

Applying Blended Finance within the MCC Model: Approaches to Economic Analysis

Economic Analysis Division and
the Finance, Investment, and Trade Practice Group

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EXECUTIVE SUMMARY

Blended finance instruments aim to crowd-in and scale up private sector capital and financing for development objectives. This guidance note proposes operationally relevant approaches for the economic analysis of MCC-funded blended finance transactions managed by the Finance, Investment and Trade (FIT) Practice Group. It suggests refinements to current analytic practices that would be carried out by the Economic Analysis (EA) division in consultation with other Country Team members, in particular from FIT and M&E, with direct equities in the analysis.²

OVERVIEW

MCC seeks to proactively catalyze private sector/commercially oriented financing through its Blended Finance Strategy.³ This is in recognition that official and public development finance is not sufficient to meet the development goals and role that private investment can play in covering the financing gap for low to middle income countries.

MCC’s Blended Finance Strategy aims to support MCC’s mission to facilitate poverty reduction through economic growth using programs that target the root causes of binding constraints to economic growth. Blended finance is a structured approach that involves mixing commercially oriented capital with grant/concessional capital to create bankable transactions. Blended finance transactions have three primary characteristics. First, a blended finance transaction contributes towards achieving development goals. Secondly, the transaction expects to yield a positive financial return. Thirdly, the public and/or philanthropic parties in a transaction are catalytic – meaning that their funding improves the risk and return profile of a transaction in order to attract participation from the private sector.

MCC’s blended finance objective is to turn deals that have strong economic, environmental, and/or social development impact, but that might be only marginally financially attractive, into commercially viable propositions by reducing risk or improving returns. The blended finance “subsidy” in a transaction

¹ This note is developed to aid the Economic Analysis division’s efforts to conduct cost-benefit analysis and beneficiary analysis of MCC’s blended finance investments. The note is the result of collaboration between the Economic Analysis division and the Finance, Investment, and Trade (FIT) practice group at MCC through the Blended Finance Working Group. Staff participating in the Working Group and contributing to the note include Jason Bauer, Barry Deren, Alexander Dixon, Brian Epley, Stephen Gaull, Sudarshan Gooptu, James Hallmark, Amanda Jennings, Arif Mamun, Aaron Szott, and Rukmini Roy.

² The analytic approaches discussed in this note may not immediately apply to blended finance investments supported by the American Catalyst Facility for Development (ACFD), an initiative between MCC and the United States International Development Finance Corporation (DFC).

³ Blended Finance Strategy 2023.

using MCC grants could accrue to users through reduced fees or prices to help ensure affordability, while helping to create markets. MCC-supported projects are required to be *economically viable* and generate an estimated minimum economic rate of return (ERR) of 10 percent. Blended finance transactions should also provide an *efficient* and *cost-effective* use of public funds in service of promoting economic growth for poverty reduction in MCC partner countries. The extent of *additionality* and *leverage* that any MCC grant facilitate is an important consideration.⁴

MCC's approach is in line with the best principles and guidance in deployment of blended finance, and the OECD definition (which defines it as the “strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries”). Consistent with this, MCC strives to catalyze private investment without subsidizing companies or crowding out private finance. Importantly, MCC also looks to complement, not duplicate or compete with the work of other development organizations.

MCC partner countries have a myriad of investment needs that are greater than their available financing options. The lack of public financing is exacerbated by the lack of bankable projects with only certain select projects such as ports and power generation attracting blended finance. To help address this challenge, MCC compacts and threshold programs often include appropriate and pragmatic targeted policy and institutional reforms necessary to create an enabling environment for private sector investment. Traditionally MCC uses upstream policy and institutional reform to address market failures which catalyzes private sector investment. MCC often seeks to validate reforms using blended finance as a market validation mechanism. MCC has a variety of mechanisms from its blended finance tool kit such as risk instruments and credit enhancements (e.g., guarantees, first loss grants) to reduce risks for private investors.

MCC's blended finance tool kit includes providing support to bring projects to market and financing solutions to enable financial close. All of the instruments in MCC's Blended Finance toolkit are delivered in the form of grants, quite often using a facility approach to competitively select and deliver targeted solutions.

The following table provides examples from the MCC's blended finance portfolio mapped to tools from the Blended Finance Toolkit, noting that while we have used a variety of tools and approaches, not all of the above outlined options/approaches have yet been used in MCC programs. In all cases, MCC's approach to blended finance is tailored to the specific country and project context.

⁴ Leverage is defined as the amount of commercially priced capital provided to a blended finance transaction for every US dollar of concessional or below-market price (public) financing and/or grants. (See Convergence, 2023. “Evaluating the Impact of Blended Finance”, May 2023.) Additionality looks at whether private capital is being mobilized beyond levels that would otherwise be secured in the absence of public incentives and actions to address financial risks.

Executive Summary Table 1: Blended Finance at MCC

	FIT Blended Finance Tool/Instrument	Use of Blended Finance Grant/ MCC Funding	Examples from FIT current/past portfolio
Support to bring projects to market	Technical Assistance/Project Prep	Feasibility and other technical support needed prepare bankable projects	<ul style="list-style-type: none"> GP TAPP window – Commercial RE (Indonesia I)
	Transaction Advisory Services	Support to public-private partnerships (PPPs) and capital market instruments	<ul style="list-style-type: none"> Industrial Zone PPPs (Morocco II) El Salvador PPPs FMDP – Indonesia II Truck Parking Logistics Center (CDI)
Financing Solutions to enable projects to reach financial close and/or scale up	Blended Finance Grant Facility	Grants and/or loans for blended finance instruments needed to facilitate financial close of defined transaction	<ul style="list-style-type: none"> BFDM Indonesia (Indonesia II)
	Co-Investment Project Developer Support	Viability gap financing (VGF) needed to reach financial close (in structured transaction)	<ul style="list-style-type: none"> As-Samra Wastewater Treatment Plant (Jordan) Green Prosperity (GP) – Commercial RE (Indonesia I) Morocco II Industrial Zone Program (FONZID)
	Co-Investment/ Matching Grant Facility	Co-Investment with private sector in a defined project	<ul style="list-style-type: none"> GP – Sustainable Cocoa Private Sector Partnerships (Indonesia I) Off-Grid Clean Energy Facility (Benin)
	Support to Guarantee Funds	Equity, other cost contributions and/or TA to increase capacity to issue guarantees	<ul style="list-style-type: none"> GROW Guarantee Facility (Kosovo) Morocco Green Guarantee Fund (Morocco II)
	On-Lending/ Revolving Credit Facility	Funds used to provide multiple rounds of lending to targeted beneficiaries with finance constraints	<ul style="list-style-type: none"> Revolving Credit Programs (Armenia, Moldova, Ghana) MSME On-Lending Activity (Indonesia II)

MCC supported blended finance projects/programs need to meet MCC's standard ERR hurdle rate. The purpose of this note is to explore additional criteria to be used by MCC to determine a justification framework for the use of grants in a blended finance transaction. The ERR metric will be married with market-based metrics such as IRRs to determine fair return to investors in an effort to avoid over subsidization of the private sector. The analytic framework discussed in this note would apply across the various blended finance instruments for assessing the risk-return profile facing private investors along with potential social benefits so as to help achieve targeted private investment behavior through MCC support.

TECHNICAL CHALLENGES IN ASSESSING ECONOMIC VIABILITY OF BLENDED FINANCING

The economic analysis of blended finance investments is similar to other types of MCC support. Blended finance only alters the composition of financing, and possibly the scale of an investment. Hence, cost-benefit analyses (CBA) of blended finance projects supported by MCC will build on the existing

CBA guidance and associated sector-specific cost-benefit analysis guidance.⁵ The cost-benefit analysis of a blended finance investment will need to look at two aspects of a specific transaction:

- Does the transaction meet MCC’s needs in terms of the sectoral economic costs and benefit streams that impact on economic growth in the area of focus⁶, and
- What is the net economic benefit expected as a result of blending MCC grants with other sources of commercially-oriented financing mobilized (along with below-market price funding from philanthropies, Multilateral Development Banks (MDBs) and other Development Finance Institutions (DFIs)). In short, what is the “de-risking” function of MCC grants and the financing additionality it catalyzes in the transaction.

Gauging the “additionality” of private capital and financing in a blended finance transaction in a robust manner is challenging. Within development finance, “additionality” is defined as achieving results that would not have occurred without external intervention. A project is bankable when its risk-return profile meets investors’ criteria, and it is able to attract funding from investors. Bankability criteria include the probability of meeting the project’s financial, environmental, and social goals, sufficient estimated cash flows to cover costs and sufficient returns that meet investors’ expectations, and its creditworthiness. Multilateral development banks long recognized additionality as a fundamental principle guiding their private sector engagements, but they accept the challenges in identifying evidence to demonstrate additionality and mainly look for convincing narratives around additionality based on context, developmental challenge being targeted, and reflections on the counterfactual (African Development Bank et al. 2018). Given that publicly available blended finance transaction-level data transparency for developing countries is still at a nascent stage, development literature to date finds that definitive evidence of additionality remains elusive. The field has determined a probabilistic approach to additionality based on indicative evidence using reasonable observable capital/financial market indicators.

Efficiency of blended finance often uses the metric of the “leverage ratio”, or the dollars of private co-financing per dollar of public/concessional funds invested. Evidence on the “development additionality” of blended finance, or “its value for money” relative to other forms of development assistance, is scarce given the difficulty of estimating counterfactual scenarios.

Auction mechanisms are an instrument economists recommend as a bidding process by which the “revealed preference” of private sector partners can be gleaned. Project finance often includes a silent or implied auction component, information from which typically remains private to the investor. Project equity investors will survey the market for the most affordable debt. Debt in project finance is critical to equity holders as it provides leverage which drive project returns to the private investor. If auctions are not used, additionality could be implied if the proposed project had been put out for a competitive bid and no private sector/commercial financiers were forthcoming without any explicit announcement that grant/ concessional funds would be available to “de-risk” the transaction.

⁵ Conducting a CBA does not mean you must choose the highest return project. However, the exercise provides clarity on why not. Even in decisions with multiple criteria, a CBA, in effect, helps “price” the choices MCC would make among economic growth-related factors such as: income distribution, geographic coverage of benefit streams, and unquantified benefits.

⁶ A “good project” is defined for our purposes as meeting the ten percent ERR hurdle rate on the basis of its economic costs and benefits without taking into account the additional financial benefits and costs of the financial structure of the blended financing transaction (e.g., economic growth and job creation, women’s economic empowerment, among others).

DUE DILIGENCE CONSIDERATIONS: SCREENING OF BLENDED FINANCE PROJECTS

- Blended finance projects should follow the same approach to economic project analysis that apply to any other project in an MCC Compact.
- The efficiency of blended finance transactions is maximized when various risks are allocated to the public and private parties that are best able to mitigate them. A taxonomy of blended finance risks breaks down the situation based on two dimensions of risk): The *scope* of the risk (i.e., asset-specific, portfolio-wide, or systemic across the economy) and the *duration* of the risk. As in all MCC projects, risks that are only realized in the long run may be challenging for MCC to address. In blended finance transactions, the types of risk and appropriate allocation of these risks is even more important.
- Like all MCC projects, the requirement to conduct adequate due diligence of the soundness and certainty of arguments put forward regarding expected outcomes and impacts on incomes, including the impacts upon poverty, also applies to interventions utilizing MCC resources in blended finance arrangements. So long as the theory of change underpinning an investment that addresses root causes of a binding constraint to growth is valid *ex-ante*, its economic rationale should not change by changing the composition of financing. Hence, adherence to the “hurdle rate” check is an essential first step in assessing the economic viability of a blended finance-related investment project. Thereafter, the challenges of assessing additionality *ex-ante* in blended finance transactions, however, *should not be construed as justifying the avoidance of analysis, or the consideration of approaches for inferring outcomes indirectly*.
- The MCC due diligence process and economic analysis should confirm that blended finance projects considered by MCC are of a kind that satisfy the rationale for effective public subsidization of private investment, i.e., projects that bear positive public externalities, and that contribute to solutions targeting the identified binding constraints to economic growth but are privately unprofitable or excessively risky due to factors that might be alleviated through blended financing. The process being used in the blended finance transaction and incentives provided through MCC grants or otherwise (including fiscal commitments from partner country governments that properly account for contingent liabilities and fiscal risks it accumulates) should ensure that amount of public financing that might be applied is the least amount necessary for securing the desired private sector responses. Blended finance projects, however, *bear the additional task of explaining the basis of additionality and its scale within that economic context*. As mentioned above, additionality is defined as achievement of a goal that would not have happened without donor intervention. There are two categories of additionality: financial and ecosystem⁷.
- The objective of the cost-benefit analysis remains the determination of likely changes in value-added as a consequence of a proposed intervention, and whether they are sufficient in view of costs. Projects employing blended financing do place a spotlight on changes in the value of particular firms, and on changes in the wage income of their workforce⁸. Blended finance typically is proposed for a class of investments whose social returns, as typically assessed by MCC’s approach to economic analysis, exceed a benchmark threshold. However, while being feasible for the private

⁷ Referenced USAID’s Additionality and Human Impact Guidance Note. Link unavailable.

⁸ Measurable indicators that have been used in CBAs include revenue or profits of impacted firms and/or changes in wages or household incomes of the people who benefit from the investment that uses blended financing.

sector to undertake, these investments are not undertaken by the private sector entities because private returns are too low, or risks are too high.

- The detailed financial modeling that has been prepared during due diligence for a blended finance transaction with a private sector investor can provide valuable information about the expected performance of the proposed intervention and how the investment interacts with the economy outside the private investor that implements it. This modeling exercise would provide estimates of incremental value added generated by the proposed investment in the business and help set the stage for the estimation of external social benefits from the scope of its operation. If the proposed investment resides in the sector where an MCC program is operating, MCC can leverage the knowledge base and the networking it has already done in the sector to refine the financial model. A critical challenge when assessing the impacts of blended financing ex-ante is the confidentiality of information and the difficulty of collecting data on the performance of blended finance instruments and mechanisms. Appropriate non-disclosure agreements may need to be entered into between MCC, partner country entities, and due-diligence consultants (and others as needed) to facilitate access to financial and economic data that will be needed at various stages of economic assessment of blended finance transactions.
- Due diligence of blended finance investments should also include the review of estimates of the numbers and composition of likely beneficiaries, whether generated internally or provided by external partners. It is the consideration of the recipients of the positive external benefits of an intervention involving blended finance that motivate and justify MCC's interest in a project. *Beneficiary analysis should verify to what extent social benefits accrue to the poor and identify observable and verifiable results (through appropriately selected M&E indicators).*
- Finally, due diligence of blended finance investments should also consider assurances that requisite needed 'soft' apparatus, or private sector enabling environment/ecosystem, is in place for effective implementation and long-term viability of a project. In fact, policy, regulatory and institutional pre-requisites can also underlie the reluctance of private investors from investing their funds, and not simply the absence of demonstrated financial viability of some type of enterprise or client relationship.

LIST OF ABBREVIATIONS

Abbreviation	Definition
ADB	Asian Development Bank
ACFD	American Catalyst Facility for Development
BF	Blended Finance
CA	Constraints Analysis
CBA	Cost-Benefit Analysis
COVID	Corona Virus Disease
CU	Currency Unit
DAC	Development Assistance Committee (OECD)
Deval	German Institute for Development Evaluation
DESA	Department of Economic and Social Affairs (UN)
DFC	International Development Finance Corporation
DFI	Development Finance Institution
EA	Economic Analysis (MCC division)
ERP	Equity Risk Premium
ERR	Economic Rate of Return
ESMAP	Energy Sector Management Assistance Program (World Bank)
FIRR	Financial Internal Rate of Return
FIT	Finance, Investment and Trade (MCC practice group)
G20	Group of 20
G7	Group of 7
GPRBA	Global Partnership for Results-Based Approaches
IDB	Inter-American Development Bank
IED	Independent Evaluation Department (ADB)
IFC	International Finance Corporation (World Bank)
ILO	International Labor Organization (UN)
IMF	International Monetary Fund
IPP	Independent Power Producer
IRR	Internal Rate of Return
LEED	Leadership in Energy and Environmental Design
LIC	Low Income Country
LMIC	Lower Middle Income Country
MCC	Millennium Challenge Corporation
MDB	Multilateral Development Bank
MIC	Middle Income Country
MRP	Market Risk Premium
MW	Megawatt
NPV	Net Present Value

ODI	Overseas Development Institute
OECD	Organization for Economic Cooperation and Development
PPP	Public-Private Partnership
RE	Renewable Energy
SME	Small and Medium Enterprises
SSRN	Social Science Research Network
STEM	Science, Technology, Engineering and Mathematics
TA	Technical Assistance
THK	Tri Hita Karana
TVS	Transport and Vertical Structures (MCC practice group)
USAID	United States Agency for International Development
VGF	Viability Gap Financing
WACC	Weighted Average Cost of Capital

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1. INTRODUCTION

Within the development community, blended finance (“BF”) has emerged as a modality for leveraging additional private sector and commercially oriented finance to advance developmental goals, through systemic “de-risking” and prudent risk-sharing with the private sector.⁹¹⁰ This note discusses approaches to assess the economic viability of blended financing for projects, considering what circumstances need to be present to justify the use of public finance (including MCC grant funds) to catalyze commercially oriented financing and private investments for market-based economic activities.

This note proposes operational approaches or refinements of current practices that address the economic deployment of public resources for applications of blended finance within the context of MCC programs, and in adherence to MCC’s investment criteria as stipulated in Section 610(a) of the *Millennium Challenge Act*. Section 610 states that – “Any notification relating to the intent to negotiate or sign a Compact shall include a report describing the projected economic justification for the Compact, including, as applicable—**(A) the expected economic rate of return of the Compact; (B) a cost-benefit analysis of the Compact; (C) a description of the impact on beneficiary populations; (D) the likelihood that the investment will catalyze private sector investments; and (E) any other applicable economic factors that justify each project to be funded under such a Compact to the extent practicable and appropriate.** MCC existing ERR analysis addresses provisions A, B, and C for any all projects funded by MCC including blended finance projects. The determination of provision D of section 610 requires application of private market principles to determine fair returns for investors. This most readily done via an Internal Rate of Return calculations that keys on investors returns that can be compared to their weighted average cost of capital (WACC).

In doing so, the aim is to clarify implications of using such financial structuring/engineering techniques in the context of MCC investments that target some of the root causes of identified constraints to economic

⁹ See the following for more information on the benefits of blended financing and market research on the topic:

- <https://www.oecd.org/development/financing-sustainable-development/blended-finance-principles>
- <https://www.convergence.finance/blended-finance>
- <https://ieg.worldbankgroup.org/blog/what-blended-finance-and-how-can-it-help-deliver-successful-high-impact-high-risk-projects>
- <https://www.devex.com/news/how-to-use-blended-finance-to-address-growing-global-health-needs-105173>
- <https://impactcp.org/insights/what-is-blended-finance>
- <https://about.bankofamerica.com/en/making-an-impact/blended-finance>.

¹⁰ Blended finance by development institutions has typically taken two forms: 1) private investment and co-finance of public goods and services (e.g., toll roads, water and sanitation systems, airports); and 2) public co-finance of private investments in profit-making ventures. This paper does not deal with the first category, which includes public-private partnerships, as such forms of engagement are driven by the economic value of the proposed public good or service and are rarely controversial, even if they may be difficult to design and implement in practice.

growth in a MCC partner country. To this end, we explore ways to assess whether application of blended finance instruments is an appropriate and cost-effective use of public funds in service of promoting economic growth for poverty reduction in MCC partner countries. In principle, there is no special application of cost-benefit analysis for assessments of projects employing blended finance. To be a candidate for blended finance a project is ex-ante identified as economically viable. The relevant concerns are namely, *under what circumstances do private participation in the investment project become bankable/financially viable, and how much should the public sector spend to put those conditions in place?* To answer these questions after the ERR question has been answered, requires project level analysis of the private sector returns for comparison to market norms. Not all projects that are economically desirable are suitable for blended finance applications. One of the key challenges to expanding the use of blended finance in developing countries remains an inadequate pipeline of bankable projects. Even a well-structured agreement with sound risk allocations may not necessarily result in a bankable project. The ecosystem around which the private sector investor operates in a developing country, and prevalence of favorable enabling environments and investment climate that supports the viability of these investments over time, matters as well.

This note is developed to aid the Economic Analysis division's efforts to conduct cost-benefit analysis and beneficiary analysis of MCC's blended finance investments. It's the result of collaboration between the Economic Analysis division and the Finance, Investment, and Trade (FIT) practice group at MCC through the Blended Finance Working Group. The analytic approaches discussed in this note may not immediately apply to blended finance investments supported by the American Catalyst Facility for Development (ACFD)—an initiative between MCC and the United States International Development Finance Corporation (DFC)—as MCC follows the ACFD Operations Manual in advancing investments under the initiative.

2. MCC'S APPROACH TO BLENDED FINANCE

The developmental needs of low-income countries still far exceed the availability of domestic public resources, and the available development financing from official development partners and philanthropic sources. Blended finance may offer an opportunity to expand the total amount of resources mobilized for deployment towards the advancement of economic wellbeing in developing countries.

MCC endeavors to advance economic growth in pursuit of poverty reduction through strategies that target the binding constraints to private sector investment. Thus, promotion of private sector investment and the mobilization of private capital for developmental outcomes is at the core of MCC's mission. Blended finance is a natural complement to MCC's programming as it aims to leverage public financing with private/commercially oriented capital to achieve public goods.¹¹ The possibility of mobilizing private capital beyond levels that would otherwise be secured in the absence of public incentives and actions addressing financial risks is an attractive prospect. If such *additionality* is realized, blended finance expands the impact of limited public resources.

MCC follows the [*OECD's principles and guidance*](#) in deployment of blended finance, which is defined by the OECD as "[*strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries*](#)". Blended finance provides a framework for aligning the

¹¹ A public good is an outcome of blended finance but not necessarily the aim of all participants. It is safe to assume that private capital generally seeking a financial return.

objectives, competencies, and resources of the public and private sectors to scale up finance and investment flows in emerging markets. Consistent with this, MCC strives to catalyze private investment without unnecessarily subsidizing companies or crowding out private finance. Importantly, MCC also looks to complement, not duplicate, or compete with, the work of other development organizations.

MCC engages in blended finance in three keyways – as a *catalyst*, *builder*, and *dealmaker*:

1. *Catalyst* - As a catalyst, MCC works hand-in-hand with country partners on targeted policy and institutional reforms necessary to create an enabling environment for private sector investment. In addition, MCC provides strategic, financial, and technical advisory support to create pipelines of investable opportunities in MCC's partner countries.
2. *Builder* - As a builder, MCC strategically invests in public infrastructure with our partner country that promotes and supports economic development and private-sector investment.
3. *Dealmaker* - As a dealmaker, MCC provides strategic grant capital to crowd in commercial finance; offers pathways to scale and capital to create markets for innovations and proven business models; and brings transactions and financially viable public-private partnership (PPP) projects to market that meet international standards.

3. MCC AND BLENDED FINANCE INSTRUMENTS

From a general market perspective, there are four blended finance archetypes. These are:

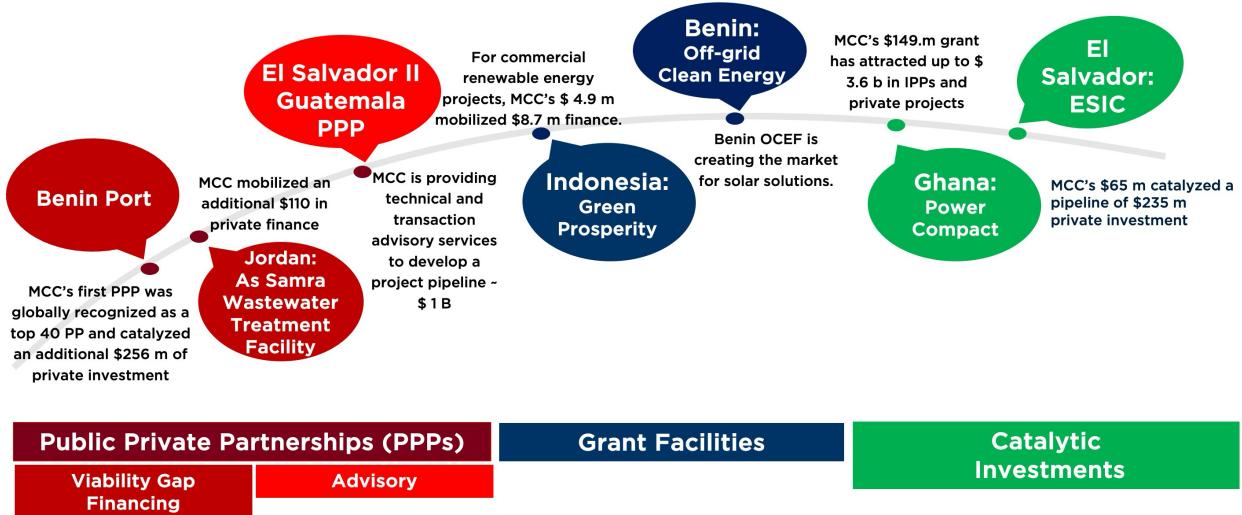
- *Concessional Capital*: Public or philanthropic investors provide funds on below-market terms within the capital structure to lower the overall cost of capital or to provide an additional layer of protection to private investors.
- *Guarantee/Risk Insurance*: Public or philanthropic investors provide credit enhancement through guarantees or insurance on below-market terms.
- *Business-Oriented Technical Assistance*: A transaction is associated with a grant-funded technical assistance facility that can be utilized pre- or post-investment to strengthen commercial viability and developmental impact.
- *Design-Stage Grants*: Transaction design or preparation is grant funded (including project preparation or design stage).

MCC blended finance tools fall into three buckets – Leverage Grants, PPPs/Viability Gap Financing (VGF), and Guarantees/Hedging. Working through MCC's standard business processes and country teams, these delivery modalities are tailored to the operating environment in MCC partner countries and provide flexibility in determining which approach will best catalyze private sector investment to support MCC programs and, ultimately, contribute to sustained economic growth. The chart below illustrates MCC's blended finance activities across our partner countries.

Blended Finance at MCC: Progress so far



Blended finance is not new to MCC. MCC has been doing Blended Finance since its founding – before the term existed.



Source: FIT (2021)

1. *Matching Leverage Grant Facilities:* Matching grants are used by MCC to achieve leverage. These are sometimes focused on public goods investments; they can also be used to finance productive assets and investments. Matching grants can compensate for the absence of suitable term and investment finance and to stimulate investment and business activity where the intended beneficiaries operate under severe constraints (e.g., insufficient equity finance) or where innovations face higher risks or unpredictable profits.
2. *Public-private partnerships (PPPs):* PPPs are long-term agreements between the government and a private partner whereby the private partner delivers and funds public services. PPPs may deliver public services both with regards to infrastructure assets (such as bridges) and social assets (such as hospitals and utilities). MCC works to establish a durable institutional framework supported by competent and well-resourced authorities who can ensure value for money transactions that minimize fiscal risks to countries. Well-designed PPPs identify and transfer risks that the private sector has better ability to manage and the blending of MCC grants aims to leverage additional private/commercially oriented equity and debt financing into the transaction for bankable infrastructure investment projects.
3. *Guaranty and hedging support:* MCC's guaranty and hedging support tools seek to help increase the availability of capital by providing partner countries access to *de-risking* tools and instruments offered by third parties. MCC will not issue guarantees directly but will explore opportunities to support those issued by others to incentivize private sector participation in and around programs. These tools have the potential to allow MCC to leverage its investment.

Among MCC's investment criteria, the incorporation of blended finance within a country program is an optional criterion to be satisfied. *MCC's Blended Finance Strategy (2023)* aims to increase the number, scope, and scale of private investments in and around MCC programs through blended finance.

On the financing side, MCC essentially has one instrument for blended finance operations: i.e., grant financing, that is the modality of all MCC country programs. MCC will not issue guarantees directly but will explore opportunities to support those issued by others to incentivize private sector participation in and around programs. MCC's portfolio of blended finance interventions arises from the range of desired financial outcomes that the applied grants target, and the procedural mechanisms by which the grants are administered. MCC can make direct payments to transactions or contribute to funds that are then offered at below market interest rates for the purposes of lowering the overall cost of capital, or increasing the return to equity, for targeted borrowers and preferred investments. Such applications may fall under the rubric of "viability gap financing", which can arise in various contexts in addition to considerations of the cost of acquiring fixed assets in comparison with the cash flows those assets are expected to generate. MCC grants may also be used to purchase risk or credit guarantees – instruments that often are accompanying private costs of doing business when local financial markets provide them. MCC can finance such instruments that are not sufficiently provided in local markets, or provided at a cost that is within the capacity of a targeted investment to finance. In this case, the emphasis is placed on engineering the viability of cash flows, given installed assets.

Special-purpose bonds. The deployment of bonds to finance special projects presents some conceptual issues. A green or blue (or some other flavor of special purpose) bond is still an accrual of government debt. Why in one instance should a debt instrument be considered blended finance and other treasury paper not? After all, a government could also finance special projects from ordinary bonds that are sold in domestic or international financial markets, as government resources are fungible. The distinguishing feature of these special-purpose bonds is that they are securitized so as to render them competitive with other instruments that are available in financial markets, and so presumably, since their quality is higher, they are more attractive to the private sector to hold than typically issued government debt. Finance is blended only in the sense that non-private funds securing the bond result in higher levels of private capital recruitment for public use than otherwise would have been the case. Additionality, therefore, is the defining characteristic in determining whether an increase in government debt represents an exercise of blended finance. Objectively, however, true additionality is difficult to validate, and from the above *Convergence* perspective such specialized debt does not well fit a transactional definition of blended finance. Such specialized bonds, of course, can allow governments to finance equity holdings in investments that also attract private capital participation. To the extent that such instruments enable governments to engineer blended finance transactions, the bonds are devices that can provide the public contribution to a deal, and therefore clearly have utility on that basis.

4. TECHNICAL CHALLENGES AROUND ECONOMIC ANALYSIS OF BLENDED FINANCE INVESTMENTS

Apart from the idiosyncrasies of assessing economic benefits and costs in individual sectors, the economic analysis of blended finance investments essentially is no different than other types of interventions that MCC supports. Blended finance only alters the composition of financing, and possibly the scale of an investment. There are no economic impacts that can be attributed to the composition of financing unless one is willing to assert that government resources are not budget-constrained with respect to the investments that are targeted. For example, suppose that a government can fully finance an economically desirable investment. The resources are allocated for the commitment. Now suppose the government provides incentives (at a cost) to induce a private agent to finance part of the asset cost in exchange for an acceptable return to its investment

share. The government now has an amount that can be reallocated to other purposes. In principle, if a share of those freed up government resources can be expended in some other productive use that otherwise would not have taken place, it may be possible to account for an incremental benefit to blended finance transaction. Other than that quantum, no other benefits are generated that would not have been generated without the participation of the private sector, and that increment needs to weigh against the cost of inducing that participation.

In practice, one generally expects government resources to fall well short of what is needed for public investment. Private capital is not substituting for government spending but is part of a financial structure to engineer an economic outcome that would not have been produced otherwise. The economic complexity of blended finance resides in understanding how in particular circumstances the determinants of private investment behavior can be harnessed in service to the creation of economic benefits external to what the private sector appropriates in profit. These determinants in part entail knowledge of private information that is not necessarily voluntarily revealed, and because such information may not be fully known, it is often challenging to gauge how much public or philanthropic support is sufficient to induce targeted private investment behavior, *i.e.*, the efficiency of applied resources. Discussions of “leverage” subsume (and sometimes obscure) these concerns around the efficient use of public resources in blended finance.

Practitioners will often refer to the efficiency of blended finance using the “leverage ratio”, or the dollars of private co-financing per dollar of public funds invested. Essentially, leverage (*i.e.*, more private financing) allows the government to do more projects for the same public budget, which can be beneficial for society if, and only if, those projects generate positive externalities.

Available empirical evidence suggests that blended finance transactions in developing countries have not been as successful as originally thought in leveraging public funds: The Overseas Development Institute estimates that leverage ratios have been on the order of 1:0.75 in LMICs and just 1:0.37 in LICs. That is, on average private investors match \$0.75 in LMICs and \$0.37 in LICs for every dollar of public resources that has been used to implement a transaction. In a similar vein, the Center for Global Development research finds that the “billions to trillions” vision has limited relevance for LICs since 95% of private finance mobilized by Development Finance Institutions (DFIs) goes to middle-income countries (MICs); similarly, with blended finance transactions representing a mere 6% share of DFI transactions, 89% of it going to MICs (Lee and Cardenas 2020). Even though “billions to trillions” is doubtful in the settings where MCC most often operates, and the aspiration implies that the private sector consistently more than matches public financing in transactions, the structure of financing of deals that are economically attractive for MCC to pursue will depend upon the individual circumstances of each deal. Certainly, public monies can finance more projects if the private sector brings more to the table in a deal, but the economic rationale for considering a deal does not require this.

The challenge remains, however, in finding the right balance of public funding that entices a commercially oriented investor and private capital to participating in a given project, who would not have done so otherwise, and avoiding rewarding those who would have participated without this public support in any case. The structure of financing is also important. Certain structures, like the use of donor money in junior tiers, provide a lift or protection to all senior money, including DFIs and others who may not have

needed the encouragement. Other approaches, like a guarantee of a specific investor or a specific tier, are more surgical. For this reason, the concept of “additionality” – the amount of private co-financing that is in some sense ‘new’ – is useful. Clearly, the government may not have an interest in subsidizing any private sector investment that is not additional unless it is somehow encouraging positive externalities (or discouraging negative externalities) that would otherwise be unaddressed. There is also the question of whether any public funding that may be used to make projects commercially viable is well spent. Blended finance has meaningful benefits to the economic growth and development of countries.¹² Implemented judiciously, these benefits can be realized.

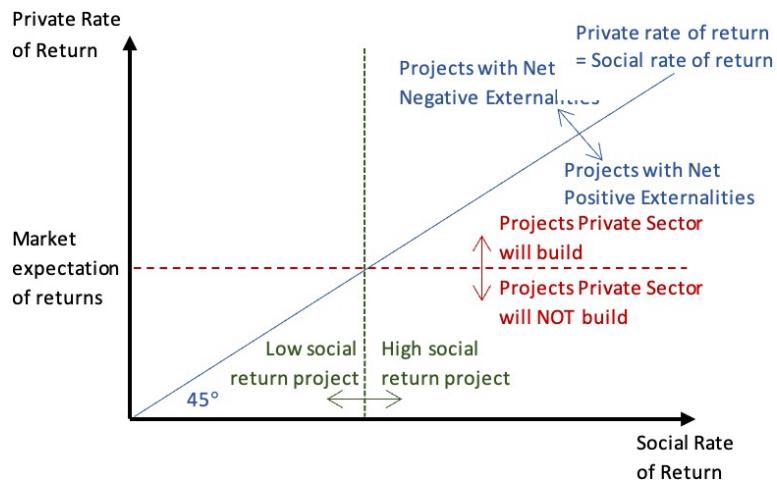
Whether blended finance is being justified through leverage and externalities or through additionality, assessing private sector risk and return tradeoffs is a major challenge. The remainder of this section introduces a simple framework to assist in understanding this tradeoff.

As a general matter, blended finance should be understood as a subsidy for targeted investments. Taking a basic view, we can think of the investment as carrying an expected private rate of return (i.e., financial internal rate of return or FIRR) that provides the incentive for the private actor to invest in the project. When the government subsidizes private investment through a blended finance instrument, the effect is to increase the private rate of return primarily through adjustments in investment costs or cash flows, or the cost of finance, providing a stronger incentive for the private partner to invest than it would have otherwise, and introducing an opportunity cost for the use of public resources. To invest in the project, the private partner would need the private rate of return to be higher than alternative uses of their funds, which means that the private rate of return (including the direct or indirect subsidy) needs to be higher than the market average returns in similar projects, e.g., toll roads, power plants etc., with perhaps some additional margin to compensate for risk.

Practitioner perspective: Subsidies for a private investment can accrue to users rather than to debt and equity investors, as was the case in MCC’s As-Samra Water project in Jordan. Private debt and equity earned unsubsidized returns. The quantum of debt and equity was lower because of MCC’s VGF, thus their investment was de-risked. The subsidies went to rate payers in the form of lower tariff than what otherwise would have been needed without VGF and if 100% commercially financed.

¹² Indeed, this is the essence of the Cascade, or “Maximizing Financing for Development”, which is at the heart of the World Bank Group strategy. To maximize the impact of scarce public resources, the Cascade first seeks to mobilize commercial finance, enabled by upstream reforms where necessary. Where risks remain high, the priority is to apply guarantees and risk-sharing instruments. Official and public resources are applied only where market solutions are not possible through sector reform and risk mitigation. (See World Bank Document and IEG Evaluation Report, July 2020 here.)

Figure 1: A framework for understanding the economic benefits of blended finance.
Adapted from Warner (2013).



The problem that the government faces when deciding to utilize blended finance as a potential solution is depicted graphically in Figure 1. The government has an incentive to encourage investment if the social rate of return is higher than could be achieved through alternative uses of the funds (vertical line). For MCC, the social rate of return is measured by the economic rate of return¹³ and this threshold is set at 10%. The social and private rates of return are closely related concepts, in the absence of externalities, only the private partner benefits and the private internal rate of return and economic rate of return are equal. But, if private positive externalities are present, the social rate of return which includes the benefits to all individuals, is higher than the private rate of return, which is the area below the diagonal. Finally, the horizontal red line is indicative of the private partner's decision problem: To invest only if the project's private rate of return is above comparative benchmark market returns (e.g., the rate by which cash flows from the project would be discounted) that contributes to the hurdle rate for the private investor. This private hurdle rate can vary by the type of investment and its characteristics, but at its core is a reference to an expected market return that is incremental to the value of holding a “safe” asset.

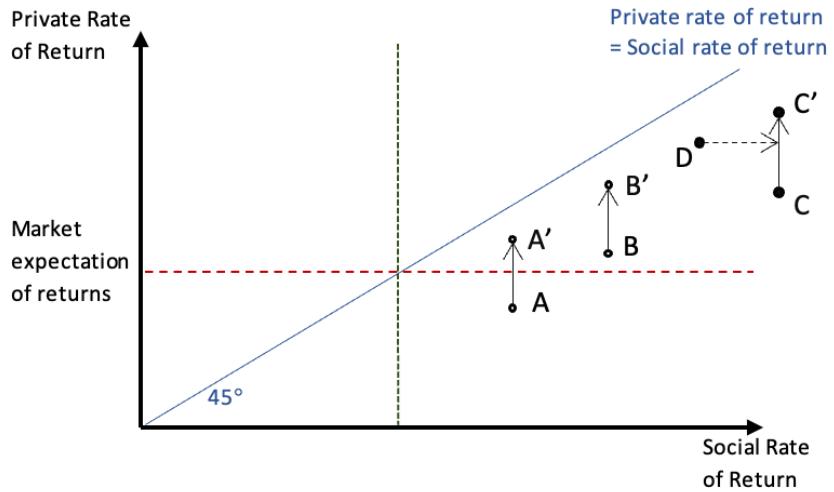
As discussed above, leverage and additionality provide two motivations for blended finance. Figure 2, adapted from Warner (2013), now shows how these two cases can be incorporated into the framework introduced above. The first case, investment “A” represents the opportunity for “additionality” through blended finance. A has high social returns, but private returns are below the typical private hurdle rate, so that the private sector is unlikely to invest in this project, despite the benefits for society. The effect of the blended finance subsidy, if it is large enough, is to raise the private return from point A to point A’, so that, with the addition of the subsidy, private returns are now high enough to induce the private partner to invest.¹⁴ Also depicted is the case where additionality has failed: The government has failed to perfectly screen projects and subsidizes investment “B” despite the returns being sufficiently high that the private

¹³ Note that other concepts of social return that are not purely economic in nature are also possible. For example, by weighting benefits to the poor more highly than benefits to the rich. Such alternatives would reflect different social priorities than simply maximizing economic activity.

¹⁴ A spreadsheet example of this situation, and a procedure for determining the quantity of required public funds, are provided in Appendix A.

sector would have invested in this project without the subsidy, thereby wasting public funds. Once overhead is factored in, subsidizing investments like “B” reduces public welfare.

Figure 2: Leverage and additionality in blended finance. Adapted from Warner (2013).



The other case is when the blended finance instrument is targeted to increase positive (or reduce negative) externalities. This could be the case, for example, if the subsidy was targeted to encourage the use of low polluting manufacturing technologies instead of more polluting alternatives. Investment “D” corresponds to the more polluting technology in this example. If the subsidy for changing to the clean technology is large enough, the private partner can be induced to switch to the clean technology “C” even though the private returns for this technology are lower than for the polluting technology, if the subsidy is high enough so that the private return including the subsidy (point C') is higher than for the polluting case (D). In this case, note that additionality, or lack thereof, is not a factor: The social benefit for inducing the switch to technology C is positive, so the only consideration is whether the subsidy is cost-effective.

Whether the blended finance instrument is working in the public interest depends critically on whether the government can effectively screen out projects like “B”, without over screening. Unfortunately, the evidence on this point is not encouraging. Carter, Sijpe, and Calel (2018) note that positive externality projects are difficult to identify and monitor. Moreover, the private sector has an incentive to underreport private returns (e.g., investments like “B” will want to pretend to be projects like “A”), complicating the process of screening. They go on to demonstrate that if screening is imperfect, the cases where there is full additionality and those where there is no additionality will produce the same empirical outcomes.

Evidence on the “development additionality” of blended finance, or “its value for money” relative to other forms of development assistance, is scarce given the difficulty of credibly estimating counterfactual scenarios (ODI, 2019).¹⁵ Within MCC, the As-Samra Project in Jordan arguably provides an example of a plausible counterfactual. Here MCC provided viability-gap financing (VGF) to allow water treatment

¹⁵ We could also consider impacts from blended finance demonstrations and associated policy and institutional reforms on outcomes as expansive as the existence and scale of markets. Unfortunately, evidence of these sorts of market creation impacts is also lacking (ODI, 2019).

services to be affordable to both the government and rate payers, which it would not have been the case if the project had been fully funded by commercial sources of funding. With full commercial funding, willingness-to-pay surveys within Jordan indicated that it was doubtful that public demand would have been able to support the cost of operations that would have been charged to enable a satisfactory private return on investment. This enabled a public priority project with important environmental and economic benefits to proceed. MCC's grant was a subsidy to rate payers rather than to investors, who only earned a return on the amount of their own capital invested.

5. ROLE OF BLENDED FINANCE IN MCC PROGRAMMING

5.1. WHEN CAN BLENDED FINANCE TOOLS BE EFFECTIVE IN MOBILIZING PRIVATE FINANCIAL CAPITAL?

Blended finance tools can be effective when they address conditions that suppress the intrinsic commercial viability of a socially desirable private investment (the level of profitability), the variability of the private returns on that investment (volatility of profitability), or both. MCC programs emerging out of a constraints analysis often focus, for example, on the provision of complementary infrastructure, or enhancement of human resources, that broadly enhances the level of profitability of economic activity. Here, the strategies of blended finance and MCC programming at large basically coincide.

Practitioner perspective: "If the purpose of blended finance is to encourage self-discovery, the outcome of which is unknown, the institution that extends blended finance may not necessarily be "aware" of that opportunity before encountering a concrete project opportunity brought by prospective clients. Perhaps counterintuitively, overly prescriptive blended finance programs may thus lead to an inefficient allocation of scarce donor resources (while also generating perverse incentives that further contribute to the inefficiency)...An ex-ante solution is to conduct break even analysis to determine the minimum gross social returns required to justify the subsidy that BF is bringing for the private investors." (Pegon 2022, p. 13)

Concessional finance (the first Convergence archetype) is an instrument to induce private sector participation in an investment when it allows expected private returns to that investment to become competitive relative to the returns of alternative investments having similar risk characteristics (i.e., variability of returns). That is, from a private investor's perspective, expected required returns must be commensurate with the risks of holding an asset. This is the accommodation of uncertainty in investment decision making when volatility is fixed.

Alternatively, insurance and guarantees (the second Convergence archetype) are used to manage market risks that deter private capital. In this case blended finance endeavors to induce private responses to buy into socially desired investments by offering pairings of expected means and variances of returns that satisfy the preferences of targeted investors.

The third Convergence archetype (commercially targeted technical assistance) might address the expected level of returns on investment, or address elements contributing to their volatility (at least those potentially within the control of investors). Investment design assistance (the fourth archetype) is an effort to illuminate the characteristics of returns among possible choices of investments, and in so doing reveal those choices to the private sector and lower the cost of its due diligence.

These four instruments address elements of risk that fall upon the private sector that is solicited to consider participation in a targeted investment. These four archetypes, however, do not constitute the full range of approaches to induce investment behavior through the mitigation of risks associated with private claims on profits. Allocating risks away to other parties is another strategy, and this underlies the utility of project finance. Here, contracting (and, critically, the legal enforcement of contracts) provides a mechanism to implement risk allocation in support of the participation of private capital, for example, to deliver infrastructure projects.

The consideration of blended finance to implement desired investments therefore begins with a thorough understanding of the nature of the salient risks affecting private decision making. The choice of policy instruments, whether among the four Convergence archetypes, or not involving blended finance at all, then follows from that understanding, including the scope for reallocating risk.

The efficiency of blended finance transactions is maximized when various risks are allocated to those public and private parties best able to mitigate them (see, for example, Shavell (1979)). For example, the government is best positioned to bear risks related to macroeconomic stability; these risks are outside the control of the private partner, and the government is the only entity large enough to insure against systemic risks to the entire economy. On the opposite end of the spectrum, many project-specific risks should be allocated to the private sector partner, since they can mitigate many of these risks through appropriate choices of design or operations. Lastly, however, if the risks are correlated across a portfolio of many projects (for example, if demand falls because of a sector/economy-wide crisis, then all affected toll roads would be impacted), then the public sector may be forced to bear these costs regardless of the *de jure* risk transfer arrangement¹⁶.

5.2 RISK ALLOCATION MECHANISMS

A taxonomy of blended finance risks breaks down the situation based on two dimensions of risk: the *scope* of the risk (i.e., asset-specific, portfolio-wide, or systemic across the economy) and the duration of the risk. As in all MCC projects, risks that are only realized in the long run may be challenging for MCC to address. In blended finance transactions, the types of risk and appropriate allocation of these risks are even more important. As is true for many MCC infrastructure investments, blended Finance affords MCC the opportunity to have measurable impact with repayment periods of up to 30 years, which is outside of MCC's limited, five-year program implementation timeline. Table 1 summarizes the blended finance risk taxonomy and presents examples for each category of risk.

¹⁶ There is much literature regarding fiscal risks ensuing from contingent liabilities of the Government, e.g., the under-performance of toll roads due to unforeseen shocks and not the government not meeting its *de-jure* obligations. See Herrera Dappe et al. (2023).

Table 1. Blended Finance Risk Taxonomy with Examples

Risk Duration	Scope of Risk		
	Asset-specific Risks	Market risks	Economy-wide external and domestic risks affecting firm profitability
Short-run	Return on investment	Liquidity	Currency ¹⁷
Long-run	Return on investment	Portfolio composition	Sovereign Default (Public Debt)

The justification and structure for blended finance projects will depend on the location of the project's risks within the BF taxonomy.

Asset-specific risks - being closely linked to risk transfer and hence incentives, are critical for targeting positive (or limiting negative) externalities and need to be present in any blended finance transaction that seeks to target externalities for public benefit. For these asset-specific risks, the public sector must consider carefully how subsidies may distort otherwise desirable incentives.

Market risks – which are risks that are correlated across a sub-sector of the economy, can be broadly understood to occur in situations where a private sector investor is unable to sufficiently diversify. Such risks may also be relevant for MCC considerations, as projects that MCC supports are exposed to specific sectoral shocks. For example, a fall in trade flows impacting a port may significantly reduce traffic between a port and the storage facility via a toll road, thus reducing the profitability of either the road or the storage facility either of which could be built with MCC blended financing. Such possibilities can be hedged against, for example, through BF tools such as a first loss guarantee on a short-term bond, making the project more attractive to potential investors who would otherwise consider the project too risky. Market risks are likely in cases where limited information and imperfect arbitrage plays a large part. If MCC can identify such sectors during the preliminary diagnostic phase of program development, then blended finance instruments could theoretically catalyze additional investment, for example, by offsetting investor risk premia.

Economy-wide or systemic risks are likely to be common in countries where macro-appropriability constraints are identified (e.g., excessive taxation, or inflation induced by monetary policy), and such risks may impact blended finance projects. In these cases, it is unclear how and whether MCC has a role in insuring against these risks, especially since other organizations, such as the International Monetary Fund (IMF), have more expertise, experience, and the appropriate assistance tools for managing these issues. However, if potential investors perceive such risks to be present in a particular country context, this may depress investor interest in the BF project, which, all else equal, will drive subsidies higher. These risks must therefore be monitored and managed, where feasible, through appropriate ex-ante contingency planning at the project design stage.

It may be economically justified to address these risks and rebalance the risk-return profile of the transaction for private investors and financiers through public concessional finance or MCC grants if:

¹⁷ Especially currency risk that impacts on the sector in which the proposed investment project falls within. e.g., via imported fuel prices, foreign currency denominated receivables, etc.

- the public donor has a greater risk appetite than the commercial market for any given return expectation (perhaps because the public donor applies a lower discount rate to take account of the interests of future generations);
- unusually high risks are associated with early movers in a market, for instance around market size or government regulation, but their investments pave the way for future lower-risk entrants (the risk premium then corresponds to an information externality that the public donor is willing to assume); or
- the public donor is willing to incur a loss to ‘pay’ for the risks associated with a complex project, so long as the social returns (which may also be the anticipated economic welfare gains from better health and/or education outcomes) make that worthwhile.

Table 2 provides examples of risks blended finance might address.

Like any tool of public policy, it will have to meet standards of effectiveness and efficiency. Transparency and data at a reasonable level of granularity absolutely are fundamental to assessing the effectiveness and efficiency of blended finance but are sorely and unnecessarily lacking. Development partners are insisting on both as a condition for scaling up blended finance.¹⁸ The OECD and DFI Enhanced Principles for deploying blended finance principles are examples of such efforts towards harmonizing international standards that can be used in assessing blended finance transactions.¹⁹ Nevertheless, the availability of ex-post data remains elusive.

Table 2. How Does Blended Finance “De-Risk” Projects?

Type of risk	Examples	Blended finance rationale	Project example
Policy risk	Unclear regulation	BF might compensate for lack of information absent regulatory track record	<ul style="list-style-type: none"> • Morocco Industrial Land Law drafted and adopted with compact support • Cote d'Ivoire Truck Parking and Logistics PPP • Benin off-grid clean energy facility (OCEF) that provided support to draft off-grid policy and concession agreements with the regulator • El Salvador Regulatory Improvement Activity • Guatemala Improving Tax and Customs Administration Activity • Mozambique Reforms Package for Taxation of Agricultural Investment Activity (PREFIA)

¹⁸ See, for example, “The next step in blended finance: addressing the evidence gap in development performance and results”, OECD and Danida Workshop Report, 22 October 2018 at <https://search.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended%20Finance-Evidence-Gap-report.pdf>.

¹⁹ DFI Working Group on Blended Concessional Finance for Private Sector Projects, Joint Report December 2021. Available at: <https://www.ifc.org/content/dam/ifc/doc/mgrt/202112-dfi-bcf-joint-report.pdf>.

Type of risk	Examples	Blended finance rationale	Project example
Project risk	Skills/ capacity	Technical assistance to compensate for lack of local talent	<ul style="list-style-type: none"> • Transaction advisory services for Morocco industrial parks using PPPs • Technical assistance for Morocco FONZID • El Salvador Public-Private Partnership Sub-Activity • Guatemala Strengthening Capacity to form Public Private Partnerships • Georgia Agribusiness Development Activity
Business risk	First mover	Taking risk and creating market knowledge for future market entrants goes unrewarded. BF can compensate.	<ul style="list-style-type: none"> • Morocco industrial parks development using PPPs • Benin off-grid clean energy facility (OCEF) addressed new country and new sector risk • Solomon Islands THP investment facilitation activity to support tourism investment • El Salvador Investment Challenge Sub-Activity • Georgia STEM Higher Education Project • Mozambique Zambezia Commercial Aggregator Platform Activity • Namibia Ecotourism Development in Conservancies Activity
Counterparty risk	Weak off-take agreement	Government failure. BF can mitigate this risk (e.g., guarantees) but should seek alignment of government interest.	<ul style="list-style-type: none"> • Morocco Green Guarantee • Burkina Faso Africa Trade & Investment Development Insurance (ATIDI) • Sierra Leone Africa Trade Insurance (ATI) Sub-Activity
Tenor risk	Market finance too short term	Underdeveloped local capital markets. BF can be designed to lengthen terms or mitigate refinancing risk.	<ul style="list-style-type: none"> • Collaboration with Lesotho Pension Fund • Georgia Investment Fund Activity
Liquidity risk	Thin debt or equity markets	Underdeveloped emerging markets or green asset markets. BF can be designed to limit downside.	<ul style="list-style-type: none"> • Morocco Green Guarantee • Collaboration with Lesotho Pension Fund – pay for risk mitigation instrument • Burkina Faso Africa Trade & Investment Development Insurance (ATIDI) • Impact Fund in Zambia • Sierra Leone Africa Trade Insurance (ATI) Sub-Activity
Market risk	Currency volatility	No currency hedging available. BF can step in as swap counterparty.	

Source: Lenkes (2021) with addition of examples by MCC.

6. ACCOUNTABILITY CONSIDERATIONS

Like all MCC projects, the requirement to conduct adequate due diligence of the soundness and certainty of arguments put forward regarding expected outcomes and impacts on incomes, including the impacts upon poverty, also applies to interventions utilizing MCC resources in blended finance arrangements.

Practitioner perspective: “The concrete application to blended finance is that it can be used to encourage entrepreneurs and financiers to implement and finance new technologies, business models or financing structures in untested geographies, for the immediate benefit of increasing the firms’ bottom line, but with the developmental goal of generating knowledge spillovers that are beneficial to the entire economy. The underlying expectation is that through that initial blended finance intervention, if the investment is ultimately profitable, we may reach a tipping point where entrepreneurs and financiers are comfortable to undertake similar investments without public support. The resulting knowledge spillovers improve firms’ productivity thus contributing to growth.” “...ensuring that knowledge does spillover is an integral part of the equation. For instance, empirical evidence... suggests that multiple interventions – typically two to four – might be required to reach the desired tipping point.” (Pelon 2022, p.13-14)

The institutional model of MCC is geared to ensure that US public monies spent in programs effectively address constraints to economic growth by addressing some of its root causes in ways that enable the reduction of poverty. Confidence that this institutional objective occurs, or is likely to occur, broadly emerges via two basic actions: (a) informed decision making in the selection of investments, and (b) robust evidence that desired changes in the state of the world have in fact happened (i.e., the testing of refutable hypotheses regarding investment outcomes and impacts).

So long as the theory of change underpinning an investment that addresses root causes of a binding constraint to growth is valid, *ex ante*, its economic rationale should not change by changing the composition of financing.²⁰ There is a possibility that the scope of benefits might expand with a project that is rendered feasible using blended financing. These benefits might carry traits that characterize them as desirable from a public perspective. If this were the case, the positive externality of the investment strengthens a possible argument for it: the impacts conceivably might be far ranging such as for a public good. However, it is perhaps more likely that an investment enhances the profitability of certain activities. In this case, one is looking at the possibility of a club good where the impacts are restricted to a certain range of activities, and to specific agents (i.e., not fully a public good).

Infrastructure shared by many users in the absence of congestion, such as an internet backbone, a power distribution network, an industrial park, an enterprise zone, branding, licensing, and copyrights, are

²⁰ Certainly, the risk profile of a project may change over time, which needs to be monitored and managed in implementation.

examples of *club goods*. Users of the infrastructure do not affect the consumption of others, but access to the good is (or can be) restricted. A connection or usage requires permission, whether it entails consideration or not. Naturally, the question of just who benefits externally, and by how much becomes more salient in this latter scenario. This possibility of ‘additionality’ is often cited as a justification for promoting the use of blended financing. Additionality, however, can be rather elusive to establish in practice, and difficult to detect if present. Verification of private profitability is not problematic. The challenges of assessing additionality *ex-ante*, however, should not be construed as justifying the avoidance of analysis, or the consideration of approaches for inferring outcomes indirectly.

The possibility of positive externalities accompanying private investments that use blended finance is not in itself sufficient for satisfying MCC’s investment criteria. In MCC’s engagements with partner countries, there always is a plethora of development needs that an MCC program does not address. MCC has undertaken a process to prioritize assistance in ways that concentrate resources on problems that, if resolved, result in significant responses in (private sector) investment, job creation, income growth, and, through it, the reduction of poverty.

Proposed projects entailing blended finance need not address the root causes of the binding constraints to growth that a country partner and MCC have identified to structure an MCC program. Projects that enhance the effectiveness of MCC program interventions should not be controversial. A question might arise, however, as to how closely a proposal hews to an MCC program. ‘Complementarity’ should have the form of amplifying the effectiveness of solutions deployed in a country program to help address directly or indirectly the root causes of a constraint. It might be argued that complementarity also constitutes the facilitation of private sector responses to ‘loosened’ constraints that obstructed investment decision making in the past. This perspective easily transforms into one calling for interventions in access to credit. It introduces opportunities, when poorly designed, to prioritize investments that in practice may benefit those who already have good access to capital at the expense of genuinely extending the impacts of a program to women and the poor. The burdens of due diligence are not diminished with the consideration of blended finance interventions: they indeed can be more pressing.

7. DUE DILIGENCE MODALITIES: SCREENING OF BLENDED FINANCE PROJECTS

This section discusses the data-driven, evidence-based *ex-ante* due diligence that could be undertaken when assessing the economic viability of blended finance-related infrastructure projects at MCC.

Projects presented to MCC for approval should be of a kind that satisfy the rationale for effective public subsidization of private investment, i.e., projects that bear positive public externalities, and that contribute to solutions targeting the identified binding constraints to economic growth but are privately unprofitable or excessively risky due to factors that might be alleviated through the public expenditure or contingent fiscal instruments such as partial guarantees. Such factors typically are those that affect financial decision making outside the restrictions imposed by identified binding constraints. In many situations, access to finance is not the binding constraint but it may frustrate efforts that might also contribute loosening constraints that have been identified.

Proposals need to adhere to the principles for private sector projects funded by blended concessional finance laid out by the DFI Working Group led by IFC.²¹ Suitable projects are expected to be taken on by the private sector as a consequence of public financing. These investments receiving public contributions of some kind are in principle amenable to economic assessment. Finally, there must be an effort to ensure that the amount of public financing that might be applied is the least amount necessary for securing the desired private sector response.

7.1. ADHERENCE TO CA BINDING CONSTRAINTS TO GROWTH AND DEGREE OF COMPLEMENTARITY WITH INTERVENTIONS ADDRESSING ITS IDENTIFIED ROOT CAUSES

*Projects utilizing blended finance should be expected to adhere to the MCC investment criteria that are applicable to all other projects under consideration in MCC programs.*²² Proposed projects might contribute to the performance of the assets in which MCC is investing or serve as a demonstration that might attract other investments into the sector, depending upon the efficacy of existing infrastructure and other supporting institutions. Ordinarily, programs identify projects for their value in contributing in some appreciable way to the resolution of root causes of constraints impeding private sector investment. The Constraints Analysis sets the stage for program development by prioritizing such problems. Constraints that are binding, by definition, if addressed, are likely to solicit private responses on a deeper and broader scale within an economy than efforts that address relatively secondary problems, and that elicit private responses and impacts that are limited in scale so long as prior binding constraints remain in force. This approach aims to be cost-effective in terms of public resources that are devoted to advance growth in incomes, and to avoid wasteful dilution of development assistance.

Starting from root causes, the types of projects that are possibly appropriate for blended financing therefore are likely to overlap considerably in function with those that have been identified without having in mind a particular objective to promote the use of blended finance.

The theories of change describing economic consequences therefore are likely to overlap as well. Blended finance projects, however, bear the additional task of explaining the basis of additionality and its scale within that economic context. It is sometimes put forward that certain private investments are subsidized for the sake of demonstrating viability and ‘inspiring’ a crowding-in of similar investment by other agents.²³ This might be the case—and it would require an explanation of why the dynamics would work that way—but the justification of the demonstration intervention ensues from the contribution it represents to the relevant problem at hand, and not simply from the fact some replication of investment might take place.

21 See https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/bf/bf-details/bf-dfi

22 See MCC investment criteria: Framework, definitions, qualities and standards of compact readiness (sharepoint.com). May 2020.

23 This was the rationale, for example, for supporting private pack houses and Agricultural Business Centers in the first Ghana compact, Green Prosperity investments in the first Indonesia compact, and the Learning on Access to Finance for Export Value Chain Firms activity in the abandoned threshold program with Ethiopia. As policy, MCC’s draft manual for leveraged grant facilities states that such facilities “will target projects with clear commercial drivers and potential for commercial viability and potential to reach scale that would not take place on the same scale or timeline without Grant funding.”

Blended finance approaches may represent opportunities to achieve particular development objectives by circumventing local financial market frictions or imperfections without systematically addressing those problems. In many if not most of MCC partner countries, access to credit can be described as an ongoing problem, in the presence of many others, without rising to the status of a binding constraint. If access to credit were an identified binding constraint, the types of interventions that might address low savings, high interest rates, low liquidity, low credit uptake, etc., are likely on one hand to entail interventions in macro management – reforms to improve governmental performance – and institutional and regulatory actions that affect the interactions of financial market agents at the micro level involving changes in the rules of the game and how they are applied. Viewed this way, access to credit as a binding constraint in general is not amenable to the types of blended finance solutions that are intended to compensate for problems in the operation of financial markets. In other words, if the cost of credit that is accessible is a binding constraint, then the solution as a priority that has the broadest and most profound impact entails addressing the root causes of that constraint. Blended finance solutions tend to address specific deals, or types of deals, which are not likely to represent a significant fraction of the overall volume of private sector lending: it is not obvious that there can be an appreciable lowering of financing costs or interest rate over the long run as a result, or much in the way of significantly increased liquidity (unless markets were extremely thin to begin with, which would imply turning to other policy instruments to address the issue systematically as a binding constraint).

This should not be construed as suggesting that finance is not a problem while not being a binding constraint. Certainly, there are situations where projects deploying blended finance are worthwhile pursuing not so much for their merits of definitively solving systemic problems in the operation of financial markets but for their utility in mustering private resources to serve program objectives despite financial market frictions.

Blended finance is best viewed as a coping mechanism to get something done that is economically worthwhile while limiting demands on public resources. In the realm of MCC programming, what is economically worthwhile is defined in terms of its utility to address binding constraints. Blended finance may be worth pursuing because it is helping to address a priority problem – one that is elevated by the logic of the MCC program in response to a country’s CA – in power supply, in health, in water and sanitation, or in transport, etc., in ways that are not otherwise attainable for a government to undertake, given the circumstances.

7.2. EVIDENCE SUPPORTING THE RATIONALE FOR THE PARTICULAR BLENDED FINANCE THAT IS BEING PROPOSED

As is the case with other MCC-financed interventions, a theory of change needs to accompany any consideration of the use of blended finance that explains why a particular application of blended finance appears warranted. This rationale would comprise a risk audit, which sets out the evidence that market frictions inhibit preferred private investment behavior, that exogenous risks that weigh on private returns are not better addressed through non-BF policy instruments, and that the use of one or more of the BF archetypes is likely to be effective in achieving targeted private investment behavior. In short, a cogent argument based on local observations must be advanced regarding the appropriate choice of instrument and the feasibility of implementation that avoids the misallocation of public (MCC) resources.

7.3. EVIDENCE OF TOTAL INCOME GENERATED BY A PROJECT

The cost-benefit analysis (CBA) of projects employing blended finance in principle is no different from the assessment of other types of public investment. The objective of the analysis remains the determination of likely changes in value added as a consequence of a proposed intervention, and whether they are sufficient in view of costs. Projects employing BF do place a spotlight on changes in the value of particular firms, and on changes in the wage income of their workforce. However, the value-added implications of the positive externalities attached to engaging the firm, or firms, in the proposed intervention are the primary interest of CBA. This is the same subject of the CBA of public investment.

Regarding projects proposed for blended financing and their conformity to the institutional model of MCC, the same principles of economic project analysis apply as would be relevant for any other project that might contribute to a country compact program that targets binding constraints. Blended finance typically is proposed for a class of investments whose social returns, as typically assessed by MCC's approach to economic analysis, exceed a benchmark threshold; however, while being feasible for the private sector to undertake, are not undertaken by the private sector because private returns are too low. While some compact programs target problems that inhibit the appropriability of private returns, many programs typically address conditions that render low private returns (for example, inadequate complementary infrastructure). For this class of 'blended finance' projects, it might be the case that particular conditions affecting the performance of a country's financial markets might be mitigated for particular, desirable investments (especially those that complement the root cause strategy that has been developed to tackle identified binding constraints) through the subsidization of specific costs arising from financial market frictions, or of specific risk premia that influence private investment decision making. In this case, the potential attractiveness of an investment rests not only in the incremental value added that the project is expected to generate, but also in the way it impacts incomes outside the business where the investment occurs.

Therefore, three lines of inquiry need to be pursued to inform senior management of MCC of the economic desirability of proposed investments that are utilizing blended finance (See illustrative example in Box 1):

- i. What is the incremental value added created by the business recipient of a grant and what is the nature of its impacts upon incomes outside the business (and what is the theory of change explaining the likelihood of observing such outcomes)?
- ii. Who are the principal beneficiaries of income changes?
- iii. What determines the minimal amount of public resources that is required to trigger private sector investment?

The detailed financial modeling that has been prepared in the course of due diligence for a private sector deal deploying blended finance can provide valuable information about the expected performance of the proposed intervention and how the investment interacts with the economy outside the private agent that implements it. The features of this modeling would provide estimates of incremental value-added generated by the proposed investment in the business and help set the stage for the estimation of external social benefits from the scope of its operation. If the proposed investment resides in the sector where an MCC program is operating, MCC can leverage the knowledge base and the networking it has already done in the sector to build upon the financial model.

Addressing the last line of inquiry will likely vary by the nature of the proposal deploying blended finance. If the proposal is simply to subsidize the cost of finance – and these situations are particularly problematic as the private sector does not face incentives to reveal true costs or its capacity to adapt to circumstances – then, beyond justification that financing is unavailable on terms that are feasible for private sector partners, a proposal needs to demonstrate that among viable alternatives, working with domestic and international financial markets as the case may be, it represents the least cost option. The majority of MCC blended finance projects are expected to provide due diligence reports including their financial forecasts. The cost of debt is assumed to be competitively sourced. While the cost of equity to each investor is unique. MCC will use market data (e.g., Prequin, an investment data company) to determine fair market equity returns. For example, an assessment of an interest rate swap may be less costly than subsidizing a capital amount. Reducing risk premia associated with particular investments will likely require case by case considerations of hedging strategies, considering the availability of financial products that are appropriate for the particular problem context. Nor should one consider in the interests of public objectives that private financing represents “free” money, for there is always an opportunity cost in the commitment of financial resources, whether public or private.

Box 1: Assessing Economic Viability of a Blended-Financed Battery Storage Project

Consider as an example a deal to engage private investors to an MCC program that is focused on improvements in the performance of the power sector. Suppose a private agent is interested in participating in the investment or in making the investment entirely but for certain “costs” or risks to the appropriability of profits. The use of public resources mitigating those costs or risks might be feasible.

Questions to ask beyond whether the private returns are likely to be sufficient as an incentive for the investor:

- i) Why is the project desirable for the economy? Lower long-term energy supply costs might accompany greater use of one source of energy vis-à-vis another. In this situation, if cost savings are passed on to customers, one might consider consumer surplus measures (as a proxy for impacts on incomes) across the population receiving service, and among future customers. Stabilization of power in existing service areas that has been problematic may also be a consideration. There are economic benefits to having reliable power. The costs of damage to equipment can be avoided. Productivity may increase. New and different types of investments may become attractive. As a component to a mini grid, an alternative power source might permit the expansion of electricity service to new customers. The relevant description of the state of the world might be a combination of these scenarios. The scope of the proposed investment sets the stage for assessments of its possible ramifications through local economies, or possibly further afield. For example, the capacity of the alternative power source circumscribes the potential size of a beneficiary population, given the quantity of energy available expressed in equivalent megawatts or kilowatt hours, and average energy demand per connection. Such ramifications constitute the possible case for public support for a private investment, and suggest the theory, or theories, of change that would underpin an economic assessment.
- ii) Soliciting proposals of candidate blended finance investments in sectors where MCC has developed its programs should facilitate the identification of beneficiaries within and outside the boundary of the businesses that are the recipients of grant financing, and the determination that the poor would likely be among them.

iii) Who are the beneficiaries? The scope of the intended investment naturally points to the pool of potential customers—the businesses and households connected to the infrastructure, albeit indirectly—to which the investment contributes. In other cases, potential beneficiaries are inferred within the theory of change linking the private investment to impacts upon external incomes—those outside the private returns generated by the investment, and the incremental wage income that accompanies any direct employment. As is done for other compact investments, the use of existing socio-economic data, and spatial information are primary sources for identifying the composition of relevant characteristics of potential beneficiary populations, or, to state it more cautiously, for developing the (testable) hypothesis that incomes of the poor are also likely to be affected by an intervention.

As part of its due diligence, MCC must weigh the cost implications of alternatives for achieving the objectives of a particular engagement with the private sector, employing as necessary the expertise of external financial advisors. The bottom line: whatever the investment is, a project competes with alternative uses of the (private and public) funds and therefore should be expected to pass the ERR hurdle rate whether or not it is funded through a BF instrument.

7.4. VALIDATION OF BENEFICIARY ANALYSIS

A project that is a candidate for the use of blended finance is so by virtue of the economic externalities it generates. Due diligence therefore should account for the beneficiaries of these expected impacts as would be the case in general for any other MCC compact investment under consideration. If there is no incremental value-added that is shared beyond private shareholders and those directly employed by an enterprise benefiting from an application of blended finance, then the economic rationale for the intervention should be revisited.

Beneficiary analysis should verify to what extent social benefits accrue to the poor and identify observable and verifiable results (through appropriately selected M&E indicators). Due diligence includes the review of estimates of the numbers and composition of likely beneficiaries, whether provided internally or by external partners. It is the consideration of the recipients of the positive external benefits of an intervention involving BF that motivate and justify MCC's interest in a project.

7.5. ADHERENCE TO MONITORING AND EVALUATION STANDARDS

Due diligence of the use of MCC resources, including those deployed in blended finance operations, entails the validation of observable and verifiable results.

MCC's monitoring and evaluation approach measures the achievement of a project's objective (as stated in Section 1.2 of the program agreement) by both evaluating the impact on the objective itself and by monitoring the results along the proposed theory of change by which the objective is realized. For more information on MCC's approach to M&E, and the necessary characteristics of project objectives and theories of change to facilitate high quality M&E, see the forthcoming revised MCC M&E Policy.

M&E for blended finance investments will be no different than M&E for any other MCC investment. The designer of the investment should articulate their rationale for the choice of blended finance in the theory of change, for example a rationale of additionality. (This is assuming the blended finance investment

works logically towards achieving the project objective. If it does not, tracking its results is outside the scope of MCC M&E.) The designers must then work with M&E to assign measurable indicators to each result. Monitoring activities will measure results along this theory of change, presumably to include the amounts and types of financing. Evaluation activities will answer MCC's two core evaluation questions for the project:

1. Was the project implemented according to plan (in terms of quantity and quality of outputs)?
2. Did the project achieve its targeted outcomes, particularly its stated objective, in the timeframe and magnitude expected? Why or why not?

The evaluation methodology will be proposed by the independent evaluator. As the evaluation is anchored around the project objective, the marginal value-added of blended finance to the achievement of the project objectives will not be assessed separately as part of the core of the evaluation, nor will there be a focus on rigorously determining if indeed blended finance did produce additionality.

A critical challenge when assessing the impacts of blended financing ex-ante is the confidentiality of information and the difficulty of collecting data on the performance of blended finance instruments and mechanisms. Strict privacy regulations in the banking and investment sectors often disallow the sharing or publication of certain types of data (see Habbel et al. 2021). Efforts are underway, especially by the OECD and DFIs, to harmonize standards, principles, and results metrics to facilitate the assessment of blended finance interventions²⁴.

The risk of double counting is high when there are multiple donors/DFIs participating in the same blended finance intervention. In practice, given the incentives of DFIs and some donor entities to report high additionality, it is likely that at least some of the private investments would have been made independently from official contributions as so the estimates of capital mobilization through blended financing may be overestimations. This risk is compounded by the fact that there are a wide range of instruments and mechanisms for blended financing, in their structure and manner in which they mobilize private financing. This makes measurement and comparability difficult, especially ex-ante. For example, in the case of guarantees, while the OECD uses total value of the BF project others are using the value of resources specifically backed by the guarantee in the investment project to reduce double-counting from blended financing of their concessional funds/grants.

Recent OECD estimates suggest that 56% of blended finance deals are confined to the energy and banking sectors, mostly going to middle-income countries, and only around 6% of deals go to projects in social sectors which typically lack commercially viable financial returns. Low-income countries received only 9% of total BF deals which went mostly to countries with lower barriers to private capital mobilization. OECD estimates that the average private finance mobilized by less-developed countries is \$6.1 million per deal vs. \$27 million per deal in LMICs and \$61 million in upper-middle-income countries during 2017-19.

Mobilization of private sector capital is a core rationale for blended financing for development. Table 3 provides a list of indicators that are typically used in practice to track such mobilization efforts. A survey

²⁴ These include the OECD Blended Finance Principles Guidance, the OECD-UNDP Impact Standards for Financing Sustainable Development, the IFC Operating Principles for Impact Management and Measurement, and the IRIS+ metrics.

of the literature on the methods and tools available and used in practice to evaluate blended finance instruments and approaches highlights the lesson that the blended finance intervention's theory of change or rationale for the investment is a crucial first step. This, in turn, informs the selection of the most appropriate combination of analytical tools to use to assess the blended finance project or program.

Table 3. Indicators to Track Mobilization of Private Capital Through Blended Financing

Instrument or mechanism	Mobilization of private capital				Subsidy costs to mobilize private investors	Pricing of the financial return offered to private investors
	In absolute terms	As a ratio to official capital invested	For local and foreign capital	For class A and B shares		
Equity	•	•	•		•	•
Debt (Credit lines, syndicated loans, etc.)	•	•	•		•	•
Guarantees/insurance	•	•	•		•	•
Bonds	•	•	•		•	•
Performance based grants	•	•	•		•	
Structured funds	•	•	•	•	•	•

Source: OECD (2021)

One way of deducing additionality is to look at the drivers for private sector capital mobilization in Blended Finance transactions. Table 4 shows examples of measurable results indicators in this regard. It also helps more clearly making a case for using scarce grant resources to benefit the poor (See Box 2). Due diligence of proposed blended finance projects could be undertaken by using a simpler approach, taking less time and resources through a series of semi-structured interviews with private investors in the fund and ascertaining the reasons for their contributions to the blended financing structure and modality. Appendix B provides a checklist for assessing the impacts of blended finance on the poor and risks as developed by the *Tri Hita Karana Roadmap for Blended Finance* – an OECD and Indonesia led multistakeholder Working Group in conjunction with major partners from governments to inform G7 and G20 deliberations on promoting greater transparency and accountability in blended finance operations.²⁵ The ex-ante questions in this checklist can be answered in an objective manner (yes = 1/no=0) and used in a scoring system to prioritize blended finance investments on poverty reduction and development grounds. Only a subset of the questions can be used for certain categories of blended financing transactions (e.g., sex distribution of benefits, among others.)

²⁵ This was launched at the Tri Hita Karana Sustainable Development Forum on “Blended Finance and Innovation for Better Business Better World” in Bali, Indonesia along the sidelines of the 2018 Annual Meetings of the International Monetary Fund and World Bank Group.

Box 2. Potential Benefit Streams of Blended Finance Investments for the Poor

These include:

Direct benefits to low-income households, poor and vulnerable consumers, businesses owned and operated by low-income individuals/ informal sector, and smallholder farmers.

Indirect contribution to market creation and/or changes in behavior of the other market participants in ways that expand economic opportunities and strengthen markets for the poor.

Supporting benefits from investments in broader economic growth and increase in labor productivity or environmental sustainability. Table 4: Indicators for Factors that Drive Private Capital Mobilization

Table 4: Indicators for Factors that Drive Private Capital Mobilization

Instrument or mechanism	Financial return to private investors	Provided risk buffer/level of risk	Track record of success	Existence of financial ratings	Level of concessionality	Social and environmental impact
Equity	•	•			•	•
Debt (Credit lines, syndicated loans, etc.)	•	•			•	•
Guarantees/insurance	•	•			•	•
Bonds	•	•	•	•	•	•
Performance-based grants	•				•	•
Structured funds	•	•	•	•	•	•

Source: OECD (2021)

Blended finance projects will need to be assessed *ex-ante* in terms of two dimensions, namely, their *financial sustainability* and *development orientation*. In other words, it will look at how the de-risking is being done on the financial returns with MCC grants and the nonfinancial barriers to private sector capital are being alleviated (i.e., development risks) so as to leverage additionality of private capital in the project/ portfolio at hand. Table 5 provides a summary of indicators used to evaluate financial sustainability.

Table 5. Examples of Measurable Metrics for Financial Sustainability.

	Profit/yield	Interest income	Costs (operating cost, etc.)	Non-performing loans (NPL) in % of total loan portfolio	Equity internal rate of return	Valuation of shares over time	Debt to equity ratio	Dividends	Redemption conditions	Revolving use of funds	Financial return offered to A and B shareholders	Assessment of pre-agreed outcomes	Financial performance of investee (e.e. profit, credit history, NPL, etc.)
Equity	•		•		•	•	•	•	•				•
Debt (Credit lines, syndicated loans, etc.)		•	•	•	•		•		•				•
Guarantees/ insurance			•	—	—								•
Bonds	•	•	•	•									•
Performance- based grants			•									•	•
Structured funds	•	•	•	•	•	•	•	•	•	•	•		•

Source: OECD (2021) Table 4.1, pp 30.

A suitable rating scale can be created to indicate different levels of financial sustainability depending on the fulfilment of certain criteria that MCC deems essential for the projects it chooses to support and prioritize on an objective basis. These metrics should be available through standard monitoring documentation and contractual agreements for the projects. Credit lines can also provide a suitable reference point to compare loan volumes, cost structures and control options for participating donors/DFI in the blended finance transaction. Qualitative metrics can be assessed on the basis of interviews/surveys of relevant stakeholders (e.g., using the Checklist of the Tri Hita Karana Roadmap for Blended Finance Working Group of the OECD, Appendix 2). Table 6 summarizes evaluation approaches in terms of mobilization and financial sustainability.

Table 6. Assessing Blended Finance Transactions Up-Front for Financial Sustainability and Development Orientation

	Indicators	Quantitative methods	Qualitative methods
Financial sustainability & development orientation	<ul style="list-style-type: none"> • Profit/yield; interest income • Costs (e.g. operating costs) • Repayment/default rates; non-performing loans • Internal rate of return/net present value • Debt to equity ratio • Dividends; redemption conditions • Credit history • Revolving use of funds 	<ul style="list-style-type: none"> • Cost-benefit analysis • Social return on investment • Value for money analysis 	<ul style="list-style-type: none"> • Document analysis of: • Development objectives and goals • Alignment with official development strategies • Flexibility of the instrument/ mechanism • Management and governance
Mobilization	<ul style="list-style-type: none"> • Leverage ratios: <ul style="list-style-type: none"> – in absolute terms – as a ratio to official capital invested – for local and foreign capital – for class A and B shares • Cost of the subsidy • Pricing of the financial return offered to investors 		

Source: OECD 2021. Adapted from Table 5.1 pg. 52.

7.6. SATISFACTION OF POLICY, REGULATORY, INSTITUTIONAL PRE-REQUISITES

Due diligence should also consider assurances that requisite needed 'soft' apparatus is in place for effective implementation. Policy, regulatory and institutional pre-requisites can underlie the reluctance of private investment, and not simply the absence of demonstrated financial viability of some type of enterprise or client relationship (Box 3). Generally, interventions that target the subsidization of private investment to demonstrate financial viability do not presume the lack of capital within local financial markets, or the cost of credit as a basis for justification. Rather, the perceived problem is one of information and the costs or risks associated with obtaining it. Whereas other instruments deployed in blended finance may intend to mitigate uncertainties over the size and timing of cash and cost flows over time, the core assertion here is that some level of economic activity is not occurring because 'first movers', who could signal to other more risk averse investors to jump into the market, are not investing due to uncertainty over total costs and cash flows. However, that is not necessarily the whole story.

Investor reluctance may have little to do with the availability of finance or its costs. It can also be due to anticipated inadequate return on investment when competitors follow in imitation. Understanding investors' perceptions of the dynamic features of their business environments is important for understanding their approaches to financial decision making.²⁶

²⁶ Appendix C provides a simple illustration of competitive dynamics embedded in financial modeling.

Box 3. Mobilizing Private Sector Finance for Infrastructure and SMEs – Policy & Institutions Matter.

According to the OECD, the following policy and institutional pre-conditions can set the stage for higher levels of private sector finance for infrastructure and diversification of infrastructure and SME financing instruments:

- (i) Ensure that financial, fiscal and monetary regulatory policies are supportive of economic activity and create a stable long-term investment environment free of financial vulnerabilities;
- (ii) Promote strong public investment management institutions and sustainable public finances and use of international guidance (e.g. from IMF and OECD);
- (iii) Establish a strong legal and institutional framework that supports an efficient microeconomic environment, transparency, well-functioning capital markets and ensures regulatory certainty and stability;
- (iv) Encourage the formation of pools of long-term savings;
- (v) Promote the development of local currency capital markets (including equity, bonds and derivative markets), and their integration with their international counterparts;
- (vi) Establish a national infrastructure roadmap and long-term government strategy, develop a robust and transparent pipeline of investable infrastructure projects, and enhance infrastructure connectivity;
- (vii) Ensure sound governance of infrastructure investment, including the integration of Environmental, Social and Governance (ESG) factors and lifetime deployment;
- (viii) Promote resilient, quality (including cost-benefit analysis) and connected infrastructure;
- (ix) Promote awareness and financial literacy on the variety of financial instruments and risk allocation mechanisms; and
- (x) Promote implementation of existing pre-conditions and international instruments and guidance related to the financing of infrastructure and SMEs.

Source: OECD (2016).

Various factors can shape the dynamic features of business environments. Weak protection of intellectual property rights may be the core of concern (not profitability per se, but the appropriability of profitability) as well as tax implications, burdensome regulation, or some other institutional obstacle (such as governance and corruption issues).

Investors are also mindful of the possible volatility of returns on investment. Excess volatility reflecting excess risk needs to be managed proactively. This is where hedging instruments and their availability in the capital market concerned matters.

Therefore, when considering the efficacy of the use of blended finance to advance development objectives, *comprehensive root cause analysis is essential for robust due diligence*. The aim should be to ensure that blended finance be a solution to a problem that is addressing the underlying root causes of the identified binding constraint that the Compact is aiming to tackle.

7.7. VALIDATION OF THE ESTIMATED LEVEL OF SUBSIDIZATION

Principles of appropriate concessionality need to be transparently applied and verifiable. The premise behind the subsidization in blended finance is that it uses concessional/grant funds strategically for projects with high development impact (and in MCC context, to generate economic growth for poverty reduction) so that it can catalyze financing from the private sector that would not be forthcoming otherwise (see OECD 2016, DFI Working Group 2020). It is often used to improve the risk-return relationship in investment projects and to address market failures (perceived or otherwise) (see Winckler Andersen *et al.* 2019).

The “efficiency” consideration in the use of MCC resources requires that only the minimum concessionality that is needed is used to catalyze commercial capital. In doing so, MCC aims to use the “DFI Enhanced Principles for Blended Concessional Finance for Private Sector Projects” put forth in 2017 by the Development Finance Institutions (DFI) Working Group (that IFC chairs)²⁷. These DFI Principles follow five key principles for blended finance that need to be specified up-front when deciding on whether to support a concessional blended finance project or not. Namely, the rationale for blended concessional finance; crowding-in and minimum concessionality; commercial sustainability; reinforcing markets; and promoting high standards (e.g., in areas of corporate governance, environmental impact, integrity, transparency, and disclosure).

One approach to estimate the level of subsidization of the total project cost, that is used by the IFC, is to compute the difference between a sector and/or instrument-type specific “reference price” and the concessional/subsidized price being charged by the blended concessional finance co-investment (https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/bf/bf-details/concessionality-calculation). The reference price can be the market price, if available, or a computed price based on some pricing model or a negotiated price with the private sector finance provider. The IFC’s pricing model, for instance, comprises of the three elements of risk, cost, and net profit. “Total project cost” is the amount it will take to construct or expend an infrastructure project or the operations of a company. The latter can include equity and debt, but in most instances, the de-risking is done in the context of debt instruments used to finance the prospective infrastructure investment (IFC 2021). In blended finance transactions with financial institutions, total project cost refers to the size of the loan or amount of investment in a capital markets issuance (e.g., a Sukuk project bond or a first loss guarantee). This amount should be disclosed in order for the *ex-ante* due diligence to be conducted. Table 7 provides estimates of average concessionality/subsidization levels in a historical sample of IFC’s concessional blended finance portfolio (as opposed to its standard infrastructure PPPs that do not use concessional funds to de-risk the transaction), by blended finance instrument and industry sector.

Table 7. Average Subsidization Level as a Percentage of Total Blended Finance Project Cost

Blended finance product/industry/theme	Average subsidization Rate
Overall	3.8%
By Product	
Senior Debt	2.7%
Sub Debt	2.6%
Guarantee	3.6%
Equity	3.8%
Performance Incentive	1.5%
Local Currency	10.1%
By Industry	
Manufacturing, Agriculture and Services	3.7%

²⁷ The goal of this DFI Working Group is to develop common standards for implementation of concessional blended finance projects and serve as a platform to provide transparent, comprehensive, and consistent data on their blended finance activities. It will also share best practices and review the merits and adequacy of existing approaches for concessional blended financing with a view towards enhancing trust and transparency for the use of concessional resources from DFIs without distorting markets.

Blended finance product/industry/theme	Average subsidization Rate
Financial Institution Group	4.2%
Infrastructure and Natural Resources	2.9%
Disruptive Technology and Funds	2.5%
By Blended Finance Facility Theme	
Agriculture	3.7%
Climate	2.7%
SME finance	2.5%
Gender finance	1.3%
Low income & fragile and conflict affected state	5.8%

Source: IFC (2021)

These average subsidization estimates can be used for benchmarking purposes in MCC's blended finance transactions.

With the objective of ensuring that the minimum level of official grants is used in a blended finance transaction to leverage private finance and attract private investors, various mechanisms are used *ex-ante*. One is to make grants part of a bidding process. (See Appendix D on Possible Auction Mechanisms). For instance, *viability gap funding mechanisms* have been created in infrastructure sectors to make projects financially attractive without raising user's fees beyond affordability limits. Under this structure, the eligible private sector bidder requiring the lowest subsidy is selected. Another possibility is for providers to structure deals that allow them to share any future upside. In this instance, if there are profits the public sector can get repaid in the future, without having to estimate the subsidy up-front²⁸. These modalities can be used to create demonstration effects that can incentivize commercial replication and support the development of local capital markets for infrastructure finance as well²⁹. Price discovery via appears to be a good way to test both whether blended is needed and what the minimum support might be. However, there are different dangers built into different approaches. Viability gap cover for a first round of bidding could run the risk that some subsequent round of tenders will fail without the subsidy because the market has become accustomed to this. The gaming behavior accompanying market dynamism must always be kept in mind.

²⁸ UN/DESA Policy Brief #100: Effective blended finance in the era of COVID-19 recovery. 12 April 2021.

²⁹ It should be noted however, that this is by no means a certainty.

8. REFERENCES

African Development Bank, Asian Development Bank, et al. *Multilateral Development Banks' Harmonized Framework for Additionality in Private Sector Operations*. September 2018. <https://www.adb.org/sites/default/files/institutional-document/456886/mdb-additionality-private-sector.pdf>

Herrera Dappe, Matías; Foster, Vivien; Musacchio, Aldo; Ter-Minassian, Teresa; Turkgulu, Burak. 2023. "Off the Books: Understanding and Mitigating the Fiscal Risks of Infrastructure." *Sustainable Infrastructure Series*. Washington, DC: World Bank. <http://hdl.handle.net/10986/39459> License: CC BY 3.0 IGO.

Bjoern Struewer (2020). "Making Subsidies Smarter: How to Create More 'Bang for the Buck' in Blended Finance. William Davidson Institute at the University of Michigan. Guest article January 30, 2020. <https://nextbillion.net/smarter-subsidies-in-blended-finance/>

Brealey, Richard, and Myers, S.C., and Allen, F., Principles of Corporate Finance, 13th Edition (McGraw-Hill Education: New York, 2020), pp. 230-31.

Carter, P, Van de Sijpe, N. and Calel, R. (2018), "The Elusive Quest for Additionality", No. Working Paper No. 495, Center for Global Development, Washington DC.

Carter, P., Van de Sijpe, N., & Calel, R. (2021). The elusive quest for additionality. *World Development*, 141, 105393.

Convergence Blended Finance (2023). *Evaluating the Impact of Blended Finance: Convergence's Case Study Portfolio Revisited*. Convergence Report.

Damodaran, Aswath, Country Risk: Determinants, Measures and Implications - The 2021 Edition (July 5, 2021). NYU Stern School of Business Forthcoming, available at SSRN: <https://ssrn.com/abstract=3879109> or <https://dx.doi.org/10.2139/ssrn.3879109>

<https://dx.doi.org/10.2139/ssrn.3879109> Damodaran, Aswath, Equity Risk Premiums (ERP): Determinants, Estimation, and Implications – The 2022 Edition (March 23, 2022), available at SSRN: <https://ssrn.com/abstract=4066060> or <http://dx.doi.org/10.2139/ssrn.4066060>.

DEVal (2020). "The state of the Evidence on Blended Finance for Sustainable Development". Report of the German Institute for Development (DEVal). December 2020.

DFI Working Group (2020). Joint Report December 2020 Update on Blended Concessional Finance for Private Sector Projects. <https://documents1.worldbank.org/curated/en/221851613400323474/pdf/Joint-Report-2020.pdf>

Eberhard, A., Gratwick, K., Morella, E., and Antmann, P. (2016). Independent Power Projects in Sub-Saharan Africa: Lessons from Five Key Countries. The World Bank, Washington D.C. IRENA and CEM. (2015).

Eberhard, A., Kolker J. and Leigland, J. (2014). South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons. Public-Private Infrastructure Advisory Facility, Washington D.C.

Eberhard, Anton and Raine Naude (2017) "Recommendations for the design of successful renewable energy auctions or competitive Tenders in Africa". Graduate Business School, University of Cape Town, South Africa.

Fernandez, Pablo and Bañuls, Sofia and Fernandez Acin, Pablo, *Survey: Market Risk Premium and Risk-Free Rate Used for 88 countries in 2021* (June 6, 2021). IESE Business School Working Paper, available at SSRN: <https://ssrn.com/abstract=3861152> or <http://dx.doi.org/10.2139/ssrn.3861152>.

Finance Investment and Trade. "MCC's Finance Investment and Trade Team Mobilizing capital, resources, and knowledge for sustained economic growth: Collaboration with TVS on Blended Finance." MCC Presentation, May 18, 2021.

Giles Parkinson (2017). "Chile solar auction sets new record low for solar PV". *Renew Economy* Clean Energy News and Analysis. November 7, 2012. <https://reneweconomy.com.au/chile-solar-auction-sets-new-record-low-for-solar-pv-85114/>

GPRBA (Global Partnership for Results-Based Approaches). 2019. New Perspectives on Results-Based Blended Finance for Cities: Innovative Finance Solutions for Climate-Smart Infrastructure. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO. <https://www.gprba.org/sites/gprba/files/publication/downloads/2019-07/new-perspectives-results-based-blended-finance-cities-innovative-finance.pdf>

Habbel, V., E. Jackson, M. Orth, J. Richter and S. Harten (2021), "Evaluating blended finance instruments and mechanisms: Approaches and methods", *OECD Development Co-operation Working Papers*, No. 101, OECD Publishing, Paris.

Independent Evaluation Department (IED). *Additionality of the Asian Development Bank's Nonsovereign Operations*. IED, Asian Development Bank, TS-17, February 2022. Available at https://www.adb.org/sites/default/files/evaluation-document/682001/files/te-nso-additionality-redacted_6.pdf.

International Finance Corporation (IFC) (2021a). "Using Blended Concessional Finance to Invest in Challenging Markets: Economic Considerations, Transparency, Governance and Lessons of Experience". Report by the Vice Presidency for Economics and Private Sector Development, IFC, February 2021.

International Finance Corporation (IFC) (2021b). "What is Concessionality and How is it Calculated?" 2021. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/bf/bf-details/concessionality-calculation

Khan, Mushtaq, Mitchell Watkins and Iffat Zahan (2022). “De-risking private power in Bangladesh: How financing design can stop collusive contracting”. *Energy Policy*, Volume 168, September 2022, 113146. <https://doi.org/10.1016/j.enpol.2022.113146>

Lankes, Hans Peter (2021). “*Blended finance for scaling up climate and nature investments*”. *Report of the One Planet Lab and Grantham Institute, London School of Economics*. November 2021. <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/11/Blended-Finance-for-Scaling-Up-Climate-and-Nature-Investments-1.pdf>.

<https://doi.org/10.1016/j.enpol.2022.113146> Nancy Lee and Mauricio Cardenas (2020). “The Future of Private Finance for Development in Poor Countries”, Center for Global Development, December 2020, pp. 14-15.

OECD (2016). *Guidance Note on Diversification of Financial Instruments for Infrastructure and SMEs*. September 2016. <https://www.oecd.org/daf/fin/private-pensions/G20-OECD-Guidance-Note-Diversification-Financial-Instruments.pdf>.

OECD (2021), Blended Finance Evaluation Methods and Approaches. Working Paper No. 101, 2021.

Pegon, Matthieu (2022). Mobilizing Beyond Leverage: Exploring the Catalytic Impact of Blended Finance. September 21, 2022, IDB Invest Publication. https://ibf-uzh.ch/wp-content/uploads/2022/10/Mobilizing-beyond-Leverage_Matthieu-Pegon-2022-draft.pdf

Renewable Energy Auctions – A Guide to Design. <https://www.irena.org/publications/2015/Jun/Renewable-Energy-Auctions-A-Guide-to-Design>

Sánchez Torrente, L., V. Habbel, J. J. Rocío Pérez, N. Doswald, Bertzky, M., G. Gotz, M. Orth, J. Richter, G. Fernández de Velasco and S. Harten (2020): “The State of the Evidence on Blended Finance for Sustainable Development. An Evidence Gap Map.” DEval Discussion Paper 3/2020, German Institute for Development Evaluation (DEval), Bonn.

Shavell, S. (1979). Risk Sharing and Incentives in the Principal and Agent Relationship, *The Bell Journal of Economics*, Vol. 10 No. 1, pp. 55-73.

The Tri Hita Karana Roadmap for Blended Finance (2020). “A Checklist for Assessing the Impact of Blended Finance on the Poor”, Paper by the *Tri Hita Karana (THK) Roadmap for Blended Finance Impact Working Group*, OECD-DAC. January 2020.

United Nations (UN) (2021): “Effective blended finance in the era of COVID-19 recovery.” UN/DESA Policy Brief #100. 12 April 2021.

United State Agency for International Development (USAID). 2021. “Using Blended Finance To Generate Additionality And Human Impact: Guidance Note.” Washington, DC.

Warner, M. A. M. (2013). *A framework for efficient government investment*. IMF Working Paper No. WP/13/58. February 2013.

Winckler Andersen, O., et al. (2019), “Blended Finance Evaluation: Governance and Methodological Challenges”, *OECD Development Co-operation Working Papers*, No. 51, OECD Publishing, Paris, <https://doi.org/10.1787/4c1fc76e-en>.

World Bank (2019). Vietnam: Solar and Competitive Bidding Strategy and Framework. ESMAP Knowledge Report, World Bank, Washington DC.

World Bank and Carbon Trust. 2018. Study on Using the Climate Auction Model to Catalyse Energy, and Resource Efficient Buildings. London, United Kingdom: The Carbon Trust.

World Bank (2020). “The IFC’s Blended Finance Operations”. Independent Evaluation Group, World Bank, 2020.

APPENDIX A

Rightsizing the Use of Public Funds for Private Investment Making: The Private Discount Rate

THE CASE OF FULL EQUITY FINANCING

Investment decision making entails the weighing up of benefits and costs over time against the initial financial outlay. Since in today's values, incurring a cost, or receiving a revenue, five years from now is not the same as when those events happen now, it is usual practice to discount flows of costs and revenues occurring over time (typically on an annual basis) to render them into present values – the common unit of account of spending or receiving today a dollar, or other currency, so that they may be compared. If total net financial benefits (the excess or deficit of revenues minus costs within a time period) over time exceed the investment outlay, then the endeavor should be undertaken on its financial merits. This is the positive net present value (NPV) criterion. Another way of stating this criterion is to estimate the discount rate when applied to the sequence of costs and benefits over time would render the value of total net benefits equal to the investment (assuming for simplicity that the investment occurs in the first year and all revenues and costs happen in following years). So long as this estimated discount rate—the calculated internal rate of return—exceeds the private discount rate that would have been applied for the NPV test of the profitability of the investment, it would be financially desirable to undertake the project.

There are technical reasons to prefer the use of the NPV approach over the IRR. Unless annual sequences of revenues and costs are constant over time, the calculation of the IRR as a function of net benefit streams is nonlinear. There can be multiple solutions for the IRR. In this sense, the NPV approach is more reliable in producing an unambiguous outcome to determine an investment decision.

In the NPV approach, it does not matter whether the sequence of annual values is current—including the consequences of price inflation—or constant (in terms of today's prices), so long as the private discount rate that is applied is consistent with the choice of presentation. To simplify matters, this note refers to expenditures and revenues, whenever they might occur, that are expressed in terms of prices of a base year, which typically is the year when a project investment takes place. This is the practice as well in MCC's economic analyses; although, the principal output of MCC's assessments is to report out an economic internal rate of return (ERR) and not an economic net present value.

The basic formula for the calculation of net present value is the following:

$$NPV = -I + \frac{R_1 - C_1}{(1 + r_\delta)} + \frac{R_2 - C_2}{(1 + r_\delta)^2} + \dots + \frac{R_n - C_n}{(1 + r_\delta)^n}$$

where r is the private discount rate and n is the number of years of the life of the investment (for economic analyses this generally is 19, and therefore 20 years in total for the time horizon of an MCC project in a typical assessment).

In general, a private investor will not apply the same discount rate to assess different investment projects. The discount rate will vary to accommodate characteristics of the type of investment, including the anticipated timing of cash flows and their expected level and certainty; that is, the possible variability of levels of realized costs and revenues over time³⁰. The discount rate would also reflect the capital structure of the financing of the investment: the shares of one's own and borrowed funds.

Consider first that an investment that is financed entirely with equity capital: one's own funds. The fundamental choice entails not purchasing with those funds an asset that would provide relatively known, or fixed, and safe returns but an asset that would compensate for the risk of holding it for returns that are higher although more variable.

To choose an appropriate discount rate to apply for the NPV test, one can look at the past performance of similar investments. Ordinarily this is private information, and not readily available to outsiders. If, however, the technology utilized in the investment is mature and relatively widely disseminated, the possible sources of information increase, and it is more likely that industry benchmarks are available, within the country concerned, and in other countries. Such data may be used to guide the choice of discount rate in a particular country setting for a new investment.

In each case, we can assume that the expected return to the investment is greater than the return from investing in a safe asset. Consider the safe asset to be the holding of sovereign debt. The cost of sovereign debt for various countries in terms of premia added to the returns on US securities is readily available. As a starting point, consider private discount rate for the investment decision, as applied within a particular country setting, to be at least equal to a safe return, which can be considered to be the return on sovereign debt (the yield of government bonds having a tenor comparable to the life of the asset obtained by investment), plus an additional percentage amount to compensate for the risk associated with holding the asset obtained through the investment. The risk is intrinsically associated with the variability of net cash flows (revenues less operating costs) that the asset generates: the uncertainty that characterizes the scale and timing of revenues as well as costs. The technology underlying the asset might be a defining factor, but most often technology interplays with market, regulatory as well as other economy-wide conditions to introduce risk in anticipated cash flows. The required rate of return to equity—the return that finances the investment in its entirety—can be defined as:

$$r_\delta = r_f + ERP = \text{required return to equity}$$

where ERP is the equity risk premium that is required in addition to the safe return, and is the discount rate that is applied to a project's cash flows. In the absence of debt as a source to finance a project, the required return to equity is the value applied as the discount rate to calculate Net Present Value for investment decisions.

The term 'ERP' as used here refers to the compensation an investor requires for a particular investment, but it is more broadly defined in settings where approximately efficient financial operate. There the excess

³⁰ See for example, the discussion in Brealey, Myers, and Allen(2020).

risk return would primarily refer to returns from traded equities, or in equities as a class. Alternatively, the Market Risk Premium (MRP) refers to returns in excess of the safe return from diversified portfolios of assets that are available in financial markets, not just equities. In general, in these settings, the ERP can be expected to be higher than the MRP because the broader range of financial instruments allows for greater diversification of risk. For the purposes of this guidance note, not too fine a distinction will be made between the two concepts. What is important is the notion that the required return to equity can, and typically does, embody the benchmarking of opportunity costs.

Such benchmarking is of practical importance, because it may not be possible to assess with particular precision an individual project's ERP as defined above. If data on the performance of similar investments are available, an ERP benchmark can be estimated by averaging the realized returns to equity from that class of investments and subtracting the given safe return.

$$ERP = \text{average returns to equity} - r_f$$

A reference class of investments may entail the performance of projects within a given sector, and the ERP estimated from such data would reflect expectations of the average level of compensation needed to attract private capital into that sector.

In the absence of information pertaining to similar investments, or classes of investments, the starting benchmark by default falls to the average performance of equity financing at large in an economy. From this starting point, adjustments might be made to accommodate the particular risk features of an investment at hand, and judgements for doing so will remain more a matter of art than science. The avoidance of making purely subjective assessments will much depend upon the availability and quality of information that bears on identifiable risk features of the particular investment under consideration, and the location of its true ERP within a distribution of market risk premia. However, certain recurring relationships of sector returns to average market returns that have been observed across economies may provide an empirical basis to inform some adjustments. Such modifications through the use of market betas will be addressed in the next section along with the weighted average cost of capital (WACC).

Fortunately, Fernandez et al (2021), and Damodaran (2021, 2022) provide estimates of average market risk premia, along with country-specific risk-free returns, for the range of countries that MCC may select for program development. These authors moreover supply ranges around point estimates, which will be useful for establishing bounds for sensitivity analyses. Damodaran also helpfully provides a mapping between Standard and Poor's bond rating categories and spreads for sovereign debt defaults, which can be used for validating estimates of country-specific risk-free returns as the sum of the yield of 20-year Treasuries and a country risk spread.

The rest of this section will demonstrate how an estimate of the private discount rate, whether derived as the required return to equity, or as the opportunity cost of capital, taking into account both equity and debt financing for a targeted investment (i.e., the WACC that is described in the next section), can be applied to calculate the minimal amount of concessional financing that is required to incentivize private participation in an economically desirable investment that *ex ante* is not financially viable.

Suppose that an estimate for has been established, and the investment under consideration is economically desirable for its externalities; although, the estimated investment cost and the expected flows of private revenues and costs over time for the life of the investment do not yield positive NPV given. More than one approach may be available to induce private investment in this context, depending upon the instruments on hand, and to determine the appropriate level of subsidization. One can buy down the cost of the investment, augment revenues, buy down recurrent costs, or some combination of the three, to the point where NPV given is brought to some notional value above zero. Whatever the combination of modalities, the cost of inducing private financing of the investment is equal to the absolute value of the NPV before subsidization, plus whatever margin is targeted to provide a perceivable incentive. If the cost of inducing private participation exceeds the cost of investment, then there is no savings in the use of public resources to engage the private sector.

For example, consider the following situation where over a period of five years incremental value added is 30 currency units of constant value (CU) each year against an investment cost of 100 CU. The ERR is 15%. Private returns, however, are 20 CU each year, and the private discount rate, is 25%. The NPV is therefore about negative 46 CU. The private sector is not willing to invest; although economically (by MCC's threshold), it is desirable to have the investment. Subsidizing the investment by more than 46 CU will induce the private sector to participate, *ceteris paribus*.

Private discount rate	0.25				
Incremental External Economic Benefit	10				
Ex-ante Private Assessment					
Year	0	1	2	3	4
Cash flow	-100	20	20	20	20
Discount Factor	1.00	1.25	1.56	1.95	2.44
PV	-100.00	16.00	12.80	10.24	8.19
NPV	-46.21				
Economic Assessment					
Year	0	1	2	3	4
Economic B-C	-100	30	30	30	30
ERR	15%				
Ex-post Private Assessment					
Year	0	1	2	3	4
Cash flow	-53.79	20	20	20	20
Discount Factor	1.00	1.25	1.56	1.95	2.44
PV	-53.79	16.00	12.80	10.24	8.19
NPV	0.00				
Private/Public Ratio	1.16				

In this instance, every unit of public money used to subsidize the private investment is more than matched (the private/public ratio, $53.79/46.21 = 1.16$, is greater than 1). This need not always be the case. Continuing the example, if the private discount rate were 0.35 as shown below, then the public sector would need to finance roughly 60% of the investment to induce the private sector to participate (the private/public ratio, $44.40/55.60 = 0.80$, is less than 1).

Private discount rate		0.35
Incremental External Economic Benefit		10
Ex-ante Private Assessment		
Year	0	1
Cash flow	-100	20
Discount Factor	1.00	1.35
PV	-100.00	14.81
NPV	-55.60	20
	3	20
	4	20
	5	20
Economic Assessment		
Year	0	1
Economic B-C	-100	30
ERR	15%	30
	3	30
	4	30
	5	30
Ex-post Private Assessment		
Year	0	1
Cash flow	-44.40	20
Discount Factor	1.00	1.35
PV	-44.40	14.81
NPV	0.00	20
	3	20
	4	20
	5	20
Private/Public Ratio		
	0.80	

In each of these cases, there would not be private investment if the subsidization were less than the threshold amount, unless there were some distribution of investors who employ lower discount rates for this type of investment.

This setup can be used to ask what the private discount rate would need to be to result in parity financing by both the public and private sectors. Since in this case total investment value is 100 CU, the problem is to find that private discount rate that renders an NPV in the ex-ante private assessment of negative 50 CU. Using the goal-seek utility in Excel, the threshold private discount rate solves to be about 29%. Accordingly, the private/public ratio is 1 as both the public and private sectors are financing equal shares of the investment. Now, if observations inform the belief that discount rates must be clustered below this level, an auction soliciting the level of private sector participation in the investment should result in a majority private sector share, and vice versa.

Private discount rate	0.29					
Incremental External Economic Benefit	10					
Ex-ante Private Assessment						
Year	0	1	2	3	4	5
Cash flow	-100	20	20	20	20	20
Discount Factor	1.00	1.29	1.66	2.13	2.74	3.52
PV	-100.00	15.55	12.08	9.39	7.30	5.68
NPV	-50.00					
Economic Assessment						
Year	0	1	2	3	4	5
Economic B-C	-100	30	30	30	30	30
ERR	15%					
Ex-post Private Assessment						
Year	0	1	2	3	4	5
Cash flow	-50.00	20	20	20	20	20
Discount Factor	1.00	1.29	1.66	2.13	2.74	3.52
PV	-50.00	15.55	12.08	9.39	7.30	5.68
NPV	0.00					
Private/Public Ratio	1.00					

APPENDIX B

A Checklist for Assessing the Impact of Blended Finance on the Poor

Source: Tri Hita Karana Roadmap for Blended Finance: Action Areas

Issue	Assessing Benefits: ex ante	Measuring Impact: ex post
Access		
	Will the poor have access to the benefits of the investment?	Characteristics of beneficiaries of the investment by income level or alternative poverty measure, sources of income, sex, education, urban/rural, family situation, business/farm size, etc.
	Will the investment deliver new access to goods and services that increase the well-being of the poor?	Numbers of poor newly accessing beneficial products like financial services, electricity, water, sanitation, appliances, health services, the internet, etc.
	Will poor producers be given new access to value chains and markets that deliver greater revenue?	Numbers of poor producers newly selling in a formal market, an export market, a higher value market (e.g., processed vs. unprocessed goods), at a higher unit price, etc.
	Will the investment help increase educational levels of the poor?	Number of poor newly accessing a school Number of poor having a higher school qualification
Affordability		
	Will the investment increase the affordability of key goods and services that raise the productivity and well-being of poor households (e.g., financial services, skills, health services, better information, and connectivity)?	Number of affordable products provided by the investment, such as housing or scholarships
	Will the investment increase the affordability of productive inputs used by poor producers (e.g., fertilizer, water, electricity, transport costs)?	Number of affordable key productive inputs used by farms or businesses owned by the poor
Income and Wealth Benefits		
	Will the investment create jobs that can be accessed by the poor? <ul style="list-style-type: none">• Will the jobs be in the formal sector?• Will the jobs be directly or indirectly related to the investment?• Will the jobs increase labor income for the poor?• Will the jobs be secure and decrease seasonality?	New businesses created by the poor Jobs for the poor supported Type of jobs supported (full time, part time, seasonal) Formal jobs for the poor supported Increased labor income for the poor Reduced job seasonality or insecurity for the poor
	Will the investment add value to assets held by the poor?	Change in value of assets (e.g., land, livestock, financial assets, inventories) held by the poor

	Will the investment generate higher revenues, sales, turnover, or profit for poor producers?	Increased revenue, sales, turnover, or profit for poor producers
	Will the investment reduce indebtedness of the poor?	Changes in poor household, business, and farm debt levels
Basic Needs and Vulnerability		
	Will the investment reduce food insecurity for the poor?	Food insecurity as measured by food consumption patterns for the poor
	Will the investment generate significant improvements in the health or human capital of poor beneficiaries?	Health indicators for poor beneficiaries Skill indicators for poor beneficiaries
	Will the investment reduce the vulnerability of the poor to negative shocks (such as shocks related to extreme weather, natural disasters, health, macroeconomic instability)?	Access by the poor to financial services, including insurance, credit, and savings products Access by the poor to resilient production techniques Shifts in production or consumption by the poor to reduce vulnerability to extreme weather or other shocks
Empowerment and Standards		
	Will the investment help poor producers achieve greater market power and receive a larger share of the value in a given market (e.g., through a fair trade or organic certification)?	Share of production by the poor sold in certified markets Share of production by the poor sold through formalized producer groups
	Will the investment increase the financial literacy of the poor?	Financial literacy indicators for poor beneficiaries
	Will the investment help the poor establish a formal identity for access to financial and other services?	Access by the poor to digital and other formal identity verification
	Will the investment provide market information that strengthens the competitiveness or efficiency of the poor?	Access by the poor to information on market conditions, e.g., product prices, input costs, weather
	Will the investment help formalize economic activity in which the poor participate?	Indicators of formalization of jobs for poor beneficiaries Indicators of formalization of businesses owned by the poor
	Will the investment strengthen the management or finances of producer groups for poor producers (e.g., farmer cooperatives)?	Indicators of producer group financial and governance performance
	Will the poor be included as decision makers in investment design and implementation?	Defined and quantified roles for the poor in investment design and implementation
	Will the investment conform to international recognized standards that protect poor consumers or producers (e.g., ILO or IFC standards)?	Internationally recognized labor and social standards protecting poor producers or consumers under the investment

	Will the data privacy of poor clients of financial institutions or mobile service providers be protected?	Standards for data privacy protection for poor beneficiaries
Market Building and Finance Mobilization		
	Will the investment introduce a new product or service or asset (e.g., savings product) previously unavailable to the poor?	Numbers of poor accessing new products, services, or assets Type of new products/services tailored to the poor
	Will the investment introduce a new business model that better serves the poor?	Successful launch of a sustainable business model innovation with demonstrable benefits for the poor
	Will the investment likely affect the behavior of other market actors in ways that expand and strengthen the market outside the scope of the investment?	Adoption by other market actors of business models or technologies beneficial for the poor
	Will the investment mobilize additional private finance for poor regions, such as urban slum areas, informal settlements, or last-mile rural locations, etc. within a country?	Indicators of increased private investment in poor regions that can be demonstrably linked to the investment
	Will the investment mobilize additional private finance for a low-income country?	Indicators of increased private investment in a low-income country that can be demonstrably linked to the investment

Source: Adapted from <https://www.convergence.finance/resource/a-checklist-for-assessing-the-impact-of-blended-finance-on-the-poor/view>

APPENDIX C

Modeling the Dynamics of Investment Decisions

Section 5 of this note emphasized the importance of understanding the features of the business environment (the investor's mental model of it) that prominently enter into an investor's financial modeling of an investment decision. Such financial modeling can entail the interactions between a proposed investment and the environment in which it is introduced. The investment decision of the 'first mover' investor can be viewed this way.

The structure of a financial model that incorporates relevant dynamic features of the business environment will certainly depend upon the interactions that the investor considers to be important. If it is possible to solicit such information from potential investors, then these financial elements and interactions can be documented in a graphical format. This graphical representation, while being an expression of an investor's mental model of the environment governing the success of a potential investment – something that can be shared and critiqued, in instances can be the basis of the development of a corresponding simulation model. Such a simulation model of financial dynamics may be used to draw out qualitative differences in investment outcomes when underlying features are varied. The simulations can provide insights into the relative effectiveness of different policies that implement nonfinancial as well as financial interventions. The purpose of this appendix is to present a simple application of system dynamics to financial modelling as a tool for root cause analysis, and for evaluating policies around considerations of blended finance. Of course, the basic approach illustrated here is not restricted to investments where the use of blended finance might be considered.

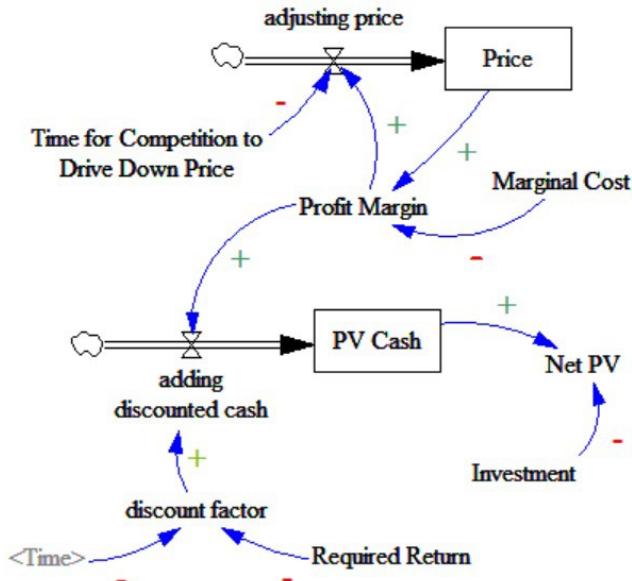
For example, consider a simple situation where an investor is considering committing to a project to supply (at constant returns to scale) a novel product. The investment involves technological development to prove the concept, so the first mover must take this expense into account. If the investment is successful, however, the demonstration would entice imitators to supply a nearly identical product. These following investors, given proof of the concept and the visibility of the technology, would not pay as much as the first mover to enter the market. The first-mover investor believes an initial price can be commanded that will exceed the marginal cost of supplying the product (the quantity of which is normalized to unity) and provide an appreciable profit. For simplicity, the pool of potential customers is large enough to accommodate an arbitrary number of competitors (the first mover does not lose customers, but word of mouth of new suppliers of the product attracts new customers to them).³¹ As new competitors enter the market, the cost of the product is bid down towards the marginal cost of production and the first investor responds in kind to retain existing customers. Eventually, the price is driven to the marginal cost and there is zero profit for each producer. All the while, the first investor has been accumulating a cash flow, which is discounted at the investor's required return (or opportunity cost of capital, WACC). It makes sense for the initial investor to take on the project only if the investor expects that the discounted cash flow will exceed the costs of the investment by the time the price is

³¹ This is what the first mover aims to test in the first place. In financial markets, including for blended financing through portfolio investment by private entities, capital flows in and out much faster than FDI flows. Aim is to convince new investors that infrastructure investments become a part of the asset class they can invest in. This includes pension funds, insurance companies, sovereign wealth funds, and the like. First-mover investments, and success thereof, can convince others to participate in financing these projects. OECD BF principles aim to do this to establish trust in the blended financing to a developing country by potential international and local investors.

equal to marginal cost.

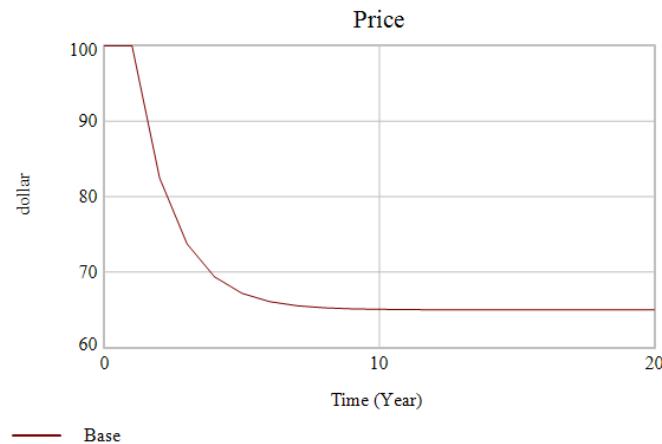
The following causal loop diagram in Figure C.1 depicts the mechanics of this mental model of this business environment.

Figure C.1. Simple Competition Dynamics Model



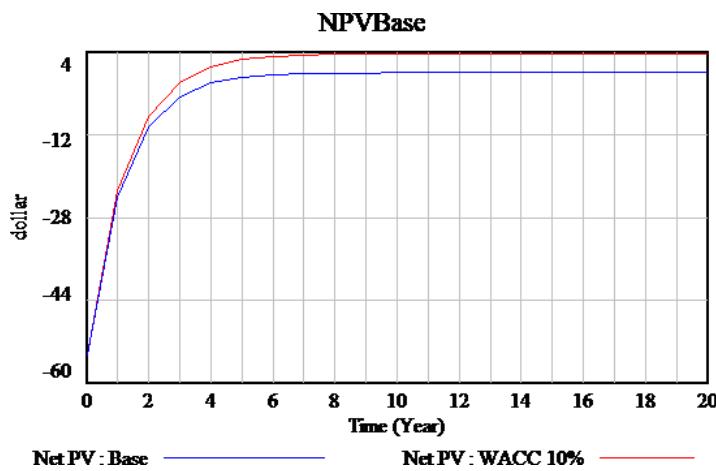
In the diagram, it is assumed that the profit margin, the difference between the current price of the product and its marginal cost of production, is gradually eliminated by a fixed fraction in each period of time (a process of exponential decay). The dynamic financial model depicted in the diagram is readily converted into a working simulation model, where, for the sake of illustration, the profit margin is reduced by half in each time period (that is, for the purposes of the example the parameter *Time for Competition to Drive Down Price* is set at two years) for the base case. What this implies is that about 75% of the initial profit margin is squeezed in three years, and in 7 years about 97% of the margin is gone. In practice, one might consider business licensing data to develop an idea of how quickly clusters of similar businesses emerge in new locations, and this may provide benchmarks that set lower and upper bounds to parameters. Or, the model could simply reflect the revealed expectations of investors, however they were developed. The evolution of the price in this base case is shown in Figure C.2.

Figure C.2. Simple Competition Dynamics: Price Evolution in the Base Case



Also, assume that the investor determines with certainty after the investment that the product can initially command a price (revenue) of \$100 while the marginal cost (labor and input expenditures) of production is \$65 (these figures are arbitrary for the sake of the example) per unit. The investor furthermore has a required return of 14%. Given these particular values, an investment cost of about \$55 (per unit) would render a NPV of 0 by the time competition produces a steady state of zero net profit (the blue line in Figure C.3). In this situation, the investor is indifferent to taking on the project (the IRR equals the opportunity cost of capital, which is 14%). Of course, if investment were more than \$55, it would not be profitable to make the investment.

Figure C.3. Project NPV Over Time for Simple Competition Dynamics: Base Case and Cost of Capital at 10%

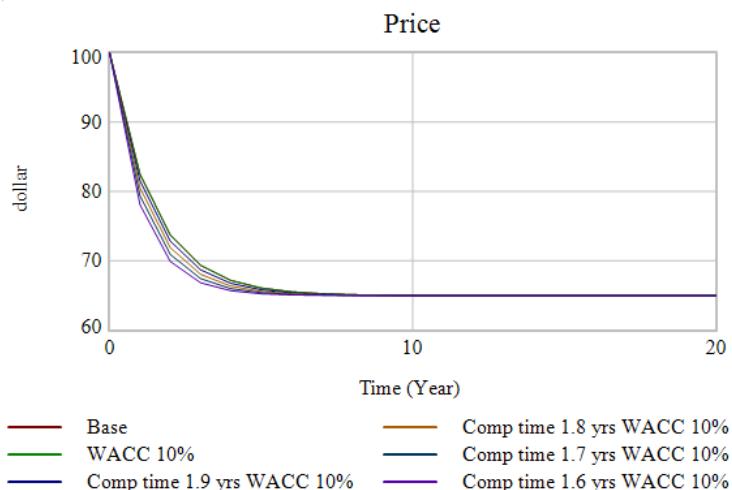


If the cost of capital were less than 14%, the NPV would be strictly positive – all other things remaining the same—and the investment should be undertaken given the flow of cash as defined. For example, if the required return were reduced to as much as 10%, the NPV in this case would be approximately \$3.6 (the red line in Figure C.3). Note that the IRR is still 14% as the cash flow pattern has not changed: only the rate at which those flows are discounted for the NPV.

Suppose potential investors agree that this structure of the financial problem is a valid way of representing the potential profitability of the initial investment. Suppose as well that blended finance reduces the required return (WACC) to 10%. Is this sufficient to incentivize a first mover? Not necessarily. Nothing has been said about the volatility of the return.

The pace of new market entrants is a critical factor in the financial model. Assume that the emergence of new competition is dependent upon the enforcement of intellectual property rights, and that this enforcement is uncertain at the time the investment is committed. The enforcement of rights may be weaker than anticipated, and the base case does not anticipate does expect absolute enforcement in a less than ideal business environment. It might be stronger than anticipated. Whatever the case may be, in this example, relatively small variations in the competition time parameter can produce relatively large changes in the return to the investment. At shorter times, the NPV and the IRR deteriorate. For example, keeping the required return (WACC) set at 10%, but shortening the period in which competitors reduce the gap at any point in time between the price of the product and its marginal cost, say, from 2 to 1.9 years (that is, 75% of the initial profit margin is reduced in 2.66 years and 97% in 6.66 years) lowers the NPV by nearly 60% (from approximately \$3.6 to \$1.5). Figure C.4 illustrates how the price (and with it the cash flow) profile in the financial model changes with decreases in this parameter. The IRR drops to a little under 12% because the stream of cash flows is smaller and ends sooner than in the base case (or in the case when only WACC is changed to 10%). If this parameter is further lowered to 1.8, the NPV already is negative and the IRR is below 10%: worse than the base case, where the required return without blended financing was 14% (Figure C.5). Similar increases in the time parameter increase the NPV and the IRR by similar, corresponding magnitudes.

Figure C.4. Simple Competition Dynamics: Price under Various Paces of Competition³²



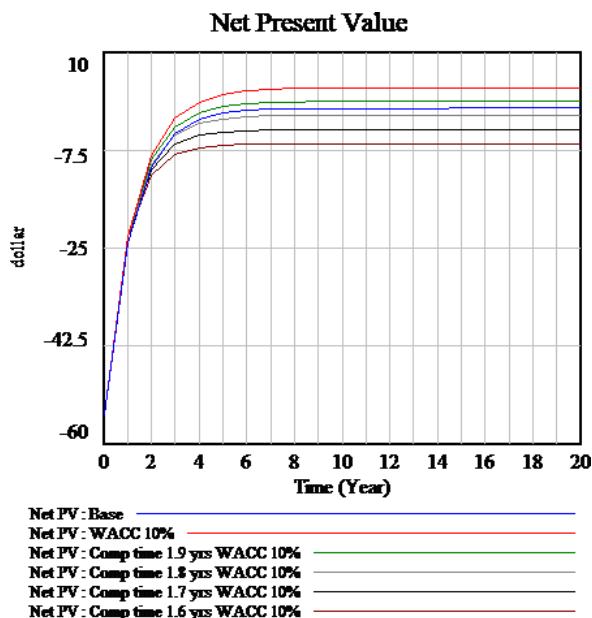
What this example illustrates is that even simple models can produce behavior that can be sensitive to changes in particular parameterizations. If, in this example, had it been determined that the competition time parameter should be set at ten years for the purposes of the financial modeling, small changes in its

³² Unlike the earlier graph, this graph is produced from a particular implementation of the model in Vensim that works with lagged values. The price actually begins to fall from period 1 when operations are assumed to begin after investment is undertaken at time 0.

value either way would not have a qualitatively different impact on the investment decision (competition, although present, would be slow to develop, and ignorable, in any case). In contrast, if in another setting where competition was not a factor, volatility of the profit margin might very well generate a range of outcomes that result in different decisions being made.

For financial models to be as informationally useful as is practical, it is essential to deploy Monte Carlo simulation when sensitivity analysis of the structure of the models can identify factors that generate qualitatively significant variation in investment returns, and the values of those factors are uncertain, particularly from the perspective of potential investors. Due diligence should attempt to identify reasonable distributions for such parameters through past observations, expert opinion, Delphi methods, or other investigative approaches. In much the same way a confidence interval including zero discredits the hypothesis in econometric estimation that a certain parameter is non-zero, the volatility of an element in a financial model that implies the possible absence of profitability, or exposes the opportunity cost of an investment should cast doubt on its viability. This may explain the hesitancy of the private sector to have already taken it up, whatever one concludes about the cost of finance in local markets.

Figure C.5. Project NPV for Simple Competition Dynamics: Sensitivity Analysis of Market Entry



Even when the profitability of an investment is not critically sensitive to one or more conditions, using Monte Carlo simulation to evaluate financial model parameters that could introduce the most variation in the return on investment is a valuable practice. While the mean return may favor a decision for the investment under conditions of certainty, the possible variance of that return could militate against it. The risk preferences of potential investors, as it turns out, are a relevant consideration that is not captured in this model, but something that may become apparent when the policy of subsidizing the cost of capital does not lead to desired investor behavior.

Due diligence analysis should rank the parameters in the model that are appreciably uncertain,³³ particularly from the perspective of targeted investors, determine reasonable distributions for their values employing approaches described above, and use Monte Carlo simulation to estimate the variance of the return on investment. The estimated variance can then be benchmarked against other similar investments, making use of local financial market information, or against returns for investments in developed markets.

In this instance it is essential to have a clear understanding of the dynamics governing the value placed on information, interactions among first movers and other market entrants, and those between investors and the business environment within which they would be operating.

In the interests of constructing a basis on which to conduct due diligence, and to develop CBA, it would be useful to generate a sets of hypotheses, some overlapping or competing, that aim both to explain why information has not been obtained regarding presumably profitable investments, and to clarify why private agents, assuming that they are in fact informed to some extent regarding opportunities, do not act on their knowledge. It is not sufficient to have a mental model of the interactions that guarantee success at a desired scale: if that depiction were a reasonably accurate representation of reality, then the question remains why that representation is not held widely enough within or without the country context to have already solicited financing from entrepreneurs either domestic or foreign. Depending upon the nature of the situation, theories of change might be elaborated around hypotheses to expose the nature of the dynamics thought to be at play. If blended finance is intended to provide incentives to the private sector to invest in some project, the mean of the return of that investment needs to be commensurate to the risk of obtaining the asset in the eyes of the investor. Different investors will have different risk tolerance levels. An effective use of blended finance cannot neglect this understanding in particular transactions. One must know who the investor is (for whom the financial modeling is relevant), as well as some estimate of the mean and variance of the return of the investment proposition at hand (this what Monte Carlo simulation can contribute to the financial modeling). This consideration of targeted investors is particularly relevant if one of the objectives of an intervention is to develop local project finance: foreign investors with better access to capital may accept risks that local investors are not capable to take on.

In this example, the realized return on investment given an engineered opportunity cost of capital of 10% may not be sufficient with respect to its variance, and the cost of capital may need to be bought down further for the project to appear attractive to investors. This comes at a cost, however. This simple model suggests that there may be other policy levers that address financial risk systemically and more broadly than lowering the cost of investment for a particular transaction. In this case, the relevant question becomes “In view of development objectives, is it more cost effective and impactful to address the risk to returns introduced by uncertain enforcement of property rights, or to accept and compensate for the risk by subsidizing the cost of capital?”³⁴ Here, reduction in the variation of return risk linked to property rights, assuming that is the core problem affecting the performance of the investment, would make the investment more attractive at any required level of return.³⁵

³³ For example, voltage supplied at standard will fluctuate within defined performance boundaries, and such variation has no perceptible impact on electricity usage. The possibility of fluctuation outside technical norms may be factor that needs to be taken into account in a financial model if some investment happens to be reliant on quality of electricity supply.

³⁴ Assuming that can be done without increasing the variance of the return.

³⁵ More attractive for any type of investor but not necessarily acceptable.

To address this question, one would need to have some idea of the concrete conditions that would be required to ensure reliable, consistent enforcement of property rights, or at least less variability around that enforcement. This might involve, say, the passage of legislation, changes in the structure of the judiciary, or its staffing: another mental model explaining how particular actions would appreciably alter the financial risk traced to this feature of the financial model.

This example can extend to other situations where considerations of the use of blended finance point to obstacles that fall outside the happy nexus of binding constraints that partner countries are willing to tackle, and are feasible for MCC to address. There will always be tradeoffs in the development of MCC-financed programs, and the use of blended finance might be an opportunity to augment strategies once decided, while not addressing root causes. The successful implementation of blended finance, however, brings its own set of challenges and tradeoffs.

When considering projects involving some form of business development for the purpose of mobilizing credit to places where it is not already flowing, due diligence should proceed on the supposition that investors make money by seeking out opportunities where they can put their resources. Investors should be assumed to be naturally engaged in searching within the environment they know best, and, depending upon risk tolerance, perhaps further afield. Relatively elevated risk is not necessarily a problem for some investors as long as expected average returns are sufficient. Project interventions focused on pre-conceptions of how agents themselves perceive risk can fall wide off the mark when it is the return³⁶ itself that is the problem. Instead, project responses might do better by dwelling on the complementary conditions that are required to realize investment cash flows. This applies to other instruments of blended finance as well.

³⁶ There is always a risk-return trade-off. The issue is what combination the private sector will have an appetite for vis-a-vis the government's preference.

APPENDIX D

Finding the Appropriate Subsidy in Blended Finance Transactions – Auction Mechanisms

INTRODUCTION

Blended finance transactions constitute broad categories of cases for which there can be no single subsidization strategy. Therefore, a first step to understand the use of auction-like mechanisms in blended finance is to introduce a typology of these transactions that is relevant to the use of these tools.

The first dimension of the blended finance typology is the returns to scale of the underlying investment. Viewed on a spectrum of investments from the most highly ‘public-good-like’ (at one end, with declining average costs and low marginal cost of service delivery), to the most ‘private-good-like’ (the other end, in which subsidization is only justified by social considerations outside the economists’ purview). The implication of this dimension is that the private sector will struggle to monetize investments that are closer to the ‘public-good-like’ case and hence the government will be forced to play an active role. However, this does not preclude the use of blended finance (in fact, many Public-Private Partnerships (PPPs) fall into this category). Instead, in the public-good case, the government will be forced to structure the blended finance transaction to ensure bankability for the private partner. In the intermediate case, investments with high capital expenditures and long payback periods may require some government enhancements/ sweeteners to potential investors/financiers of commercial capital (e.g., offering sovereign guarantees as a credit enhancement for public sector undertakings³⁷ to reduce the uncertainty of the investment over the longer horizon).

The second dimension of the blended finance typology relates to the origin of the blended finance proposal. There are three major cases, which differ in terms of what the government knows at the time that the proposal is made: (1) Structured Proposal, (2) Solicited Proposal, and (3) Unsolicited Proposal. In the first case, the government identifies the need for the investment and structures the transaction to ensure that the private sector views the investment as bankable given the project risks and financing costs. This process need not rule out participation of the private sector, who may help the government set a reasonable level of expected private returns, only that the government is the party that has identified a need for the investment and important aspects of the proposed specification. In this case, the government has some understanding of the potential benefits of the investment, but less understanding of the overall project costs and no information on the likely financial returns for the private sector partner. On the other hand, both Solicited and Unsolicited Proposals carry the information that the project is likely to be bankable – otherwise the private sector would not have made the proposal – while the public’s benefits are more uncertain. Solicited and Unsolicited proposals differ in the presumption that the government will only solicit proposals when public benefits are high. Note that the second dimension is highly correlated with the first dimension, since high private returns are rarely associated with ‘public-good-like’ investments and are thus less likely to be the focus of private proposals.

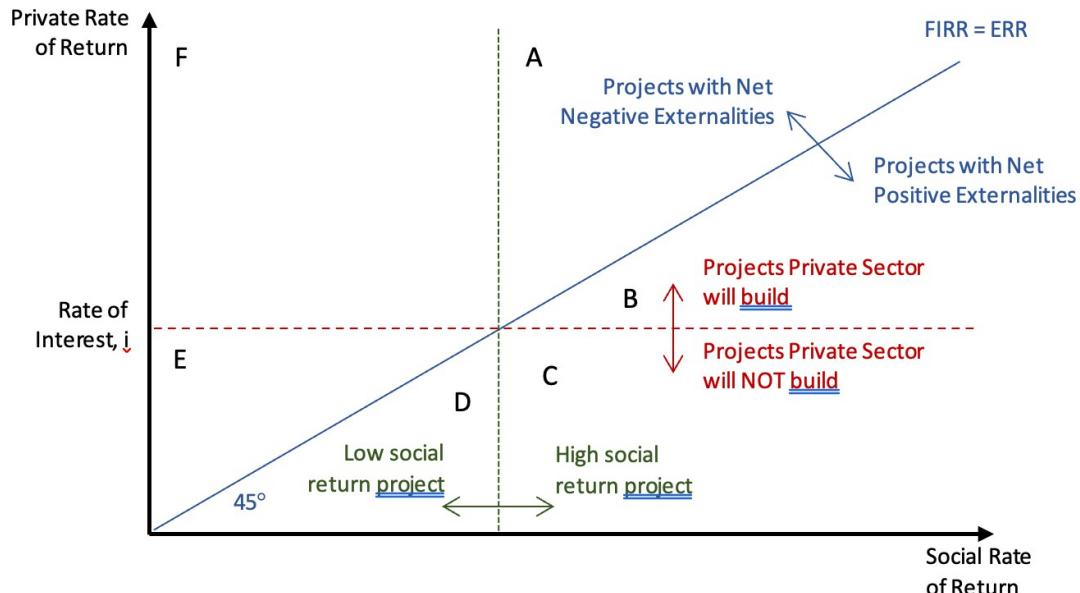
³⁷ Long-term contracts that guarantee future cash flows serve a similar function in assuring confidence in the profitability of invested capital. For example, in power systems in which the utility is the “single-buyer” for electricity, power purchase agreements with the utility will often have “take-or-pay” provisions that ensure the private partner will be paid even if the utility does not purchase electricity. This helps ensure that Independent Power Producers (IPPs) earn sufficient returns on their investments.

The third and final dimension of the typology is the financial instrument used. The nature of the financial instrument used is critical to structuring the incentives of the private sector. For example, the choice between debt and equity financing affects the risk transfer to or from the public sector. Similarly, the use of grants or loan financing affects the leverage ratio, all else equal. While this dimension is important, perhaps deserving of its own typology, it is not viewed as relevant to the use of auction-like mechanisms and not discussed further here.

CONCEPTUAL UNDERPINNINGS

The basic model³⁸ for understanding the economics of blended finance transactions is based on Warner (2013) and shown below in Figure D.1.

Figure D.1. A model for blended finance, adapted from Warner, 2013



The basic Warner model presented here (ignoring complications, such as risk and capital structure) is based on the insight that social returns are equal to private returns with the addition of project “externalities”.³⁹ In this framework, investments are represented by points on the graph, with projects on the 45-degree when no externalities are present – e.g., the only social benefit is the private financial return of the private partner. The private sector is assumed to be willing to invest in any project above the red dashed line indicating the appropriate benchmark market-based return,⁴⁰ such that private returns exceed financing costs. Conversely, barring political pressures, the government can be presumed to focus on

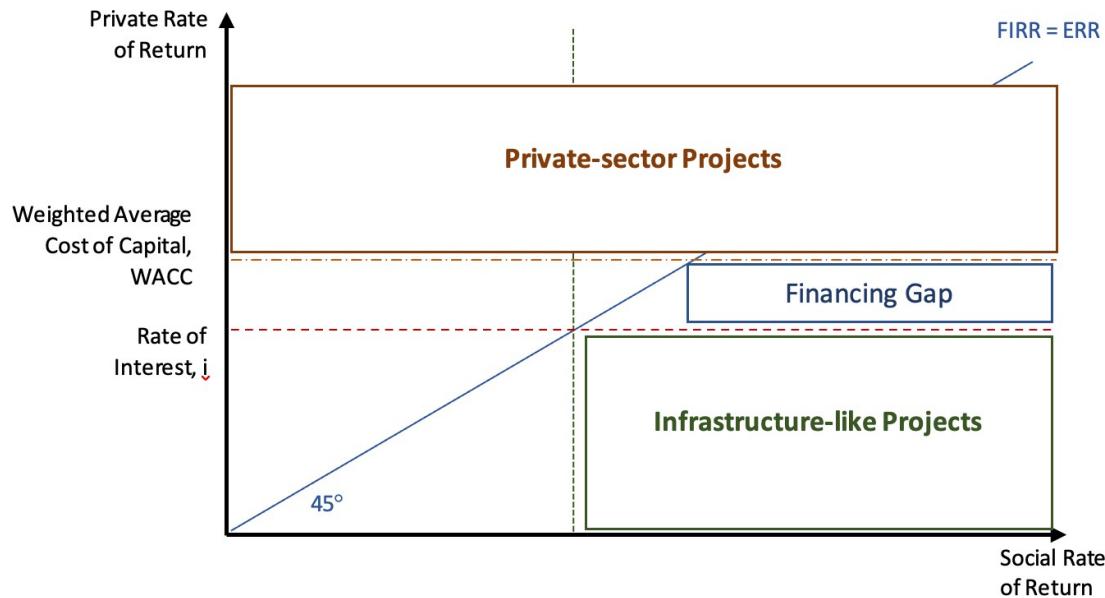
³⁸ See Warner, A. (2013), “A Framework for Efficient Government Investment”, IMF WP/13/58.

³⁹ Here, “externalities” should be understood, in a broad sense, as social benefits which the private partner does not internalize in the context of specific project agreement(s), contract(s), etc.

⁴⁰ For blended finance, a risk-adjusted private hurdle rate, for example, as measured by the weighted average cost of capital (WACC), should generally replace the market rate of interest in this diagram.

projects located on the right-hand side of the graph. Infrastructure (and infrastructure-like) projects are those that occupy the lower right section of the graph.

Figure D.2. Blended Finance Typology applied to the Warner (2013) model



The typology discussed in the previous section can be applied to adapt this model to the problem of utilizing auction-like mechanisms to blended finance transactions. Clearly, infrastructure-like projects are those that have high social returns, and low private returns, locating them on the lower-right portion of the diagram, below the red line marking the market rate of interest and to the right of the vertical line representing the public sector hurdle rate (at MCC this is the ERR hurdle rate of 10%). Adding another layer to the original Warner model, the private sector will invest if the investment returns exceed a private hurdle rate, presumably the Weighted Average Cost of Capital (WACC) for the investment or firm. As shown in Figure D.2, this generally leads to a financing gap between the projects that the private sector will likely fund, and those which the public sector should fund. In all cases, the public sector has an interest only in projects below the 45-degree line. The financing gap shown here is not a quality of the market, but specific market actors which each have a unique hurdle rate for internal decision-making due to factors such as risk tolerance, idiosyncratic financing costs, and desired capital structure.

The basic challenge in applying auction-like mechanisms to blended finance is therefore to elicit information from the private partner that can help minimize the government's subsidy. To do this, consider:

- *Government's problem:* maximize social returns (e.g., the ERR). This is likely when the government has identified the investment's need (i.e., structured or solicited proposals).
- *Private partner's problem:* maximize private returns. This is private information, which the private partner generally has an incentive to understate.

There are two blended finance justifications that arise from this model, *i.e.*, these are strategies that “move” projects toward NE corner of the BF diagram⁴¹:

- Case 1: High private returns, low public returns (move “East” in the diagram)

The private sector wants to do the project without government interventions, but the public would prefer other projects (e.g., the government has a preference for solar power over coal since the latter has significant environmental externalities). This is the case for “Pigouvian” taxes or subsidies that target these externalities. For a market-wide scheme (e.g., implemented through the tax code) this subsidy would efficiently be set equal to the externality. In a blended finance setting, however, this level represents the maximum level at which the subsidy should be set (e.g., the level at which it is socially efficient for the marginal firm to be just indifferent between investing in the “dirty” and “clean” technologies). However, because most firms are not the marginal firm – their private returns using the “clean” technology may be higher than the market average, for example – auction-like mechanisms can allow for a lower subsidy: The auction reveals the subsidy level that is “good enough” for the project to be bankable (for that firm).

- Case 2: Low private returns, high public returns (move “North” in the diagram)

In this case, the government wants to do the project even without private sector participation. Presumably, the justification for blended finance in this case is therefore for the government to leverage its funds to encourage more investment in this project-type⁴², although additionality (investment in the sector/economy that would not happen in the counterfactual) is always less than leverage due to “crowding-out” effects. Hence, the economic case for subsidies in this case are less clear than in Case 1.

Since this case is “public-good-like”, the government may wish to invest, but the private sector has an incentive to make proposals that overstate the need for subsidies or transfer risks onto the government. Auctions may be able to help this issue but, ultimately, auctions work best when there is only a single degree of freedom on which to bid (the “bid variable”). So, the government must restrict auction-like mechanisms to structured proposals⁴³ in this case, even as soliciting proposals can still be a valuable source of information. Projects that originated as unsolicited proposals add an additional degree of complexity⁴⁴ and risk for the government.

The other two cases (low/low and high/high) need not be mentioned, as these are cases in which neither party is likely to invest, or both parties are willing to invest without need for subsidies (resp.).

The final issue to consider is the degree of “crowding out” that results from the blended finance subsidy. For Case 1 above, crowding out is never actually a problem: the purpose of the subsidy is to move the

41 E.g., so that private returns are high enough to ensure private participation while social returns continue to meet the same baseline level obtainable through no private sector participation in the project.

42 For example, tax incentives to invest in the power sector (simple subsidies) or power purchase agreements with “take-or-pay” provisions (deal structure) fall into this category.

43 Of course, the government can solicit proposals (or accept unsolicited proposals), and, using this feedback from the private sector, structure its own proposal following its own due diligence process.

44 The government has an interest in encouraging the private sector to prepare such proposals even as accepting the proposal as-is can lead to higher costs and excessive risk to the government. Mechanisms to address this problem exist, but the relevance of unsolicited proposals to MCC’s investment approach is not clear.

investment from one “type” (e.g., dirty coal) to another (e.g., clean solar), leaving the total investment level in the economy fixed. However, crowding out can be a concern for investments included in Case 2. Consider, for example, that the marginal investment in an economy (sans subsidy) can have high social returns (in principle). A subsidy targeted at an investment with lower social returns than this marginal investment would therefore reduce total welfare through crowding out, *ipso facto*, since a subsidy always increases investment at a rate of less than one-for-one.

Additionality is the degree to which total investment is likely to increase in the sector/economy due to the blended finance instrument. Additionality is always necessarily less than leverage precisely because crowding out effects are always greater than zero, and less than 100%. Crowding out – and hence additionality – is mediated by interest rates (domestic), exchange rates (foreign), and inflation (either domestic or foreign) feedback effects depending on the source of funds. Of course, while crowding out is always a cost, blended finance can sometimes be justified for sectors and project types in which social returns exceed the market’s expected private returns. Therefore, the “public-good-like” investments of our typology are also those investments for which crowding out is least worrisome.

AUCTIONS IN PRACTICE – COUNTRY EXPERIENCES

The purpose of auction facilities as it relates to blended finance transactions is to maximize value-for-money in infrastructure investments with private sector investors’ participation as debtor (e.g., through structured bonds and/or collateralized bond purchases) or equity investment into the project by minimizing the official subsidy (or MCC Grant) required given the specifics of the investment and market conditions. Additionality and Leverage also being key considerations for this subsidization using MCC grants and partner government support to achieve economically desirable outcomes (Figure D.3). Subsidies induce desired changes in behavior and information.

Figure D.3. Power Africa – Example for Illustrating Additionality and Leverage – Two key motivations for Supporting Blended Financing

Power Africa Kenya: Additionality Overview



Additionality

- **Financial additionality:** TAS helped the four off-grid businesses close debt and equity transactions greater than \$100mm, utilizing innovative financial solutions to advance the off-grid market
- **Ecosystem additionality:** the transactions created increased investor interest and crowded in new investors in the off-grid sector. TAS also enhanced the track record and capacity of local intermediaries, helping to grow and strengthen the investment ecosystem

Financial Additionality Examples

	 Ozuri	 greenlight planet	 PowerGen RENEWABLE ENERGY	 M-KOPA SOLAR
Size Total (US\$)	26 million	70 million	Undisclosed	5 million
Size Kenya (US\$)	7.8 million	42 million	Undisclosed	5 million
Engagement Type	Equity Transaction	Debt Transaction	Equity Transaction	Debt Transaction

Ecosystem Additionality Examples

	Demonstration effects: USAID helped increase traction amongst new investors (e.g., Marubeni, Oiko Credit) interested in off-grid market in Africa
	Sector-wide growth: donor support crowded in support and interest for both 1st and 2nd generation SHS players and enhanced the capacity of TAS intermediaries

Source: Power Africa Kenya Example (USAID) presentation “Using Blended Finance to Generate Additionality and Human Impact”. See <https://www.youtube.com/watch?v=qzH7uh6npJY>

When utilizing a blended finance instrument with an auction mechanism, e.g., through a bond that aims to finance a LEED-certified building investment, the subsidy provider (e.g., provincial government, city or municipality) ensures that a desired building design standard and financing structure is implemented at a lower financial incentive than most likely alternatives (e.g., in the form of put options attached to these bonds) especially when private sector interest is high, thus reducing the cost to the public.

Example: Vietnam Solar Program’s Competitive Bidding Strategy and Framework

Under its this Program, the Government of Vietnam aims to procure sustained and scalable financing that balances risk among stakeholders during the bidding process and over the life of the asset. Though a ministerial decree, the mandated bidding agency, based on market inputs and the level of competition, determines the procedures for bidding, qualification criteria for selection of IPPs and criteria for the winning selection using an iterative process of price discovery. This aims to keep the subsidy provided by the government funding to be minimal at the time of the bidding process and market conditions at the time.

The iterative bidding process typically occurs in real time via the internet which has been found to achieve greater price reductions than those arrived at through a more static paper-based process. A pre-requisite for this mechanism however is that there is market maturity, competition, and adequate preparation. An initial pilot can be conducted using two-stage sealed envelope bidding process⁴⁵ to get financial bids regarding the lowest tariff (minimum subsidy) proposed by the private sector partner in the transaction.

⁴⁵ The two-stage sealed envelope bidding process is a term of Vietnamese law the details of which are not relevant to this guidance.

The iterative process can then be introduced later after gauging bidders' interest and maturity of the market.

Auction mechanisms have been successfully used in infrastructure projects notably in Chile. Specifically, an energy auction the Chilean Government conducted to attract private partners and financing for solar energy in November 2017 received the lowest price for solar in the region with 2.15 US cent/kWh. After an iterative process, the tender process was amended in 2015 (Law 20,805) and a longer contract term (20 years) and different sized hourly blocks of energy supply (day, peak, night, 24 hours) were introduced the successful bid came through. The Chile government secured an average price of \$US 32.5/MWh for 600MW of solar and wind capacity. The project is expected to produce around 2,200GWh. This is a 75 per cent fall since its auction program began in 2015. As a result, consumer prices for power would fall by nearly 50 per cent once all the new projects are completed and online in 2024.

Irrespective of the auction mechanism used, for assessments of proposed blended-finance-related infrastructure projects to be done appropriately, one requires comprehensive cost accounting of the “True cost” of these to government, including contingent liabilities incurred, and subsidy elements being considered in its capital structure (i.e., debt-equity mix and any guarantees, viability gap financing, among others being considered) to “de-risk” the project and make it attractive for private investors with diverse investment mandates and risk-tolerance thresholds to participate in the blended finance transaction.⁴⁶

⁴⁶ World Bank's IEG 2019 bottom-up BF evaluation report found that average concessionality for IFC BF projects is 3.6% of total project cost. See also Khan, et al. (2022).



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