# Development Finance Institutions and Infrastructure:
## A Systematic Review of Evidence for Development Additionality

**Report prepared by:**

Dr Stephen Spratt and Lily Ryan Collins

Institute of Development Studies & Engineers Against Poverty

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## Acronyms & Abbreviations

ADB – Asian Development Bank

AfDB – African Development Bank

AS – Advisory Services

BIO – Belgian Investment Company for Developing Countries

BOT – Build-Operate-Transfer

BMZ – Federal Ministry for Economic Cooperation and Development (Germany)

CDC – The UK Government's Development Finance Institution (previously Commonwealth Development Corporation)

COFIDES - Compañía Española de Financiación del Desarrollo

DEG - Deutsche Investitions- und Entwicklungsgesellschaft (German DFI)

DFI – Development Finance Institution

DFID – Department for International Development (UK)

DMC – Developing Member Country (Asian Development Bank)

EAIF – Emerging Africa Infrastructure Fund

EBRD – European Bank for Reconstruction and Development

EDFI – European Development Finance Institution

EIB – European Investment Bank

ESG - Environmental, Social and Governance

FinnFund – The Finnish development finance company

FMO - The entrepreneurial development bank of the Netherlands

FROR – Financial Rate of Return

GEF - Global Environment Facility

GHG – Greenhouse Gas

GNI – Gross National Income

IADB – Inter-American Development Bank

ICT – Information and Communications Technologies

IEG – The World Bank's Independent Evaluation Group

IFC – International Finance Corporation (a member of the World Bank Group)

IFU – The Industrialisation Fund for Developing Countries (Denmark)

ILO – International Labour Organisation

IPP – Independent Power Producer

KfW – German development bank

LDC – Least Developed Country

LIC – Low Income Country

M&E – Monitoring and Evaluation

MDB – Multilateral Development Bank

MIC – Middle Income Country

MIGA – Multilateral Investment Guarantee Agency

Norad – Norwegian Agency for Development Cooperation

NorFund - Norwegian Investment Fund for Developing Countries

OECD-DAC – Organisation for Economic Cooperation and Development – Development Assistance Committee

OeEB – The Development Bank of Austria

OPIC – Overseas Private Investment Corporation (USA)

PIDG – Private Infrastructure Development Group

PPI – Private Participation in Infrastructure

PPIAF – Public-Private Infrastructure Advisory Facility

PPP – Public-Private Partnership

PROPARCO - Société de Promotion et de Participation pour la Coopération Economique (France)

PSD – Private Sector Development

PSOD –Private Sector Operations Department (Asian Development Bank)

PSP – Private Sector Participation

RCT - Randomised Controlled Trial

RDB – Regional Development Bank

SBI-BMI - Belgian Corporation for International Investment

SIDA – Swedish International Development Cooperation Agency

SIFEM – Swiss Investment Fund for Emerging Markets

SIMEST - Società Italiana per le Imprese all'Estero (Italy)

SOFID - Sociedade para o Financiamento do Desenvolvimento (Portugal)

SwedFund - state owned risk capital company (Sweden)

TA – Technical Assistance

WBG – World Bank Group

## Executive Summary

### Introduction

Infrastructure is underprovided throughout the developing world. In 2006, the OECD estimated that more than 1 billion people lacked access to roads, 1.2 billion did not have safe drinking water, 2.3 billion had no reliable sources of energy, 2.4 billion lacked sanitation facilities and 4 billion were without modern communication services (OECD, 2006: 10). The World Bank has concluded that spending on infrastructure in Africa falls short of the level required to meet its needs by $48 billion a year[1], and that even with major efficiency savings a gap of $31 billion a year would remain (Foster & Briceño-Garcia, 2010).

For decades it was assumed that infrastructure should be funded and provided by the public sector. However, the failure of public investment to get close to necessary levels, as well as perceived problems with the quality of public provision in some instances, led to an increasing focus on the potential of private investment. Investment commitments to infrastructure projects with private participation increased significantly in the 1990s, from around $20 billion at the start of the decade, to more than $140 billion by 1997[2]. The East Asian financial crisis, however, saw this figure halved. Since then, there has been a steady increase, so that by 2008 investment commitments reached $161 billion. The global financial crisis induced another fall, and investment commitments are now around 5% below their 2008 peak.

While private investment in infrastructure is significant, it is far from sufficient to fill the funding gap. As noted above, this has been estimated at $48 billion a year in Africa alone. But, the highest level of (public and private) investment commitments to infrastructure projects with private participation was a little over $12 billion in 2008. There is no doubt, therefore, that public investment will remain central to infrastructure provision, and needs to be significantly increased. There is also a need to increase private investment in infrastructure, however, and sharply so. This is particularly the case in low income countries, which is precisely what Development Finance Institutions (DFIs) attempt to do.

It is within this context that this systematic review was commissioned to address the following questions:

*What is the evidence of the impact of DFI support (including PIDG support) for private-participation-in infrastructure (PPI), on economic growth and poverty reduction? What conclusions can be drawn from this evidence to help DFIs better target their investment to maximise their impact on economic growth and poverty reduction?*

### Key findings

1. **Hard evidence is scarce**. We identify three reasons for this:
   (i) It is difficult to measure causal relationships between infrastructure provision and development outcomes;
   (ii) It is harder still to attribute a share of this total impact to the work of DFIs, either individually or as a group;
   (iii) DFIs have traditionally focused on leveraging private finance into the infrastructure sector and have not developed robust measurement systems to track their broader impacts. Although this is now changing, and rapidly in some cases, it will take time before a solid evidence base can be constructed,

[1] Although one third of this spending is required for operation and maintenance rather than capital expenditure.
[2] World Bank and PPIAF, PPI Project Database (http://ppi.worldbank.org/)

and a number of key decisions need to be taken before this stage can be reached.

2. **DFIs can potentially create four different forms of impact 'additionality'**: *financial* (where they leverage additional private finance into infrastructure); *design* (where they influence project design so that growth and/or poverty impacts are enhanced); *policy* (where they influence the policy context in which the project occurs to enhance growth/poverty impacts); and *demonstration* (where the success of a DFI-supported project provides a stimulus for subsequent private sector projects that do not involve DFIs)

3. **Additionality cannot be separated from project selection**. As described in this report, DFIs do attempt to select projects where impacts will be high, particularly with respect to growth. At present, however, this is not done systematically or holistically: the total potential development impacts (economic, social, environmental) of projects are rarely estimated in a comparable way ex ante.
   (i) The first reason to do this is that only projects with net positive impacts should be undertaken in the first place – there can be no 'additionality' if this is not the case.
   (ii) The second reason is that projects with the greatest potential aspect can be prioritised, enabling DFIs to maximise the development impact of their scarce resources. As pointed out in the recommendations section below, however, this will only be the case if impacts across all three dimensions are measured fully and accurately, which cannot be assumed. In this report we assume that total development impacts of projects are positive, and our conclusions on additionality are based upon this assumption.

4. **DFIs create financial additionality**, particularly in low-income countries (LICs) and in less commercially attractive sectors. In particular, DFIs are able to: a) supply long-term finance, which is often essential for infrastructure but frequently unavailable in LICs; b) mitigate project risk, particularly in the early stages, thus leveraging additional finance by improving the attractiveness of deals (again, this is often crucial in LICs); and c) provide and leverage finance counter-cyclically, either lending when private investors will not, or retaining positions when the private sector would pull out.

5. **Financial additionality is less apparent in middle-income countries** (MICs), and in commercially attractive sectors such as telecoms; DFIs seem less conscious of the need to act counter-cyclically during 'good times' (i.e. from reducing or eliminating lending when it is not needed). This would be aided by a greater investment of time and resources to upfront project screening and appraisal to ensure additionality.

6. **DFIs do influence project design and the policy context to boost growth.** Both in terms of upfront project selection (e.g. selecting projects that will remove 'bottlenecks' to growth), and during the project design phase, DFIs seek to enhance growth effects, through activities such as a focus on knowledge or technology transfer, for example. Similarly – though to a lesser extent – DFIs seek to influence regulatory frameworks to enhance growth (e.g. through liberalisation) or by building public sector capacity to pursue private sector development.

7. **DFIs do far less to influence project design and the policy context to increase direct poverty impacts.** Many would argue that growth will always result in a reduction in poverty, though the extent to which this occurs will be depend on the nature of this growth – i.e. how 'pro-poor' it is. However, in addition to the growth channel to poverty reduction, many forms of infrastructure development have a *direct* effect on poverty. The mechanisms through which this occurs include factors such

as enabling access to services that were previously not available, or providing poor people with new or improved access to markets. Certain aspects of project design will greatly influence the extent of these direct effects, such as the ability of the poor to physically access services, or their ability to afford fees. Surprisingly, we found very little evidence that DFIs actively seek to influence these design features to increase direct poverty effects. There was a similar lack of evidence of efforts to influence policy, for example through pushing for pro-poor regulatory requirements.

8. **DFIs prioritise the creation of demonstration effects, but these are hard to prove**. As highlighted above, the infrastructure funding gap in developing countries is very large. DFIs have significant but limited resources, which fall well short of what is required. The aim is therefore to leverage these resources, both by attracting multiples of private finance to co-invest, but even more importantly by demonstrating the feasibility and attractiveness of such investments to commercial actors. In particular, DFIs aim to provide an example of success, and so facilitate a step-change in private investment in developing country infrastructure, where DFI participation is no longer required. Despite the priority given to the importance of creating demonstration effects there is very little evidence to support it in practice. In part this is because DFIs have only begun to focus on impact measurement relatively recently. More fundamentally, however, it reflects the difficulty of proving causality in this area: there can be no counter-factual, and it may not be possible to know for sure how important the example of a DFI-supported project was to a subsequent investment. Despite these difficulties and uncertainties, however, the importance of the issue calls for greater effort in this area.

9. **There are hard limits to the demonstration effect.** Despite its manifest importance, there are real limits to the demonstration effect in practice. In large part, DFIs are able to do what they do (e.g. provide additional finance on the terms described above) *because they are DFIs*. The political backing they receive from developed country governments allows them to borrow on highly favourable terms (as there is no default risk), and to lend on highly favourable terms (borrowers will be reluctant to default on a loan from a DFI due to the effect this may have on their relationship with the donor country, or with the World Bank in the case of the IFC).

   These factors enable DFIs to: a) obtain and provide finance on better terms (e.g. longer term); b) hold riskier overall portfolios than private institutions (e.g. dominated by LICs); c) behave counter-cyclically; d) enable private co-investors to access to finance on the same terms, and have a similarly low default risk from borrowers; and e) provide a 'political umbrella' or 'insurance' with respect political interference and risk. In many cases it is precisely these features that make a project possible, and they are the direct result of DFIs' rather unique position. It is thus not always possible for private actors to follow DFIs example and make the same investments, as they do not enjoy the advantages that made these investments work in the first place.

10. **Demonstration effects can be negative.** Where projects do not succeed, either because of factors such as a lack of political support, or the application of the wrong business model or funding mechanism, the example is likely to be negative. Instances were found where such negative demonstration effects created opposition (politically and/or amongst the public) to future attempts at PPI. Again, this suggests the need for more up-front work on project appraisal and structuring.

11. **DFIs can create different forms of additionality in different projects.** In this report we developed a framework for categorising projects based on their commercial viability, which we believe could be useful. The four project categories are:

(i) Fully commercially viable – i.e. could go ahead without DFI involvement[3].
(ii) Commercially viable but political umbrella essential to mitigate risks sufficiently to assure investors.
(iii) Project commercially viable but only if finance structured in ways that only DFIs will or can do
(iv) Only commercially viable if 'blended' model of concessional and commercial finance is used.

We suggest that there is a basic difference between category (i)-(iii) and category (iv) projects. Category (iv) projects will not be attractive to private investors unless their returns are boosted by the use of concessional finance. However, these projects are also likely to create the most direct poverty reduction impacts (for example access to affordable infrastructure services for poor people), and have a potentially large environmental role to play, particularly with regard to renewable energy which has high up-front financing costs that act as a deterrent to private financiers. Unless recognised, these kinds of projects will be squeezed in favour of categories (i)-(iii). For the different forms of additionality, category (i) projects have none and there is thus no case for DFIs participating in them. For category (ii), financial additionality is a result of the importance of the 'political umbrella' that DFIs can provide – i.e. investors would not commit finance without this backing. In these circumstances, we suggest that the 'premium' paid for this insurance should be a greater commitment to social and environmental standards by the private investor. The same holds for category (iii) projects, where the greater importance of DFI engagement should allow greater leverage to influence outcomes. We suggest a real focus on those aspects of project design that are associated with maximising poverty reduction outcomes.

12. **The only examples of DFIs influencing project design to enhance direct poverty impacts occurred in category (iv) projects**. This suggests that it is very difficult for DFIs to achieve enhanced direct poverty effects using purely commercial finance. In many ways this is not surprising: extending physical access to the poor or reducing tariffs to make them affordable are likely to reduce the profitability of projects, and therefore reduce their attractiveness to private investors. One way of addressing this is to extract a greater 'development price' for the additionality that DFIs bring, as suggested above. But there will always remain projects that have low (or negative) commercial returns, but very high developmental (and/or environmental) returns. In such circumstances, a blended finance model, where concessional finance is used to boost the returns of private investors, is the only way to make the project viable for commercial investors.

13. **DFIs are constrained from undertaking category (iv) projects in many instances**, even if large development impacts could be achieved. This can be understood through the tensions between DFIs' commercial and developmental mandates. For example:
    - DFIs are generally required to offer finance on commercial terms.
    - Many DFIs are self-financing so maintaining profitability is a priority.
    - DFIs must maintain a high credit rating and are thus incentivised to engage in high-return, low-risk projects.
    - Many activities required to enhance developmental outcomes are costly and time-consuming, eroding competitiveness vis-a-vis the private sector.
    - Most DFIs employ investment managers drawn from the private financial sector, creating a potential clash of cultures with the more developmental mandates of DFIs.

[3] Note that DFI advisory services can still play a valuable role in mobilising finance for projects that are commercially viable without DFI investment.

14. **DFIs, and donors, need to acknowledge these tensions more explicitly.** At present, donors are asking more and more of DFIs, particularly with respect to their poverty impacts. But DFIs were established to focus on growth, with poverty effects assumed to 'trickle down' as a result. If they are now to be expected to deliver *additional direct poverty and/or environmental impacts* they need to be mandated, financed and staffed in way that facilitates rather than obstructs this.

15. **DFIs need robust asset allocation mechanisms to ensure developmental impacts are maximised.** As described in this report, DFIs do attempt to select projects where development impacts will be high. At present, however, there is no systematic way of doing this, and no way of directly comparing projects so as to allocate scarce resources most effectively.

**Recommendations**

Our core recommendations are as follows:

1. **Develop robust and comparable project selection tools to maximise development impacts.** Drawing on established techniques such as 'economic rate of return' and 'social cost benefit analysis', the methods would estimate the net economic, social and environmental impacts of projects *ex ante*. This would ensure that only net positive projects are selected, and enable DFIs to prioritise those projects with the greatest impacts. Important factors to consider are: a) environmental costs and benefits are measured meaningfully,[4] b) appropriate weight is given to distributional factors,[5] genuine attempts are made to estimate and incorporate the full range of social and environmental impacts, regardless of measurement difficulties.
2. **Begin to develop a systematic evidence base on impact *ex post***, drawing on best practice from inside and outside DFIs, and developing a common framework across DFIs (recommendations on M&E and impact evaluation are provided in section 11).
3. **Develop and refine the project categorisation framework** suggested above, and integrate it into decision-making.
4. Further to Recommendation 1, **devote more resources to up-front screening and analysis of projects** to: a) exclude 'category (i)' projects; b) assign projects to categories (ii)-(iv); c) assess what forms of growth and poverty additionality the DFI can best create [i.e. financial, design, policy, demonstration]; and d) structure projects so that maximum development impact is achieved (using blended finance models for category (iv) projects).
5. **Align staff incentives with developmental and commercial outcomes on a project by project basis**, with the balance between the two being determined by the category of project being undertaken and the form(s) of additionality pursued.
6. **Where DFIs are involved in type (ii) and (iii) projects, seek to leverage improved Environmental, Social and Governance (ESG) outcomes** as the 'price' to be paid for political 'insurance' and/or better financial terms.

[4] For example, The Economics of Ecosystems and Biodiversity (TEEB) project has developed interesting techniques for estimating the full economic value of ecosystem services. Furthermore, potential financial inflows through mechanisms such as REDD+ would need to be factored into the calculations of the NPV of environmental assets. (See: http://www.teebweb.org/)

[5] Economic Rate of Return approaches sum the returns to different stakeholders affected by a potential project. These may be weighted to favour the interests of particular groups. Some DFIs are mandated to maximise benefits to the poor and marginalised, for example, and impacts (positive or negative) on these groups could be given a greater weight in the total calculation to reflect this. (See Esty et al, 2003, for a discussion)

7. **If DFIs are to engage in category (iv) projects their mandates should be altered to facilitate this**. There are three main options: First, the "parent" bilateral donor or International Financial Institution to make a pool of grant funding available to the DFI specifically for the purpose of engaging in projects with direct poverty reduction outcomes. A possible extension of this would be for donors to pool funds in a general grant fund. DFIs would be able to bid for projects where it can be demonstrated that, without such funding, the project would not be commercially viable. Second, DFIs themselves could be enabled to provide concessional finance (perhaps through a dual structure similar to the World Bank's hard and soft loan window, or the proposed dual structure for the CDC). Third, DFIs could be mandated to work much more closely with development institutions specialising in this form of finance, with perhaps a greater specialisation and 'division of labour' between DFIs themselves.
8. **DFIs should be strongly encouraged to collaborate more systematically with one another**; to complement each other's strengths and perhaps enable more specialisation and 'division of labour' between DFIs. While the factors that make this difficult are well understood, the importance of achieving the shared goals of sustainable development and the elimination of poverty should be sufficient to overcome these.

**Methodology**

Given the varied nature of the evidence on the questions under review, as well as its strong policy focus, it was decided to employ a 'realist' approach, which Pawson *et al* (2005: 1) describe as follows:

*"Realist review is a relatively new strategy for synthesizing research which has an explanatory rather than judgemental focus. It seeks to unpack the mechanism of how complex programmes work (or why they fail) in particular contexts and settings."*

A realist review begins with a 'programme theory', which details the impacts that an intervention is supposed to have, and breaks this down into stages – or 'links' in the 'causal chain'. Evidence is then assembled to support, contradict and ultimately modify these links, so as to inform future policy interventions and improve outcomes. In this case, the 'links' correspond to the aspects of 'additionality' that DFIs are trying to create.

The review focused on the following DFIs: PIDG, IFC, MIGA, DEG, EIB, FMO, CDC, SIFEM, FinnFund, NorFund, SwedFund, PROPARCO, BIO, IFU, SOFID, SIMEST, SBI-BMI, OeEB, COFIDES, OPIC, EBRD, AfDB, ADB, IADB. As well as searching for academic evidence on the questions under review, internal and independent evaluations were obtained. Given the specificity of the review questions, academic material was limited, with the result that the focus was more on DFIs own evaluations as the best sources of potential evidence. The titles and abstracts of 2,527 documents were obtained and uploaded to the EPPI 4 Reviewer systematic review software hosted by the Institute of Education, University of London. Inclusion criteria were then applied, which was simply relevance to the questions under review. This resulted in the exclusion of 2,323 documents. Full texts of 204 included documents were then uploaded. Each was coded for baseline date and quality, and for evidence and additional information relevant to the review: i.e. for relevance to one or more of the aspects of additionality identified. For each aspect, the coded material was reviewed and key themes identified, before being synthesised as summarised here and described comprehensively in the full review.

It is important to note that project level information made public by DFIs is limited, primarily because of concerns over commercial confidentiality. Early on it was recognised that this could undermine the purposes of the review: only project evaluations that DFIs choose to

make public are available, creating an obvious selection bias, where both DFIs and private sector partners have a strong incentive to ‘showcase’ the most successful projects. To address this problem, the review team negotiated access to internal documents from the IFC and is in the process of doing so with the other major DFIs. This material will form the basis of a subsequent review, which addresses the same questions using internal, confidential material. Taken together with the current document, these complementary reports will therefore review both the publicly available and confidential material on this vital subject.

## 1. Objectives

The objective of this systematic review is to answer the following two questions:
*What is the evidence of the impact of DFI support (including PIDG support) for PPI, on economic growth and poverty reduction? What conclusions can be drawn from this evidence to help DFIs better target their investment to maximise their impact on economic growth and poverty reduction?*

## 2. Background

In this section we first define some terms, before outlining the key relationships between infrastructure, economic growth and poverty reduction as evidenced in a selection of the core literature. Section 2.3 introduces Private Participation in Infrastructure (PPI), covering the rationale for the involvement of the private sector, challenges to mobilising PPI investments, debates around impacts on the poor, and the role of Development Finance Institutions (DFIs). Section 2.4 describes the rationale for the review, and section 2.5 concludes with a discussion of relevant existing studies.

### *2.1 Definitions*

*Infrastructure* is defined for the purposes of this study as transport, energy, information and communication technology, water and sanitation, industrial infrastructure and agri-business related infrastructure. Social infrastructure such as schools and hospitals has been excluded as a review of DFI investment has revealed that it is not a target area for DFI support (World Bank & PPIAF, 2010a).

For the purposes of this review, *Development Finance Institutions* (DFIs) are bilateral or multilateral development agencies: 'that provide funds, either as equity participation, loans or guarantees, to foreign or domestic investors in order to initiate or develop projects in sectors or countries in which the traditional commercial banks are reticent to invest in without some form of official involvement,' (PIDG, 2010). Note that the multilateral and regional development banks (MDBs and RDBs) are included in this analysis, but only those divisions or arms of the Banks that aim to mobilise private sector finance (e.g. the IFC in the case of the World Bank or the Private Sector Operations Department (PSOD) in the case of the Asian Development Bank).

The instruments and facilities to be covered are:

- Investment (loans and equity)
- Risk mitigation (e.g. loan guarantees)
- Advisory services (to governments)
- Project preparation and development services.

### *2.2 Infrastructure development, economic growth and poverty reduction*

At the outset it is important to stress that the view that infrastructure is underprovided in most of the developing world is universally acknowledged. In 2006 the OECD estimated that more than 1 billion people lacked access to roads, 1.2 billion did not have safe drinking water, 2.3 billion had no reliable sources of energy, 2.4 billion lacked sanitation facilities and 4 billion were without modern communication services (OECD, 2006: 10). The World Bank recently concluded spending on infrastructure in Africa currently falls short of the level required to

meet its needs by $48 billion a year[6], and that even with major efficiency savings a gap of $31 billion a year would remain (Foster & Briceño-Garcia, 2010).

Within this context, this section briefly explores the core literature on the links between infrastructure, economic growth and poverty reduction. The aims are the following:

(i) To introduce the considerable research that has already been done in this area and identify the channels through which infrastructure can affect development outcomes.
(ii) To demonstrate that establishing direct causal links between particular projects and development outcomes is fraught with methodological difficulties.
(iii) To summarise the consensus that has developed on the general relationship between infrastructure and development outcomes (in the light of the methodological challenges).
(iv) To emphasise the centrality of project design and policy context in shaping these outcomes.

### *2.2.1 Infrastructure and development: key channels*

**Understanding the impact of infrastructure investment on development**

A number of important channels have been identified in the literature on the relationship between infrastructure and development outcomes. When we consider poverty reduction there is a key distinction to be made between *direct* poverty reduction outcomes of infrastructure development and the *indirect* poverty reduction outcomes that may occur as a result of economic growth stimulated by infrastructure provision. Channels for direct and indirect impacts identified in the literature are summarised below (OECD, 2006; Jahan & McCleery, 2005; Prud'Homme, 2005).

Additional or improved infrastructure services can directly improve household incomes by:

- Increasing access for poor people to factor and product markets
- Reducing risk and vulnerability
- Enhancing asset mobilisation and usage
- Creating employment in construction, operation and maintenance.

And directly improve the non-income aspects of poverty by:

- Providing household access to improved water sources, electricity and communications
- Improving access to basic social services (such as health and education)
- Facilitating social cohesion
- Empowering the poor.

These impacts are only potential however; their magnitude and distribution in practice will be determined by the accessibility, quality and affordability of the services provided by the infrastructure.

Infrastructure provision may stimulate *economic growth* (and thus *indirectly* stimulate poverty reduction) by:

- Reducing production and transaction costs
- Increasing private investment
- Improving agricultural and industrial productivity
- Removing 'bottlenecks' which slow industrial and economic growth.

[6] Although one third of this spending is required for operation and maintenance rather than capital expenditure.

Growth can be more or less poverty reducing, depending upon the extent to which its proceeds are widely shared. It is important to stress that infrastructure provision will have an indirect impact on poverty (via growth) only to the extent that growth is pro-poor. While it is outside the scope of this review to examine this subject in detail, it is an important factor when considering the channels through which infrastructure investment will impact on poverty.

**Understanding the impact of infrastructure investment on development**

Even if we assume growth is pro-poor, evidence on the impact of infrastructure is highly heterogeneous. While the theoretical mechanisms are understood (see above), understanding what this means in practice in a particular setting is more problematic. The main factors contributing to this uncertainty are:

- the complexity of the relationship between current levels of infrastructure provision and returns on further investment;
- the importance of the institutional environment (and its national variation);
- time lags between intervention and outcomes; and,
- reverse causality (i.e. endogeneity).

Each is discussed briefly below.

Uncertainty over the relationship between current levels of infrastructure provision and economic rates of return on further investment can be understood through two apparently contradictory theories. The first predicts that rates of return will be higher in situations of under-provision, as even a small investment would provide an important boost to growth. The second predicts rates of return will be higher when there is already a reasonable level of provision, due to the realisation of 'network effects'.[7] Given this, we cannot expect constant or linear returns from infrastructure, and it may be difficult to distinguish the two effects in empirical studies (Estache & Fay, 2007; Straub, 2008*a*).

The institutional environment[8] is important in determining the degree to which infrastructure investment translates into economic growth and poverty reduction (Straub, 2008b; Jahan & McCleery, 2005; DFID, 2002). For example, the quality of the construction and maintenance of facilities, or the degree of stakeholder input into projects can both have a strong influence on outcomes, and both will be significantly affected by the institutional environment.

Infrastructure's impact on growth is associated with long time lags, which vary by sector and are difficult to predict.[9] Time lags are particularly long and unpredictable in the case of transport infrastructure (World Bank, 2008).

Infrastructure causes growth, but growth also causes greater demand for (and usually supply of) infrastructure – so called reverse causality, or 'endogeneity'. This problem is believed to have caused over-estimates of the impact of infrastructure on growth in early studies (Estache & Fay, 2007). While econometric techniques have been developed to help reduce the problem, it cannot be eliminated.

Given these factors, it is unsurprising that the results of empirical studies show a high degree of variation. Despite the uncertainty over the ultimate impacts of particular projects, however, there is a consensus that infrastructure plays an important role in both growth and

[7] The classic example of network effects in infrastructure is telecommunications, where returns to a connection increase in line with the number of connections already in existence. The concept can also be applied to transportation, water and electricity however; an investment that completes an incomplete network in any of these sectors will have high returns.

[8] Regulatory frameworks, market structure, political economy and institutional quality, for example.

[9] For example, growth effects may be delayed by firms' slow adjustment to the new opportunities on offer, but this will differ from place to place (Estache & Fay, 2007).

poverty reduction. Estache and Fay's (2007: 6) review of debates in infrastructure policy find that 'infrastructure generally matters for growth and production costs, although its impact seems higher at lower levels of income'. A review of links between infrastructure and development by Prud'Homme (2005: 161) comes to the conclusion that "infrastructure seems to have a relatively high rate of return – something like 15 per cent – comparable to or even higher than the rate of return of private "productive" capital". Straub's systematic review (2008*b:* 19) analyses 140 specifications from 64 papers between 1989 and 2007, and finds that "63 per cent of the specifications find a positive and significant link between infrastructure and some development outcome".

### *2.3 Private participation in infrastructure: rationale, challenges, debates, and DFIs*

#### *2.3.1 Rationale for Private Participation in Infrastructure (PPI)*

Perceptions of the appropriate roles of the public and private sectors in the provision of infrastructure has changed significantly in recent decades, as described by Estache and Fay (2007: 1)

> *'During the 1980s, with a few high-profile exceptions in the Anglo-Saxon world, these sectors were clearly seen as a public sector responsibility and governments were looking inward for means to improve their quality and volume. But during the nineties, these concerns largely disappeared from governments' agendas. Instead, received wisdom was that the private sector was going to take over these services, leaving only a residual role for governments (deregulation and restructuring, and the regulation of remaining residual monopolies). The time had come for the private sector to show what it could do after a frustrating long experience with an underperforming public sector. The vision did not play out as expected. Almost 20 years after privatization began to be touted as the solution to infrastructure woes, the role of the large scale private sector in the delivery of infrastructure services in energy, water or transport is far from being as widespread as many had hoped for, at least in developing countries.'*

Investment commitments to infrastructure projects with private participation did indeed increase significantly in the 1990s, from around $20 billion at the start of the decade, to more than $140 billion by 1997.[10] The East Asian financial crisis, however, saw this figure halved. Since then there has been a steady increase, so that by 2008 investment commitments reached $161 billion. The global financial crisis saw another fall, though this was not huge, and investment commitments are now around 5% below its 2008 peak.

While private investment in infrastructure is now significant, it is far from sufficient to fill the infrastructure funding gap. As noted above, Africa's infrastructure funding gap has been estimated at $48 billion a year[11]. The highest level of (public and private) investment commitments to infrastructure projects with private participation was a little over $12 billion in 2008. One review study finds that 80 per cent of infrastructure investment in the developing world in the past 15 years has been from public sources (Estache & Fay, 2007). There is no doubt, therefore, that purely public government investment will remain central to infrastructure provision, and needs to be significantly increased.

However, as the above quotation suggests, the rationale for PPI goes beyond the provision of additional funding. At least in theory, the perception has been that private sector involvement can, *inter alia*:

[10] World Bank and PPIAF, PPI Project Database (http://ppi.worldbank.org/)

[11] Although one third of this is required for operation and maintenance rather than capital expenditure and $17 billion could theoretically be saved through efficiency savings.

- Reduce political interference in decisions on the distribution of infrastructure investment and thus improve its efficiency
- Reduce costs by increasing the efficiency of operations and maintenance
- Set tariffs at cost-recovery prices (avoiding the political pressures placed on governments to provide subsidies) and use revenues to improve and expand services
- Generate increased fiscal revenues from subsidies avoided and income from concession contracts, which could be used for pro-poor programmes.

### *2.3.2 Challenges to mobilising private finance*

*a) Enabling environment*

Many consider lower than anticipated private sector investment to be a consequence of challenges in the enabling environment of developing countries, where political, exchange rate, and regulatory risks may be high. In some countries public resistance to private involvement in infrastructure also presents a major challenge. To illustrate these points, up to 40 percent of contracts involving private participation in infrastructure were cancelled or renegotiated during the 1990s, largely due to over-estimates of financial return, and under-estimates of financial and political risk and levels of public opposition (DFID, 2007).

These challenges tend to be greater in low income countries, which is one reason why private sector funding has tended to flow to more developed regions. Between 1990 and 2008, Latin American and the Caribbean captured 38 per cent of total investment commitments to infrastructure projects with private participation, compared to 6 per cent for sub-Saharan Africa and 12 per cent for South Asia (World Bank and PPIAF, 2010*a*).

*b) Potential for private sector involvement varies between sectors*

According to the World Bank's 1994 World Development Report *Infrastructure for Development* the potential for private sector involvement (i.e. the 'marketability') of infrastructure depends upon:

- The potential for competition
- the consumption characteristics of the infrastructure service (i.e. whether it is 'excludable' and 'rival'[12])
- The potential for full cost recovery from user charges
- Public service considerations (i.e. concerns over equity)
- Environmental externalities.

All of these characteristics vary markedly by sector[13]. Telecommunications and energy, for example, are relatively 'marketable'. This is because: (a) they provide services for which user fees are charged, typically based on direct measures of consumption; (b) they are 'excludable' in the sense that access to them requires a connection to a network; and, (c) it is possible to unbundle activities and thus create competition (competition occurs naturally in mobile telephony)[14]. At the other extreme, the marketability of rural roads is extremely low as they are not excludable and imposing direct user charges is almost impossible.

The table below from the World Bank's 1994 World Development Report provides a summary of the marketability of various infrastructure activities. The analysis remains highly

[12] A good is 'rival' if consumption by one user reduces the supply available to other users. A good is excludable if a user can be excluded from its use. A non-excludable, non-rival good is a definition of a pure public good (Samuelson, 1954).

[13] Some of these characteristics will be influenced by multiple factors in the external environment, not just sector. For example the potential for cost recovery depends on the income level of the target population, and environmental externalities may depend upon the project location.

[14] 'Natural monopolies' occur in technologies for which it is economically most efficient for production to be concentrated in one supplier, mainly due to high capital costs. A classic example is railway infrastructure.

relevant today: telecommunications and power are the most marketable sectors, while all the other sectors have some sub-sectors that are more marketable than others. For example, while rail passenger and freight services may be marketable, rail infrastructure is far less so. Similarly, while on-farm (tertiary) irrigation systems have a high degree of marketability, the marketability of supporting primary irrigation network that feeds into these systems is not as great.

**Table 1. Marketability of infrastructure activities by sector**

Key to marketability rating:
= 1.0 (least marketable)
= 2.0
= 3.0 (most marketable)

| | | Potential for competition [a] | Characteristics of good or service | Potential for cost recovery from user charges | Public service obligations (equity concerns) | Environmental externalities | Marketability index [b] |
|---|---|---|---|---|---|---|---|
| Telecom | Local services | Medium | Private | High | Medium | Low | 2.6 |
| | Long distance and value-added | High | Private | High | Few | Low | 3.0 |
| Power/gas | Thermal generation | High | Private | High | Few | High | 2.6 |
| | Transmission | Low | Club | High | Few | Low | 2.4 |
| | Distribution | Medium | Private | High | Many | Low | 2.4 |
| | Gas production, transmission | High | Private | High | Few | Low | 3.0 |
| Transport | Railbed and stations | Low | Club | High | Medium | Medium | 2.0 |
| | Rail freight and passenger services | High | Private | High | Medium | Medium | 2.6 |
| | Urban bus | High | Private | High | Many | Medium | 2.4 |
| | Urban rail | High | Private | Medium | Medium | Medium | 2.4 |
| | Rural roads | Low | Public | Low | Many | High | 1.0 |
| | Primary and secondary roads | Medium | Club | Medium | Few | Low | 2.4 |
| | Urban roads | Low | Common property | Medium | Few | High | 1.8 |
| | Port and airport facilities | Low | Club | High | Few | High | 2.0 |
| | Port and airport services [c] | High | Private | High | Few | High | 2.6 |
| Water | Urban piped network | Medium | Private | High | Many | High | 2.0 |
| | Nonpiped systems | High | Private | High | Medium | High | 2.4 |
| Sanitation | Piped sewerage and treatment | Low | Club | Medium | Few | High | 1.8 |
| | Condominial sewerage | Medium | Club | High | Medium | High | 2.0 |
| | On-site disposal | High | Private | High | Medium | High | 2.4 |
| Waste | Collection | High | Private | Medium | Few | Low | 2.8 |
| | Sanitary disposal | Medium | Common property | Medium | Few | High | 2.0 |
| Irrigation | Primary and secondary networks | Low | Club | Low | Medium | High | 1.4 |
| | Tertiary (on-farm) | Medium | Private | High | Medium | Medium | 2.4 |

a. Due to either absence of scale economies or sunk costs, or existence of service substitutes.
b. Marketability index is average of ratings across each row.
c. Including cargo handling, shipping, and airlines.

*Source*: World Bank (1994)

The variation in marketability is illustrated in investment patterns. From 1984 to 2008, approximately 42 per cent of investment commitments to infrastructure projects with private participation in the developing world was invested in telecommunications, 31 per cent in energy, 22 per cent in transport and 6 per cent in water and sanitation (World Bank and PPIAF, 2010). In 2008, energy took the same proportion of investment, transport and water and sanitation decreased to 17 per cent and 2 per cent respectively, and telecommunications had increased to 50 per cent (ibid).

### *2.3.3 Debates over the impact on the poor*

The impact upon the poor of PPI investment is a subject of controversy. While few would disagree that private sector involvement has the potential to improve efficiency and quality of service, many argue that private sector players have little interest in serving the poor and tend to set tariffs beyond their means (Harris, 2003). Since private firms aim to maximise profits they do not have natural incentives to extend access to those who cannot afford cost-recovery tariffs. As a result, unless infrastructure projects are specifically designed to take account of this – through requiring private operators to extend access to certain groups as a condition of the contract, for example – outcomes will often bring greater benefits to the relatively well-off (Foster & Briceño-Garcia, 2010).

The problem is most acute in high-risk countries, where investors require a higher rate of return to compensate for this risk: "...the average tariff necessary to generate the minimum required rate of return in the poorest developing countries has to be higher than elsewhere since it needs to cover a higher cost of capital" (Estache, 2006: 4).

In the light of these debates, Estache and Fay (2007) summarise the instruments available to support **access** for the poor:

> *'For access there are three basic types of instruments: (a) instrument requiring operators to provide access (a service obligation to avoid unilateral exclusion by the provider); (b) instruments reducing connection costs (through cross-subsidies or direct subsidies built into the tariff design or through credit or discriminatory payment plans in favor of the poor); and (c) instruments increasing the range of suppliers (to give users choice, including the option of reducing costs by choosing lower-quality service providers).'*

And for **affordability**:

> *'... all instruments work in at least one of three ways: (a) by reducing bills for poor households (through lifelines or means-tested subsidies based on socioeconomic characteristics or the characteristics of the connection, financed through cross-subsidies or direct subsidies built into the tariff design); (b) by reducing the cost of services (by avoiding granting a monopoly right when it is not necessary or by providing an incentive for operators to reduce costs and pass on the cost reductions to users); and (c) by facilitating the payment of bills (by allowing discriminatory administrative arrangements in favor of the permanently or temporarily poor),* (Estache and Fay, 2007: 19-20).'

### *2.3.4 The role of DFIs*

The inability of either the public or private sectors alone to finance and develop infrastructure projects at the level required in developing countries has led to more combined, public-private approaches. Development Finance Institutions (DFIs) are key players in this process, providing guarantees, loans and technical support to help to mitigate the risks posed by projects with large sunk costs, particularly in higher-risk, less developed countries where commercial finance is difficult to obtain.

The establishment of the Private Infrastructure Development Group (PIDG) in 2002 demonstrated the awareness that had developed in the donor community of the particular difficulty of raising private finance for infrastructure. The PIDG is in many ways a new type of DFI. It focuses exclusively on infrastructure, has multiple donors (in contrast to the majority of DFIs which work bilaterally), and has several 'facilities', each of which is explicitly designed to overcome a specific market failure.

### *2.4 Rationale for the review*

The aim of this review is to assess the extent to which DFIs' activity in the infrastructure sector creates 'additional' developmental impact, i.e. impact which is additional compared to the counterfactual of their non-involvement.
The need for such a study is illustrated by the findings of DFID's (2007) literature review on private sector infrastructure investment:

> *'The weakness of the evidence base supporting the dominant PPI rationale is a significant challenge for the* [private sector infrastructure investment] *facilities...The emphasis of the Facilities is often more market-based than rights-based, and the independent reviews of the facilities suggest they need to strengthen pro-poor impact and community engagement (pp. 51 and 73).'*

### *2.5 Similar studies*

No literature reviews or systematic reviews addressing the particular question in this systematic review have been undertaken. For related studies, perhaps the most relevant is DFID's (2008) 'Desk Review of DFID's Private Sector Infrastructure Investment Facilities', which investigates how effectively DFID's interventions in the private sector infrastructure portfolio of facilities supporting infrastructure investment have contributed to achieving DFID's core objectives.
The study finds that:

> *'There is currently little quantitative evidence available to assess the development impact of the... Facilities, principally because very few investment projects resulting from their interventions have yet been completed and thus directly enhanced access or quality of infrastructure services (v).'*

Given this, the assessment is based principally upon:

a) The growth and distribution of the DFIs' activities
b) Alignment with host country priorities
c) Cost effectiveness
d) Effectiveness in monitoring development impact
e) The demonstration effect.

Although the report could not provide empirical evidence of the links between DFI activity and developmental outcomes, it concludes that:

> *'The PSI portfolio supports DFID's broad strategic objectives, in particular in promoting economic growth in target...countries through advancing private participation in infrastructure development* (ix).'

Another DFID study, which was commissioned as an input to the above study, is also relevant to this review. The conclusions of the *Literature Review of Private Sector Infrastructure Investment* (2007), was also broadly positive, though again the findings are inconclusive:

> *'While at the broad level, there is clear association between infrastructure investment, economic growth and poverty reduction, the steps in causality that lead from one to the other, and how these work specifically in the case of PPI are less obvious... empirical evidence for robust links between the steps in the causal chain is limited* (p.8)*."*

## 3. Methods

This section begins by describing the methodological approach taken in this review. Section 3.2 explains our understanding of the 'causal chain' that links DFI engagement in infrastructure investment to growth and poverty outcomes, and is central to our approach. The following sections describe the study searches that were undertaken (3.3), the inclusion/exclusion process (3.4), and the coding and analysis of the included studies (3.5).

### *3.1 Approach: a 'Realist Review'*

Unlike 'traditional' systematic reviews in the health sector, the evidence available on the impact of DFIs on growth and poverty reduction is not largely in the same form. Specifically, there is not a critical mass of randomised control trials (RCTs) available to provide comparable quantitative assessments of the evidence available. Rather, evidence is available in a range of forms, principally DFI project evaluations, which vary significantly in form by DFI, and a limited number of academic studies.

Given the heterogeneous nature of the available evidence on the question under review, it was decided to employ a 'realist' approach, which Pawson *et al* (2005: 1) describe as follows:

> *'Realist review is a relatively new strategy for synthesizing research which has an explanatory rather than judgemental focus. It seeks to unpack the mechanism of how complex programmes work (or why they fail) in particular contexts and settings.'*

A realist review begins with the elucidation of a 'programme theory', which details the impacts that an intervention is supposed to have at each stage, and breaks this down into stages – or 'links' in the causal chain. Evidence is then assembled to support, contradict and ultimately modify these links, so as to inform future interventions and improve desired outcomes.

### *3.2 Conceptualising and interrogating the causal chain*

In this section, we first set out our understanding of the causal chain that links DFI engagement in infrastructure investment to growth and poverty outcomes. We then reframe this causal chain in terms of 'programme theory', where the assumptions that underpin each 'link' in the chain (i.e. what is supposed to happen and why) are made explicit. Finally, we identify and provide a rationale for selection of key links to be covered in this systematic review.

**Figure 1. Graphical illustration of causal chain**

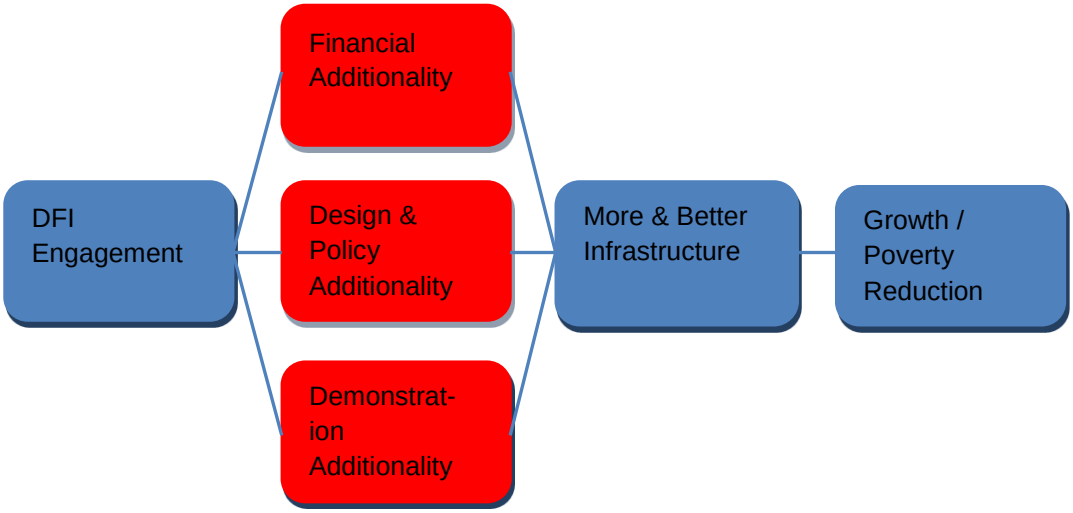

Figure 1 above sets out the links in the causal chain from DFI engagement to development impact. The questions (or links in the causal chain) are as follows:

1) Does DFI engagement crowd out (i.e. reduce) or create additional (i.e. increase) private investment in infrastructure projects? (*financial additionality*)
2) What influence does DFI engagement have on the probability of subsequent private sector funded projects in the same jurisdiction? *(demonstration additionality)*
3) What influence does DFI engagement have on infrastructure project design and the policy context within which projects occur? *(design and policy additionality)*
4) What influence does project design/policy context have on a) poverty reduction, and b) economic growth outcomes?

Link 1: DFIs and (financial) additionality

Ostensibly, DFIs have leveraged significant additional private sector finance. For example, according to the PIDG (2010: 1), 'US$390 million from the PIDG donors has helped secure US$10.5 billion of private investment commitments.' The PIDG website suggests that: 'Every US$1 of donor funds channelled through PIDG helps leverage commitments of over $25 of private sector funding for infrastructure.'[15]

The rationale for DFI engagement in infrastructure is clear. What is less clear, however, is how much 'additionality' this engagement actually creates. The quotations above focus on additionality of finance, where the claim is not that US$1 of DFI investment leverages US$25 of private investment, but that it 'helps' to do so. Methodologically, there is no obvious way to be more precise in terms of attribution. No counter-factual exists, and where a number of DFIs are involved – as is often the case – it is rarely clear how financial additionality should be allocated between the parties.

For link 1, the assumption to test, therefore, is that DFIs do leverage significant additional private finance into the infrastructure sectors of developing countries. Given the methodological issues described above, no one source of information or methodological approach would be able to adequately test this. Instead evidence from a range of sources, has been used to create a synthesis.

Link 2: DFIs and the 'demonstration effect'

Producing a demonstration effect is, in some ways, the main goal of DFIs. The funds available to them are far short of what is required to fill the infrastructure funding gap. Developing country governmental budgets and donor funds have also historically proven inadequate to fill this gap. Through their financing and advisory activities, therefore, DFIs aim to improve private sector perceptions of the risk/return trade-off of infrastructure projects such that a step-change in private investment results.

In reality, public investment in infrastructure will remain important for the foreseeable future, not least because many of the projects that are required are unlikely to be commercially viable on their own terms. But, public funding alone will never be enough to meet the shortfall, particularly in a climate of fiscal consolidation for both developing country governments and developed country donors. Consequently, the demonstration role of DFIs is crucial in reducing the infrastructure funding gap by encouraging private investment.
In common with Link 1, proving DFIs' demonstration effect is challenging due to the absence of a counterfactual and the difficulty of isolating the demonstration effect of DFIs from other changes in the investment environment that may encourage private sector investment.

Link 3: DFIs, project design and policy context

There are numerous aspects of infrastructure project design and the policy environment that influence growth and poverty impacts. As will be described in more detail below, it is not

[15] http://www.pidg.org/sitePages.asp?step=4&navID=15&contentID=44

possible to directly observe DFI impact upon growth or poverty through their work in the infrastructure sector. Instead, this link explores how DFI engagement affects (or does not) the design and policy characteristics that can be identified as having an impact on growth or poverty outcomes.

DFIs' mandates and investment criteria vary widely, and we would expect to see this reflected in their activities in this regard. All the PIDG finance facilities state, for example, that transactions should satisfy at least one of three criteria: 1) underpinning economic growth; 2) benefiting broad based population groups, 3) promoting the interests of poor people (DFID, 2008: 21). The investment criteria are therefore not explicitly pro-poor, although the PIDG DFIs are mandated to focus on low-income countries.

Link 4: From infrastructure projects to development outcomes: design and policy features

The bulk of the academic and policy literature relates to the final link. The channels of impact, the importance of design and context, and the methodological challenges of assessing these factors have been well researched and summarised. Given that the focus of this review is the additionality of DFIs, the focus will be on the first three links, about which far less is known.

Therefore, while the key studies in this area have been reviewed and summarised, this does not form part of the formal systematic review process. Rather, key aspects of infrastructure project design and policy have been identified from this literature that has been shown to have a positive impact on a) poverty, and b) growth. These are set out in Table 4 in section 6.2. As described above, the systematic review of Link 3 then looked for evidence that DFIs have sought to influence these proxies.

### *3.3 Searching for studies*

The search for relevant studies had two components: general searches of academic databases and targeted searches for DFI evaluations through websites and direct contact with DFI staff.

#### *3.3.1 General Searches*

The following databases were searched: JOLIS, Web of Science, IDEAS, EconLit, Google Scholar.

Key search terms used (using different combinations and with increasing levels of specificity) were:
"Additional(ity)"; "crowd(ing) out"; "demonstration or example"
"Evaluation OR review OR appraisal"; "PPP OR PPI OR Public Private"; "Infrastructure OR water OR road OR energy OR power OR electrification OR sanitation OR telecom OR ports OR Railway OR transportation OR ICT"
"Design"; "policy"; "framework"; "context"; "market based OR privatization OR model OR revenues OR conditions OR regulation".
"Impact or effect(s) OR outcomes"; "Poverty"; "growth"
2,350 documents were obtained.

#### *3.3.2 Targeted searches*

The first stage of the targeted search was identification of relevant DFIs. The following decisions were made:

1) National DFIs based in developing countries would not be included. There are many such institutions, identifying them all would be challenging and obtaining documentation from them more challenging still. Most importantly however, these DFIs play a different role and have different priorities to 'donor' DFIs based in the developed world, which are the subject of this study.
2) Regional and multilateral DFIs and banks that aim to mobilise private sector investment in infrastructure in the developing world as part of their activities would be included. These are: the IFC and MIGA, the EIB and EBRD, ADB, AfDB and IADB.
3) The other categories of organisation to be included are bilateral DFIs in developed countries and the PIDG which can be thought of as a 'multilateral DFI'
4) The focus was primarily for evaluations (ideally independent) from the included organisations as these were the most promising source of potential evidence.

The websites of the following organisations were searched by hand:
PIDG, IFC, MIGA, DEG, EIB, FMO, CDC, SIFEM, FinnFund, NorFund, SwedFund, PROPARCO, BIO, IFU, SOFID, SIMEST, SBI-BMI, OeEB, COFIDES, OPIC, EBRD, AfDB, ADB, IADB.[16] The OECD-DAC evaluations database was also searched using the word 'private' in an attempt to capture all relevant studies.

The monitoring and evaluation and impact assessment policies of all the above organisations were studied. Those organisations that carried out or commissioned independent evaluations were also contacted directly to request documentation. 177 DFI evaluations were obtained. 2,527 titles and abstracts were uploaded to the EPPI 4 Reviewer systematic review software hosted by the Institute of Education, University of London.

### *3.4 Inclusion / exclusion of studies*

The primary criterion for inclusion is simply relevance: is the study a) an evaluation (or summary of evaluations) of DFI projects in relevant sectors, b) an appraisal of DFIs activities, or c) an analysis of DFIs activities relating to one or more of the aspects of additionality.

The country income band upon which the evaluation or academic study focuses is also important. We focused on countries in the three lowest bands of the OECD-DAC List of Aid Recipients for 2009-2010 (Least Developed, Low Income and Lower Middle Income) as poorer developing countries generally face the greatest challenges in attracting private sector investment, and are the principal target countries for DFIs in the infrastructure sector. Studies focused on Upper Middle Income Countries were also included, but given lower priority as described below. We included studies from 1990 onwards, reflecting the concentration of DFI activity from this date. A review of titles and abstracts led to 2,323 documents being excluded on grounds of relevance or duplication. 204 documents were included and full texts uploaded to the review software.

### *3.5 Coding and analysis*

Each document was coded four times:
1. Base data: DFI, sector, income level, region, intervention type, investment type.
2. Relevance/quality: documents were prioritised in terms of relevance and quality (e.g. Independent studies carried out by consultants or DFIs' independent evaluation departments were preferred to Annual Reports). 86 studies were prioritised. (The same 4 stage process was undertaken separately for the non-prioritised studies).

[16] A brief summary of the mission, sectoral and country focus and activities of each of these organisations is provided in Annex A.

3. Evidence: statements supported by specific facts and figures, rather than general claims.
4. Additionality information on four aspects of additionality & explanatory factors

For each aspect of additionality, coded material was reviewed and key themes then identified.

## 4. Search results and details of included studies

A breakdown of the 204 included studies by organisation, country income level, region and infrastructure sector is given below. Twenty of the 204 documents were not classified as independent, but were still seen as sufficiently relevant to include, although they were not classified as priority documents (they have been classified as 'other' - see section 5.3). These are documents such as annual reports and other reports produced by DFIs, but not by independent evaluation departments or independent consultants.

### Table(s) 2. Included Study Breakdown

**Organisation (or academic)**

| | |
|---|---|
| EBRD | 75 |
| IFC | 28 |
| ADB | 15 |
| EIB | 12 |
| MIGA | 12 |
| PIDG | 6 |
| Norad | 5 |
| NorFund | 5 |
| FMO | 4 |
| KFW | 4 |
| BMZ | 3 |
| CDC | 2 |
| SwedFund | 2 |
| DEG | 1 |
| IADB | 1 |
| SIDA | 1 |
| IFU | 1 |
| *Academic* | 27 |
| **Total** | **204** |

**Country income level***

| | |
|---|---|
| Least Developed | 7 |
| Other Low Income | 4 |
| Lower Middle Income | 14 |
| Upper Middle Income | 4 |
| Developed Countries | 8 |
| **Total** | **37** |

* 37 documents refer to specific countries (most documents are sector, region or DFI-wide evaluations covering multiple countries and projects)

**Region***

| | |
|---|---|
| Africa | 9 |
| Asia | 23 |
| Europe | 33 |
| Latin America and the Caribbean | 1 |
| **Total** | **66** |

*66 documents refer to specific regions. The others refer to multiple regions or are not region specific.

**Sector***

| | |
|---|---|
| Agri-infrastructure | 1 |
| Energy | 22 |
| Industry | 11 |
| Solid Waste | 2 |
| Telecoms | 7 |
| Transport | 20 |
| Urban Development | 4 |
| Watsan | 16 |
| **Total** | **83** |

* 83 documents refer to specific sectors

## 5. Analysis of evidence

This section describes the evidence extracted from the documents studied and seeks to identify patterns in the data. Statements were only classified as evidence when they were supported by specific facts and figures. Therefore, while much of the material coded cannot be classified as evidence, it does provide information of interest, which is covered in section 6. Tables providing the statistical results of the analysis are provided in Annex B.

### *5.1 Priority Documents*

A total of 86 documents seen to be highly relevant to the study question were coded in the first round of coding. Relevance has been evaluated on the basis of three criteria: (1) whether the evaluation covers least developed and low-income countries, which are the focus of the study question; (2) whether the evaluation covers the infrastructure sectors included in the study question; (3) whether the document provides *evidence* on the study question from an independent source as opposed to, for example, annual reports that are produced internally.

**Table 3. 86 priority documents: frequencies by organisation**

| **DFI** | |
|---|---|
| IFC | 23 |
| ADB | 14 |
| MIGA | 12 |
| EIB | 7 |
| Norad | 5 |
| FMO | 4 |
| BMZ | 3 |
| CDC | 2 |
| NorFund | 2 |
| PIDG | 2 |
| SwedFund | 2 |
| AFD | 1 |
| DEG | 1 |
| IADB | 1 |
| SIDA | 1 |
| IFU | 1 |
| **Total** | **81** |

Of these 86 documents, 81 evaluate the work of a particular organisation. The frequencies of these documents by organisation are provided in the table below. This section first discusses frequencies of samples of evidence (i.e. the number of examples of evidence of each type of additionality) and goes on to discuss 'crosstabs', i.e. mapping the frequency of outcomes against contextual factors and using the results to explore causality.

The weight of evidence is clearly positive; it indicates that the work of DFIs does create financial, design, policy and demonstration additionality more often than not. However, the number examples of 'negative or no' additionality suggest that there is room for improvement.

#### *5.1.1 Additionality frequencies*

From the 86 documents coded in the first tier, 67 examples of evidence of additionality in total were found (i.e. a phrase or paragraph containing evidence of additionality)[17]. Evidence of additionality is therefore limited. Evidence of policy additionality and demonstration additionality is particularly scarce, with just five and eight examples respectively.

**Table 4. Additionality Evidence**

| *Financial additionality* | | *Design additionality* | | | *Policy additionality* | | *Demonstration effect* | |
|---|---|---|---|---|---|---|---|---|
| Positive | None | Growth | Poverty | Negative or none | Positive | Negative or none | Positive | Negative |

[17] Note that this does not mean that 67 documents were found containing evidence of additionality, but that 67 examples of evidence of additionality were found in total in the 86 documents examined.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 18 | 10 | 14 | 6 | 6 | 4 | 1 | 5 | 3 |

*c) Financial Additionality*

Evidence on financial additionality is mixed, with 18 examples of projects that created additionality and ten that would have gone ahead without DFI involvement. This suggests that DFIs have created financial additionality in a significant number of cases, but that these types of projects are not easy to identify and that significant up-front project screening and appraisal work is necessary and justified to ensure projects are additional.

*d) Design Additionality*

14 documents contain evidence of design additionality to promote economic growth, and six documents contain evidence of design additionality to enhance poverty reduction. Considering that increasing growth and reducing poverty are the principal goals of the organisations included in this study, this is a very small proportion of the 86 documents examined.

Under design additionality for growth, the three most frequent proxies are:' targeting bottlenecks to production and growth' (8 documents); 'employment' (6); and 'fiscal contribution' (6).[18] Considerably less evidence was found for design additionality to enhance poverty reduction. Just six documents contain evidence of this type, five related to designing the infrastructure either to physically reach the poor (3) or be affordable for the poor (2), with the final example pertaining to labour standards. However, two documents contain examples of projects that have failed to physically reach the poor, and two documents provide evidence of projects that have not been affordable for the poor or poorest. In summary, the evidence of the *additional* impact of DFIs on poverty reduction is scarce, and where evidence does exist it is mixed.

*e) Policy Additionality and Demonstration Additionality*

Evidence on policy additionality or demonstration additionality is also scarce. Just five documents contain evidence on the former: four cases of improvements to the legal and regulatory framework and one case of an unsuccessful attempt. Five documents contain evidence of demonstration additionality and three documents contain evidence of a failed attempt or a negative demonstration effect. The low numbers suggest that: (1) evidence on these types of additionality is not being gathered; and/or (2) the organisations under study struggle to generate these types of additionality.

### *5.1.2 Crosstabs: Exploring regularities in the evidence*

Within the review software, crosstabs are used to map the frequency of outcomes against contextual factors (for example financial additionality against country income level) and are thus employed to explore patterns in the data. There are some important caveats on this part of the review. First, a relatively small quantity of evidence was discovered by the research team, meaning that results cannot be said to be statistically significant (although this does not mean that they are not of interest). Second, some of the apparent patterns are attributable to:

- the type and range of studies the research team has been able to access;
- the way in which different organisations carry out evaluations; and,

[18] Note, however, that the magnitude of the effect varies significantly between evidence samples, particularly for employment and fiscal contribution.

- the variation in the quantity of evaluations the research team was able to access from each organisation.

As far as is possible we have attempted to control for these factors in the analysis, as explained under the headings below.

*a) Organisation*

The greatest number of documents containing evidence of financial additionality are from the IFC (8), MIGA (6) and the ADB (4). In the case of the IFC and the ADB this may be a reflection of the large scale of these organisations, but it is also due to the large number of documents available and their manner of reporting.

The only organisations with more than one document containing evidence of design additionality are ADB (6) and the IFC (3). This may suggest that the smaller and more resource-constrained DFIs are not focusing on and/or measuring design additionality. The three organisations demonstrating evidence of policy additionality are the IFC (3), MIGA (1) and Norad (1). This may be because each of these organisations engages actively in enabling environment activities, unlike bilateral DFIs.

The three organisations for which evidence of demonstration additionality was found are the IFC, ADB and Norad. Again these are organisations that have a wider remit than institutions such as the European bilateral DFIs (EDFIs).

*b) Region*

Evidence of financial additionality is shared equally between Africa and Asia, but examples of projects that would have taken place without the organisation's involvement are more common in Africa: seven examples, compared to three in Asia. It is *possible* that this may be associated with the strong mandate of the organisations based in the developed world to promote development in Africa, which may lead to excessive pressure to find projects and thus the selection of inappropriate projects. This is by no means the only possible cause, however, and as has been stressed the sample size is too small to do more than suggest the existence of data patterns.

In Africa, two examples were found of a positive demonstration effect, while five were found of failed or negative demonstration effects. To compare, Asia has four positive and two negative examples. The sample is too small to draw definite conclusions, but the evidence suggests that creating a demonstration effect in Africa is challenging. There are no discernible patterns in design or policy additionality by region.

*c) Sector*

Evidence of financial additionality is most plentiful and most mixed for the energy and telecoms sectors. Seven examples of financial additionality were found in the energy sector, compared with four projects that would have gone ahead without DFI involvement. The corresponding figures for the telecoms sector are five and three respectively. There are three examples of financial additionality in transportation and two in water and sanitation, but no examples of projects that would have gone ahead without DFI involvement in either sector. With the usual caveats, this suggests a lower risk of crowding out in these sectors as they are less popular with private sector investors.

Evidence of policy additionality for growth is dominated by the energy sector, with six out of seven examples. Five of these six relate to changes to the legal and regulatory framework to encourage private sector investment. This provides another example (albeit supported by limited evidence) of DFIs fulfilling their objectives – a sound legal and regulatory framework is critical for a successful energy sector but is lacking in many of the poorest developing countries. Evidence of demonstration additionality is also dominated by the energy sector, although it is mixed: four examples of a positive effect versus three examples of a failed or

negative demonstration effect. The evidence is similarly mixed for telecoms, with one positive example and two of failed or negative demonstration effects.

*d) Design Additionality broken down into income level and sector*

Crosstabs for the design additionality code were broken down into greater detail under each sub-code of growth, poverty reduction and negative or none. In most instances the scale of the sample is too small to draw conclusions, but those contextual factors for which tentative hypotheses can be made are discussed below.

*Country Income Level*

Of the 26 examples of design additionality for growth, the most frequent (7) are examples of targeting bottlenecks to growth in LDCs. This is one of the principal objectives of the organisations under study, and provides some evidence that these organisations are fulfilling their mandates in this area. There are also five examples of employment creation in LDCs, but the number of jobs generated varies greatly.

Considering design additionality for poverty reduction, four of the seven examples are of projects that were designed to physically reach the poor in LDCs. Again, this provides some (limited) evidence of the organisations under study fulfilling their mandate. However, four of the seven examples of failed or negative design additionality are of projects which have failed to reach the poor or are not affordable for the poor in LDCs. This demonstrates the difficulty of creating commercially viable pro-poor projects in the poorest countries in the world.

*Sector*

Of the 12 interventions designed to target bottlenecks, seven are in the energy sector, which is widely acknowledged to be the sector suffering from the greatest under-investment in lower-income countries. Three are in the (pro-poor but often difficult to marketise) water and sanitation sectors. Again this provides a degree of evidence that the organisations under study are fulfilling their objectives.

### *5.2 EBRD documents*

Of all the organisations under review, the greatest number of documents was sourced from the EBRD. The EBRD has a particular mandate and geographical focus: it aims to 'help our countries make the transition towards well-functioning market economies' (EBRD website), and its 'region of operations stretches from central Europe and the Western Balkans to central Asia (*ibid*)'. EBRD documents were considered less relevant than those prioritised as many of the countries in this region are not LDCs or LICs. There are also important differences between the activities required to foster a transition to an open market economy and those to promote broad-based development in a low-income and/or high-risk country.

#### *5.2.1 Additionality Frequencies*

**Table 5. Additionality Evidence from EBRD**

| Financial additionality | | Developmental outcomes | | | Policy additionality | | | Demonstration effect | |
|---|---|---|---|---|---|---|---|---|---|
| Positive | None | Growth | Poverty | Negative or room to improve | Capacity | Legal and reg framework | Negative or room to improve | Positive | Negative |
| 6 | 2 | 2 | 0 | 0 | 3 | 5 | 2 | 1 | 0 |

Evidence of additionality in the EBRD documents is sparse. While the patterns observed do not differ greatly from those observed for the 86 priority documents, the principal difference is a considerably higher proportion of policy additionality outcomes than for other organisations, particularly for the legal and regulatory framework. This is what we would expect to see for the EBRD given its transition mandate.

#### *5.2.2 Crosstabs*

Data was generally too sparse to generate patterns using crosstabs. However, considering financial and policy additionality outcomes against sectors does reveal some results of interest. For financial additionality we see a good distribution across sectors. Two positive results in water and sanitation support the suggestion that creating financial additionality in the water and sanitation sector is feasible for DFIs. In common with the study of the priority documents, we see the majority of policy additionality in the energy sector, principally energy sector reform to enable liberalisation, competition and the entry of the private sector.

### *5.3 Other Studies*

Finally, information from 'other' studies was reviewed. These documents were seen as less relevant either because: (1) they did not deal with the lower-income bracket countries of principal interest to this study, and/or; (2) they were not carried out by an independent body[19]. There were 46 'other' documents, but the research team eventually took the decision to exclude the 34 DFI annual reports. The small amount of material that may have been of interest in these documents were judged not to justify the long period of time that would have been required to code the text. Twelve 'other' studies were therefore included: five from EIB, three from IFC and four from KfW. Given the low number of documents coded and questions over their relevance and independence, the statistical patterns found in the evidence from these documents is not seen to be of sufficient importance to discuss here. However, data tables for this part of the study are available in Annex B.

## 6. Synthesis of coded text

In this section we synthesise the text that was coded as relevant to the study question. This includes the text coded as evidence according to the definition set out above, and the very large quantity of text that did not. That much of the text did not qualify as evidence should not be taken to mean that the material set out here is necessarily of less value than that in the previous section. Indeed, given the paucity of hard evidence, much of the real value of the review has been gleaned from the material summarised in this section.
As in the preceding chapter, we present findings for each of the aspects of additionality that were described in our causal chain: financial, design, policy and demonstration.

### *6.1 Financial additionality*

The most fundamental aspect of DFIs' activities is their ability to leverage additional private investment into the infrastructure sectors of developing countries. There is strong evidence that infrastructure development supports economic growth and that growth is a prerequisite to poverty reduction. Therefore, to the extent that DFIs' activities leverage additional finance leading to a greater provision of infrastructure than would otherwise have been the case, we can say they are creating a positive developmental impact.

[19] By independent body we mean an independent evaluation organisation within a DFI, for example the World Bank's Independent Evaluation Group (IEG) or an external (and independent) agency or consultancy.

### 6.1.1 *Types of financial additionality*

The first finding to emerge is that DFI leveraged finance is not always additional in the strictest sense of the word. In many cases finance could have been obtained without DFI engagement, but not in the form required to make the project economically viable. In practice, therefore, such finance can be thought of as additional, since it was the involvement of DFIs that enabled it to be mobilised in a form that made projects viable. A number of different categories can be identified:

*a) Better terms: longer maturities and viable rates*

Perhaps more than any other form of investment, infrastructure requires long-term financing. Fixed costs are high, and construction times long. Investors must therefore be prepared to wait a significant time for the project to pass the break-even point and begin to generate positive returns.

Long-term finance, however, is precisely what is lacking in many developing countries, particularly poorer, higher-risk countries that are a priority for some DFIs. Throughout the material reviewed, this was the common form of financial additionality. The quotations below from evaluations of IFC and ADB projects are typical:

> *'IFC's involvement allowed the Company, for the first-time ever, to obtain long-term foreign currency financing at attractive rates.'*[20,21]

> *'Some sponsors considered ADB's involvement essential as a means of enhancing creditworthiness and catalyzing commercial funding. ADB's relatively long maturities and grace period were well suited to infrastructure financing.'*[22]

In many instances, DFIs are the only entities in a country able to provide and leverage finance of the appropriate maturities, which is clearly additional.

There is little evidence that DFIs offer loans at interest rates that do not fully reflect risks in any systematic sense. This is unsurprising, as most DFIs are prohibited from acting in such a way, and generally aim to adjust their rates to market levels.

> *'Despite the higher risks associated with subordinated debt, the willingness of the DFI to use this instrument may not imply a subsidy. For instance, 'IFC 'C' loans are not viewed as a subsidy, since they earn very good returns'. Overall, the combination of additional basis points for longer maturing senior loans, and higher returns on mezzanine to conventional debt, are viewed by some in the commercial financial sector as adequate compensation for any additional risks taken by the DFIs. Generally, the private sector will not be able to take out loans with such long maturities. Loan maturities differ amongst DFIs.'*[23]

In some instances, such as the provision of long-term finance in high-risk countries, there is no strict market test, as there are no commercial players providing such finance on any terms. DFI activity in such situations could raise concerns over market distorting practices. However, as argued in an independent review of SIDA's guarantee programme below, it is more a matter of 'market-making' than distorting, which is fully compatible with DFIs' mandates.

[20] Note that each reference has an ID number which can be used to identify the original document in the EPPI Reviewer software.
[21] Independent Evaluation of IFC's Development Results 2008: IFC's Additionality in Supporting Private Sector Development (ID: 1251652)
[22] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[23] The use of subsidies by Development Finance Institutions in the infrastructure sector (ID: 1562411)

*'The potential distortions of the Sida guarantees must be seen in the context of already existing distortions. Thus, the existence of government backed DFIs dominating the long-term financing in the poorer developing countries implies a distortion in the sense that 'pure market players', e.g. local or international commercial banks, tend not to participate, both from the perspective that risks are perceived to be too high, and that the market lending rates by DFIs are too low given the risk levels. Sida guarantees which are risk-reflecting and with shared risks with commercial players fall in between: they are not provided on 'ideal' commercial grounds (which tends to be a theoretical level as there is no such commercial market), but they tend to be provided at more market like conditions than many DFI operations. There is a certain degree of 'market making' with the Sida guarantees in the sense they bring in commercial banks (or local capital markets) in a share private-public partnership in 'markets' otherwise dominated by the quasi-governmental DFIs. Yet 'risk-reflecting' is an implicit subsidy as compared to a 'market rate' as Sida is not pricing its own capital. In summary, overall Sida's guarantees which are provided at risk-reflected price, are more likely to reduce distortions in markets already heavily distorted, or to create markets, which do not exist, than be a concern for creation of additional market distortions.'*[24]

*b) Countercyclical*

Private financing is a procyclical business. During economic upswings, perceptions of risk diminish, asset prices rise – boosting the value of collateral – financing becomes increasingly available at tighter and tighter margins. During downswings, the opposite occurs. Differences between the relative attractiveness of regions, countries and sectors remain, but the general availability of financing and its terms move with the business cycle.

DFIs have an important role in taking a more countercyclical approach. While real economic prospects do deteriorate in difficult economic times, market perceptions often overshoot these realities. Consequently there will be many projects that are good investment prospects, but the timing is such that they appear not to be.

There are two aspects to this. First, a downturn in the home markets of investors could reduce the risk tolerance of financial institutions based there. Second, an economic downturn – or other problems – in the country where the investment is being sought, could reduce investors' appetite to take on country-specific risk. In very high risk countries, DFIs may be able to provide political risk insurance when commercial actors would not. The approach taken by MIGA is contrasted with private insurers who are generally unwilling '*to enter markets during a conflict situation or in its immediate aftermath, and the scarcity of political risk insurance in high-risk countries such as Afghanistan*.'[25]

The quote from the FMO below highlights the fact that DFIs are well aware of the importance of this function, but also stresses the need to behave countercyclically during upswings:

*'Past evaluations have demonstrated that FMO's investment and development outcomes can be badly affected by economic and financial sector crises in its markets. They also show that FMO has been able to achieve some of its best results and to play its role most effectively in post-crisis situations, when liquidity in our markets had dried up. DFIs should ideally play a countercyclical role, exercising restraint and withdrawing from markets and market segments when these are increasingly served by commercial finance, and stepping up their activities when and where commercial financiers withdraw. This follows directly from the additionality principle. At the start of 2008, when advising on FMO's strategic directions, we wrote that "FMO may want to consider consciously and deliberately lowering its investment volumes at times when*

[24] SIDA Evaluation of Independent Guarantee Scheme (ID: 1545363)
[25] Independent Evaluation of MIGA's Development Effectiveness-2009: Enhancing MIGA's Risk Mitigation in IDA and Conflict-Affected Countries (ID: 1508110)

*market liquidity is high (as evidenced, for example, by region-wide pressure on margins or by rapid growth in emerging markets private equity fund raising), to be all the more able to respond when the market reverses, liquidity dries up and FMO is optimally additional.'*[26]

As we will discuss further below, it is difficult for DFIs to maintain this countercyclical stance. Although they are not subject to the same level of procyclical incentives as private actors, they do face such pressures, which need to be understood before they can be countered.

*c) Risk absorption and mitigation during project development*

DFIs are able to absorb more risk than private operators and so can play a crucial role in the early stages of a deal. As pointed out by SIDA below, private operators can face significant uncertainties and risks in the preparatory stages of projects, which they may not be compensated for:

*'Often private companies undertaking pioneering projects in high risk environments have to bear a number of, often unexpected transaction costs, for example in respect of inflexible regulations, poorly experienced institutions, etc. As such, the enterprises undertake a number of development efforts for which there tend to be no reward. Swedish development assistance should be prepared to share such costs and risks through the pricing of its guarantee premiums.'*[27]

The case for sharing these costs are clear, but DFIs can also go further and seek to identify and mitigate risks directly:

*'ADB took the lead in technical, financial, and legal due diligence, identifying key project risks including traffic volume risk, toll adjustment risk, and political and economic risks, and designing measures to mitigate those risks. It also played a key role in mobilizing commercial financing when funding became scarce in the wake of the Asian financial crisis. ADB attracted financing from IFC, EFIC, Compagnie Francaise d'Assurance pour le Commerce Extérieur (COFACE), MIGA, and commercial banks.'*[28]

The importance of this function is reflected in the fact that the PIDG has established dedicated facilities – InfraCo Asia and InfraCo Africa – to focus specifically on this area:

By taking on the high costs and risks of early stage project development, InfraCo Africa allows infrastructure projects to occur in situations where the private sector would not otherwise be willing or able to invest.

### 6.1.2 How can DFIs provide or leverage finance in environments where 'pure market players' do not?

*a) Access to finance on favourable terms*

DFIs maintain very high credit ratings, enabling them to access finance on more favourable terms than standard commercial institutions. There are a number of reasons for this, the most fundamental of which is that bilateral DFIs are backed by developed country governments so that default risk is effectively eliminated – or, more accurately, it is the same as the default risk of the government. Multilateral DFIs are backed by all member governments, again eliminating the risk of default.

[26] FMO Annual Evaluation Review 2008/09 Good times, bad times and development effectiveness (ID: 1251604)
[27] SIDA Evaluation of Independent Guarantee Scheme (ID: 1545363)
[28] Philippines: Loan and Complementary Loan to Manila North Tollways Corporation for the North Luzon Expressway Rehabilitation and Expansion Project (ID: 1245258)

As well as eliminating default risk for those lending to DFIs, the political backing they enjoy also provides them with protection with respect to their own lending. The probability of those borrowing from DFIs defaulting is lower than for commercial institutions. As described below, this particularly noticeable for members of the World Bank Group, but the point also holds for bilateral DFIs:

> *'IFC loans have never been included in a sovereign debt rescheduling, nor have payments to the IFC ever been permanently interrupted by a general debt-servicing moratorium (Moodys, 2007). This seems to be because the IFC— and other donor agencies—enjoy what is described as de facto preferred creditor status. This means that member governments grant IFC loans preferential access to foreign exchange in the event of a foreign exchange crisis. As a result, "IFC loans, including the portions taken by participants, are exempt from country risk provisioning when applicable and have never been included in general country debt rescheduling...The preferred creditor status of the World Bank and other multilateral development institutions is not a legal status, but it is embodied in practice and has received consistent universal recognition. It is granted by member governments of the IFC and recognised by other creditors. It is also an important element in the IFC's triple-A ratings. Because of the mitigation of transfer and convertibility risk, capital markets transactions structured under the IFC B-loan umbrella can achieve a rating above the sovereign rating of the host country. Through the IFC umbrella, the ceiling can be "pierced". The preferred creditor status stems from the fact that defaulting on payments to the World Bank would probably result in a halt to disbursements of other Bank loans, and possibly a stop on the approval of new projects (Fitch ICBA, 2000). Developing-country governments are therefore far less likely to default on payments on a contract involving a major donor than they are on another contract. With a MIGA guarantee, furthermore, MIGA has the right, in the event of a payout, to recoup the cost from the host country government.'*[29]

As noted above, the IFC is able to extend its protection to commercial borrowers through its B-loan programme. Under this mechanism, the IFC is the 'lender of record', in that all funds are raised by the IFC and then distributed to other participants. In this way commercial institutions are able to access funds on the same terms as the IFC and with the same level of default risk. In many countries where DFIs operate the ability to provide this assurance to private investors is essential.

*b) Ability to hold riskier portfolio than private investors*

A further effect of their political support is that DFIs are able to take on more risk than private sector institutions and thus enable projects to proceed that would not in the absence of DFIs:

> *'...implicit subsidies that are provided by the public sector to the DFI are rarely translated into subsidies visible at project level, but are essentially providing support for the rationale of DFIs. These implicit subsidies allow the DFIs to hold large, risky investment portfolios, which means that, even though there is no direct subsidy element, projects which otherwise would not have gained support from the private sector can go ahead.'*[30]

DFIs also tend to display high levels of liquidity compared to private operators, enabling them to take on more risk.

> *'Given a high level of liquidity, it seems logical to suggest that DFIs can take higher risks without jeopardising their core business.'*[31]

[29] PRIVATE SECTOR PARTICIPATION IN AFRICAN INFRASTRUCTURE (ID: 1234021)
[30] The use of subsidies by Development Finance Institutions in the infrastructure sector (ID: 1562411)
[31] The use of subsidies by Development Finance Institutions in the infrastructure sector (ID: 1562411)

*c) Political umbrella & stamp of approval effect*

As well as reducing default risk, DFIs are able to significantly reduce the risk of political interference. Infrastructure projects require large upfront investment and have long lead-in times. They are also unusually dependent upon the maintenance of a supportive regulatory and policy framework. Providing comfort to investors that this will be maintained is therefore of fundamental importance.

The effect is particularly pronounced in the case of the World Bank Group, but extends to other organisations such as the Regional Development Banks:

> *'As a multilateral entity, it is able to play the role of an honest broker, and the deterrence effect arising from its mandate is valued greatly by investors, who understand that host counties have more at stake than just individual projects—potentially the much larger and more important relationship with the WBG could be at risk.'*[32]

> *'Investors were also clear that they find IFC to be a valuable partner...They also appreciate the protection from political risk that IFC's involvement provides.'*[33]

> *'ADB participation provided an important means of ameliorating political risk, especially for tariffs in the power and energy sectors.'*[34]

DFIs also appear able to play the role of 'honest broker' over disputes between parties to a deal:

> *'For host countries, resolution of disputes provides a positive signaling effect of the attractiveness of the country as an investment destination.'*[35]

> *'In cases when projects encountered difficulties related to government actions, sponsors particularly appreciated ADB's ability to access senior decision makers, in the role of an honest broker, to help resolve the problem.'*[36]

More generally, DFI participation confers a 'stamp of approval', giving a project credibility. This is particularly important in high-risk countries, and where there are no precedents:

> *'One of CDC's objectives is to mobilise third party capital investment in emerging markets by demonstrating the benefits of successful investment to other capital providers. In this way, CDC can act as a 'stamp of approval' for new fund managers in emerging markets, reassuring and attracting other investors.'*[37]

> *'...the 'blue stamping' of having an official Danish developing financing institution on board is useful to many firms regardless of their experience in the market.'*[38]

> *'Most projects, in particular the ones where EIB entered into innovative financing schemes as discussed above, reported important catalytic and signalling effects through EIB participation. In a number of projects, the EIB was, as the biggest and/or only lender, providing both a stamp of approval to the project/sector as well as a*

[32] The World Bank Group Guarantee Instruments 1990–2007 (ID: 1251654)
[33] Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa Draft Final Report (ID: 1251634)
[34] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[35] The World Bank Group Guarantee Instruments 1990–2007 (ID: 1251654)
[36] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[37] CDC Group plc Development Review 2009 (ID: 1245342)
[38] Evaluation: the Industrialisation Fund for Developing Countries (IFU) (ID: 1545320)

*significant sign of comfort and seriousness, thus improving the project's reputation through EIB participation.'*[39]

*'With respect to IFC role and contribution, IFC provided comfort to other financiers in a relatively new sector that many would have not considered without IFC's participation.'*[40]

An important point to make, as suggested in the quotation below, is that the line between a political umbrella and *no* financial additionality is sometimes blurred.

*'With regard to the potential danger of only replacing other capital – which gives no value added effects to Norfund's investments – some of the other investors have indicated that the investments would have been carried out without Norfund. Norfund was however a preferred partner because of their experience of investing in developing countries and being owned by the Norwegian Government.'*[41]

In summary, it is clearly the case that DFIs can and do leverage significant levels of additional finance into infrastructure projects in developing countries. As we have seen, in many cases, investors would not have engaged with a project without DFI participation and the advantages (in terms of financing terms and risk reduction) and general assurance they are able to provide. This is particularly true in higher risk countries, where the value of these advantages and assurances is greatest.

### *6.1.3 Non-additionality and crowding out*

As has been discussed, establishing a clear 'yes or no' answer on whether a DFI has created financial additionality is extremely difficult due to the lack of a counterfactual. Very few cases of clear crowding out were found in the review, where crowding out is defined as DFIs investing *in the place* of private financiers and thus prejudicing the development of a healthy private sector market for infrastructure financing. However, many cases were found of projects which the evaluators believe could have gone ahead without DFI involvement, as described below in the case of IFU.

*'The additionality of IFU is clearly least for those projects where the Danish investors would go ahead without IFU's participation. This is the case in half of all projects in Asia assessed by the Evaluation, three-fourths of the projects with large DPs and half of the projects with SME DPs in Africa, and two-thirds of the DPs in Latin America.'*[42]

Whether such projects would have gone ahead without DFI involvement is questionable. However, in these cases, it seems likely that the appropriate level of DFI involvement would be project development activities (such as those carried out by the PIDG InfraCo Facilities) rather than financing. Nevertheless, if the DFI is contributing just a small proportion of the total project finance (say 10 per cent) a verdict of 'crowding out' again seems overly harsh.

If it appears that a project would probably have gone ahead without DFI involvement, but it is not clear that the DFI has crowded out other private investors (i.e. invested in their place when they wished to make the investment themselves), we have referred to this as 'non-additionality'.

*a) Incentives to invest in more commercially attractive countries and sectors*

[39] Evaluation of operations financed by the EIB in Neighbourhood and Partnership Countries between 2000 and 2008 (ID: 1251585)
[40] Private Sector Development In the Electric Power Sector: A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s (ID: 1251639)
[41] Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund) (ID: 1251662)
[42] Evaluation: the Industrialisation Fund for Developing Countries (IFU) (ID: 1545320)

DFIs face pressures to bring in deals and it is easier to do this in good times and relatively attractive countries and sectors. Almost by definition, the greatest additionality will entail the most work and potentially the most delays. This is not conducive to achieving a high volume of deals, and the risk is that pressure on staff to make deals may erode financial additionality:

> *'In other cases, IFC involvement followed other investment in the sector—the Kenya Telekom privatization seems to have been in part triggered by the success of earlier mobile investment; while the IFC's investment in Orange Cameroon came when both mobile operators were already in the process of rolling out networks.'*[43]

> *'Evidence suggests that during the first years FMO struggled with the additionality of projects funded by the LDC Infrastructure Fund. Each of the four cases in which the financing of the Fund was not additional and had no catalytic impact were approved at a moment when investment officers were eagerly looking for investment opportunities for the Fund.'*[44]

Given that it is easier to attract investors to projects in sectors with greater commercial prospects, there will be a natural pull towards such sectors, to the extent that DFIs are motivated by returns. In such circumstances, a lack of additionality risks becoming straight crowding out of the private sector, particularly where DFIs can provide finance on better than market terms:

> *'In recent years, PSOD has had difficulty obtaining central bank approval for bank-related transactions due to concerns about ADB crowding out commercial operations because of its potential to provide funds at below-market rates. Central bank concerns about ADB's involvement in the Indian finance sector also have affected infrastructure operations.'*[45]

*b) Subsidised Technical Assistance or Advisory Services reduces financial additionality*

There is a risk that DFIs providing subsidised Technical Assistance (TA) or Advisory Services (AS) may be selected as preferred project participants as a result of these subsidies, and thus may crowd-out other potential private investors. However, it is important to note that this only occurs in cases in which the TA or AS is being provided *in combination with* some form of finance on a particular project. Where TA or AS is provided in isolation and results in a private investor providing finance, neither non-additionality nor crowding out will occur.

The IFC in particular is concerned about the potential for distortion arising from this effect:

> *'...the increased availability of free (or subsidized) AS in support of private sector development—from IFC and other development institutions—makes it impossible to assess true client demand, and can be market distorting....the provision of free or near-free AS could be market distorting, because: i) the project may directly compete with projects offered by private providers of knowledge services; and ii) IFC may be indirectly competing with other financiers by effectively cross-subsidizing an investment it has with the same client. The risk is that a company agrees to a loan it could have obtained in effect more cheaply from other sources, removing IFC's financial additionality in the deal.'*[46]

[43] Demonstration effect_Castalia_Africa_Evaluation_Draft_Final_Report.pdf
[44] IOB Evaluation: Investing in infrastructure (Evaluation of the LDC Infrastructure Fund) (ID: 1251601)
[45] INDIA: CASE STUDIES ON Private Sector Development and Operations (ID: 1245290)
[46] Independent Evaluation of IFC's Development Results 2009: Knowledge for Private Sector Development (ID: 1251653)

There is a fine line to be drawn here. We have seen how DFI engagement – including TA or AS – can be crucial in mitigating early-stage risk and thereby enabling projects to occur. Alternatively, it is conceivable that DFIs could use free or concessional TA/AS to 'sweeten' a deal and thus crowd out private investors. While this is largely a matter of judgement – and in most cases will be relatively obvious – safeguards based on asset allocation for country risk and the commercial attractiveness of sectors could be one way to avoid the potential for distortion resulting from TA and AS.

In summary, despite the risks described above, we found little support for the view that *crowding out* of private investors by DFIs is a significant issue. However, the synthesis and the analysis of evidence in section 7 did provide support for the view that *non-additionality* as we have defined it here is relatively common. While a comprehensive review of the tools DFIs use to screen for possible non-additionality or crowding out is beyond the scope of this study, the material reviewed suggests that this may be one area in which DFIs could improve. The table below provides a preliminary classification of the likelihood of non-additionality or crowding out by DFI instrument or type of finance. The extent to which project commercial viability affects the likelihood of financial additionality and other outcomes is discussed in depth in section 7.1.

**Table 6. Likelihood of non-additionality or crowding out by type of instrument or finance**

| **Instrument or type of finance** | **Likelihood of non-additionality or crowding out** |
|---|---|
| Technical Assistance, Advisory Services or Project Development only | None |
| Subsidised Technical Assistance, Advisory Services or Project Development combined with investment in a particular project | Potentially high, as the subsidised TA/AS effectively forms a subsidy on the investment, and could be market distorting. |
| Finance on (close to) commercial terms | As discussed above, DFIs do not provide finance on commercial terms in the strictest sense of the word; this would be counter to their *raison d'être*. However the closer the finance provided is to pure commercial finance (which all DFIs theoretically aspire to) the greater the chances that private investors will be crowded out.)<br><br>* This is not to say that DFIs should not provide this type of finance, but that caution should be taken when doing so. |
| Financing with an element of grant or (clearly) concessional loan. | Examples of this type of concessional financing are surprisingly common, as discussed further in section 7.1. However this type of finance is generally used to leverage private sector finance on commercial terms. In these cases, non-additionality appears considerably less likely, as DFIs search for the best terms and (at least in theory) would only provide concessional finance where there is no other option. |

| | |
|---|---|
| DFI(s) provide majority of finance with little or no co-financing from private sector | In a limited number of cases, DFIs provide all or most of the project finance. (An example of this is the OLKARIA III geothermal power plant in Kenya, for which debt finance was provided by DEG, KfW, the European DFIs' EFP, Proparco, FMP and the EAIF, with no purely commercial parties involved.[47]) In such cases there is clearly no risk of non-additionality. |

### *6.2 Design additionality*

Many DFIs aim to do more than leverage private finance. While this is not true of all DFIs, many are committed to creating additional development impacts: larger growth effects and/or greater reductions in poverty resulting from projects than would be the case without their participation.

To test for these forms of additionality, we identified key aspects of infrastructure project design and policy frameworks that have been shown to have a positive impact on a) poverty, and b) growth and looked for evidence of DFI influence on these. The proxies are provided in table 4 below.

**Table 7. Design and Policy Proxies for Increased Development Impact**

| *Poverty* | | *Growth* | |
|---|---|---|---|
| *Design* | *Policy* | *Design* | *Policy* |
| Good quality service physically reaches the poor | Universal service obligations or bonuses for connecting poor areas / households | Targets bottlenecks which are barriers to productivity, trade, etc. | Better institutional arrangements for maintenance |
| Connection costs and user fees affordable for the poor | Poor users cross-subsidised or directly subsidised | Local suppliers used | Capacity building in domestic institutions |
| Appropriate service levels permitted or encouraged | Encourage competition to reduce costs and increase choice in level of service provided | Employment generation | Improved stakeholder engagement |
| Design aims to reduce gender and other inequalities | Accompanying, sector wide pro-poor reforms and policies to enable the poor to access new commercial opportunities | Fiscal impact (i.e. increased government revenues) | Regulatory reform to avoid political interference (e.g. independent regulator) |
| Participation of poor in project planning | Requirement to consult with poor groups. | Private sector development | |
| Pro-poor employment generation | Local content requirements (encourage PSD) | | |

[47] The Growing Role of the Development Finance Institutions in International Development Policy (ID: 1251682)

Sources: Straub, S. (2008b) Infrastructure and Growth in Developing Countries: Recent Advances and Research Challenges – World Bank Policy Research Working Paper 4460 (Systematic review); World Bank World Development Report 1994: Infrastructure for Development; DFID (2002) Making Connections: Infrastructure for Poverty Reduction; Estache, A. (2006) Infrastructure: A survey of recent and upcoming issues. World Bank; Jahan, S. & McCleery, R. (2005) Making Infrastructure Work for the Poor: Synthesis Report of Four Country Studies – Bangladesh, Senegal, Thailand and Zambia. New York: UNDP; OECD-DAC (2006) Promoting Pro-Poor Growth: Infrastructure. OECD; Prud'Homme, R. (2005) Infrastructure and Development

### *6.2.1 For growth*

The great majority of material relevant to project design additionality focused on growth. Growth additionality was found to be created not only through project-level interventions, but also commonly in project selection; i.e. projects were selected on the basis that they would generate relatively high levels of economic growth. Below we consider the key themes emerging from the synthesis.

*a) Target Bottlenecks and support international trade*

The most common factor was the alleviation of 'bottlenecks' that constrain productivity and thus economic growth. This may relate to the multiplier impacts of a particular sector, as in the IFC project below:

> *'The introduction of mobile phones in Nigeria has had a significant impact. There was almost no communications sector in Nigeria in 2001, except for an unreliable government owned fixed-line telephone company.'*[48]

Or to removing a constraint on inputs to a range of sectors, as in the ADB project described below:

> *'In India, the Petronet LNG project plays an important role servicing India's large and growing demand for clean energy and supplies 20% of the LNG gas that is used to fuel taxis and buses in major urban centers in India and to industrial commercial users.'*[49]

Or to removing an actual, physical 'bottleneck':

> *'There are no viable alternative routes to Central and Northern Luzon....By offering improved transport facilities to and from Northern and Central Luzon, the rehabilitated NLEX has assisted the development of industrial and commercial activities in the area. It has thereby eased local unemployment and created livelihood opportunities in an economy severely affected by the eruption of Mount Pinatubo in 1991 and the closure of the American air base at almost the same time.'*[50]

A specific area of focus is on relieving bottlenecks with respect to international trade (quotations from ADB and SIDA respectively):

> *'Without the Project, Sri Lanka would have lost its competitive advantage in the port industry to other ports such as Salalah (Oman) and Aden (Yemen) because of (i) inefficiencies in its operation, and (ii) its limited facilities. In an environment of rapidly*

[48] IFC in Nigeria: 1998 - 2007 An Independent Country Impact Review (ID: 1251629)
[49] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[50] Philippines: Loan and Complementary Loan to Manila North Tollways Corporation for the North Luzon Expressway Rehabilitation and Expansion (ID: 1245258)

*increasing container traffic, shipping lines will use ports where they can be assured of continuous and reliable service.'*[51]

*'The Maputo Port – as a critical link in the Maputo Corridor – must be considered a project with very strong potential developmental dimensions not only for Mozambique, but also for the neighbouring countries.'*[52]

The weight of material on this subject make it clear that this is a major concern of DFIs.

*b) Generate employment, improve labour standards and make fiscal contribution*

All new infrastructure facilities will generate some degree of employment, which can be considered additional if the project would not have occurred without the engagement of the DFI. The question, however, is whether DFIs go further than this, actively seeking to support projects with high employment potential, or to expand this potential through an influence on the project design or the policy context in which it occurs.

There are numerous references to the employment created through the project, with the quote below from IFU being typical:

*'In all regions, the investment projects have resulted in some degree of direct employment creation, the conservation of jobs, and indirect job creation through sub-contractor jobs.'*[53]

Little material was found supporting the idea that DFIs proactively engage in efforts to enhance employment effects beyond this, however.

Where DFIs have been more active is with respect to labour standards:

*'To date, many of the major DFIs have included labour provisions in their policies for their client companies. In this regard a leading role has been played by IFC. By 1998, IFC had adopted a safeguard policy dealing with labour issues (IFC Compliance Advisory Ombudsman, 2003). Following an assessment by the IFC's Ombudsman in 2003 and consultations with a wide array of stakeholders, including the ILO, the "IFC Policy and Performance Standards on Social and Environmental Sustainability" (IFC, 2006) were adopted and have been applied to all IFC-financed projects since May 2006 (Sims, 2008; Bakvis and McCoy, 2008)...In general, the IFC Performance Standards have become a reference for other DFIs in developing integrated labour provisions within their own policies (Sims, 2008)... ... some DFI policies go further; those of EBRD and DEG even go beyond the scope of the labour standards protected by IFC's Performance Standards, the by the DFI policy (Rudolph, 2005; EBRD, 2008). The EBRD requires companies, for example, to respect also certain EU regulation on non-discrimination. Many of these DFIs, including IFC, IDB and most of the European DFIs, also have an exclusion list in place that precludes DFIs from investing in clients that use child labour and forced labour.'*[54]

While these developments are positive, their actual impact remains unclear:

*'Little is known about the practical application of labour provisions in the policies of DFIs, as much of the information is confidential and the nature of such policies makes it premature to conduct a comprehensive assessment. In particular, information on the*

[51] Equity Investment and Loan to the Colombo Port Development Project in the Democratic Socialist Republic of Sri Lanka (ID: 1245316)
[52] SIDA Evaluation of Independent Guarantee Scheme (ID: 1545363)
[53] Evaluation: the Industrialisation Fund for Developing Countries (IFU) (ID: 1545320)
[54] Labour Standards and Development Finance Institutions: A review of current policies and activities_ILO discussion paper (ID: 1570971)

*application of labour provisions in DFI policies regarding investments through financial intermediaries or in the context of public procurement is difficult to obtain and neither a comprehensive internal nor external assessment is available so far.'* (*ibid*)

A similar view can be taken to fiscal contributions. Clearly any project that is completed successfully and yields a positive return will make a fiscal contribution. In the case of privatisation of former state-owned-enterprises (SOEs) this may entail savings from eliminating subsidies, as well as tax returns.

This can be a significant part of the rationale for privatisation, as found in the case of the following IFC project:

*'The main beneficiary in the airport project has been the host government, as revenue generation was the main impetus for privatization, and the concession agreement reflects this objective.'*[55]

*'OLKARIA III geothermal power plant...development effects include government revenues amounting to €5 million through tax revenues and royalties. This is particularly notable given Kenya's budget deficit of -3.5%.'*[56]

For both employment and fiscal contributions, location matters. Situating a major project in a relatively deprived area amplifies the positive employment effect (the below quotation refers to long-term, indirect job creation, rather than short-term job creation during construction), and may also provide much needed revenue to local government, as described by this quotation from an ADB evaluation:

*'An OECD evaluation of a cement plant in Viet Nam constructed in a remote and relatively poor area found that it was having important positive social impacts. The plant had helped attract other private investment to the region and is becoming a nucleus of an export processing zone. Road, rail, port, power, water and industrial infrastructure was being created. The company was the largest tax payer in the province and it had made substantial contributions to the state education system.'*[57]

What this illustrates is that it is possible to generate additional development impacts through decisions such as where to locate project. Clearly this is not a simple matter, but it remains surprising that more efforts on the part of DFIs to create such additionality was not found.

*c) Generate knowledge and technology transfer*

The material reviewed suggests that some DFIs are making concerted efforts to promote human capital development, as described in the below quotation from an evaluation of IFU:

*'For all regions, human capital investments through training and involvement of local staff and changed management regimes have been key features of the Danish enterprises' activities. Technology transfer, in terms of technical equipment and procedures, transparent and open management principles and corporate governance – by some described as a cultural change – as well as quality control and monitoring are mentioned as impacts of the Danish enterprises.'*[58]

Also relating to the employment function, we found a preference for local rather than expatriate employees in the case of some DFIs, for example FMO:

[55] A Decade of Action in Transport: An Evaluation of World Bank Assistance to the Transport Sector, 1995–2005 (ID: 1251623)
[56] The Growing Role of the Development Finance Institutions in International Development Policy (ID: 1251682)
[57] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[58] Evaluation: the Industrialisation Fund for Developing Countries (IFU) (ID: 1545320)

*'The project works with local subcontractors and only employs only a few (three to five) expats. The construction of the DTWP has a positive effect on the experience of local subcontractors. This experience not only consists of technical skills but also to safety and health standards at the construction site. Moreover, the constructor (Biwater) trains the Khartoum State Water Company (KSWC) personnel.'*[59]

Given the importance of physical capital in the infrastructure sector, it is not surprising that some DFIs also focus on technology transfer (quotations relate to MIGA and Norfund respectively):

*'There is evidence that these MIGA projects efficiently transferred technology and know-how. State-of-the-art technology was installed and considerable effort was devoted to training and turning over plant management to local employees. OEU observed that the role of expatriate managers declined in importance the longer a project was in operation.'*[60]

*'The company has introduced new technology: Portland Composite Cement PCC versus the traditional Ordinary Portland Cement OPC. The former requires less clinker and is thus cheaper and uses fewer imports. PCC cannot be used for heavy structures like large bridges but lends itself well to construction of buildings. The PCC is now accepted and used by the building industry, and competitors have followed by selling the same product.'*[61]

*d) Encourage private sector development and promote competition*

Projects involving DFIs may also support private sector development, either directly or as a result of learning from industrial co-investors:

*'Businesses primarily learn from each other in the market place. Operating on commercial terms and in conjunction with private companies is therefore a form of knowledge transfer, and in this environment Norfund is germane in a way that public institutions such as NORAD and the World Bank cannot be. In Nicaragua, Norfund has improved the financial discipline and stricter commercial orientation of the investments made through active board representation in the companies as well as by employing financial controllers and providing management advisory services and counselling to the companies... The industrial knowledge transfer will normally be in the form of an industrial co-investor.'*[62]

Private sector development may also occur indirectly through the creation of forward and backward linkages in the supply chain (the below quotation refers to IFC's operations as a whole, not exclusively infrastructure projects):

*'Three-quarters of IFC's projects have contributed to the development of local private sectors through linkages supporting other private enterprises, demonstration effects, privatizations, or regulatory changes...The Private Sector Development (PSD) impact measures the effects of the project on the development of private enterprise beyond the project participants. This includes demonstration effects, effects on local suppliers of goods and services, technology and knowhow, employee training, contribution to domestic capital market development, project governance and reputation, the extent to which a project leads to more private ownership and stronger local entrepreneurship, greater competition or competitiveness, as well as impacts on competitors, new market*

[59] IOB Evaluation: Investing in infrastructure (Evaluation of the LDC Infrastructure Fund) (ID: 1251601)
[60] Private Sector Development In the Electric Power Sector: A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s (ID: 1251639)
[61] Evaluation of Norwegian Business-related Assistance: Bangladesh Case Study (ID: 1251658)
[62] Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund) (ID: 1251662)

*entrants, and producers of complementary goods. Twelve out of the 21 projects (57 percent) received satisfactory or better ratings for PSD impacts as a result of their high demonstration effects and large upstream and downstream effects on the host countries.'*[63]

DFIs also seek to encourage PSD through increased competition, recognising that in many sectors service quality is likely to rise and prices fall as competition increases. While this will not be the case in some infrastructure sectors, which more resemble natural monopolies, it is particularly relevant in telecoms, or industrial sectors, as described below (quotations describe SIDA and ADB projects respectively):

*'Overall, the intense competition in the sector is making telecom services increasingly accessible to the poor. MTN Uganda, Celtel and UTL all expand their networks to attract new clients, and the companies devise continuously new services to add to their markets, besides engage in a highly competitive pricing on the services.'*[64]

*'The implementation of the Project led to the involvement of a high-quality sponsor that could introduce leading-edge technology in cement production and environmental and safety procedures....The Project is regarded to have stimulated private sector investment and increased competition in the cement industry, as evidenced by the fact that foreign private sector cement operations accounted for about 26.4% of the total cement production in the country at the end of 2005 from a level of 0% at the time of loan processing.'*[65]

*e) Improve Environmental, Social and Governance (ESG) performance*

The importance of improving standards of corporate governance beyond the standards that would have been adopted in their absence is a major theme of all DFIs (first two quotations describe ADB projects):

*'SAGT not only introduced service standards to the sector but also professional work ethics and corporate governance.'*[66]

*'PSOD was complimented by sponsors on a number of occasions on its efforts to establish standards of high corporate governance in both infrastructure and financial sector projects.'*[67]

*'Aside from investments, IFC also helped MWC become the first company in the Philippines to prepare a corporate sustainability report. The report covered MWC's various environmental and social initiatives and measures that are linked to its business objectives and was published in 2004.'*[68]

*'It should however be stressed that the presence of Norfund had an indirect positive impact on corporate governance. Norfund relies on IFC's requirements in the Common Terms Agreement for the loan of 2004 with regard to environment, labour conditions and health. In the initial Norad loan this was only addressed by a default clause relating to various ILO conventions. No reporting was required.'*[69]

While all DFIs have policies and guidelines on the social and environmental aspects of corporate behaviour, the actual impact of these appears to differ somewhat. It is clearly more

[63] OEG Findings: Annual Review of IFC's Evaluation Findings: FY 2000 (ID: 1251638)
[64] SIDA Evaluation of Independent Guarantee Scheme (ID: 1545363)
[65] Viet Nam: Loans to the Nghi Son Cement Corporation (ID: 1245296)
[66] Equity Investment and Loan to the Colombo Port Development Project in the Democratic Socialist
[67] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[68] Manila Water Company – Philippines: Helping to Provide the Poor with Access to Water (ID: 1251650)
[69] Evaluation of Norwegian Business-related Assistance: Bangladesh Case Study (ID: 1251658)

difficult to monitor, and particularly to enforce, environmental and social standards using an arms-length fund-of-funds approach (such as that adopted by CDC) rather than investing directly. In the former case, the impact is more likely to occur at the asset allocation level rather than that of the individual firm, with the number of investments making the costs of firm level monitoring prohibitive. On the other hand, DFIs using arms-length investment models, such as CDC and Norfund (although Norfund makes direct investments as well), tend to put significant effort into improving social and environmental standards, as their mode of operation makes it difficult for them to achieve design and policy additionality in more direct ways. This is illustrated by the quotation from an evaluation of Norfund.

> *'It is positive to note that Norfund has formulated guidelines for environmental issues, human rights, ethical issues and workers' health issues related to HIV/AIDS. They can function both as guidelines for upgrading business organisations in which Norfund invests directly and the general business environment. For the Aureos funds, Norfund has been active both in extending existing standards to environmental and health and safety concerns, as well as in training investors to adhere to standards in the field.'*[70]

The IFC can be seen as the industry leader in this area, particularly with regard to the comprehensiveness of its Performance Standards[71] on ESG issues.

> *'IEG evaluations find that where clients are developing sound environmental management systems, with close supervision by IFC, projects are more likely to deliver sustainable environmental and social performance.'*[72]

As with labour standards, some DFIs have modified IFC Standards and applied them to their own work. This is illustrated in the case of Norfund by the quotation above (fourth quotation in section (e)).

*f) Mobilise Investment in green energy / energy efficiency*

As well as reducing negative environmental impacts through their project activities, DFIs can also act proactively, mobilising investment into sectors with positive environmental impacts such as renewable energy. In some cases there is a clear commercial rationale for the switch to greener production such as the switch to natural gas-generated power from diesel generation in this FMO project:

> *'The five energy projects have significant effects on the environment. In the context of the Mtwara/Artumas project, all outdated diesel-fired power supply facilities were dismantled. The transfer to natural gas-fired power generation resulted in a CO2 reduction of 784,000 MT per year. It is argued that by facilitating a fuel switch, the WAGP project in West Africa helps to reduce greenhouse gas emissions, both by substituting oil by gas and by using associated gas that would otherwise be flared.'*[73]

In cases where commercial viability is less clear, DFIs may access supporting finance from environmentally focused funds to support their activities:

> *'IFC support to energy efficiency started with its advisory services operations and then expanded through partnership programs with commercial banks, utility companies, energy management companies (EMCs), and energy efficiency equipment suppliers. ... The programs are typically cofinanced by the Global Environment Facility (GEF) and other donors. So far, all programs are supported by GEF, especially those that provide technical assistance and a guarantee facility to banks. IFC is also providing a*

[70] Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund) (ID: 1251662)
[71] See: http://www.ifc.org/ifcext/sustainability.nsf/Content/EnvSocStandards
[72] IEG Evaluation of IFC's Development Results 2007: Lessons from 10 years of experience (ID: 1558671)
[73] IOB Evaluation: Investing in infrastructure (Evaluation of the LDC Infrastructure Fund) (ID: 1251601)

*standalone energy efficiency credit line and guarantees to individual banks and EMCs.'*[74]

Examples of DFI investments in renewable energy are far less common than investments in energy efficiency, or energy production using cleaner fossil fuels. The reasons are relatively clear: renewable energy production remains an immature industrial sector; uncertainties and risks remain high; and costs are generally higher than non-renewable alternatives, calling into question the economic viability of projects without long-term policy support. Consequently, projects which do proceed are likely to have a wide spread of participants (to reduce risk) and may have limited private sector participation, even at the more commercially viable end of renewable energy production as illustrated by the financing arrangements for the OLKARIA III geothermal project in Kenya:

*'OLKARIA III geothermal power plant was constructed in 2000 and is the only independent power producer in Africa utilizing geothermal resources, which represent a reliable and affordable form of clean energy. The plant was set for a capacity expansion from 13 MW to 48 MW to meet the growing energy needs of Kenya's population and businesses, but was delayed due to difficulties in obtaining the necessary debt financing. DEG and KfW (national German development bank) joined forces in 2005 to provide €60 and €30 million respectively in financing. Co-investors were mobilized with €25 million from European DFIs' EFP (see EFP case study), and individual contributions of €11-15 million from PROPARCO, FMO and the Emerging Africa Infrastructure Fund (EAIF).'*[75]

### 6.2.2 <u>For poverty reduction</u>

Despite their ostensible focus on poverty alleviation, we found little support for the proposition that DFIs actively seek to influence project design in a number of areas that the literature suggests are important in shaping poverty outcomes.

For example, little evidence was found of attempts by DFIs to:

- Influence governments or investors to provide improved access/affordability for the poor
- Generate pro-poor employment during or after construction
- Enable the poor to participate in project planning
- Make explicit efforts to reduce exclusion of women and people with disabilities (only one example was found of a project that explicitly aimed to reduce gender inequality)
- Enhance local supply chain linkages.

During the coding of text for the 86 priority studies, just four examples were found of evidence of DFI projects resulting in direct poverty reduction outcomes, (i.e. clear evidence of improved access and/or affordability for the poor). Closer examination of these four projects revealed that *all were found to be funded in part by non-commercial financing*, as shown in the table below.

[74] Assessing the Impact of IFC's China Utility-Based Energy Efficiency Finance Program Energy Efficiency Finance (ID: 1251656)
[75] The Growing Role of the Development Finance Institutions in International Development Policy (ID: 1251682)

**Table 8. Projects with direct pro-poor outcomes and non-commercial financing element**

| Project and pro-poor component | Form of non-commercial financing element |
|---|---|
| Omdurman Water Supply & Optimisation Project (FMO): Pro-poor water supply | Thirty percent grant financed.<br>Subordinated loan. |
| Manila Water Company (IFC): Pro-poor water supply | Output-based aid element to serve the poorest. |
| Grameen Phone (Norad, NorFund, IFC & ADB): Pro-poor telecoms provision | Soft loan.<br>Sponsor is part not-for-profit. |
| Chiansi Irrigation Project (PIDG – InfraCo): Irrigation for poor smallholders | 'Patient capital' model used to alter the viability of the project by absorbing high upfront costs and reducing return horizons to commercially acceptable levels |

### *6.2.3 Negative or no design additionality*

Material was also found identifying areas in which DFIs had performed poorly in terms of design additionality. The two principal areas are insufficient consideration and understanding of project context (particularly as regards the position of governments and public sector entities) and the implementation of projects that clearly did not have pro-poor outcomes.

*a) Resistance from government or public sector entities*

Private sector infrastructure projects are unlikely to succeed where there is widespread resistance from the government or other public entities, or a policy in place that creates barriers to PPI. This is illustrated by the quotations from IFC and Norfund below:

> *'IFC's discussions with the Water Commission began to break down as the parties disagreed on the privatization model. IFC was accused of trying to force a "one size fits all" model on the commission when it proposed a plan similar to that used in Manila (Philippines). Based on conversations with former Water Commission officials, IEG learned that the commission believed that the IFC program had overlooked critical structural issues regarding the municipal water system. Eventually, the relationship fell apart."*[76]

> *'At the time this investment was seen as the start of a major involvement by Norfund and SN Power in Sri Lanka's hydropower sector. However...SN Power sees limited potential in Sri Lanka for private sector driven hydropower development, whether large or small-scale. The government's policy is that large scale hydropower should be in state ownership, hence no existing plants are for sale, nor are any new constructions taking place."*[77]

The opportunity costs of aborted projects are high and they may create negative demonstration effects. While this strengthens the case for extensive up-front screening and appraisal before taking the decision to invest, it can affect competitiveness with the private sector, as discussed in section below.

*b) Project does not have pro-poor outcomes*

[76] IFC in Nigeria: 1998 - 2007 An Independent Country Impact Review (ID: 1251629)
[77] Evaluation of Norwegian Business-related Assistance: Sri-Lanka Case Study (ID: 1251657)

In some cases, projects that priced out the poor, had unforeseen consequences resulting in the growth they mobilised being unlikely to lead to poverty reduction, or were not aligned with country priorities. Examples of this are provided by the MIGA, FMO and EIB projects described below:

> *'10 percent of the projects with high business performance were rated partially unsatisfactory for their contribution to economic sustainability because monopolistic pricing and consumer welfare loss had limited their economic benefits. For example, an infrastructure project had satisfactory business performance at the time of IEG evaluation but the loss in consumer welfare and the monopolistic nature of the concession had resulted in a less than satisfactory economic contribution. The biggest beneficiary of this project was the host government because of the substantial fees it received from the concession to the detriment of the users and service providers of the project.'*[78]

> *'For part of the poorest population in Omdurman, the costs of improved water facilities may be too high. This means that they will continue to use (unsafe) secondary sources. In the short run, the costs of water will increase for almost 30% of the poorest households. Many of these households (72%) are not connected to the drinking water system. For 8%, expenditures will rise to more than 10% of their income.'*[79]

> *'In some instances, projects were selected without paying sufficient attention to their consistency with country investment priorities or their potential development impact.'*[80]

It is important to consider the opportunity cost of such projects. Given the huge infrastructure deficit in many poor countries, it seems likely that the funding raised could have been used for projects that would have had a considerably greater pro-poor impact.

### *6.3 Policy additionality*

We define policy additionality as being where the DFI has an impact on the legal and regulatory framework and/or develops capacity within the public sector. As with design, this section is separated into examples of policy additionality for growth and poverty.
In common with design additionality, the proxies were developed from a review of literature on the subject of the relationship between infrastructure, growth and poverty reduction, and are listed in Table 4 above.

#### *6.3.1 <u>For growth</u>*

*a) Legal and regulatory framework more conducive to growth*

By far the most commonly noted examples of policy additionality involve legal and regulatory frameworks to facilitate growth. In some cases – particularly with the regional and multilateral development banks – this is part of a broader process of economic liberalisation or transition to capitalism (first quotation below from ADB, second and third from EBRD):

> *'ADB played a critical role in facilitating the liberalization of the gas market and then helping mitigate investor and lender concerns, in what was a new and untested product and technology in India where there were limited skills and experience available locally... The Project has demonstrated it is possible to import LNG*

[78] Independent Evaluation Group (MIGA) 2006 Annual Report (ID: 1508107)

[79] IOB Evaluation: Investing in infrastructure (Evaluation of the LDC Infrastructure Fund) (ID: 1251601)

[80] A synthesis report: Evaluation of the risk capital operations carried out by the EIB in four ACP Countries 1989-1999 (ID: 1251597)

*successfully at competitive prices, thereby supporting the liberalization of the gas sector and enhancing the level of private sector participation in the energy sector.'*[81]

*'There have also been improvements in the legal and institutional framework for markets and efficiency...The project allowed the Bank to directly influence essential market reforms in the country's telecommunications sector, strengthen corporate governance and promote market change.'*[82]

*'An indisputable success of the TC assignment is the passage of a PPP Law. This has markedly improved the so-called enabling environment in the country as a whole, at least in terms of legal infrastructure.'*[83]

The IFC is able to amplify its impact in this area through collaboration with other branches of the World Bank Group:

*'In a few instances, MIGA collaborated with IFC in support of electric power projects. Jamaica stands out in particular, as it involved close collaboration between IBRD, IFC, and MIGA in promoting the PSDE reform agenda, each institution using its specialized services, which eventually led to the commercialization of Jamaica's public utility and an increase in generating capacity.'*[84]

While in many instances, liberalisation is necessary, it also brings risks. In particular, it should not be assumed that regulation that is favourable to private investors and companies is necessarily optimal for national economic development. As recognised in the ADB evaluation quoted below, a fair and appropriate allocation of risks, and a holistic approach to regulation and institution-building, is essential for sustainability and effectiveness, but also to maintain public support and so political commitment:

*'ADB recognized early on the potential perils of private power generation projects with power purchase agreements that allocated too many risks to government, and therefore supported renegotiation efforts in the aftermath of the Asian financial crisis and the development of more equitable risk-sharing arrangements. In the water sector, ADB initially supported bulk water BOT-type projects that did not address underlying sector problems related to water losses and service quality. However, its recent efforts have increasingly emphasized whole system approaches...Compared with past sector-based assistance, which focused on developing PPP modalities and individual transactions, ADB in recent years supported government efforts for developing cross-sector legal, regulatory, and institutional frameworks. These structures are important for building and sustaining political commitment and local capacity for larger scale PSP in infrastructure.'*[85]

*b) Build public sector capacity/commitment to foster growth*

Several instances were found of DFIs' enhancing capacity to realise PPI and/or commitment to PPI. Examples include capacity building for current and future privatisations and for public tendering and procurement (both quotations describe IFC projects):

*'...the same individuals in the Privatization Unit went on to participate in other privatization transactions. In particular, officials mentioned the influence of the*

[81] Energy Policy 2000 Review: Energy Efficiency for a Better Future (ID: 1245297)
[82] EBRD (2000) 1245405
[83] EBRD (2006) 1245378
[84] Private Sector Development In the Electric Power Sector: A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s (ID: 1251639)
[85] ADB ASSISTANCE FOR PUBLIC-PRIVATE PARTNERSHIPS IN INFRASTRUCTURE DEVELOPMENT – POTENTIAL FOR MORE SUCCESS (ID: 1245325)

*telecoms experience in implementing later electricity sector reforms, and unbundling and privatizing the state-owned electricity utility.'*[86]

*'The process of tendering and negotiating Kipevu II, including negotiations with the IFC, also contributed to growing Government capacity in the energy sector on managing international competitive procurements of IPPs. The same officials involved in Kipevu II went on to procure the subsequent similar IPPs described above.'*[87]

Many would argue that creating government support for PPI, and capacity to manage private sector involvement in ways that optimise national economic development, is a key element in efforts to reduce the infrastructure funding gap in the developing world. Thus the outcomes described above are potentially very important.

### 6.3.2 *For poverty reduction*

As in the previous section, no material was found to suggest that DFIs are actively engaged with public sector capacity building with respect to poverty reduction, or that they aim to influence policy so as to:

- Encourage pro-poor institutional and regulatory reform
- Support the engagement of poor and vulnerable stakeholders during project planning.

Given the importance placed upon maintaining political support for reform (i.e. liberalisation/ privatisation), and the fact that this support will be strongly influenced by underlying public attitudes to the process of change, DFIs' lack of engagement in these areas is surprising.

### 6.3.3 *Negative or no policy additionality*

Several cases were found of DFIs unsuccessfully attempting to influence the policy framework to enhance development outcomes, or being unable to influence the policy framework due to their mandate or structure.

*a) Governments made commitments that were not eventually fulfilled*

In some cases governments reneged on regulatory reform commitments once financing had been obtained, as in the ADB projects described below. While this may be something of an occupational hazard of much donor activity, it may also indicate that the context of the project was not well understood before financial commitments were made.

*'The Government failed to establish an independent regulator, as it was required to do under the concession agreement.'*[88]

*'While the Government of Viet Nam is widely regarded as a strong proponent of reform, few of the liberalization measures envisaged in the RRP have materialized. This result highlights the need for caution when designing projects in transition economies. Where possible, liberalization measures should occur before making investments, because demonstration effects are likely to have limited impact once funding is committed.'*[89]

*b) DFI mandate or structure constrains capacity to influence policy framework*

[86] Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa Draft Final Report (ID: 1251634)
[87] Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa Draft Final Report (ID: 1251634)
[88] Equity Investment and Loan to the Colombo Port Development Project in the Democratic Socialist Republic of Sri Lanka (ID: 1245316)
[89] Viet Nam: Loans to the Nghi Son Cement Corporation (ID: 1245296)

In several cases DFIs (or their evaluators) stressed the lack of a mandate or suitable structure to engage in enabling environment activities such as regulatory reform, despite these being perceived as necessary to successfully achieve their objectives:

> *'Due to PSOD's limited capacity to pursue enabling environment reforms it operates in a reactive rather than proactive fashion. PSOD would benefit by scaling up its market presence in resident missions, and strengthening its access to technical assistance resources to initiate enabling environment reforms on its own account.'*[90]

> *'MIGA does not normally have leverage to influence the business environment and the country's IC policies and regulatory framework.'*[91]

DFIs adopting the 'fund of funds' model will be less able to exert influence on the policy framework, as demonstrated by the quotation below describing the BMZ Public-Private Partnership facility:

> *'There seems to be a need to clarify who or what "public" is, since the partner country is not officially involved in projects financed from the facility. The realization of "win-win situations" depends on the definition of (at least partially) congruent objectives in a participatory process and a commitment by both the public and private side until the development process is self-sustaining.'*[92]

RDBs and MDBs have greater scope, mandate and resources for enabling environment activities than, for example, bilateral DFIs. In addition, the private sector operations departments of MDBs and RDBs often collaborate with other departments within the Banks to improve the enabling environment for PPI:

> *'While there is a close collaboration and coordination between the World Bank and IFC as regards private sector development work, this does not appear to be the situation with regard to European DFIs. For instance, the British Department of International Development (DFID) reported that contact with CDC could have been better, as did the Swedish and Danish development authorities with regard to Swedfund and IFU. The same lack of close collaboration can be found between Norfund and NORAD. This is in contrast to IFC/World Bank, where typically Country Assistance Strategies are prepared by the World Bank Group as a whole, including IFC as field mission participants. IFC activities are often accompanied by piggy-back World Bank technical assistance for capacity and competence-building to make it more attractive for other investors to join in.'*[93]

### *6.4 Demonstration additionality*

Although, there is little hard evidence that DFIs create positive demonstration effects, this does not mean that no such effects exist. Difficulties in 'proving' demonstration effects arise partly from the perennial difficulty of finding a counter-factual and of 'proving' causality in a highly complex and rapidly changing environment with a multitude of potential explanatory variables. There is also the question of time-scale, as any demonstration effect may take years to come to fruition.

Despite these difficulties, there was no shortage of non-evidence based claims for a demonstration effects in the material we reviewed. Below we consider some of the main

[90] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[91] An Evaluation of MIGA Investment Climate Activities (ID: 1508111)
[92] German Development Co-operation with Uganda Abstract of the Evaluation "Public-Private Partnership (PPP)" - Country Study Uganda - (ID: 1245333)
[93] Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund) (ID: 1251662)

explanations of causality behind this effect, before considering cases in which DFIs' activities appear to have had no demonstration effect (where one was anticipated) or a negative demonstration effect.

### *6.4.1 Positive demonstration effects*

*a) Demonstrate that risk-return ratio is better than perceived*

In some instances DFIs can demonstrate that private investors have an inaccurate view of risks and returns; i.e. that the risk-return ratio is actually better than they suppose:

> *'Maybe the most important benefit of fund investments, as noted by one of Swedfund's investment managers, is that the local investment professionals managing these funds can demonstrate to Swedfund and other investors that it is actually possible to invest successfully in the most remote markets and act as key reference points for future investment decisions. This is the way for poor countries to become perceived as exciting emerging markets.*[94]

As well as Swedfund, this is very much the approach pioneered by the CDC. To be successful, it requires the DFI itself to be commercially successful. The more commercially successful DFIs are, the greater the potential demonstration effect.

*b) Risk-return ratio improves as a result of DFI activities*

As previously noted in this review, the activities of DFIs may serve to reduce actual risk, altering the reality of the investment climate, for example, as in the SIDA and IFC projects described below:

> *'The Sida guarantee played a significant, pioneering role in long-term local financing. At the time it was issued, the local capital market was unwilling and unable to provide more than short term financing. The bond market was basically non-existent. The Sida guarantee provided a first private bond issue in Uganda, which has later been followed by others.*[95]

> *'...the influx of private investment in telecoms was observed in other sectors and lent impetus to the privatization program. Electricity sector officials cited the telecoms sector as having provided an example that private investment in infrastructure can work.*[96]

As well as facilitating market innovations to alter the risk-return ratio in a broad sense, DFIs may change perceptions of the commercial attractiveness of a particular sector, and/or the size of the market available for competition. This may be the result of private sector development following a DFI intervention, or from DFI involvement in early stage risk-mitigation:

> *'IFC played a central role as an investor in Uganda's first mobile investment, and as the Government's advisor in the subsequent sector reform, which included privatization of the incumbent operator, Uganda Telecom and licensing of a second national operator (MTN). Two more major mobile networks are now being rolled out, and Uganda's telecoms sector is one of the most competitive in Africa.*[97]

[94] Swedfund's Investments Through Funds- Capital for Economic Growth and Development Driven by Local Businesses (ID: 1251680)
[95] SIDA Evaluation of Independent Guarantee Scheme (ID: 1545363)
[96] Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa Draft Final Report (ID: 1251634)
[97] Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa Draft Final Report (ID: 1251634)

Finally, of course, the most straightforward demonstration effect for an investor may well be the presence of other investors:

*'Investments by a multinational company or by an international fund improve the general climate for investments. As stated by one informant, "The best guarantee for a foreign investor is another foreign investor already present in the country."'*[98]

*c) Innovative and replicable model successfully used*

Demonstrating that a new business model works and is commercially viable is an important function of DFIs. As we have seen, they have the capacity to absorb more risk than commercial operators, and so have greater scope to innovate or experiment, as in the ADB project described below:

> *'The Manila North Tollway Corporation project was the only infrastructure project in the Philippines approved and implemented over the period of analysis.... The success of the project helped demonstrate the feasibility of public private partnership structures in the road sector. The transaction is replicable and further private road projects are being processed by the government. Given the limited amount of successful public private partnerships in the road sector worldwide, this outcome is positive.'*[99]

It is important for DFIs and policy makers not to assume that because a model works in one situation it is generally applicable. The contextualisation of positive outcomes requires a thorough examination of the factors that led to the project's success, and an analysis of their feasibility in other settings. For example, experience with PPPs in the road sector has not been overwhelmingly successful. Exploring why the case described above is different, and the extent to which these factors can be transferred to other countries, should be a key component of DFIs' project evaluation and strategic planning for future investments.

Demonstration effects can also occur within the DFI community, with innovative approaches developed by one DFI potentially providing a positive example to others:

> *'The InfraCo business model is widely seen as innovative and its progress is being monitored by a wide range of stakeholders and IFC is in the process of creating a similar vehicle to develop infrastructure projects.'*[100]

*d) Internationally accepted standards used*

By bringing internationally accepted standards to bear a project may provide an important precedent. Particularly for social and environmental issues, this may be important in mitigating reputational risk for investors:

> *'Sponsors indicated that they value ADB participation as it provides a way of confirming that adequate standards of environmental, social, health, and safety management are put in place and observed.'*[101]

### *6.4.2 <u>Negative or no demonstration effect</u>*

A considerable quantity of material was found to suggest that projects predicted to create a demonstration effect often fail to do so. In some cases DFI engagement may even create a negative effect, discouraging private investors from further involvement in the country or

[98] Evaluation of the Norwegian Investment Fund for Developing Countries (Norfund) (ID: 1251662)
[99] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)
[100] Desk Review of DFID's Private Sector Infrastructure Investment Facilities (ID: 1510260)
[101] ADB ASSISTANCE FOR PUBLIC-PRIVATE PARTNERSHIPS IN INFRASTRUCTURE DEVELOPMENT – POTENTIAL FOR MORE SUCCESS (ID: 1245325)

sector. This is summed up in a major IEG evaluation of IFC's additionality in 174 IFC-supported investment operations that reached early operating maturity during 2005–07:

> *'IFC's catalytic role is unproven—it is not clear that IFC's investment brought other investors to the country (as expected).'*[102]

Some possible explanations for this outcome are provided below.

*a) Perceptions of risk-return ratio increased*

In some cases, DFI projects may *increase* private investors' perception of risk due to high-profile project failures, as described in the below extract from an independent evaluation of ADB's private sector work in the Philippines:

> *'The Maynilad Water Services project did not reach financial close due to the financial difficulties experienced by the company. The investment in PIATCO air terminal was cancelled as implementation and operational disputes emerged between the sponsors and the Government before the commissioning of the completed terminal... Infrastructure investment has almost ceased following problems with Maynilad, PIATCO, Manila Electric Company, and Manila North Tollway.'*[103]

The extract from an ADB evaluation below describes a case in which projects were structured so that high risk levels only became apparent when financial markets became less liquid, thus discouraging future private investment. However, it should be acknowledged that the aftermath of the Asian financial crisis was a particularly extreme environment.

> *'Following the Asian financial crisis, it became apparent that concession agreements in sectors such as power, roads and water have sometimes allowed excessive levels of risks to be transferred to the private sector in areas such as tariff, traffic and currency movements. Project failures have effectively reduced the supply of private capital in these sectors.'*[104]

*b) Necessity of having a supportive enabling environment (which may not exist)*

In the infrastructure sector in particular, a supportive enabling environment is essential to a project's success and to mobilising private sector investment. This is clear from the available literature, and DFIs themselves attest to this fact repeatedly. When projects are implemented in a weak enabling environment they rarely perform as expected, and thus will be less likely to encourage future private investors and may even discourage them. Evaluations of ADB's work provide two examples of this situation:

> *'While PSOD's PPP projects have been successful and have included many "pathfinder projects", the impact on further PPP development has been somewhat reduced due to continuing weaknesses in the enabling environment; changes in government commitment to PSP (e.g., in Pakistan and Sri Lanka); underlying issues with PPPs, which can be relatively inflexible instruments, particularly in times of economic crises; and lack of demonstration potential (e.g., the Guangzhou Pearl River project).'* [105]

[102] Independent Evaluation of IFC's Development Results 2008: IFC's Additionality in Supporting Private Sector Development (ID: 1251652)

[103] PHILIPPINES: CASE STUDIES ON Private Sector Development and Operations (ID: 1245339)

[104] Evaluation - Private Sector Development and Operations: Harnessing Synergies with the Public Sector (ID: 1245299)

[105] ADB ASSISTANCE FOR PUBLIC-PRIVATE PARTNERSHIPS IN INFRASTRUCTURE DEVELOPMENT – POTENTIAL FOR MORE SUCCESS (ID: 1245325)

*'ADB's assistance was critical in facilitating one of the cheapest power generation projects (Meghnaghat Power Plant IPP with 450 MW capacity) undertaken by the private sector in Asia. However, there has not been a follow-up private sector generation project to Meghnaghat and ADB's efforts to help the Government attract new investments to power generation were not successful... While the lack of capacity, governance issues including political interference, and unrealistic expectations of cost power purchase have contributed to lack of success in attracting private investment to power generation, it must be noted that there was inadequate interest from experienced and competent investors to invest in large-scale power plants in Bangladesh.'*[106]

In situations where government is not supportive of private sector engagement in infrastructure it will be difficult to create a demonstration effect, as shown by this extract from a MIGA evaluation:

*'In an infrastructure project in a middle income country, while the project was operating successfully and made positive contributions to economic sustainability, its demonstration effect was limited due to deficiencies in the regulatory environment and government-imposed restrictions on private sector involvement in the sector.'*[107]

Key ingredients for a supportive enabling environment extend beyond governments, however. In some cases, PPI is perceived as externally-driven and is thus unpopular, increasing the difficulty of creating a demonstration effect:

*'This suggests that much public resistance may be attributable precisely to the fact that PPI has been externally driven. This presents a challenge for the facilities, not necessarily because they impose PPI, but because their involvement may be seen by local communities as an imposition. Public approval and participation in PPI may not only be advisable but also essential if reforms are not to be rejected.'*[108]

*c) Unsuccessful projects generate hostility towards PPI within governments*

Where projects involving PPI are unsuccessful or do not generate the anticipated benefits for governments, this may make political decision-makers less inclined to encourage and facilitate further private investment, thus reducing future opportunities for PPI. The clearest example of this type of effect emerges from an independent evaluation of IFC's demonstration effect in Africa:

*'Finally, there are some cases where the project was not seen as a success by Government and therefore created, if anything, negative demonstration effects. The clearest example is the Rift Valley Railway in Kenya and Uganda, in which the IFC was heavily involved as both investor and advisor to the Government of Kenya. This project was described in both countries as a failure, and in Kenya has made transport sector officials cautious about (but not outright against) PPI. Other examples are the Bujagali hydropower project in Uganda, where government officials perceived the project as "taking too long and being too expensive" and the SONEL privatization in Cameroon, where there has been frustration with the performance of the concession and lack of further investment. In both cases, the Government appears to have partly reverted towards a policy of Government investment in the sector (at least, for some subsequent hydropower investments).'* [109]

*d) Problems with commercial viability of particular sectors*

[106] SECTOR ASSISTANCE PROGRAM EVALUATION FOR BANGLADESH ENERGY SECTOR (ID: 1245311)

[107] Independent Evaluation Group (MIGA) 2006 Annual Report (ID: 1508107)

[108] Literature Review on Private Sector Infrastructure Investment (ID: 1510261)

[109] Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa Draft Final Report (ID: 1251634)

A related but rather different issue is to sectors. Some sectors and project types are more commercially attractive than others, as illustrated by the following extract from an evaluation of an EBRD oil refinery project:

> *'The evaluation of this project concluded that the commercialisation and privatisation covenant of the Bank was not well conceived. There are almost no circumstances where a stand alone refinery could be successfully commercialised and ultimately privatised, due to the inherent lack of interest from the global oil companies and the difficulty of structuring a refinery as a financially viable stand-alone project. This is particularly the case in remote frontier locations with difficult access to both feedstock and to key markets for petroleum products.'*[110]

Where projects attempted using an inappropriate business model, the results are also likely to create a negative demonstration effect.

> *'...the fact that 67% of approved PSOD water transactions had to be cancelled due to disputes between project promoters and authorities, limitations of the BOT modality, and unresolved tariff issues highlights PSOD's particular difficulties in identifying viable transactions in this sector despite numerous attempts to become more engaged...While residential electricity tariffs in most DMCs cover for at least some operations and maintenance costs, residential water tariffs in most DMCs, particularly in South Asia, do not allow for any cost recovery, which does not permit the use of PPP modalities that involve assumption of demand risk by the private party.'*[111]

The risk is that this negative demonstration effect spreads beyond the particular sector, undermining support for the PPP model in sectors where it would be much more suitable.

*e) 'Stamp of approval'/market making*

A key finding to emerge from this review is the limits to the demonstration effect. The basic point is that DFIs are often able to mobilise finance precisely because they are DFIs backed by states. As a result, it is simply not possible in many cases for the private sector to replicate what they have done.

In the next section we will explore the implications of this in some detail.

## 7. Further findings from the evidence and coded text

### *7.1 Towards a categorisation of project types by commercial viability*

During the review a picture has emerged of four different project types being executed by DFIs, categorised by commercial viability:

*(i) Fully commercially viable*

In some instances, DFIs were found to have not generated financial additionality. That is, the projects were fully commercially viable, and would have proceeded with or without DFI participation in the form of investment.

[110] EBRD (2004) 1245395
[111] ADB ASSISTANCE FOR PUBLIC-PRIVATE PARTNERSHIPS IN INFRASTRUCTURE DEVELOPMENT – POTENTIAL FOR MORE SUCCESS (ID: 1245325)

While there are arguments that can be made in favour of DFIs investing in projects of this kind ( to enable them to leverage improved environment and social performance, for example), they are incompatible with the requirement to create financial additionality and thus ultimately unconvincing. Also, such participation runs a risk of crowding out private sector investors, which runs counter to DFIs' mandates of private sector development.

It should be noted that the above comment does not apply to DFI advisory services, which may help to mobilise finance from private investors where the principal barrier is a lack of management expertise, rather than commercial viability.

*(ii) Commercially viable but political umbrella essential to mitigate risks sufficiently to assure investors*

Numerous examples of projects of this kind were found, as described above. It should be noted that the distinction between category i) and ii) is not always straightforward. In some cases, the provision of a 'political umbrella' was clearly essential. In others, however, investors may ultimately have been prepared to go ahead without DFI engagement, though they had a preference for the political cover provided by co-investing with a DFI.

Where DFIs offer this political insurance, they should extract a 'price' for doing so. One option would be a commitment to greater social and/or environmental performance from the project sponsors.

*(iii) Project commercially viable but only if finance structured in ways that only DFIs will or can do*

As we have seen, there are numerous examples of projects where DFIs provided finance at maturities and/or terms which were essential to ensure the commercial viability of the project. Often this is combined with the provision of the 'political umbrella' described above, so that DFIs' additionality becomes cumulatively greater as we move down through this categorisation of projects.

*(iv) Only commercially viable if 'blended' model of concessional and commercial finance is used*

Categories (i)-(iii) can be thought of as on a spectrum where the distinction between them is fuzzy at the margins and subject to change over time. For example, a reduction in political risk could result in a category ii) project becoming a category i) project. Alternatively, development of a domestic market supplying long-term local currency could see a category iii) project becoming a category i). The final category (iv) is qualitatively different, however. Here we are concerned with projects with potentially very high developmental and/or environmental impacts, but where commercial returns are likely to be very low, or possibly negative, and there is no guarantee that this will change over time.[112]

In Table 7 we separate this type of project into several further categories, distinguished by the type of non-commercial financing they would require and their likely developmental outcomes.

Although relatively few examples of type (iv) projects were found during the review, the development impact of these was high as illustrated by table 6 below, while some EBRD projects and the IFC's energy efficiency programme described in section 6.2.1 (f) provide further examples.

[112] Returns to projects that reach the very poor are low due to the poor's constrained ability to pay, while projects with high environmental returns are low due to their positive (but un-costed) externalities.

**Table 9. Projects requiring non-commercial financing: type of finance, likely developmental outcomes and examples from the documents studied**

| | Project type | Type of non-commercial finance likely to be required | Developmental outcomes | Examples from the documents studied |
|---|---|---|---|---|
| (a) | High direct development impact projects extending networks to poor urban or rural areas with large up-front fixed costs | One-off grant or concessional loan at fixed cost stage | Access for the poor to infrastructure services | [Omdurman Water Supply & Optimisation Project (FMO)] *"The new plant will have a large effect on the total water supply and consumption. Simulations ... suggest that the new plant will raise water consumption by 25%-30%. The effects of this improved supply will be largest for the poorest groups without a connection to the network. These people (approximately 35%-40% of the households in North Omdurman) have an income below USD 200 per month."*[113] [Partly grant financed]<br><br>*"The Norad loans (and later Norfund's investments) were relevant: Grameen Phone provides millions of poor people in rural areas with phone communication, where there was none before."*[114] [Soft loan] |
| (b) | High direct development impact projects providing infrastructure services where the poor cannot pay commercially viable tariffs | Ongoing variable cost subsidy (e.g. extend OBA) | Affordable access for the poor to infrastructure services (note that (b) and (c) will often go together). | *"To further support [Manila Water Company's] efforts in reaching lower income households, IFC helped facilitate a US$2.8 million Output-Based Aid grant which was used to subsidize the cost of water connection to poor families."*[115] |

[113] IOB Evaluation: Investing in infrastructure (Evaluation of the LDC Infrastructure Fund) (ID: 1251601)

[114] Evaluation of Norwegian Business-related Assistance: Bangladesh Case Study (ID: 1251658)

[115] Manila Water Company – Philippines: Helping to Provide the Poor with Access to Water (ID: 1251650)

| | | | | |
|---|---|---|---|---|
| (c) | Public good type projects with wide economic benefits that cannot be captured by private supplier, such as some transport projects | Blend of public and private funding | Pro-poor growth | [EBRD] *"It makes sense to offer financing for certain types of basic infrastructure independently of regulatory progress; examples include the backbone network and satellite terminals to support rural access. Even if it is difficult to prove that the investments in such basic infrastructure are commercially viable, the positive secondary effects on the overall economy should dominate."* |
| (d) | Renewable energy projects with large up-front fixed costs that cannot be recouped on commercial terms | One-off grant or concessional loan and variable cost incentives (e.g. feed in tariffs) | Reduced carbon emissions. Growth and indirect poverty reduction as a result of energy production. | [IFC] *"The intervention is to reduce information gaps about the benefits of energy efficiency. The program is also expected to generate demonstration effects. The programs are typically cofinanced by the Global Environment Facility (GEF) and other donors. So far, all programs are supported by GEF, especially those that provide technical assistance and a guarantee facility to banks."*[116] |
| (e) | Projects with very long time frames | 'Patient capital' | Any of the above. | Chiansi Irrigation Project (PIDG – InfraCo)<br>*"Currently, the small scale farmers in the region, rely on rainfall for 4 months a year; ...This project will facilitate access to year-round reliable, bulk water supply for farming, improved access roads & related transport and health infrastructure."*[117] |

Returning to the four overarching project categories, the table below describes the potential for financial additionality, demonstration effect, growth and poverty reduction outcomes in each case.

[116] Assessing the Impact of IFC's China Utility-Based Energy Efficiency Finance Program Energy Efficiency Finance (ID: 1251656)
[117] PIDG Chiansi Results Measurement Sheet

**Table 10. Towards a categorisation of project types by commercial viability**

| | | DFI financial additionality | Potential for demonstration effect | Potential for growth outcomes | Potential for direct poverty reduction outcomes |
|---|---|---|---|---|---|
| (i) | Fully commercially viable | No | None as project was already commercially viable | Good, but would have occurred without DFI investment | Little or none |
| (ii) | Commercially viable but political umbrella essential to mitigate risks sufficiently to assure investors | Yes | Little as purely commercial actors do not have political umbrella | Good | Possibly as a result of obligations to improve social and environmental standards as the 'price' to be paid for the political umbrella. |
| (iii) | Project commercially viable but only if finance structured in ways that only DFIs will or can do | Yes | Reasonable, as this type of project may lower perceptions of risk-return ratio and make private players more inclined to provide finance on better terms | Good | Possibly as a result of obligations to improve social and environmental standards as the 'price' to be paid for better terms. |
| (iv) | Only commercially viable for investors if non-commercial support is provided | Yes, but not in the way intended by most DFIs | None, as project not commercially viable | Depends on project type, especially the sector | Very good.<br><br>See Table 6 for a breakdown of outcomes by project type. |

It is not clear that DFIs sufficiently recognise the fundamental difference between category (iv) projects and category (i)-(iii) projects. Yet this distinction is important, since category (iv) projects require a very different financing model and staff with different skill and knowledge sets (and possibly quite different mindsets) to category (i)-(iii) projects. If this is not appreciated category (iv) projects may proceed in a way that is not appropriate (e.g. attempted to run on a commercial basis) and thereby run a high risk of failure. Alternatively, they will be squeezed out of DFI portfolios by more commercially viable projects.

As discussed below, some DFIs may be of the view that category (iv) projects are not within their mandate and that they are not appropriate organisations to carry out such projects. In this case it is important for DFIs to be explicit about this, for donors to recognise and accept

this situation, and for all parties to acknowledge that this is likely to make it more difficult for them to demonstrate direct poverty-reduction outcomes resulting from their work.

### *7.2 Sources of tension between commercial and developmental mandates*

Our review suggests a number of factors that are limiting the extent to which DFIs can focus on, and achieve, direct poverty reduction outcomes.

#### *7.2.1 Many DFIs are required to be self-financing*

DFIs that are required to be self-financing must ensure their projects are profitable, as captured by the first part of Norfund's mission statement below.

> *'Norfund is an investment company intended to develop and establish profitable and sustainable enterprises in poor countries.'* (Norfund website)

Clearly, this will preclude them from consciously taking on non-commercially viable (but potentially highly developmental) projects at a loss. More generally, it incentivises them to focus on the most commercially lucrative projects. As we have seen, however, this will not necessarily coincide with maximum development impact.

#### *7.2.2 Maintain high credit rating through high returns/low risk*

DFIs are able to access finance on favourable terms as they are perceived as less risky than commercial institutions, and this is important in enabling them to provide and leverage finance in low-income / high-risk environments. DFIs thus need to maintain the market perception of them as a low-risk borrower in order to continue receiving favourable terms, which may incentivise staff to seek relatively low-risk projects. The quotation below captures the trade-off, while also suggesting that DFIs could be taking on more risk:

> *'Given a high level of liquidity, it seems logical to suggest that DFIs can take higher risks without jeopardising their core business. However, any proposition that DFIs could do more to invest in high risk infrastructure sectors and frontier areas needs to be handled with care. The central question is whether each DFI is operating at its optimum level of exposure given its liquidity. This optimum lies in an investment portfolio that balances the cost of managing elevated levels of investment risk (i.e. loss provisions on loans and guarantees, equity impairment revaluations, and retained earnings designated to technical assistance and grants), with the need to maintain levels of liquidity sufficient to ensure stable and high institutional credit ratings, in turn securing access to lower costs of borrowing and ongoing confidence in the credibility of the institution. We have not performed such an analysis. Whether DFIs are operating at this optimum might be informed by past experience, for example by looking at what happened during the Asian financial crisis of the late 1990s. During this period DFI portfolios were presumably far riskier, loan losses higher and returns lower. And yet this poorer financial performance does not seem to have adversely affected the institutional credit ratings.'*[118]

#### *7.2.3 Ensure competitiveness – with private sector and other DFIs*

Complex and time-consuming up-front screening is required to identify projects that:

- Are commercially viable, but only with DFI participation

[118] The use of subsidies by Development Finance Institutions in the infrastructure sector (ID: 1562411)

- Have the potential to create a demonstration effect
- Will generate significant growth and poverty reduction outcomes.

Such a process is expensive and slows transaction times, characteristics that are off-putting for potential investees and co-investors. If DFIs' transaction costs (in terms of time and finance) are considerably higher than private investors, this would effectively reduce the commercial viability of the projects they become involved in, and thus erode their capacity to correct market failures. DFIs thus face a trade-off between expending time and resources identifying their 'ideal' project type and remaining efficient and competitive.

#### *7.2.4 Clash of cultures: developmental vs. commercial*

Given that they were designed to engage with private investors, it is unsurprising that many people working for DFIs have a background in commercial finance. This is positive in the sense that they bring a clear understanding of the needs and constraints of private operators, but less so in that they are perhaps less focused on the developmental or environmental aspects of projects.

This is not to suggest that these factors are not considered important, but that the incentives to focus on maintaining deal flow and commercial success may be harder to resist, than would be the case if more staff had a development-oriented background.

#### *7.2.5 Mandates may constrain DFIs in other ways*

*a) Tied to national interests*

Several bilateral DFIs are mandated to support economic development in their home countries as well as in the countries in which they invest, as demonstrated by the quotations from the websites of Finnfund and OPIC below. The range of projects in which these DFIs engage is constrained by the sectors and countries in which their home-country companies are willing and able to invest, which may not be those most likely to result in poverty reduction outcomes.

> *'We finance private projects that involve a Finnish interest.... Apart from co-investing with Finnish companies we can finance ventures that use Finnish technology, cooperate with Finnish partners on a long-term basis or generate major environmental or social benefits*.' (Finnfund website)

> *'OPIC is the U.S. Government's development finance institution. It mobilizes private capital to help solve critical world challenges and in doing so, advances U.S. foreign policy. Because OPIC works with the U.S. private sector, it helps U.S. businesses gain footholds in emerging markets catalyzing revenues, jobs and growth opportunities both at home and abroad.'* (OPIC website)

*b) Some 'DFIs' have a more developmental mandate than others*

As can be seen from the summary of DFIs' missions and country/regional focus in Annex A, the extent to which DFIs are focused on the poorest countries and / or people varies. CDC, for example, is strictly mandated to invest the majority of funding in the world's poorest countries (since 2009): 'CDC will make more than 75% of new investments in low-income countries (those with an annual gross national income (GNI) per capita of less than US$905 in 2006) ...[and] will invest more than 50% of its funds in sub-Saharan Africa' (CDC website), whereas for IFU limits on country income levels are less stringent: 'Host countries of investments must be on the OECD's DAC list of development aid recipients, and the 2009 GNI capita income may not exceed USD 6,098 (2011). A general exemption from this limit has been granted to South Africa, Botswana and Namibia.' (IFU website)

### *7.3 Unpacking the causal chain assumptions*

This review has been structured around the causal chain described in section 3.2. The findings from the review on the validity of the four assumptions that underpin the causal chain are summarised in this section.

1. *DFIs leverage significant additional finance*

The assumption to test is that DFIs do leverage significant additional private finance into the infrastructure sectors of developing countries. While it is not possible to quantify this figure, the evidence suggests that this assumption is broadly correct, but the probability that this is so in any given project is dependent on a number of factors:

(i) Country income level: financial additionality is more likely in low than in middle-income countries.
(ii) Sector: some sectors are more commercial attractive than others (e.g. telecoms vs. water and sanitation). DFIs are less likely to create financial additionality in sectors which are commercially attractive.
(iii) Type of finance: Infrastructure projects require particular forms of financing, notably long-term financing due to the long gestation periods of projects. DFIs are often instrumental in providing finance of the required maturity and in this way create financial additionality.

2. *DFIs produce a positive demonstration effect, leading to an increase in private investment over the longer-term, which is not dependent on DFI engagement.*

Of all the assumptions reviewed, this is the most difficult to assess. Definitively proving causality in this area has not been possible with the material available to the reviewers, though the evidence suggests that the following factors will affect the probability of creating a demonstration effect:

(i) Policy context: particularly, in the infrastructure sector, a supportive – and stable – regulatory framework is essential. Projects where DFIs can improve this framework, and there is confidence that it will be maintained without DFI participation, are more likely to create a demonstration effect.
(ii) Project categories: demonstration effects are only possible in projects that are fully commercially viable. Where projects are reliant on some form of concessional financing (and by their nature will never be fully commercially viable) the impossibility of creating a demonstration effect should be explicitly recognised.
(iii) Extent to which project realisation depends on DFI 'political umbrella': As discussed earlier in the report, DFIs provide a 'political umbrella' or 'insurance' with respect political interference and risk. In many cases it is precisely these features that make a project possible, and they are the direct result of DFIs' unique position. Where project realisation is heavily dependent on the 'political umbrella' effect, a demonstration effect is less likely to occur.

3. *DFIs influence project design and policy contexts so that development impacts (growth and poverty) are greater than would have been the case without their participation.*

Unpacking this assumption is important. It could be argued that fulfilling assumptions 1 and 2 (financial and demonstration additionality) is sufficient, as this will lead to greater infrastructure provision, which has proven development benefits. DFIs generally go further, however, and claim additional impacts, often described as 'pro-poor'.

The first point to consider is the way in which DFIs select projects, i.e. whether this done on the basis of potential development impacts. While there is some evidence that this is the case, particularly with respect to growth effects, this type of assessment is not done systematically and – crucially – is not done in such a way as to enable *comparison* of developmental outcomes between projects under consideration. For this to be the case, DFIs would need to assess potential impacts ex ante, and do so in a way that took full account of economic, social and environmental impacts. Approaches such as Economic Rates of Return and Social Cost Benefit Analysis, could be adapted for this purpose, and used to ensure only net positive projects were undertaken, and those with the greatest potential impact were selected.

Other factors relevant to this assumption are:

(i) Financial (or private) returns may diverge from Economic (or social) returns. Commercial investors are concerned with the former, and – where there is a divergence – DFIs' role is to influence project design to build in features associated with positive development outcomes.
(ii) There are limits to this process. Some project design or financing features that are positive from a development perspective may be commercially negative. Private investors will only be prepared to incorporate such features to the extent that their target rate of return is maintained.
(iii) There are limits to what DFIs can achieve in this regard, as they also face incentives to focus on the most commercially viable projects.
(iv) Overcoming this problem may require changes to DFIs mandates and financing (e.g. allowing them to employ concessional finance and not requiring them to be self-financing).
(v) DFIs have significant influence, both on governments and investors / businesses. It is not clear that this is leveraged to the extent it could be so as to improve project design and the policy context and thus enhance development outcomes.

4. *Infrastructure projects have significant (and large) development impacts, both directly (on poverty) and indirectly (on growth)*

As discussed earlier in the report, assessing the validity of this assumption by reviewing the evidence in full is beyond the scope of this review, although work carried out by others on this topic is discussed in section 2.2. Results have been found to be mixed and highly contingent upon contextual factors, and there are daunting methodological challenges in assessing the impact of infrastructure development. Nevertheless, there is an overall consensus that infrastructure plays an important role in both growth and poverty reduction. More research is clearly needed, particularly to identify the channels of impact, and how these differ by country, sector and income group. A particularly important area for DFIs is understanding in which circumstances and for which sectors there are trade-offs between growth and poverty outcomes in infrastructure investment strategies, and in which circumstances / sectors are there synergies.

## 8. Limitations

### *8.1 Limitations intrinsic to the subject of enquiry*

As we have seen throughout this review, establishing cause and effect in the infrastructure sector is extremely difficult. Although there is a consensus in the literature that infrastructure is vital for growth and poverty reduction, maximising these effects is dependent on a range of factors relating to both project design and the policy context within which the project occurs. As a result, it is very difficult to assign impacts to particular projects with any degree of certainty.

As well as the importance of context, there is the perennial issue of endogeneity (i.e. causality). Simply put does more infrastructure make people less poor, or do less poor people require more infrastructure, which they are better able to afford. This problem is far from being unique to infrastructure. As in other sectors, there is likely to some causality in both directions, but it is clear that providing high quality infrastructure (power, transport, water) that is both accessible and affordable for the poor, will have a significant effect.

Where infrastructure does differ from some other sectors is in timescales. The size of many projects means it can be many years from the signing of contracts to the opening of doors. Similarly, it can be many more years before macro effects such as on economic growth appear and can be measured. We will therefore simply not know what the long-term effects of many projects underway today will be for many years.

When attempting to judge the additionality of DFIs it is essential to keep these uncertainties in mind. Donors, and DFIs themselves, want to be able to demonstrate the impact have on development. While this is fully understandable, it needs to be kept in perspective. Both infrastructure and development are long-term games, which are ill-suited to a frame of mind that needs short-term results.

### *8.2 Limitations related to institutional factors*

As well as the difficulties created by the infrastructure sector, there are those specific to DFIs. For example, the desire to demonstrate impact has not been matched by a long-term commitment to measuring impact. More often, we found institutions attempting to retrospectively build attribution systems into historical projects. Although this is changing significantly, further progress is required. Again, this is a long-term process, where they aim should be to consider what we will need to know in ten years, as well as next year, and to build stable monitoring systems to ensure this information is generated.

A related issue is consistency, both within and between DFIs. As things stand, different DFIs take very different approaches to the measurement of impact and each is working hard to develop a coherent system, often in isolation. The impression created was of lots of relatively isolated attempts to invent the wheel, with insufficient attention paid to existing work on Monitoring and Evaluation (M&E) in other fields, and far too little cooperation between DFIs. In an ideal world, DFIs would operate according to an agreed framework for impact assessment, which would greatly facilitate their working together as it would provide a common way of determining priorities and assessing success. While it is understandable that bilateral DFIs need to tailor their approach to fit their own national circumstances, this should not obscure the fact that, in the end, their goals are the same: sustainable growth and poverty reduction. Some progress has been made towards meeting this objective; a DFI working group on development results indicators harmonisation was set up in May 2009 and a core set of twenty indicators / definitions has been established.

The final DFI-related limitation is transparency. Unlike infrastructure projects undertaken in the public sector – and funded by the World Bank, for example – very little information is available on the activities of DFIs. The primary reason for this appears to be concerns over commercial confidentiality, where contracts are constructed with the private sector that precludes the release of information that would be commonplace in the public sector. It is far from clear how much this information is genuinely sensitive in a commercial sense, and how much the lack of transparency is just a cultural aspect of the sector that has evolved and is retained because of inertia as much as anything else.

What is clear, however, is that the inability to scrutinise project evaluations (both 'in-house' and independent) for PPIs makes it impossible to compare outcomes with those from publicly funded infrastructure projects. This is very strange. Proponents of both PPI and publicly funded projects routinely claim their approach delivers the best outcomes, but without an equal level of transparency across the possible approaches it is not possible to substantiate these claims.

Early on in this project it was recognised that this would fundamentally undermine the purposes of the review. Only project evaluations that DFIs chose to make public were available, creating an obvious selection bias, where both DFIs and private sector partners have a strong incentive to 'showcase' the most successful projects.

To address this problem, the review team has negotiated access to internal documents from the IFC and is in the process of doing so with the other major DFIs. This material will form the basis of a subsequent review, which addresses the same questions using internal, confidential material. Taken together with the current document, these complementary reports will review both the publicly available and confidential material on this very important subject.

## 9. Conclusions and recommendations

### *9.1 Conclusions*

This review has aimed to answer the following questions:

*What is the evidence of the impact of DFI support (including PIDG support) for PPI, on economic growth and poverty reduction? What conclusions can be drawn from this evidence to help DFIs better target their investment to maximise their impact on economic growth and poverty reduction?*

We approached the first of these questions by decomposing DFI's 'impact' into a 'causal chain' with four 'links'. Each of these 'links' described a particular form of 'additionality' that DFIs could potentially create, which taken together amount to DFIs' total impact on growth and poverty reduction. The forms of additionality identified are: financial, design, policy and demonstration. Financial additionality is simply the extent to which DFIs are able to bring more private investment to the infrastructure sector than would have been the case without their interventions; design additionality is the extent to which DFIs influence project design so as to create more growth and/or a greater impact upon poverty; policy additionality is the extent to which DFIs influence the policy context within which projects occur to improve the same outcomes; demonstration additionality (or effect) is the extent to which DFI supported projects provide a positive example, thereby leading to an increase in subsequent private sector projects that do not require DFI participation.

We attempt to provide answers to the second question in this section of the review.

The first conclusion that can be drawn from the study is that actual evidence is very limited. Firstly, DFIs do not appear to have a systematic approach to project selection designed to maximise development impact – economic, social and environmental. A number of approaches have been developed in recent years – particularly Economic Rate of Return and Social Cost Benefit Analysis – which could be modified for this purpose. Ex ante assessments could ensure that only net positive projects were undertaken, and comparability across available options could be used to prioritise projects with the greatest impact, thus maximising the 'returns' from DFIs' scarce resources. To be an effective asset allocation tool, however, such approaches would need to take account of distributional factors – by over-weighting the impacts of the poor, for example – and measure environmental impacts full and accurately. The work of The Economics of Ecosystems and Biodiversity (TEEB) may provide positive lessons in this regard.

Secondly, from the 86 documents seen to be of greatest relevance to the question – most of which are lengthy independent evaluations of DFI activities – just 67 statements[119] could be described as evidence of additionality – even if we assume all projects are net positive in developmental terms. These limitations make the second question very difficult to answer with any degree of certainty, which is a problem for DFIs attempting to improve their impact on economic growth and poverty reduction. The first, and perhaps most important, recommendation is therefore that DFIs should develop better techniques for measuring their impact (*ex ante* and *ex post*), and where possible use compatible approaches (further recommendations on this subject are made in Section 11 below).

The main conclusions on the four types of additionality from the evidence and coded text are provided below.

### *9.1.1 Financial additionality*

Both the evidence and coded text suggests that DFIs are creating financial additionality through a number of channels. Principally, *to a much greater extent than private sector investors*, they: a) provide finance on better terms, b) mitigate project risk, and c) invest countercyclically. This is possible, first and foremost, because DFIs are backed by developed country governments, both politically and financially. This enables them to access to finance on favourable terms (by enhancing their creditworthiness), reduces the risks of borrowers defaulting on loans from them (by amplifying the consequences of doing so), and so enables them to hold riskier portfolio than private institutions would be able to hold. These factors enable them to (profitably) invest where private actors might not, to absorb the higher risk components of deals, and to provide long-term finance where it is unavailable. Their particular status also allows them to provide a 'political umbrella' for co-investors from the private sector, so that DFIs can bring real commercial and real political benefits to deals, enabling them to leverage significant private sector finance.

The evidence suggests that DFI projects create financial additionality more often than not. There is very little evidence of crowding out (which is perhaps not surprising as the review has focused on lower income countries where crowding out is improbable). However, there are also multiple cases - more than one third of the evidence samples - in which DFI financial additionality is questionable, i.e. it seems likely that the project would have gone ahead without DFI involvement. Both income and sector seem to matter: the higher the level of income in a country, and the more commercially attractive the sector, the more likely it is that DFIs will not be additional. Furthermore, as pointed out above, there is little attempt to systematically forecast development impact before projects are undertaken, so that even where additionality can be demonstrated, this does not mean that greater additionality could not have been achieved through a different project.

[119] We did not adopt a stringent definition, merely requiring statements to be specific in terms of 'facts and/or figures', rather than generic statements of the form: 'a demonstration effect was observed...'

In order to ensure additionality, therefore, a more thorough process of up-front impact assessment, screening and asset allocation is necessary and worthwhile, as is an improved understanding of the factors likely to result in financial (non)additionality.

### *9.1.2 Design and policy additionality for growth*

There is a good range of material to support the view that DFI activity in infrastructure supports economic growth. Important channels through which project design features can do this include:

- Targeting bottlenecks to productivity and international trade
- Generating employment and government fiscal revenues;
- Generating knowledge and technology transfer;
- Private sector development, including improving environmental, social and governance performance; and
- Mobilising investment in green energy and energy efficiency.

In each of these cases, we found evidence (or supporting material) to suggest that DFIs are actively seeking to influence project design (including in the selection of projects, though this is not done systematically using a standardised methodology) to boost economic growth. However, several cases were also identified of negative or no design additionality, often as a result of unexpected resistance from governments or public sector entities to greater private sector involvement.

A greater weight of evidence and supportive material has been found that DFIs seek to influence project design than policy features to boost growth (14 samples of evidence vs. 4). This is perhaps not surprising, as most bilateral DFIs do not have a mandate to influence legal and regulatory frameworks or build capacity in the public sector. Nevertheless, most DFIs aim to encourage such results, albeit indirectly, so this outcome could be seen as disappointing. We recognise, however, that this may also partly reflect the difficulty of measuring policy outcomes and, particularly, attributing them to DFI activities.

Where policy additionality for growth was found, it tended to focus on changes to the legal and regulatory framework or on public sector capacity building. Several cases were also found of negative or no policy additionality, often where governments made commitments to policy reform that were not fulfilled, or DFIs' mandates prevented activities (to influence the enabling environment, for example) although the project would have benefitted from such interventions.

Where outcomes for design and policy additionality for growth were disappointing, a common factor was an inadequate understanding of the policy or political context before committing to a project. Again, this supports the case for devoting greater resources to up-front screening and appraisal.

### *9.1.3 Design and policy additionality for poverty reduction*

A key finding is that there is very little evidence of any kind that DFIs actively seek to influence project design or policy to improve *direct* poverty outcomes. This suggests one of two things. First, that DFIs are not prioritising these kinds of outcomes; or second, that within the constraints of their current mandates and operating practices, it is very difficult to generate *additional direct poverty reduction outcomes.* Given that many DFIs are explicitly charged with reducing poverty, we strongly suspect that the second of these explanations is correct. Interestingly, the few projects in which this type of additionality was found were all partly financed on non-commercial terms, which suggests that the real difficulty lies in generating this kind of additionality on *purely commercial terms*.

In the process of the review, the research team developed a set of proxies for design and policy additionality for poverty reduction from the literature. These are listed below:

Design:

1. Influence governments or investors to provide improved access/affordability for the poor
2. Generate pro-poor employment during or after construction
3. Enable the poor to participate in project planning
4. Make explicit efforts to reduce exclusion of women and people with disabilities
5. Enhance local supply chain linkages.

Policy:

6. Encourage pro-poor institutional and regulatory reform;
7. Support the engagement of poor and vulnerable stakeholders during project planning.

Of these seven proxies, it is only 'encouraging pro-poor institutional and regulatory' that appears beyond the scope of most DFIs. There is no obvious reason why DFIs should not make greater efforts to encourage their partners to engage in the other six activities. It is understandable that private investors may not prioritise these activities, many of which may add to costs (e.g. extending physical access to poor areas), or reduce returns (e.g. ensuring tariffs are low enough to be afforded by the poor), or simply create delays. However, as we have seen, private investors often obtain significant benefits from partnering with DFIs, and there seems no reason why some of these interventions should not form part of the social 'price' they pay in exchange.

It seems likely that the tensions between DFIs' commercial and developmental mandates are an important factor in DFIs' non-engagement in these activities. DFI staff incentives tend to be aligned with commercial indicators such as the volume of deals and profitability. One approach to incentivising staff to engage in the above activities would be a re-alignment of incentives to balance developmental and commercial outcomes.

#### *9.1.4 Demonstration additionality*

Evidence that DFIs create demonstration effects is scarce. It is clearly the case that 'proving' causality in a highly complex and rapidly changing environment, with a multitude of potential explanatory variables, is extremely difficult. Despite these difficulties, however, greater efforts to understand and prove demonstration effects are warranted, particularly as this is a key element of DFIs' mission[120].

Non-evidence based claims indicate that the following forms of *positive demonstration* are important:

- Improving investors' *perceptions* of risk and returns in LIC infrastructure sectors
- Improving the *reality* of risk-return ratios - by mitigating risks, for example
- Showcasing the success of innovative and replicable business models, or the use of internationally accepted standards for the first time.

Conversely, other claims indicate that the following forms of *negative demonstration* are important:

- Perception of the risk-return ratio deteriorated as the result of a project.
- Projects demonstrated the lack of an (essential) supportive enabling environment.

[120] The IFC's recently commissioned report 'Evaluation of the Demonstration Effect of IFC's Involvement in Infrastructure in Africa' (Castalia – forthcoming) is an example of such an effort.

- Unsuccessful projects generated hostility towards PPI within host country governments, particularly where PPI was attempted in less commercially viable sectors.

A key finding to emerge from this review is **the limits to the demonstration effect**. In many cases DFIs are able to mobilise finance precisely because they are DFIs backed by states. As a result, it is simply not possible in many instances for the private sector to replicate what they have done.

### *9.1.5 Towards a categorisation of projects by commercial viability*

An important conclusion of this review is that it is possible and helpful to classify DFI projects in the infrastructure sector according to their underlying commercial viability. If developed and refined, this categorisation has the potential to provide guidance on the different types of additionality that DFIs could create in different settings, enabling them to focus their efforts accordingly. Categorising projects in this way also provides guidance on the most appropriate types of financing instruments and structures. If used in conjunction with the ex ante project selection techniques discussed above, this would help to ensure that a) projects with the greatest development potential are engaged in, and b) DFIs' activities are instrumental in seeing this potential fulfilled (i.e. additionality). As we shall see, these approaches would have implications for DFI's mandates

The four project categories are:

(i) Fully commercially viable – i.e. would have gone ahead without DFI investment[121]
(ii) Commercially viable in a balance sheet sense, but political 'insurance' provided by DFIs essential to assuage investors' concerns about political risk
(iii) Commercially viable but only if finance structured in ways that only DFIs will or can do
(iv) Only commercially viable for investors if non-commercial support is provided.

We would argue that that there is a fundamental difference between category (i)-(iii) projects and category (iv) projects, but DFIs tend to operate as if this was not the case. Category (iv) projects will not be attractive to private investors unless their returns are boosted by the use of concessional finance, but they are also the projects that are most likely to have direct poverty reduction and/or positive environmental outcomes. Unless this is recognised, these kind of projects will be squeezed in favour of categories i)-iii), not least because DFIs' mandates and financing structures naturally pull them towards full commercial viability, and even toward the most commercially viable. For example, an ex ante impact assessment could indicate very high net development impacts from a particular project, but limited commercial potential. Put another way, a project may have a high Economic Rate of Return but a low Financial Rate of Return.

In our view, it will be difficult for DFIs to engage in such projects to a significant degree, as they tend to be pulled towards projects with high financial returns. If they wish to undertake 'high (development) impact/low (financial) return projects', some structural reform may be required.

The conclusions of a recent International Development Committee report on the future of CDC are relevant here. The report concludes that: *'[CDC's] development impact has been*

[121] Note that DFI advisory services can still play a valuable role in mobilising finance for projects that are commercially viable without DFI investment.

*insufficient for a Government-owned company whose net investments count as Official Development Assistance.'*[122]

And recommends that: '*CDC be split into two parts. The first part would primarily use the 'fund of funds' method and co-investment (through equity), and other financial instruments as appropriate, to make investments in developing countries. The new second part would have a mandate to make innovative investments in 'pro-poor' sectors. The profit from the first part of the business would fund or subsidise the second.' (ibid).*

This is only one of a number of ways DFIs could address the tensions described above. What is clear, however, is that the underlying causes of these tensions need to be fully understood before they can be addressed.

***Tension between commercial and developmental mandates of DFIs***

The shortage of evidence of direct poverty reduction outcomes can be understood in the context of the tensions between DFIs' commercial and developmental mandates. The founding principal of DFIs is that it is possible to generate high commercial returns and developmental outcomes. This review finds that this is certainly true if development outcomes are defined in terms of growth, which may lead to trickle-down poverty reduction. It is also the case that additional infrastructure – almost by definition – provides access to services for some that was not previously available, and so has a positive development effect. Where the evidence grows very thin, however, is that this relationship holds for *additional* poverty reduction outcomes, above and beyond these effects.

Tensions between commercial and developmental mandates identified in this review include:

- Many DFIs are required to be self-financing so maintaining profitability is a priority
- DFIs must maintain their high credit rating and are thus incentivised to engage in high-return, low-risk projects[123]
- Many activities required to enhance a project's developmental outcomes are costly and time-consuming, and may erode their competitiveness vis-a-vis the private sector
- Most DFIs employ investment managers drawn from the private financial sector, creating a potential clash of cultures with the more developmental mandates of DFIs
- DFIs' mandates may constrain them in other ways, for example if they are tied to national interests, or if they do not oblige the DFI to invest in low-income/high-risk countries.

DFIs, and particularly the donors that support them, need to acknowledge these tensions more explicitly. At present, donors are asking more and more of DFIs, particularly with respect to their poverty impacts. But in many ways DFIs were established to focus on growth, with poverty effects assumed to 'trickle down' as a consequence. If they are expected to deliver more in terms of direct poverty effects they need to be mandated, financed and staffed in way that is compatible with this.

[122] House of Commons International Development Committee (2011) The Future of CDC: Government Response to the Committee's Fifth Report of Session 2010-2011, available at: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmintdev/1045/1045.pdf

[123] However, there are questions over whether engaging in more high-risk projects would in fact prejudice DFIs' high credit ratings; see teVelde & Warner (2007).

### *9.2 Recommendations*

1. Develop robust tools to assess the broad development impact (economic, social, environmental) of projects *ex ante*, and allocate resources so as to maximise these impacts.

2. Start to build a systematic evidence base on DFI impact *ex post*, drawing on best practice in the academic and policy spheres, and developing a common framework across DFIs (further recommendations on M&E and impact evaluation are provided below).

3. Consider weighting impact assessments and asset allocation (*ex ante* and *ex post*) in favour of certain groups to reflect DFI mandates – e.g. the poor.

4. Develop and refine the project categorisation framework suggested above.

5. Devote more resources to up-front screening and analysis of projects to:

    a. Only undertake projects with net positive development impacts.

    b. Exclude 'category i) projects, b) assign included projects to category ii)-iv)

    c. Assess what forms of growth **and poverty** additionality the DFI can best create [i.e. financial, design, policy, demonstration]

    d. Structure projects so that maximum development impact is achieved, using blended finance for category iv) projects

    e. Measure impact on an ongoing basis.

6. Align staff incentives with developmental and commercial outcomes on a project by project basis, with the balance between the two being determined by the category of project being undertaken and the form of additionality being pursued.

7. Where DFIs are involved in type (ii) and (iii) projects, seek to leverage improved ESG outcomes as the 'price' to be paid for political 'insurance' or better financial terms.

8. If DFIs are to engage in category (iv) projects their mandates should be altered to facilitate this. There are three main options: First, the "parent" bilateral donor or International Financial Institution could make a pool of grant funding available to the DFI specifically for the purpose of engaging in projects with direct poverty reduction outcomes. A possible extension of this would be for donors to pool funds in a general grant fund. DFIs could then bid for projects where it can be demonstrated that, without such funding, the project would not be commercially viable. Second, DFIs themselves could be enabled to provide concessional finance (perhaps through a dual structure similar to the World Bank's hard and soft loan window, or the proposed dual structure for the CDC). Third, DFIs could be mandated to work much more closely with development institutions specialising in this form of finance, with perhaps a greater specialisation and 'division of labour' between DFIs themselves.

9. Many of the recommendations made here would stand a greater chance of successful execution if DFIs collaborated more systematically with one another.

## 10. Priority areas for further research

Despite the importance of infrastructure to development, and the significant resources devoted by bilateral and multilateral development agencies, the field is surprisingly under-researched. Many quite basic questions remain unresolved. The increased focus by donors on achieving significant developmental change based on solid empirical research is very much to be welcomed, but it requires a rapid improvement in the evidence base if it is to succeed.

The suggestions made here are not intended to be definitive, but are suggestions for priority areas given the research undertaken in the course of this review.

1. Build on existing work[124] to develop *ex ante* and *ex post* measures of impact that integrate social, environmental and economic 'returns' coherently and equitably[125]

2. Seek to establish a common measurement framework across DFIs. Include gender in this analysis.

3. Develop a common framework for measuring additionality.

4. Develop and refine the categorisation of projects based on the relationship between (potential) commercial and (composite) developmental 'returns', by sector and context.

5. Develop a better understanding of what forms of finance are most suited to each project category and why.

6. Analyse the mandates of multilateral and bilateral DFIs to see if they are compatible with the delivery of these forms of finance.

7. Develop a robust evidence base of the long-term relationship between infrastructure and poverty by sector.

[124] Such as the Economic Rate of Return, or Social Cost Benefit Analysis approaches.
[125] Through, for example, over-weighting the impact on the poor.

## 11. Commentary on M&E and impact assessment

Recent years have seen an increasing emphasis on monitoring and evaluation (M&E) and impact assessment, as part of the drive to 'manage for results.'[126] DFIs have responded by developing more sophisticated assessment frameworks, which generally include elements of both M&E and impact assessment.
These have distinct purposes, and thus distinct approaches are required:

> Monitoring presents what has been delivered and evaluation answers the question "what has happened as a result of the intervention?"
>
> Impact evaluation is a particular aspect of evaluation, focusing on the ultimate benefits of an intervention. (IFC/GTZ/DFID, 2008, p.21)

An in-depth review and comparison of the M&E and impact assessment approaches of the many DFIs included in this report would be a valuable exercise, but is beyond the scope of this study. Rather, this section:

a) Explores *what* DFIs should be measuring and considers approaches to measuring the outcomes and impacts of DFIs' activities
b) Identifies key trade-offs in DFI M&E and impact assessment; and,
c) Makes recommendations for improved M&E and impact assessment on the basis of (a) and (b).

A brief description of the PIDG's M&E framework is provided in Annex C by way of example. We focus on the way DFIs measure development outcomes as opposed to factors such as return on investment, internal organisational, or institutional performance.

### *11.1 What should DFIs be measuring and how can they measure it?*

The objectives of DFIs working in infrastructure are summarised in the PIDG's mission statement:
*...our aim is to help mobilise private investment in the infrastructure sector that is needed to increase service provision for the poor, boost economic growth and alleviate poverty in developing countries.* (PIDG website)

This mission statement encompasses three objectives: (1) to mobilise private sector investment in the infrastructure sector in developing countries *and thus*; (2) to promote economic growth; (3) to reduce poverty. 'What to measure' is discussed for each of these objectives in turn below.

At present, most DFIs measure objective (1) by calculating the quantity of finance that they are able to leverage per unit of currency they invest. This is an important figure which is relatively easy to obtain, and should certainly continue to feature in DFI reporting. However, a comprehensive understanding of the extent to which DFIs are achieving the mobilisation of private sector investment would require the measurement of four additional indicators:

1. **Ex ante development impact (i.e. 'selection additionality')**: the first question is whether the proposed project is net positive from a development perspective, with impact being comprised of economic, social and environmental elements and potentially weighted in favour of impacts on the poor. Building on techniques such as

[126] In 2002, at the International Conference on Financing for Development in Monterrey, development partners agreed to focus on managing for development results; an aspiration which was later included in the 2005 Paris Declaration on Aid Effectiveness.

Economic Rates of Return and Social Cost Benefit Analysis, this would also enable projects with the greatest returns to be prioritised, maximising the total development impacts of DFI resources.

2. **Financial additionality**; regardless of the net development benefit, however, if the project would have gone ahead without the involvement of the DFI (as found in a number of cases during this research) the DFI cannot be said to have created any additionality
3. **Demonstration additionality**; if 1 and 2 are met, and the project has directly resulted in further private sector investment without DFI involvement, the DFI can be seen as having played an important role in leveraging this finance also
4. **Attribution**; there are cases in which more than one DFI is involved in a project but all DFIs claim the finance leveraged as attributable to their role, leading to double (or triple) counting. This is discussed further below.

Measuring all forms of additionality can be challenging. One of the recommendations of this report is that DFIs develop standardised methods for measuring additionality.

Measuring impact in relation to objectives (2) and (3) is more complex. As we have seen, many questions remain about the mechanisms through which infrastructure leads to economic growth and poverty reduction. An independent evaluation of the Facilities supported by DFID (DFID, 2008), for example, finds that this relationship has not have been sufficiently interrogated by the DFIs.

Whether ex ante or ex post, four possible approaches to measuring growth and poverty impacts *at the project level* are identified below.[127] The approaches given here are not mutually exclusive; some or all may be adopted. In general, the methods increase in cost, complexity and sophistication as go down the list.

1. Identify and track simple **output indicators,** where the outputs are believed to be essential preconditions for achieving the growth and poverty reduction outcomes of infrastructure development.[128] At present, the PIDG (and several other DFIs) measure:
   - Access: number of people with new connections or access to improved quality of service;
   - Government revenue (subsidies avoided, revenue from up-front fees and on-going tax payments)
   - Direct job creation.

   Some variations on this include:
   - The IFC and some other DFIs are starting to measure GHG emissions reduced or avoided
   - Norfund measures the proportion of women employed.

2. Measure **design and policy additionality**. An important part of DFI additionality is the extent to which they influence project design and policy characteristics to generate enhanced growth and poverty reduction outcomes. At present few DFIs attempt to measure this, although the PIDG is starting to do so. The proxies for design and policy additionality identified in this report could support the development of indicators to measure these forms of additionality. Again, this is not a direct

[127] Measurement of impact at the organisational level can be achieved by aggregating project level data, but will also include measures such as the proportion of DFI activity carried out in low-income and / or high-risk countries.

[128] In traditional donor-funded infrastructure projects this type of indicator would normally be measured in a logframe. However, the logframe approach is not seen as appropriate for DFIs as their principal role is leveraging finance from private providers, and they thus have far less control over project outcomes than donors would in fully (or largely) donor-funded projects.

measure of growth and poverty *outcomes*, but a measure of the *output* mechanisms through which it is believed DFIs can enhance such outcomes.

3. Measure **economic and social rates of return**. A project's financial rate of return (FROR)[129] is an important indicator for DFIs, but does not capture the full important economic, social benefits created by the investment. Measuring economic and social rates of return is becoming increasingly common in international development, and new techniques have been developed that enable relatively rapid and inexpensive measurement of these indicators.[130] While this type of study will not provide the level of detail and contextualisation of a full impact assessment (described below), they would support an improved understanding of the myriad social and economic costs and benefits of an infrastructure project, how these costs and benefits are distributed between different groups in society, and thus the project's growth and poverty reduction impacts.

4. **Independent impact assessments**. Impact assessments aim to identify the ultimate growth and poverty reduction impacts of infrastructure investments (measuring these outcomes directly as far as is possible, rather than via proxy indicators), and contextualise project outcomes. In order to be objective they must be carried out by an organisation that has full independence from the organisation responsible for project implementation. There are several approaches to carrying out impact assessments. The most common is simply a study carried out by expert independent consultants (or independent evaluation department in the case of MDBs and RDBs) a period of time after project completion, including field visits, interviews with key stakeholders, desk study, etc. More scientific approaches include experimental and quasi-experimental field experiments[131]. DFIs are not commissioning these types of evaluations at project level to date (reasons for this are discussed below), although many have commissioned independent evaluations of the organisation as a whole.

### *11.2 Trade-offs in DFI M&E and impact assessment*

DFIs face multiple trade-offs when making decisions on M&E and impact assessment frameworks.

#### *11.2.1 Accurate, detailed and contextualised identification of outcomes vs. simplicity and economy*

In order to provide detailed information on project performance, and thus an understanding of how future performance could be improved, M&E and impact assessment would objectively and accurately identify and contextualise the ultimate growth, poverty reduction, gender and environmental impacts of DFI activities. Fully achieving this would require the

[129] The key differences between calculations of FROR and economic and social ROR are that the latter takes into account: (1) any taxes, depreciation or finance charges, and attempts to calculate the full cost to the economy over the project's lifetime; and (2) the social and environmental costs and benefits of the project to society, including opportunity costs, increased productivity and non-economic costs and benefits.

[130] For example, the PIDG recently commissioned a study on the economic and social rate of return of four InfraCo projects which was carried out in the space of a month. In reality this was insufficient time to perform a full study, but such studies are not hugely time consuming, particularly once some consensus has developed over appropriate proxies.

[131] In an experimental (or 'randomised') experiment, a study sample is divided into two groups: one will benefit from an intervention (the treatment group) and the other will not (the control group). The outcome measured can then be compared in the two groups. Randomisation in this context means that the evaluator ensures that no pattern exists between the assignment of families into groups and any characteristics of those subjects. When the selection of beneficiaries cannot be done randomly, evaluations can rely on groups similar to those benefiting from a treatment (quasi-experimental approaches). The data are then processed using econometric techniques such as regression discontinuity, matching techniques, difference in differences and regression discontinuities which best approximate the results of a randomised approach. (Estache, 2010)

on-going commissioning of project-level independent impact assessments across a variety of contexts and sectors, which would be costly and time-consuming.

Achieving comprehensive impact assessment is particularly challenging in infrastructure projects due to the long and unpredictable time-lags between project completion and the manifestation of developmental outcomes. Accurate impact assessment is therefore a long-term undertaking. Some would also argue that the 'value for money' of infrastructure impact assessments is less clearly demonstrable than for other types of interventions because infrastructure projects are often not divisible; i.e. it is difficult to run a small pilot project and then scale up incorporating lessons learnt (unlike health projects for example). Finally, to gain an accurate understanding of impacts, it is important to combine macro-economic and social indicators with micro data that goes down to the level of the household or the firm. This enables the evaluator to understand the micro mechanisms through which infrastructure effects economic activity.

There is thus a trade-off with DFIs' need to keep their overheads to a minimum in order to be competitive with the private sector, and to concentrate resources on delivering outcomes 'on the ground'. At present, most DFIs are very far from carrying out the type of comprehensive impact assessment described above: for example, many do not disaggregate by income level and gender even for relatively simple data collection in areas such as access. An improved understanding of the long-term developmental impacts of the investment mobilised by DFIs would facilitate the implementation of investment strategies with greater developmental outcomes per dollar invested. Carrying out or commissioning in-depth impact assessments would appear to be a worthwhile activity.

A further trade-off is that DFIs aim to generate data which is easy for donors and the public to understand, whereas impact assessments are complex and emphasise the contextual conditionality of outcomes. For those seeking *an* answer, 'it depends...' is rarely acceptable, at least unless the evaluation is able to provide clear guidance as to the factors upon which the benefits depend.

Finally, detailed project evaluation is more challenging for DFIs than traditional donors as they have a more 'hands-off' role – their focus has been on leveraging finance rather than project implementation. Project level data is collected by clients rather than by DFIs, and carrying out detailed impact assessment is thus more difficult, particularly given the issues of commercial confidential that have been discussed in this report. However, commissioning impact assessments from consultancies or academic institutions with the requisite experience remains a relatively straightforward (if somewhat costly) option.

#### *11.2.2 Assess performance on both commercial and development objectives*

This is not precisely a 'trade-off' since all DFIs measure both commercial (principally profitability and volume of deals) and development performance. However, DFIs face challenges in balancing and (it could be argued) distinguishing the measurement of these two sets of objectives.

#### *11.2.3 Standardisation vs. organisational control over approach to measuring results*

Organisational benchmarking and sharing of data would be greatly facilitated by the standardisation of M&E and impact assessment frameworks across DFIs. The trade-off is that individual organisations would then lose the ability to develop an approach tailored to its unique way of working, and DFIs' principal donor(s) would have less say in the methods adopted.

#### *11.2.4 Accurate attribution vs. difficulty of coming to agreement over attribution*

DFIs have acknowledged that there are cases in which more than one DFI is involved in a project but all DFIs claim the finance leveraged as attributable to their role, leading to double (or triple) counting. Coming to an agreement over how attribution can be 'split' would be difficult or impossible. However, it is essential that DFIs to agree on an approach to this issue in order to avoid inaccurate reporting.

#### *11.2.5 Transparency and accountability vs. commercial confidentiality*

The increasing emphasis on measuring for results has gone hand-in-hand with a drive for increased transparency in reporting outcomes and impacts. Transparency has two main aims: to facilitate learning and improved development effectiveness beyond the organisation in question, and to enhance accountability to donors, the public and aid recipients. However, most DFIs are not able to make evaluation results public due to commercial confidentiality agreements with clients.

### *11.3 Recommendations*

1. **Measure impact ex ante**, and allocate DFI resources so as to maximise development impact.

2. **Measure additionality**: the extent to which DFIs generate financial, design, policy and demonstration additionality is a measure of the extent to which they play a different (and more developmental) role than purely private sector financiers. Measuring additionality is therefore critical to understanding the extent to which DFIs are fulfilling their role, and the areas in which there is room for improvement. Approaches to measuring additionality have been developed by the PIDG, but would be enhanced by further consultation and collaboration between DFIs and between DFIs and researchers.

3. **Reconsider the ways in which key indicators are measured:** Indicators measured vary between DFIs. Taking the three basic indicators measured by the PIDG and the IFC, broad recommendations are as follows:

    a. *Access*: in order to more accurately record the developmental impacts of access to infrastructure services, wherever possible:
        - Disaggregate access data by income level and gender
        - Measure not only access, but affordability (for example, proportion of monthly income of the poorest quintile spent on the service) and quality (for example, water quality, consistency of electricity supply, etc.)
    b. *Fiscal contribution:* the measure of subsidies avoided should be combined with a measure of whether the cost of the service has increased as a result. A further desirable step is to compliment this indicator with a measure of the extent to which the increased revenue has been spent on pro-poor programmes.
    c. *Job creation*: if we consider 'number of direct jobs created per $ invested', infrastructure investment is clearly not an efficient way to generate employment. Those DFIs measuring direct job creation generally produce figures in the tens or hundreds for each project. The economic (and poverty reduction) impact of creating this number of jobs is tiny considering the quantity of money invested. The usefulness of direct job creation as an indicator in infrastructure is therefore questionable. Measuring indirect job creation (i.e. the number of jobs created as a result of the long-term developmental impacts of the infrastructure investment) would be far more important, but is also more challenging to measure.

d. *GHG emissions avoided*: Considering the growing importance of the climate change agenda, measuring GHG emissions reduced or avoided is important and can only become more so.
e. Finally, DFIs may wish to consider measuring these key indicators *per unit of currency invested*, since DFIs' comparative advantage over traditional donors is their ability to leverage private finance.

4. **Ensure there is a clear and accurate separation between indicators measuring commercial performance and those measuring developmental outcomes:** While it is important for DFIs to measure both types of outcomes, it is vital to clearly distinguish between them so that: (a) developmental outcomes are properly understood; (b) an accurate understanding can be developed of the extent to which there may be trade-offs between commercial and development outcomes.

5. **Combine measurement of output indicators and additionality with evaluations of social and economic rate of return and/or independent impact assessments for a (random) sample of projects:** The importance of DFIs amongst organisations working to lessen the infrastructure funding gap in the developing world is growing, yet in-depth evaluations of the long-term developmental impacts of DFI projects are in short supply. MDBs and RDBs, which are generally better resourced, commission some impact evaluations of their private sector operations projects, but this is rare amongst bilateral DFIs. Commissioning such evaluations would have three positive outcomes:
    a. Demonstrate the long-term poverty reduction impacts of projects via the indirect route of economic growth;
    b. Improve the development effectiveness of DFIs working in the infrastructure sector by providing objective, accurate, detailed and contextualised information on long-term growth and poverty reduction outcomes of their activities; and,
    c. Create a valuable informational public good, as impact assessments are rarer in the infrastructure sector than in education or health, for example (Estache, 2010). Demonstration of the poverty reduction and growth impacts of private sector operations are in particularly short supply, and an expansion of PPI is very likely to require a solid evidence base that it works to garner support.

    Where detailed impact assessments are unfeasible, more rapid evaluations of a project's economic and social rate of return could be an alternative, less expensive option, although these would not provide the valuable, fine-grained information made available by an impact assessment.

6. **Negotiate with clients to facilitate greater transparency in results measurement, and design contracts to ensure this:** Greater transparency is vital to improving development effectiveness and enhancing accountability to donors, the public and recipient country stakeholders.

7. **Depending on the type of project being undertaken, consider how best to align staff incentives with market based and developmental outcomes:** Since DFIs are designed to achieve both commercial and development outcomes, it would seem advisable to align staff incentives with the achievement of both.

8. **Enhance standardisation of M&E and impact assessment frameworks across organisations to enable benchmarking and facilitate cross-organisational learning.** A related option that would achieve the desired outcome is a supra-national organisation that would carry out standardised, independent assessments of

the DFIs.[132] (The feasibility of funding such an organisation from DFIs' M&E budgets would need to be considered.)

9. **Develop an approach to sharing attribution where more than one DFI is involved in a project.** To avoid inaccurate and inflated reporting, DFIs must come to an agreement as to how to share attribution. Reaching an agreement on 'splitting' attribution would be difficult or impossible. An alternative option would be for DFIs to report separately on projects in which multiple DFIs were involved and clearly state that attribution is shared, albeit without specifying the division of attribution.

[132] Suggested by Laurence Carter of the IFC at the PIDG Annual Meeting, 10th & 11th May 2011, Berlin.

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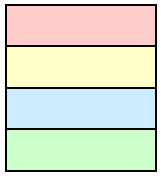
**Annex A. Organisations for which documents were studied during the Review: mission, country and sector focus and activities**

| | Mission | Country / regional focus | Infrastructure sectors | Activities |
|---|---|---|---|---|
| IFC | IFC's Purpose is to create opportunity for people to escape poverty and improve their lives by<br>• Promoting open and competitive markets in developing countries<br>• Supporting companies and other private sector partners where there is a gap<br>• Helping generate productive jobs and deliver essential services to the underserved<br>• Catalyzing and mobilizing other sources of finance for private enterprise development. | All developing countries, although increasing focus in recent years on 'frontier countries'. | No particular sector focus. | Loans<br>Equity<br>Advisory services / TA<br>Project development |
| MIGA | To spur developmentally sustainable foreign direct investment to help create jobs, promote economic growth, and reduce poverty in its developing member countries. | All developing countries. | No particular sector focus. | Political risk guarantees |
| EBRD | To help our countries make the transition towards well-functioning market economies. | Countries transitioning from a command economy to a market economy: "our region of operations stretches from central Europe and the Western Balkans to central Asia". | No strict sector focus, although urban infrastructure is a priority. | Loans<br>Equity<br>Guarantees<br>Advisory services / TA (esp. Enabling environment) |
| EIB | To further the objectives of the European Union by making long-term finance available for sound investment. | Mostly Europe. Otherwise includes pre-accession countries of South-East Europe, Mediterranean partner | No strict sector focus. | Loans<br>Guarantees |

| | | | | |
|---|---|---|---|---|
| | | countries, the African, Caribbean and Pacific countries, Asia and Latin America, and Russia and other neighbours to the East. | | Advisory services / TA |
| ADB | To help its developing member countries reduce poverty and improve the quality of life of their people. | Asia | ADB's Private Sector Operations Department (PSOD) is focused on the following core sectors of operation [in infrastructure]: energy, transport, telecommunications, water (e.g. water supply and waste treatment) and urban infrastructure. | Loans<br>Equity<br>Guarantees<br>Advisory services / TA |
| AfDB | To contribute to the sustainable economic development and social progress of its regional members, individually and jointly. | Africa | No particular sector focus. | Loans<br>Guarantees<br>Equity<br>Advisory services / TA |
| IADB | [To] support efforts by Latin America and the Caribbean countries to reduce poverty and inequality. | Latin America and the Caribbean | No particular sector focus. | Loans<br>Guarantees<br>Advisory services / TA<br>Project development |
| DEG (Germany) | Promotes private business structures to contribute to sustainable growth and improved living conditions. | Africa, Asia, Latin America, Eastern Europe. | No particular sector focus. | Loans<br>Guarantees |

| | | | | |
|---|---|---|---|---|
| | | | | Equity<br>Project developm ent |
| FMO (Netherla nds) | Our vision is that a thriving private sector will help create long-term, sustainable development impact. Our mission is to provide capital, share knowledge and create partnerships.<br>Via the Infrastructure Development Fund, FMO supports the development and improvement of social-economic infrastructure in developing countries. FMO aims to stimulate private investors to invest in private or public-private infrastructure projects in these countries. | Africa, Asia, Eastern Europe and Latin America | Infrastructure Development funding is available for infrastructure projects that contribute to the development and/or improvement of social-economic infrastructure (power, telecom, water, transport, environmental or social infrastructure).” | Loans<br>Guarantee s<br>Equity<br>Advisory services / TA |
| NorFund | To develop and establish profitable and sustainable enterprises in poor countries. The objective is to promote business development and contribute to economic growth and poverty alleviation. | East and Southern Africa, in addition to Central America and selected countries in Southeast Asia.<br>“...geographical concentration on selected, very poor countries” | Focus on renewable energy. | Loans<br>Guarantee s<br>Equity<br>Project developm ent |
| Swedfund | To promote the sustainable economic development of the countries in which we invest. | Africa, Asia and Latin America, as well as the non-EU countries of Eastern Europe | Agriculture, renewable energy... ICT, industrial, infrastructure. | Loans<br>Equity |
| BIO (Belgium) | To support the private sector in developing and emerging countries to enable them to gain access to growth and sustainable development. | BIO can invest in the 109 countries classified by the OECD as “Least Developed Countries”, “Low Income Countries” and “Lower-middle Income Countries”, also known as the DAC-list, and puts a specific focus on the partner countries of the Belgian Development Cooperation | Historically just SMEs, but broadened scope to include infrastructure in 2010:<br>Access to energy and water, telecommunications and transport infrastructure where the main purpose is to support the local private sector. | Loans<br>Guarantee s<br>Equity<br>Advisory services / TA<br>Project |

| | | | | |
|---|---|---|---|---|
| | | and on less developed countries. Africa is the largest beneficiary of BIO's funding operations and accounts for 34% of the total portfolio, followed by Asia and Latin America. | | developm ent |
| IFU (Denmark ) | To enhance global economic growth, development and more equitable income distribution through increased global flow of socially responsible and environmentally productive investments making optimal use of comparative advantages [in collaboration with Danish trade and industry]. | Host countries of investments must be on the OECD's DAC list of development aid recipients, and the 2009 GNI capita income may not exceed USD 6,098 (2011). A general exemption from this limit has been granted to South Africa, Botswana and Namibia. | No particular sector focus. | Loans Guarantee s Equity Project developm ent |
| CDC (UK) | To invest in a commercially sustainable manner in the poorer countries of the developing world and to attract other investors by demonstrating success. | [Since 2009:] CDC will make more than 75% of new investments in low-income countries (those with an annual gross national income (GNI) per capita of less than US$905 in 2006);<br>CDC will invest more than 50% of its funds in sub-Saharan Africa. | Fund of funds. No particular sector focus. | Invests capital with fund managers in the developing world. |
| PIDG | To help mobilise private investment in the infrastructure that is needed to increase service provision for the poor, boost economic growth and alleviate poverty in developing countries. Our other key aims in these countries include: capacity building; adding value to existing development efforts; and achieving sustainable growth and value-for-money. | Only those countries included in the lower income categories of the DAC List of ODA Recipients are eligible for PIDG support. | The infrastructure sectors that our facilities and programmes are permitted to focus on are: energy and power; transportation; telecommunications; gas-related infrastructure; agribusiness; housing; industrial; mining; urban infrastructure; and water and sanitation. | Loans Guarantee s Equity Advisory services / TA Project developm ent |


Regional or multilateral development bank based in the developed world
Regional development bank based in the developing world
Bilateral DFI (developed world)
Multilateral DFI (developed world)

**Annex B. Analysis of Evidence: Additionality Frequencies and Crosstabs**

**86 Priority Documents**

Additionality Frequencies (number of documents that provide evidence of additionality)

Financial Additionality

| | |
|---|---|
| Positive | 18 |
| None | 10 |
| Not possible due to circumstances (mainly weak enabling environment, also organisation does not offer suitable products) | 8 |

Design Additionality

| | |
|---|---|
| Growth | 14 |
| Poverty Reduction | 6 |
| Failed, none or room for improvement | 6 |

Design Additionality - Growth

| | |
|---|---|
| Targets bottlenecks | 8 |
| Employment | 5 |
| Fiscal contribution | 5 |
| Promotes competition | 1 |
| Technology transfer | 1 |
| Private sector development | 1 |

Design Additionality - Poverty Reduction

| | |
|---|---|
| Affordable for the poor | 2 |
| Physically reach poor | 3 |
| Labour standards | 1 |

Design Additionality - Failed, none or room for improvement

| | |
|---|---|
| Not affordable for poor or poorest | 2 |
| Does not physically reach poor or poorest | 2 |
| Negative impact on private sector development | 1 |
| Not financially sustainable | 1 |

| | |
|---|---|
| Fiscal revenue far lower than expected | 1 |
| Poor or negative impact on employment | 1 |

Policy Additionality

| | |
|---|---|
| Improved legal / regulatory framework | 4 |
| Failed, none or room for improvement | 1 |

Demonstration Additionality

| | |
|---|---|
| Positive | 5 |
| Negative or failed attempt | 3 |

Crosstabs

(Note: for 'vs. Organisation' the number refers to number of documents, whereas for the other categories, the number refers to number of cases.)

Financial Additionality vs. Organisation

| | Positive | Crowd out or none | Not possible due to circumstances |
|---|---|---|---|
| ADB | 4 | 0 | 3 |
| EIB | 0 | 1 | 1 |
| FMO | 1 | 2 | 0 |
| IFC | 8 | 0 | 3 |
| MIGA | 6 | 1 | 1 |
| Norad | 1 | 3 | 0 |
| NorFund | 0 | 1 | 0 |
| SIDA | 1 | 1 | 0 |
| SwedFund | 1 | 0 | 0 |
| IFU | 0 | 1 | 0 |
| BIO | 1 | 0 | 0 |

Design Additionality vs. Organisation

| | Growth | Poverty Reduction | Failed, none or room for improvement |
|---|---|---|---|
| ADB | 6 | 0 | 0 |
| EIB | 1 | 0 | 0 |
| FMO | 1 | 1 | 1 |
| IFC | 3 | 1 | 2 |
| MIGA | 1 | 0 | 3 |
| Norad | 1 | 2 | 0 |
| NorFund | 0 | 0 | 1 |
| SIDA | 0 | 1 | 0 |
| SwedFund | 1 | 0 | 0 |
| IFU | 0 | 0 | 1 |
| DEG | 1 | 0 | 0 |

Policy Additionality vs. Organisation

| | Growth | Failed, none or room for improvement |
|---|---|---|
| ADB | 0 | 1 |
| IFC | 3 | 0 |
| MIGA | 1 | 0 |
| Norad | 1 | 0 |

Demonstration Additionality vs. Organisation

| | Positive | Negative or failed attempt |
|---|---|---|
| ADB | 3 | 2 |
| IFC | 2 | 4 |
| Norad & Norfund | 1 | 0 |

Financial Additionality vs. Country Income Level

| | Positive | Crowd out or none | Not possible due to circumstances |
|---|---|---|---|
| Least Developed | 11 | 7 | 1 |
| Other Low Income | 3 | 0 | 0 |
| Lower Middle | 4 | 2 | 6 |

| | | | |
|---|---|---|---|
| Income | | | |
| Upper Middle Income | 0 | 1 | 0 |
| Developed | 0 | 1 | 0 |

No of samples impossible to code due to lack of transparency: 12 (IFC: 4, SIDA: 1, MIGA: 4, FMO:1, NorFund: 1, EIB: 1)

Design Additionality vs. Country Income Level

| | Growth | Poverty Reduction | Failed, none or room for improvement |
|---|---|---|---|
| Least Developed | 12 | 5 | 4 |
| Other Low Income | 4 | 0 | 1 |
| Lower Middle Income | 5 | 1 | 1 |
| Upper Middle Income | 0 | 2 | 0 |

No of samples impossible to code due to lack of transparency: 5 (EIB: 1, IFC:3, MIGA:1)

Policy Additionality vs. Country Income Level

| | Growth | Failed, none or room for improvement |
|---|---|---|
| Least Developed | 3 | 0 |
| Low income | 2 | 0 |
| Lower Middle Income | 0 | 1 |
| Upper middle income | 1 | 0 |

No of samples impossible to code due to lack of transparency: 1 (IFC)

Demonstration Additionality vs. Country Income Level

| | Positive | Failed, none or room for improvement |
|---|---|---|
| Least Developed | 3 | 2 |

| | | |
|---|---|---|
| Low income | 1 | 2 |
| Lower middle income | 2 | 2 |

No of samples impossible to code due to lack of transparency: 1 (ADB)

Detailed Crosstabs for Design Additionality

(Note: for 'vs. Organisation' the number refers to number of documents, whereas for the other categories, the number refers to number of cases.)

**DFI**

Design Additionality_Growth vs. Organisation

| | Employment | Fiscal contribution | Promotes competition | Targets bottlenecks | Technology transfer | Private sector development |
|---|---|---|---|---|---|---|
| ADB | 2 | 2 | 1 | 3 | 0 | 1 |
| EIB | 1 | 0 | 0 | 0 | 0 | 0 |
| FMO | 1 | 0 | 0 | 1 | 0 | 0 |
| IFC | 0 | 1 | 0 | 2 | 0 | 0 |
| MIGA | 0 | 1 | 0 | 0 | 0 | 0 |
| Norad | 1 | 1 | 0 | 1 | 1 | 0 |
| SwedFund | 0 | 1 | 0 | 0 | 0 | 0 |

Design Additionality_Poverty Reduction vs. Organisation

| | Affordable for the poor | Physically reach poor | Labour standards |
|---|---|---|---|
| FMO | 0 | 1 | 0 |
| IFC | 1 | 0 | 1 |
| Norad | 1 | 1 | 0 |
| SIDA | 0 | 1 | 0 |

Design Additionality_Failed attempt, no attempt or room for improvement vs. Organisation

| | Not affordable for poor or poorest | Does not physically reach poor or poorest | Negative impact on private sector development | Not financially sustainable | Disappointing fiscal revenue | Poor or negative impact on employment |
|---|---|---|---|---|---|---|
| FMO | 1 | 1 | 0 | 0 | 0 | 0 |
| IFC | 0 | 0 | 1 | 1 | 1 | 0 |
| MIGA | 1 | 0 | 1 | 1 | 1 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| NorFund | 0 | 0 | 0 | 0 | 0 | 1 |
| IFU | 0 | 1 | 0 | 0 | 0 | 0 |

## COUNTRY INCOME LEVEL

Design Additionality_Growth vs. Country income level

| | Employment | Fiscal contribution | Promotes competition | Targets bottlenecks | Technology transfer | Private sector development |
|---|---|---|---|---|---|---|
| Least Developed | 5 | 2 | 0 | 7 | 1 | 0 |
| Other Low Income | 1 | 1 | 1 | 1 | 0 | 0 |
| Lower Middle Income | 2 | 1 | 0 | 3 | 0 | 1 |

Design Additionality_Poverty Reduction vs. Country income level

| | Affordable for the poor | Physically reach poor | Labour standards |
|---|---|---|---|
| Least Developed | 0 | 4 | 0 |
| Lower Middle Income | 1 | 0 | 0 |
| Upper Middle Income | 1 | 0 | 1 |



Design Additionality_Failed attempt, no attempt or room for improvement vs. Country Income Level

| | Not affordable for poor or poorest | Does not physically reach poor or poorest | Negative impact on private sector development | Not financially sustainable | Disappointing fiscal revenue | Poor or negative impact on employment |
|---|---|---|---|---|---|---|
| Least Developed | 2 | 2 | 0 | 0 | 0 | 1 |
| Low | 0 | 0 | 0 | 1 | 0 | 0 |
| Lower middle | 0 | 0 | 0 | 1 | 0 | 0 |

## REGION

Design Additionality_Growth vs. Region

| | Employment | Fiscal contribution | Promotes competition | Targets bottlenecks | Technology transfer | Private sector development |
|---|---|---|---|---|---|---|
| Africa | 2 | 1 | 0 | 4 | 0 | 0 |
| Asia | 4 | 3 | 1 | 8 | 1 | 1 |

Design Additionality_Poverty Reduction vs. Region

| | Affordable for the poor | Physically reach poor | Labour standards |
|---|---|---|---|
| Africa | 1 | 2 | 0 |
| Asia | 1 | 1 | 0 |
| LAC | 0 | 0 | 1 |

Design Additionality_Failed attempt, no attempt or room for improvement vs. Region

| | Not affordable for poor or poorest | Does not physically reach poor or poorest | Negative impact on private sector development | Not financially sustainable | Disappointing fiscal revenue | Poor or negative impact on employment |
|---|---|---|---|---|---|---|
| Africa | 1 | 1 | 0 | 0 | 0 | 1 |
| Asia | 0 | 0 | 0 | 2 | 0 | 0 |

## SECTOR

Design Additionality_Growth vs. Sector

| | Employment | Fiscal contribution | Promotes competition | Targets bottlenecks | Technology transfer | Private sector development |
|---|---|---|---|---|---|---|
| Energy | 2 | 2 | 0 | 7 | 0 | 0 |
| Industry | 2 | 0 | 1 | 1 | 1 | 0 |
| Transport | 1 | 2 | 0 | 0 | 0 | 1 |
| Watsan | 1 | 0 | 0 | 3 | 0 | 0 |
| Telecoms | 2 | 1 | 0 | 1 | 0 | 0 |

Design Additionality_Poverty Reduction vs. Sector

| | Affordable for the poor | Physically reach poor | Labour standards |
|---|---|---|---|
| Watsan | 1 | 1 | 0 |
| Energy | 1 | 0 | 0 |
| Telecoms | 0 | 2 | 0 |

Design Additionality_Failed attempt, no attempt or room for improvement vs. Sector

| | Not affordable for poor or poorest | Does not physically reach poor or poorest | Negative impact on private sector development | Not financially sustainable | Disappointing fiscal revenue | Poor or negative impact on employment |
|---|---|---|---|---|---|---|
| Energy | 0 | 0 | 0 | 1 | 0 | 0 |
| Transport | 0 | 0 | 1 | 0 | 1 | 0 |
| Watsan | 1 | 0 | 0 | 0 | 0 | 0 |
| Industry | 0 | 1 | 0 | 0 | 0 | 0 |

**71 EBRD Documents**

Additionality Frequencies

| Financial additionality | | Developmental outcomes | | | Policy additionality | | | Demonstration effect | |
|---|---|---|---|---|---|---|---|---|---|
| Positive | None | Growth | Poverty | Negative or room to improve | Capacity | Legal and reg framework | Negative or room to improve | Positive | Negative |
| 6 | 2 | 2 | 0 | 0 | 3 | 5 | 2 | 1 | 0 |

Crosstabs

(Note: only results for 'vs. Sector' are of interest. Results for 'vs. Country income level were not found to be of interest; many documents could not be classified, and most of those that could were 'developed'.
For the 'vs. Region' results, all classifiable outcomes were in Europe.

Financial Additionality vs. Sector

| | Positive | Crowd out or none |
|---|---|---|
| Energy | 2 | 0 |
| Transport | 1 | 0 |

| | | |
|---|---|---|
| Urban Development | 1 | 0 |
| Watsan | 2 | 1 |

Design Additionality vs. Sector

| | Growth | Poverty Reduction | Failed, none or room for improvement |
|---|---|---|---|
| Energy | 0 | 0 | 0 |
| Industry | 1 | 0 | 0 |
| Transport | 0 | 0 | 0 |
| Watsan | 0 | 0 | 0 |
| Telecoms | 0 | 0 | 0 |

Policy Additionality vs. Sector

| | Growth | Failed, none or room for improvement |
|---|---|---|
| Energy | 4 | 1 |
| Transport | 2 | 1 |
| Urban Development | 1 | 0 |
| Watsan | 1 | 0 |

Demonstration Additionality vs. Sector

| | Positive | Negative or failed attempt |
|---|---|---|
| Urban Development | 1 | 0 |
| Watsan | 1 | 0 |

**Twelve 'other' studies**

Additionality frequencies

Financial Additionality

| | |
|---|---|
| Positive | 2 |
| None | 1 |

Design Additionality

| | |
|---|---|
| Growth | 4 |
| Failed, none or room for improvement | 3 |

Policy Additionality

| | |
|---|---|
| Improved legal / regulatory framework | 1 |
| Failed, none or room for improvement | 1 |

Demonstration Additionality: No evidence

Crosstabs

(Note: Results for 'vs. Country income level' and 'vs. Region' were not found to be of interest due to the lack of data.

Financial Additionality vs. DFI

| | Positive | Crowd out or none |
|---|---|---|
| EIB | 2 | 1 |

Design Additionality vs. DFI

| | Positive | Failed, none or room for improvement |
|---|---|---|
| BIO | 3 | |
| EIB | 1 | 3 |

Policy Additionality vs. DFI

| | Positive | Failed, none or room for improvement |
|---|---|---|
| EIB | 1 | 1 |

Financial Additionality vs. Sector

| | Positive | Crowd out or none |
|---|---|---|

| | | |
|---|---|---|
| Solid Waste | 2 | 1 |

Design Additionality vs. Sector: Almost all multiple sectors

Policy Additionality vs. Sector

| | Growth | Failed, none or room for improvement |
|---|---|---|
| Transport | 1 | 1 |

**Annex C. The PIDG's M&E and impact assessment framework**

The PIDG is a relatively young organisation and its M&E and impact assessment framework has evolved considerably since it was founded in 2002, informed in part by experiences of other, older DFIs. This section provides an overview of the assessment framework as a basis for making recommendations in the following section (most of the information here is taken from the draft framework presented at DFI impact assessment workshop held at DFID's offices in November 2010).

PIDG monitors the results and development impact of each of its Facilities at two levels: (1) on an overall programme basis; and (2) on a project specific basis.

In addition, an independent evaluation is conducted every three years to assess overall performance.

*Overall PIDG programme basis:*

A logical framework ("logframe") is used to provide a systematic basis for linking each PIDG supported Facility's objectives and outputs to specific, objectively verifiable indicators. The logframe is prepared annually and covers a 3-year period. The objectives and outputs are defined in accordance with the approved Business Plan of the company. Each output has clearly defined and verifiable indicator(s). The baseline is established based on most recent year's actual performance and targets are set out for each subsequent year over the next three years.

On an annual basis, the logframe is reviewed to assess performance against target and to update and roll forward the logframe to cover the next 3 years, taking into account any changes to the approved business plan and/or changes to the external environment.

The principal indicators for DevCo are given below. Indicators for the other Facilities involved in financing and project development are broadly similar.

- Increase in private investment in infrastructure.
- Increase in private investment in DAC I and II countries.
- Increase in availability of services in poorer developing countries.
- Fiscal impact
- Number of projects bid out and in the pipeline
- Number of projects for which impact has been monitored

*PIDG facility wise project basis:*

At the commencement of development of each project each Facility is required to quantify the key development indicators for the project (these are often best estimates based on the information available at the time) and submit these to the PIDG PMU in the form of a project level "results monitoring sheet". This template designed by the PIDG Development Advisor for the PMU, is uniform for all PIDG supported facilities. The data supplied for each project is entered onto an Access database managed and updated by the PMU.

The key development indicators monitored through the PIDG results monitoring system include:

- Increase in private sector investment for infrastructure;
- Improved access to infrastructure services (both in terms of additional connections and improvement in existing services);
- Fiscal impact (in terms of government subsidies avoided, revenue from upfront fees and on-going tax payments);
- Direct job creation;
- Alignment of investments with national development plans of the country where the project is located; and most recently (since mid 2010)
- Additionality impacts; and
- Demonstration effects.

On an annual basis and at the time the project reaches financial close, the project's development impact indicators are reviewed and updated.

Progress on each project is reported as part of the company's quarterly and six-monthly reports submitted to the PIDG PMU, as highlighted above.

*Project Post-Completion Monitoring:*

As described above, the PIDG group of facilities have been systematically tracking ex ante, expected impact data since 2007 and this has now been completed for all PIDG supported projects and easily accessible from a customised Access PIDG M&E Database.

Since mid 2009, the PMU has initiated a comprehensive, post-completion[133] impact monitoring exercise to quantify ex post, realised impact data. The aim is to conduct a monitoring exercise, not an evaluation, thus to continue tracking and verifying what the PIDG already tracks, rather than introducing any new dimensions.

The "actual" impact information of completed projects is focused on the three PIDG key results monitoring indicators, namely:

- private investment mobilised;
- fiscal impact to the host government; and
- number of beneficiaries

[133] Post-Completion refers to those projects that (i) reached financial close at least two years ago and (ii) are delivering outputs on the ground.