of a regulatory-risk problem on one project is not yet known;
- On an ATM project, the Promoter's known weakness in the area of project management was not highlighted, neither were steps taken to mitigate the project completion risk.

Two airport projects in non-EU countries suffered from unforeseen political problems. In one case the problem was civil disturbance. Problems might have been foreseen, but their timing and severity would have been difficult to predict. In the second, there was probably evidence of problems at appraisal, but the potential risks and impacts were not analysed.

Although some risk analysis, or at least scenario analysis, was carried out in virtually all project appraisals, mitigation measures were rarely recommended and implemented even less frequently. With two exceptions, the appraisal teams did not propose risk minimisation measures in the project agreements. In the one case where an appropriate clause was included, the Bank's follow-up was unsuccessful. Generally, there was a lack of systematic risk identification other than traffic risk. The assessment of design, completion, and operating risks, and the identification and implementation of mitigation measures were not always satisfactory.

Economic Efficiency

As previously noted, the lack of available tools meant that an economic analysis was not possible for ATM projects, and the fee system does not encourage economic efficiency.

For airports the Bank performed quantified economic appraisals for thirteen projects, and qualitative economic assessments for the remaining eight projects. The types of costs included in the calculations were computed on a more-or-less comparable basis, while the types of benefits were not always comparable. On costs, there were only two cases, out of thirteen, where the analysis was flawed; including elements such as price contingencies, or excluding incremental O&M costs.

The benefit types identified for the thirteen projects were more varied, but the value of avoided congestion was always identified and quantified. The avoided costs of re-scheduling airplanes were quantified in four projects, with a valuation partly based on benchmarks developed in the Bank and partly based on ad hoc investigations. The level and structure of these benefits appear comparable and coherent across projects. Apart from these "classical" benefits, other benefits identified included:

- Avoided traffic diversion - three projects;
- Avoided terminal congestion - two projects;
- Increase in safety - two projects;
- Environmental benefits - one project;
- Multiplier effects on the economy - three projects;
- Increase in the value of re-used land - one project;
- Reduction in accidents - one project.

It appears that these other benefit types were identified primarily on an "as needed" basis if the classical benefits did not yield "satisfactory" results. This approach tests if a project's economic return is satisfactory in isolation, which has been the Bank's historical criterion, although it is recognised that it does not provide a comprehensive and accurate estimate of the level of a project's economic return, or allow comparability across projects and countries. Moreover, the methodology for the calculation of economic benefits was not always correct.

The base case economic internal rates of return (EIRR) ranged from 3.1% to 16.6%. In two cases, with EIRRs of 31% and 13.6% respectively, the methodology applied was inadequate and led to inappropriate conclusions. The rationale for allocating the Bank's resources on these detailed analyses is not immediately obvious because they appeared to have little impact on either the project scope and timing, or the Bank's decision whether to accept or reject a project. However, despite these reservations, most of the economic appraisals were satisfactory and, at times, of a very high standard.

Eight appraisal reports for passenger airport investments were based on the premise that the FIRR was an acceptable proxy for the EIRR, although this should only be applied to freight related investments, as recently described in PJ's proposed methodology revision, summarised below.

REVISED METHODOLOGY FOR ECONOMIC APPRAISAL OF AIRPORT PROJECTS

In 2002, PJ produced an internal paper on the economic appraisal of airport projects which discussed key issues on the methodology for the economic appraisal of airport investment projects and was intended to be the basis for a more definite set of methodological guidelines. The aim was not necessarily to calculate a precise EIRR; rather it was to distinguish economically sound projects from those which were unsound.

The approach was based on the premise that the main benefit from investment in airport infrastructure consists of minimising traffic diversion to second-best travel arrangements and that this can be achieved both by expanding the airport's capacity and by improving the service quality offered by the airport.

For passenger terminal projects, a set of standard time savings were identified based on congestion levels. Projects that consist of switching passenger access to aircraft from remote to contact stands are to be assessed through passenger willingness to pay for the increased comfort. Airside projects, on the other hand, would take into account the economic impacts of changes in departure frequency and aircraft size. Increased departure frequency benefits passengers by reducing the generalised cost of travel, and is to be valued following the "frequency delay" approach found in the academic literature, with certain simplifying assumptions. Similarly, changes in aircraft size reduce airline operating costs per passenger which can be built into the model using a common standard of cost estimates.

For freight related investments, the financial rate of return can be used as a proxy for the economic rate of return, with adjustments as appropriate.

As part of the evaluation, the proposed methodology was applied ex-post to the 13 projects for which an EIRR had been calculated. This found that both methods identified the projects which were sound and unsound, albeit with differences in the actual EIRRs calculated, with the advantage that, with the new methodology, there was direct comparability between the projects.

Project Loan and Security Structure

Airports: On average, the Bank contributed some 24% of the funding for airport projects. State contributions and other subsidies accounted for 9.5% and other LMT debt for 15.5%. The remaining 51% were funded from own resources. The average loan had a term of seventeen years with a four year grace period.

Bank loans to public entities were covered by sovereign or quasi-sovereign guarantees (eleven projects) or third parties (three projects). For the three non-EU projects, all risks are ultimately covered by the EU budgetary guarantee. Guarantees for the seven private sector and mixed-ownership projects are provided either by the intermediary and borrower of the Bank loan, the State or corporate shareholders, the EIF, or a combination thereof.

ATM: On average the Bank contributed nearly 40% of the funding for ATM projects. Of the rest, approximately 30% each came from the government and local commercial banks. The average loan had a term of fourteen years, with a three year grace period. Both the grace period and loan term were appropriate at signature, taking into account the typical balance between construction and equipment investments. Normally, the grace period

should reflect project implementation but, here, many projects were unfinished at the end of the grace period.

Where the ATM organisation was an arm of a single government, then there was usually a direct or indirect state guarantee. Where an Executive Agency has been set up by one or more governments, then the guarantee usually came from commercial banks.

7.3 *Project Implementation*

The Bank only played a role in implementation on an exceptional basis, e.g. if there was a serious project implementation problem, and usually not even then. There were implementation problems on almost all ATM projects outside the EU, but the Bank only intervened on one. Conversely, on airports, there was only one project where the Bank considered the problems serious enough to intervene directly - and then only because a contract condition was not being implemented. The project was significantly reduced soon after the Bank approved the project and the Bank's staff were of the opinion that critical investment components had been cut, to the detriment of the project. The Promoter did not respond in substance to Bank requests for clarification, although it was contractually obliged to do so, and the Bank appears to have accepted the situation. The Bank did not substantively intervene in the implementation of any of the other projects, but did visit some during implementation.

With the above exceptions, the technical implementation of projects was satisfactory, but the Bank did not intervene sufficiently forcefully on those projects where its intervention could have improved their implementation or that of the related institutional reforms.

7.4 *Project Monitoring*

The Bank's physical, i.e. non-financial, monitoring activities are focused on completion reporting: outturn costs and completion dates. However, even the information that was monitored was not collected in a systematic manner. Projects, which were designated as category one, are considered self-implementing and were, to all intents and purposes, unmonitored. The evaluation sample included ten category 1 airport projects for which a short final report should have been prepared by the Bank normally stating final costs, implementation time and occasionally commenting on specific project aspects. However, only four of these had been completed at the time of the evaluation, and two were closed "administratively" due to, *inter alia*, lack of information on the completed project. The format for these Project Completion Reports or "Rapport fin de travaux" (RFT) is standardised and would allow a detailed ex-post assessment of the main project aspects, including economic, financial and environmental issues.

In practice, the analytical content of the vast majority of RFTs was very light, or missing, or simply wrong. Two projects had major negative divergences in demand which completely invalidated the *ex-ante* judgment of the Bank's appraisal, but the RFTs stated that there was no change in demand. One was even judged by the RFT to be successful.

Category two and three projects are, in theory, monitored in more depth. A review of the five category 2 projects and twelve category 3 projects¹⁷ leads to the following observations:

⇒ With one exception the quality of monitoring was very similar to category 1 projects. One project was judged as a "good project" while in fact its economic and financial justification was weak at best. On another project, there was no ex-post information available, while one project showed a significant positive change in demand, which invalidated the sceptical assessment of the appraisal. The exception was a project where the Promoter sent regular half-yearly reports covering all aspects of the project, even though this was not a requirement. The Bank reviewed these reports and commented on them in a detailed manner.

¹⁷ 6 ATM projects in the evaluation were rated as category two at appraisal, but later downgraded to category three. These have been treated as if they had been category three throughout.

⇒ Category three projects are supposed to be monitored very closely, but the RFT for one project contained no ex-post information. The report stated that there had been no changes in markets and demand, while in fact they had collapsed, turning the project into a failure. Of ten ATM projects, there were two RFTs written without Promoter input, and a third written following the evaluation mission. There were no RFTs for the other four projects for which they should have been available. Although the Bank received regular progress reports from some Promoters, these were rarely followed up internally, even when problems were being highlighted. For instance, there was a case where technical information was regularly sent by the Promoter but apparently went unread, or at least was not acted upon, by the Bank. At the start of the project, a mission visited the site and the Promoter, and identified certain issues which needed to be resolved. However, there is no information in the project files on the technical follow up, if any. The same project was, however, followed closely on institutional and contractual matters by the lending department.

The monitoring category for the four remaining projects had not been established as these projects were appraised prior to the formal introduction of such categories. RFTs for the projects also do not exist.

The quality and quantity of the Bank's monitoring and follow-up are clearly unsatisfactory. Moreover, this conclusion is valid irrespective of the monitoring category assigned to the project. The reporting requirements for monitoring category 1 projects are very light, usually a final report at the end of the project. Whether these reports are sent to the Bank or not seems to be of little concern. In theory, the requirements for categories 2 and 3 are more stringent, but the Bank does not generally enforce Promoters' contractual obligations and, at times, personal contact with the Promoter had actually ceased.

7.5 EIB Additionality and Added Value (Financial and Non-Financial)

7.5.1 Financial Value Added

It is difficult to quantify the financial value added by the Bank because the appraisal reports did not offer any comparison with competing financing institutions or other benchmarks. However, there was evidence that the Bank competed in most cases with commercial banks and the fact that it was retained by the Promoter indicates that it was able to provide advantageous terms. In a number of cases, the Bank intermediated its lending through a commercial bank which was able to offer the Bank an acceptable guarantee. However, it is worth noting that some Promoters said that they would have preferred to deal with the Bank directly. On the whole, the Bank's participation was welcomed by Promoters, but there were only three cases where alternative sources of funding on broadly comparable terms would not have been available. In all of these cases, the projects were outside the EU and benefited from interest rate subsidies or other financial support provided by the EC through the Bank. In summary, the Bank's financial value added for the majority of projects was not seen as indispensable but appreciated as useful because of the Bank's flexibility, rapidity of processing the documentation, and favourable loan terms, particularly the grace period and term of loan.

7.5.2 Non-financial Value Added

There was little scope or opportunity for the Bank to add non-financial value to most of the projects evaluated. Firstly, most lending is within the EU where, as noted (*cf.* §7.1), Promoters do not need EIB technical support. Secondly, the Bank did not have the maximisation of non-financial value added as a policy objective. Since the evaluated projects were launched, the Bank has introduced the three pillars of Value Added. The first two of these, "Consistency with the Priority Objectives of the EU" and "Quality and Soundness of the Underlying Project" relate to non-financial value added, but of the project, not the Bank's contribution to the project. However even where the Bank believes it can improve the rating against these two pillars, it rarely enters a project at a stage where it could have an impact, for the reasons already stated (*cf.* 7.1). Even if the Bank identifies certain issues in the course of the due diligence process, which should be raised with the Promoter, they are in practice rarely communicated or discussed. This lack of

professional discourse may be one reason why the Bank's potential contribution to a project was rarely, if ever, appreciated by the Promoters.

Airport Project Promoters were almost all experienced and had their own competent technical staff. Although the expertise of the Bank's professionals was recognised by Promoters, some of them also suggested that Bank staff might play a more substantive role perhaps in the case of inexperienced promoters. There were two such non-EU Promoters in the sample of projects evaluated in-depth. On one, the Bank insisted on organisational and regulatory reforms which were agreed and included in the finance contract and, when non-compliance with certain aspects became an issue, the Bank stopped disbursement. The other project's organisational and institutional set up was also identified as a problem at appraisal, but no follow-up measures were recommended. Similarly, there were many cases where appraisal reports identified issues such as over-design and sub-optimal project timing, but there was no evidence that these were communicated to the Promoter, let alone discussed with him. There was only one case, where the Bank had a substantive impact on project design in an EU project. The project was for a number of airports and the Bank rejected one small airport for environmental reasons and another two on account of too little traffic. Nevertheless, the Promoter went ahead and implemented these components anyway, but outside of the project agreed with the Bank.

For ATM projects, the situation was quite different. Most of the Promoters were non-EU and the selection of category 3 monitoring would suggest that the Bank's services were expecting problems during implementation. These problems, mainly implementation delays, did occur in almost every project, even repeat projects with the same Promoter. Despite this, the Bank did no more than observe the delays, rather than working with the Promoters to address the issue. There was significant potential for added value on these projects, but the opportunity was not taken.

7.6 Summary of Main Issues Relating to the Project Cycle and Recommendations

7.6.1 Strategic Context and Objectives

In the context of the EU (15), the Bank's lending for airports and ATM has taken place against a well defined set of transport policy objectives established by the EU, while lending to non-EU countries was driven by the special relationships between the EU and third countries, e.g. ACP, Mediterranean policy. Thus the projects' overall strategic Relevance was well established and the balance between hub and regional airports appropriate.

However, the Bank was less successful in optimising its portfolio in terms of policy and operational objectives. This aspect was analysed in detail in the "Evaluation of the EIB's Investment in Airlines"¹⁸ and is equally valid for air infrastructure. As to the future, the analysis in chapter 2 shows that it is clear that the trend of the past decade towards increased long-distance mobility will continue and take on many characteristics of a mass market. This means continued substantial investments, presently estimated in the order of EUR 6-7 billion per year in Europe. However, the emphasis of the investments in the future is likely to be on systems and process integration, as outlined, including multi-modal transport, as well as the seamless integration between air traffic and airport management and their supporting infrastructures. Assuming the Bank wishes to continue its involvement in the sector and to support EU transport and environmental priorities, it will have to take a more integrated systems approach to its lending and adapt its lending strategy and practices for the sector. The industry faces numerous new market challenges and policy developments, and it is recognised that most airport investments can only be adequately appraised by taking into account the wider context of competing airports and alternative transport investments. The Bank should therefore prepare succinct strategy reviews for regions or areas where multiple airport investments are foreseen, enabling it to develop appropriate lending priorities and maximise its value added. This approach could optimise appraisal quality without a significant increase in staff resources.

¹⁸ www.eib.org/publications

7.6.2 Project Cycle

The reason for the lack of visibility of the Bank's technical competence was largely due to its failure to communicate and discuss its appraisal findings with Promoters properly. The evaluation has shown that in a number of cases the Promoters' projects could have benefited greatly from the Bank's technical and commercial/economic expertise, even in cases where the Promoters' competence was undisputed. There is probably little the Bank can do to improve its impact in this area other than to strengthen the dialogue between the Bank's technical experts and their counterparts on the Promoter's side. The Bank's "modulated" appraisal procedures are potentially a step in the right direction because they would allow an earlier, more substantive involvement by its technical experts in a project, for example through strengthened analysis at the pre-appraisal stage.

The majority of the Bank's project appraisals were thorough, appropriate and covered all key issues. However, there were also some which were less than satisfactory, where the depth of analysis was more a function of the availability of project information and the interests of the technical expert dealing with the project, than verifiable procedures intrinsic to the project, or a pre-established format. There were some excellent financial and economic analyses with detailed market, financial and economic evaluations, but also some questionable ones with general and qualitative judgements which were not explained and therefore not verifiable, except when the project was a clear failure *ex-post*. All of the evaluated projects were approved for funding, although it was noted that the Bank's staff had reservations about some, and others offered relatively low economic rates of return.

The Bank also took care to ensure that the risks it took itself in financing a project were minimised through adequate guarantees. However, the presence of these guarantees begs the question about the need to spend considerable time and resources on aspects of the appraisal process that appear to have little impact on the loan decision. The evaluators appreciate that the Bank has been aware of these issues for some time, and that recently issued instructions for a modified approach to project appraisals has the potential to allow a greater focus on key risks and issues. It is expected that the implementation of these guidelines will go a long way towards improving the quality of the appraisal process and optimising the use of the Bank's staff resources.

7.6.3 Monitoring and Follow-up

As indicated in almost all evaluation reports to date, project monitoring and enforcement of non-financial contractual obligations are weak. There are several reasons for this:

- ⇒ The Bank often does not have the information it needs to be able to monitor a project effectively and follow up, if necessary. In addition, the information which is supplied by the Promoter is often light on substance and does not allow in depth monitoring of a project. Some Promoters ignore non-financial contractual obligations, e.g. regular reporting, project scope; with no strong reaction by the Bank.
- ⇒ The Bank's management seem to make little use of monitoring reports to ensure the quality of its Bank's lending activities, and staff do not have an incentive to spend the necessary time and effort to generate a meaningful product. In this context, RFTs as currently prepared are often of little practical use.

At the time of evaluation, the process of physical monitoring had been under review by PJ. Working with the established RFT and the more recent project Scorecard, summarised by EV, a new completion reporting system was being set up using new project software installed by the Bank. Once fully operational, this should allow the better reporting of project outcomes. However, it will still be dependent on proper attention being paid to the monitoring process, and obtaining the correct completion data from the Promoter, both of which are management issues.

7.6.4 Value Added

In general, the Bank's value added on projects outside the EU was significant. While it did not always take advantage of all the opportunities available to add value, its ability to do so was

limited not just by the Bank's willingness to provide technical and economic expertise, but also by the Promoters' willingness to accept the Bank's advice.

Within the EU, the Bank was dealing with competent Promoters who recognised the Bank's expertise in technical and economic matters, but the majority of them did not believe that the Bank could contribute to their projects' quality. Also, where the Bank acted through an intermediary bank, e.g. for guarantee purposes, its visibility was less pronounced and the Bank's role less well understood. It was often seen as just another financial institution competing for the Promoter's business. However, where the Bank dealt directly with the Promoters, it was perceived as an efficient, flexible, customer-oriented organisation with a rapid response time.

EVALUATION CRITERIA

Project performance is assessed using the core evaluation criteria as defined by the Evaluation Cooperation Group (ECG), which brings together the operations evaluation units of the multilateral development banks (World Bank group, regional development banks, and EIB), in line with the work of the OECD- DAC Working Party on Aid Evaluation, and adapted to meet the particular operating needs of the EIB. Evaluations take due account of the analytical criteria used in the ex-ante project appraisal and the strategy, policies and procedures that relate to the operations evaluated. Changes in EIB policies or procedures following project appraisal, which are relevant to the assessment of the project, will also be taken into account.

- Relevance is the extent to which the objectives of a project are consistent with the relevant EU policies (the Treaty, Directives, Council Decisions, Mandates, etc.) and the decisions of the EIB Governors, as well as the beneficiaries' requirements, country needs, global priorities and partners' policies. In the EU, reference is made to the relevant EU policies in the context of the Article 267 of the Treaty that defines the mission of the Bank and the EIB related policies. Outside the Union, the main reference are the Community's relevant external policy objectives considered in the specific mandates given to the EIB by the Council of the European Union and the EIB interpretation of them.
- Efficacy (or effectiveness) relates to the extent to which the objectives of the project have been achieved, or are expected to be achieved, taking into account their relative importance, while recognizing any change introduced in the project since loan approval.
- Efficiency is the measure to which project benefits/outputs are commensurate with resources/inputs. For the ex-ante appraisal, a project's efficiency is normally measured through the economic and financial rate of returns. In public sector projects the economic and financial rate of returns often are not calculated ex-ante. In those cases the efficiency of the project is estimated by a cost effectiveness analysis.
- Sustainability relates to the likelihood of continued long-term benefits and the resilience to risk over the intended useful project life. The assessment of the project's sustainability varies substantially from one case to another depending on circumstances and takes into account the issues identified in the ex-ante due-diligence carried out by the Bank. Among the issues reviewed in the assessment are:
 - Technical and management issues, mainly willingness, capacity and funding to carry out the necessary maintenance of the project in order that it can reach its useful life;
 - Government commitment, regulatory environment and socio-political support (this is particularly important in weak institutional context such as in some developing countries);
 - Financial sustainability for revenue generating projects, whether there is a significant risk that those revenues become unacceptably low, e.g. that they cannot cover at least the operating and maintenance costs;
 - Environmental sustainability, whether there are environmental risks that might be a significant threat to the future operation of the project.
 - Other issues that might affect the continued long-term benefits during the useful project life.

EUROPEAN INVESTMENT BANK

OPERATIONS EVALUATION (EV)

In 1995, Operations Evaluation (EV) was established with the aim of undertaking ex-post evaluations both inside and outside the Union. Self-evaluation was introduced in 1999.

Within EV, evaluation is carried out according to established international practice, and takes account of the generally accepted criteria of relevance, efficacy, efficiency and sustainability. EV makes recommendations based on its findings from self-evaluation and ex-post evaluation. The lessons learned should improve operational performance, accountability and transparency.

Self-evaluation, based on a project scorecard system, is carried out by the operational directorates. EV coordinates this process, and prepares an independent annual self-evaluation report.

Each ex-post evaluation involves an in-depth evaluation of selected investments following which a synthesis report is produced and sent to the Management Committee. The Management Committee then decides if the report is to go to the Board and be published on the EIB Website, in keeping with the importance the Bank attaches to transparency.

The following thematic ex-post evaluations have been published on the EIB Website :

1. Performance of a Sample of Nine Sewage Treatment Plants in European Union Member Countries (1996 - available in English, French and German)
2. Evaluation of 10 Operations in the Telecommunications Sector in EU Member States (1998 - available in English, French and German)
3. Contribution of Large Rail and Road Infrastructure to Regional Development (1998 - available in English, French and German)
4. Evaluation of Industrial Projects Financed by the European Investment Bank under the Objective of Regional Development (1998 - available in English, French and German)
5. An Evaluation Study of 17 Water Projects located around the Mediterranean (1999 - available in English, French, German, Italian and Spanish).
6. The impact of EIB Borrowing Operations on the Integration of New Capital Markets. (1999 – available in English, French and German).
7. EIB Contribution to Regional Development A synthesis report on the regional development impact of EIB funding on 17 projects in Portugal and Italy (2001 – available in English (original version), French, German, Italian and Portuguese (translations from the original version)).
8. Evaluation of the risk capital operations carried out by the EIB in four ACP countries 1989-1999 (2001 - available in English (original version), French and German (translations from the original version)).
9. EIB financing of energy projects in the European Union and Central and Eastern Europe (2001- available in English (original version), French and German (translations from the original version))
10. Review of the Current Portfolio Approach for SME Global Loans (2002 – available in English (original version), French and German (translations from the original version)).
11. EIB Financing of Solid Waste Management Projects (2002 – available in English (original version), French and German (translations from the original version)).
12. Evaluation of the impact of EIB financing on Regional Development in Greece (2003 – available in English (original version) and French (translation from the original version)).
13. Evaluation of Transport Projects in Central and Eastern Europe (2003 – available in English (original version)).
14. EIB Financing of Urban Development Projects in the EU (2003 – available in English (original version), French and German (translations from the original version)).
15. Evaluation of the Projects Financed by the EIB under the Asia and Latin America Mandates (2004 – available in English (original version), French, German and Spanish).
16. Evaluation of EIB Financing of Airlines (2004 – available in English (original version) French and German)
17. EIB financing with own resources through global loans under Mediterranean mandates (2005 - available in English (original version)).
18. Evaluation of EIB Financing of Air Infrastructure (2005 – available in English (original version)).

These reports are available from: EIB website: <http://www.eib.org/publications/eval/>.
E-mail: Evaluation@eib.org