

Insight

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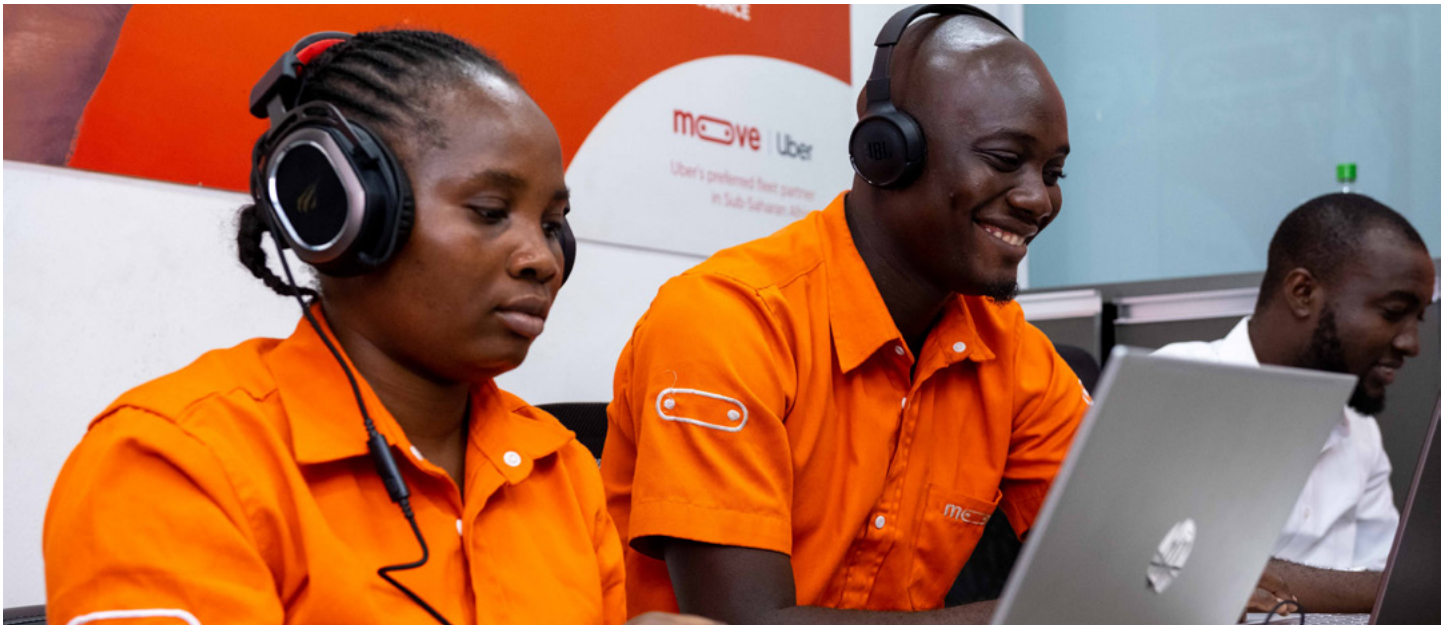
Risk, return and impact

Practical thinking on investing for development

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Summary

The ability to tolerate lower financial returns and higher risks than commercial investors can create opportunities for development finance institutions (DFIs) to have a greater positive impact on the societies in which they invest. However, requiring market rates of return can sometimes help DFIs to achieve impact, rather than hinder. Contrary to the view that DFIs reveal they are putting profits over development when they report substantial financial returns, it all depends on where those returns came from.

Understanding the relationship between risk, returns and impact requires digging into the detail. There is an underlying positive relationship between financial return and impact because both are driven by the commercial success of businesses, but to really understand risk, return and impact we must go beyond that to consider how assets are priced and how DFIs interact with private investment markets.

These debates are hampered by the lack of methods to measure the magnitude of impact in a way that allows comparison across different types of impact, delivered in different places by different investors. BII has recently introduced an **Impact Scoring tool** that assigns a score to investments, based on their alignment with our strategic impact objectives. We hope to have a large enough sample to begin to analyse delivered impact alongside measures of financial risk and return by the end of this five-year strategy period. This note discusses these issues in principle, and how we might interpret data on impact and returns once it becomes available.

The main points are:

1. DFIs should be seen as pursuing a set of distinct investment strategies, that deliver impact in different ways. These strategies involve different combinations of impact, risk, and return.
2. By pricing on commercial terms, DFIs can ensure that businesses who have no need of their support see no advantage in obtaining it. DFIs do not have an impact when they crowd-out private investors without adding anything, and pricing on commercial terms can help prevent that. This does not mean behaving in exactly the same way as commercial investors – it means operating in market segments where finance is lacking but setting prices that would allow the entry of commercial investors. DFIs are asked to mobilise private investment, which requires demonstrating that attractive rates of return can be made.

Contents

Summary	2
Introduction	4
01. Risk and additionality	6
02. Risk and impact	9
03. Investing on commercial terms	12
04. The relationship between impact and returns, within and across portfolios	14
05. Varieties of impact	17
06. Investing on concessional terms	18
07. Wages and prices	21
Conclusion	23
Annex: the basics of pricing debt and equity	24

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3. DFIs can sometimes combine higher impact, higher risk, and lower financial returns by investing on concessional terms. But this must be done selectively, only when necessary and justified by potential impact. Offering concessional finance indiscriminately would crowd-out private investors, and waste development finance on subsidising private profits. Sustainable enterprises must sell things for more than they cost to produce. Concessional finance cannot always bring that about. It is a mistake to think DFIs have a dial they can turn towards lower returns until impact is achieved.
4. One of the ways in which DFIs generate impact is by having a higher tolerance for risk than purely commercial investors. But riskier assets are often priced to generate higher expected returns. Although DFIs often operate in market segments where risks are not fully compensated for by returns, high returns are sometimes the result of successful risk-taking.



Introduction

Whether impact investing involves sacrificing financial returns for the sake of social benefits is a hotly contested question.¹ There is less debate about publicly-owned development finance institutions (DFIs), such as British International Investment (BII), who are expected to prioritise development over profits. One view among observers of DFIs is that when DFIs make high financial returns it reveals that they are behaving like commercial bankers and private equity investors, and that DFIs doing more for development would be making less money.²

There is some truth to the idea that DFIs ought to be making less money than commercial investors. If there wasn't, then our shareholder the FCDO could set us a higher financial return target than the investment return floor of at least 2 per cent, stated in our Investment Policy, and we would be no less developmental.³ Our Catalyst portfolio, for which we set a higher impact hurdle, would not need to be more accommodating on financial returns.⁴ Investments deliver impact in various way, and of various sorts. Some varieties require tolerance of lower returns, for others DFIs should be making commercial rates of returns.⁵

1 Brest and Born (2013) "When Can Impact Investing Create Real Impact?" argue that it is only by accepting lower returns that investors can have an impact, relative to what the market is already doing. An alternative view could be that the market contains many styles of investing (momentum investing, value investing etc.) and impact investing is a style that may outperform others, whilst affecting the allocation of capital in the real economy, at least for a time. Barber et al (2021) "Impact investing" in the Journal of Financial Economics, present some empirical evidence that impact oriented VC funds make somewhat lower returns than mainstream funds. A seminal paper, Saltuk and Idrissi (2012) "A Portfolio Approach to Impact Investment", encourages investors to "abandon broad debates about whether they need to trade-off financial return in exchange for impact".

2 For example, The Independent Commission for Aid Impact observed that CDC Group, as BII was called at the time, had reported financial returns above its required minimum, and surmised "CDC could have pushed harder on achieving development impact, while still meeting its financial return hurdle". The development industry news service Devex coverage of BII's annual results observed "Development experts routinely voice concerns about whether development finance institutions such as BII are taking on enough risk or if they are too focused on financial returns." <https://www.devex.com/news/2021-a-record-year-for-bii-ahead-of-transition-to-new-name-strategy-103584>

3 BII's investment policy is available here: <https://assets.bii.co.uk/wp-content/uploads/2021/12/14080613/investment-policy-2022-2026.pdf>

4 BII's Catalyst portfolio seeks highly developmental investment opportunities with challenging risk-return profiles. The intent is for loss tolerances to be set at 30% of the Catalyst Portfolio's aggregate investment value, and for any losses to be fully funded over time by returns on other Investments. The requirement for overall returns to exceed 2% includes the Catalyst portfolio.

5 Bannick et al. (2017) "Across the Returns Continuum" SSIR, argues that a spectrum of capital instruments is required to fully exploit the universe of different impact opportunities.

It is a mistake to look at a DFI's returns and think that when they make more money, they are having less impact. The relationship between development impact and financial risk and return is complicated, and you cannot infer lower development impact from higher returns. Making commercial rates of return is actually helpful for some of the things that DFIs exist to do, such as mobilising investment by others.

The first and most important point is that private sector **development finance has an impact when it helps grow successful and sustainable businesses**. If we are investing in a manufacturer of clean cookstoves to create jobs and reduce indoor pollution, we will have more impact when that business sells millions of stoves and hires lots of workers. The converse is also true: when businesses are doing badly, jobs can be lost and environmental, social and governance standards can suffer. Equity investors in a business that succeeds are more likely to make higher returns, and debt investors are more likely to be repaid. If BII has a run of good fortune and invests in an unusually good crop of successful high-impact firms, all else equal our financial returns should rise, not fall. DFIs might increase impact by tolerating lower portfolio returns, but we never invest hoping to lose money on a failed business.

A second important point, which ought to go without saying but sometimes gets forgotten, is that we invest across Africa and Asia so **our returns measured in British pounds or US dollars can be very driven by movements in exchange rates, and by changes in market sentiment towards different regions**. If the economic outlook in Africa improves and investors become more positive about the continent, equity valuations will rise across the board, and our reported returns will too. When market sentiment sours and valuations fall, we may report negative returns but that does not mean our development impact has risen. When local currencies appreciate against the dollar and sterling, that does not mean our impact has fallen. It is very hard to infer anything about impact from a DFI's reported annual financial returns, without understanding *why* returns have risen or fallen.⁶

A complete understanding of the relationships between risk, return and impact will require digging into the details of asset pricing, investment selection and how DFIs interact with project sponsors and private investors, to do things that others would not. Tolerating lower risk-adjusted returns than private investors would is part of the story, but not all of it.

The purpose of this note is to explore how the relationship between risk, returns and impact can change in different contexts, and in relation to what DFIs are trying to achieve, and explain some of the concepts involved. These questions will be discussed in general terms. BII is continually refining its approach to portfolio construction – this note outlines some of the issues that will inform our thinking, it does not describe BII policy or practice.

Pricing equity and debt

This paper talks about pricing investments, and the relationships between impact, risk and returns, in general terms. But there are important differences between debt and equity, which have implications for the nature of the relationship between returns and impact. Some of the discussion in this paper is more easily applied to equity, where financial returns vary greatly. These distinctions are explained in the annex: the basics of pricing debt and equity.

⁶ Another point that may sometimes be overlooked is that reported portfolio returns reflected historic investments that can go back decades, and so are uninformative about recent investment decisions.



01

Risk and additionality

Development finance is required to be additional. The simplest way to think about additionality is “making investments that private investors would not”. In truth, it is rarely so binary, and additionality often consists of making investments larger than they would otherwise have been; or more likely to succeed and generate impact over the long-term by providing capital on more suitable terms; or supporting enterprises to pursue a more developmental business plan and adopt better practices than would be the case under a purely commercial alternative.⁷

But, sticking with the simplest conception of additionality for ease, it seems intuitive that DFIs can do things private investors will not by having a higher tolerance for risk.⁸ And that is true – DFIs do make investments that are outside commercial risk-return appetite. But if DFIs are additional because they take more risk than commercial investors, does that mean they should also make lower financial returns?

Not necessarily. One of the foundational ideas in finance is that returns are a reward for taking risk, and that because many investors are risk averse, assets are priced so that on average returns are higher from riskier investments. That’s because if riskier investments did not offer higher returns on average, nobody would want to make them.⁹ The minimum expected return that investors will accept rises with risk.

7 The MDB’s harmonized framework for additionality in private sector operations can be found here: https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/development+impact/resources/201809-mdbs-additionality-framework See Carter et al. (2021) “The elusive quest for additionality,” World Development, for a discussion of the difficulties in establishing additionality.

8 Risk tolerance is partially a matter of portfolio construction, offsetting higher risk investments with lower. But absolute loss tolerance is also an important factor in decision-making. Investors will usually try to limit their exposure to losses on individual transactions. Relative to their size, DFIs can have greater loss tolerance than commercial investors

9 In an idealised market, without various complications of the real world, we would expect prices to adjust so that risk-adjusted returns are equalised across all possible investments.

If DFIs were operating in markets where riskier investments could be priced for higher expected returns, they could be additional by selecting riskier investments just outside of commercial risk-return requirements, and they would frequently report what would look like high portfolio financial returns (even if sub-commercial). In which case higher returns could not be interpreted as a sign of lower impact.

Sadly, DFIs face less-appealing investment choices. In simple textbook illustrations of investment decisions, risk is often portrayed as symmetrical – the chance of failure is matched by the chance of a big win. Whereas if you are investing in primary agriculture in Africa, for example, there may be little chance of the business becoming a billion-dollar ‘unicorn’ to offset the risk of it going bust. If the underlying financial value that an investment could create is not high enough, it will be impossible to price that investment so that the expected returns are high enough to offset the risks. Commercial investors would decline such investments. DFIs might accept them. When DFIs are urged to take more risk, there is often an unspoken corollary “and accept lower average returns”.

But we should not dismiss the idea that higher risk implies higher returns altogether. Cole et al (2020), for example, found that the IFC’s equity investments often made the highest returns when they were early into frontier markets, when risks were high and valuations were low.¹⁰ When BII negotiates the terms of an investment, we want the potential returns available to our counterparties to be enough to ensure their participation and best efforts, but beyond that we are not here to see others profit at our expense.¹¹ When we are looking at a risky proposition, we can drive a hard bargain and require higher returns when things go well. That is why DFIs employ experienced investment professionals to negotiate the terms of investments, to protect taxpayer’s money by not mispricing investments.

Even if DFIs cannot and should not have the same risk-return requirements as private investors, riskier investments can often be priced to generate higher average returns. High financial returns are not evidence that DFIs are being risk averse and not additional.

¹⁰ Cole, Shawn, Martin Melecky, Florian Mölders, and Tristan Reed. (2020) *Long-run returns to impact investing in emerging markets and developing economies*. No. w27870. National Bureau of Economic Research.

¹¹ Unless there is a valid case for a subsidy to raise other investors’ returns to make something good happen that would not otherwise.

Expected returns and risk-adjusted returns

This paper uses the term “expected returns”. An expected value is the product of outcomes and probabilities. The expected value of rolling a 6-sided dice is 3.5. The expected value also corresponds to the average. If you roll dice repeatedly and then take the average, it will be around 3.5. Similarly, if an investment portfolio is large enough and expectations were accurate, the portfolio average return will roughly equal its expected return.

When taking investment decisions, investors usually do not specify multiple scenarios and assign probabilities to compute an expected return. That could be seen as spurious accuracy. When equity investors negotiate valuations with firms, they might look at a ‘base case scenario’ and the returns that are expected under that scenario. Whether this base case corresponds to a true expected return (the ‘mean’) or the most likely return (the ‘mode’) is not always clear. Investors may also separately consider upside and downside scenarios and discuss their likelihoods without assigning probabilities.¹²

In the example below, there are four possible scenarios, and the expected return is 8.¹³ Returns under the most likely scenario (the base case) are 10.

	Outcome	Probability
Base case	10	0.4
Upside scenario	20	0.15
Downside scenario	5	0.2
Disaster	0	0.25

When the word “expected” is taken to mean “most likely” it can cause confusion when DFIs interact with potential investees. If DFIs announced they make equity investments with an expected return of 5 per cent, that might be misinterpreted as the return they look for under a base case (most likely) scenario. Far from it. Entrepreneurs often have an optimistic view on their probabilities of success. A DFI may require a valuation that implies a 20 per cent rate of return under their base case scenario, but privately expect something different to materialise on average.

Risk-adjusted returns

Although expected returns might be called “probability adjusted” returns, that is not the same thing as “risk adjusted” returns. Risk-adjusting returns involves applying a penalty to riskier investments. Consider two investments A and B that both offer the same expected return of 10 per cent. For investment A potential returns range from 0 to 20 per cent, for B they range from -100 per cent to +100 per cent. If you are risk averse, you dislike bearing the risk of very bad outcomes even if offset by the chance of very good outcomes. You would prefer investment A. When considering the relative appeal of different investments, investors can apply a “risk adjustment” to expected returns. For example, for investment B you might adjust for risk by subtracting 1 per cent and say the “risk adjusted” expected return is only 9 per cent. That adjustment tells you how much higher the expected return of B must be, before you’d choose it over A.

In theory, rather than think about the relationships between impact, risk and return we could just talk about impact and risk-adjusted return. But because the correct risk adjustment is hard to agree, and is theoretical rather than observable, it is useful to consider risk and return separately.

¹² For debt, two scenarios are considered: repayment and default (although what is assumed to happen upon default actually nests different possible scenarios).

¹³ Which is $(10 \times 0.4) + (20 \times 0.15) + (5 \times 0.2) + (0 \times 0.25)$.



02

Risk and impact

High risk does not imply high impact, but higher impact investments are often riskier. There are plenty of reasons why an investment might be high risk without that implying high impact. Launching a chain of high-end restaurants would probably be a very risky enterprise, but that risk does not imply it would make an outsized contribution to development if it succeeded. A start-up run by inexperienced management would also be risky, but not necessarily high impact. And so forth.

Some of the reasons why an investment would be high risk, however, are also reasons why an investment would have more impact if successful. Investments in lower-income countries, that must contend with macroeconomic instability, including frequent currency depreciations and hard currency shortages, legal and regulatory uncertainties and corruption, unreliable suppliers, difficulties recruiting skilled staff, and – perhaps above all – weak and uncertain demand – are risky. However, the creation of successful businesses that raises people’s real incomes in poorer countries will also make a larger contribution to development.

Not everything runs in the direction of higher impact in more challenging environments – some positive economic spillovers may be less likely to occur if there are too many problems in the local economy that impede their transmission.¹⁴ But a presumption that investments in lower-income countries tend to be both riskier and have higher impact when successful, compared to investments in higher-income countries, is reasonable.

Within the same country, there can also be reasons why riskier investments can have higher impact when successful. An investment in one of many entrants trying to disrupt a market with new technologies, where only a few eventual winners will operate at scale and most entrants will fail, could be one example.

¹⁴ See discussion of spillovers and “weak links in the chain” on pages 11 and 12 of the BII strategy background paper “The Economics of Development Finance” available here: <https://assets.bii.co.uk/wp-content/uploads/2021/11/04120151/The-economics-of-development-finance-1.pdf>

But this positive relationship between risk and expected impact can only be true up to a point. In the limit, if a business is certain to fail, it is (almost) certain to have no impact.¹⁵ Expected impact can only increase as risks increase if “impact when successful” rises fast enough to offset the higher probability of failure.

Here is how that might look. In this example, an investment only has impact if it is successful, and impact when successful, which is measured on a notional scale of 0 to 100, is higher for riskier investments.

Impact if successful	100	80	60	50	40	20	0
Probability of success	0	0.2	0.4	0.5	0.6	0.8	1
Expected impact	0	16	24	25	24	16	0

In this case, there is a sweet spot where expected impact is highest, and beyond that point taking more risk would reduce impact. DFIs are often urged to invest more in fragile and conflicted-afflicted low-income countries. That is not necessarily a good idea, if the risks of failure are too high.

¹⁵ Almost, because a business might fail but still have an impact. Perhaps the business fails after the emergence of a successful competitor, who has a positive impact on society, for example. An investment may also fail, in the sense of losing investors' money, but the business can survive bankruptcy as a going concern. However, these are not scenarios that DFI should count on. When faced with a business that is highly likely to fail, the correct choice is not to invest.

Measuring impact for portfolio construction

Investors could construct portfolios that optimise the combination of risk, return and impact, if they had a good measure of impact.¹⁶ Investment decisions that incorporate risk, return and impact are very hard to make because nobody has a universal yardstick to measure relative magnitudes of impact across various different types of investment in various settings. That is one reason why this paper is written in terms of generalities and principles, rather than being based on data.

At BII we adhere to the Operating Principles of Impact Management.¹⁷ The first principle is to set strategic impact objectives, the second is to manage those objectives at a portfolio level. For that purpose, we have created an impact scoring tool that assigns a number between -1 and 10 to investments, based on their alignment with our three strategic impact objectives.¹⁸ With this tool in hand, we can begin to analyse expected and delivered impact alongside measures of financial risk and return in our portfolio. We are only at the start of using this tool and hope to have a large enough sample to begin to analyse by the end of this five-year strategy period. And, as this paper argues, correlations between returns and impact would need to be interpreted with care.

Our impact score is best thought of as expressing our institutional view of what high (and low) impact means, and which investments are more likely to generate it. This view is based on our understanding of what development means and where DFIs can make the greatest contribution towards it.¹⁹ Impact investors with other priorities would score investments differently.

Some investors attempt to place dollar values on the impact of their investments, often based on an estimated “willingness to pay” for the good or service that the underlying enterprise produces.²⁰ Some adjustment for ability to pay would be necessary for a DFI such as BII that reaches people with very different income levels. There are also various efforts under way to devise methods for adding monetised impact to corporate accounts.²¹ Dollar valuations of impact would be appealing for portfolio construction purposes.²² However, these methods can be labour and data intensive, and are very difficult to apply across a broad range of different varieties of impact in different geographies, in a credible way.

¹⁶ McCreless (2017) describes the idea of an efficient impact frontier here: https://ssir.org/articles/entry/toward_the_efficient_impact_frontier

¹⁷ <https://www.impactprinciples.org/>

¹⁸ The BII impact score is described here: <https://assets.bii.co.uk/wp-content/uploads/2022/02/24121022/British-International-Investment-Impact-Score-2022-26.pdf>

¹⁹ As described here: <https://assets.bii.co.uk/wp-content/uploads/2021/11/04120151/The-economics-of-development-finance-1.pdf>

²⁰ The method developed by Y-Analytics is an example. See <https://yanalytics.org/our-approach#where-evidence-and-capital-converge>

²¹ See Serafeim and Trinh (2020). A framework for product impact-weighted accounts, Harvard Business School, for example.

²² This BII blog discusses paper by Jonathan Harris on incorporating monetised impact into portfolio construction: <https://www.bii.co.uk/en/news-insight/research/a-framework-for-investing-with-altruism-by-jonathan-harris/>



03

Investing on commercial terms

Many DFIs draw a sharp distinction between the main balance sheet, which invests on “commercial terms”, and any more concessional activities or blended finance facilities.²³ If investing on commercial terms means pricing assets in the same way as commercial investors, that raises the question of how DFIs can be doing something different to commercial investors if they are asking for the same returns for taking the same risks.

Investing on commercial terms does not mean exactly mimicking what commercial investors are already doing, it means being active in segments of the market where commercial investors are not active but pricing assets in the way that commercial investors would, if they were.

If DFIs approached the market offering to over-value equity or undercharge for debt, we would be flooded with approaches from firms looking to take advantage of this largess.²⁴ Keeping our pricing keen and placing higher demands on the businesses we invest in, such as having higher environmental, social and governance (ESG) standards, increases the likelihood that sponsors will only work with DFIs if they genuinely need our support. DFIs have impact by doing something additional to the market, so requiring commercial rates of return can therefore be helpful, rather than inimical, to our development mandate. **It ensures that firms who do not need support from DFIs see no advantage from obtaining it.**

²³ This is discussed in the European Development Finance Institution guidelines for market benchmarking: <https://edfi-website-v1.s3.fr-par.scw.cloud/uploads/2021/04/210416-DFI-Market-Benchmarking-Guidelines-Final-1.pdf>

²⁴ However, when local financial markets are uncompetitive, which reduces local investment activity in the real economy, DFIs may be justified in undercutting local private financiers and still regard themselves as investing on commercial terms, because the DFI is trying to establish prices that are closer to those that a competitive financial sector would set. That possibility is discussed in Buiter and Schankerman (2002) “Blended Finance and Subsidies: An Economic Analysis of the Use of Grants and Other Subsidies in Project Finance by Multilateral Development Banks”

DFIs are also charged with the task of mobilising private investment into emerging and frontier markets. That can sometimes mean creating and structuring investments that offer a risk-return profile that will attract commercial money, when combined with the added comfort of having a DFI as co-investor. After working to create a “bankable” project, DFIs often invest on the same terms as commercial investors. More generally, **having the goal of mobilizing private investment means that DFIs want to demonstrate that it is possible invest successfully in frontier markets. To do that, we must establish pricing benchmarks that commercial investors would view as an attractive entry point to a market.** We want to induce commercial investors to follow our example, and we will not do that when we make lower returns than they would want.²⁵

When negotiating an investment that involves private co-investors, DFIs often ask the private investors to take the lead on pricing. This helps reduce the risk that DFIs are distorting the market by undercutting private investors. If the project sponsor is then unable to raise the required quantity of finance at that price, DFIs can invest with greater confidence of financial additionality.

Private investors will not enter market segments if they see better opportunities elsewhere, but there are several reasons why that might be. It could be because the volume of business is not expected to be high enough to justify fixed overheads. DFIs are often judged by their reported gross returns, but in many respects returns net of overheads is the more relevant metric. DFIs may price debt and value equity so that gross returns match comparable commercial rate of return, but DFIs can be willing to bear higher transaction costs to generate those returns than commercial players would, and hence may make lower net returns. When trying to develop new markets, DFIs may maintain a focussed team where the volume of transactions would not be enough to justify a commercial investor doing so.

Some markets may also experience credit “rationing”, which refers to the practice of lenders of maximising their profits by deliberately keeping supply below demand, so that there will be firms with acceptable repayment probabilities that would like to borrow at prevailing prices but cannot.²⁶ In such cases, DFIs can lend at commercial rates and still have additionality.

All this means that for some (but not all) of the things that DFIs are trying to achieve, especially where the objective involves bringing a market to the point where private investors will enter, then requiring commercial rates of return is helpful for impact, not inimical to it.

²⁵ Cole et al. (2021) “Long-Run Returns to Impact Investing in Emerging Markets and Developing Economies” find that the IFC’s private equity investments in less developed markets have delivered financial returns that exceed relevant benchmarks (with the exception of the most recent decade). This is generally regarded as a good thing, consistent with the IFC’s mission, because it will encourage private investors to enter these markets.

²⁶ The economics literature on credit rationing is enormous. A good introduction is Ghosh, Mookherjee and Ray (2000). “Credit rationing in developing countries: an overview of the theory”



04

The relationship between impact and returns, within and across portfolios

The question of whether DFIs must tolerate lower returns to achieve more impact is really a question about average or expected returns. Investment is an uncertain business, and you can only make choices based on expectations. Realised returns will then usually turn out to be better or worse than expected. Making an investment is therefore a bit like rolling dice. Imagine, instead of rolling conventional dice numbered one to six, choosing between different coloured dice with different numbers that represent financial returns. The red dice has numbers zero to five, the blue has one to six and the green two to seven. If DFIs must tolerate lower returns to have more impact, that means rolling the red dice.

Whether DFIs must tolerate lower returns to have more impact depends on the universe of investment opportunities. If you can find investment opportunities that will achieve all your impact objectives and deliver high average portfolio returns, you can keep rolling the green dice and there is no need to pick up the red. It would be irresponsible to start rolling the red dice, because it would reduce the funds that can be recycled into future impact-generating investments. However, if some impact objectives can only be achieved by rolling the red dice, then the optimal impact portfolio will include these, alongside the blues and greens, which will pull down average returns.

How can we learn about what combinations of impact, risk and return are available to investors? Assuming they have adequate measures of impact (which is generally not the case), data from the portfolios of impact investors could offer us some clues.²⁷ But data on impact, risk and return within portfolios must be interpreted with care.²⁸

²⁷ Impact is about making a difference, but impact reporting is dominated by impact-relevant metrics that tend to be uninformative about the difference investments makes to people's lives and how to value that. See <https://www.devex.com/news/opinion-measuring-impact-may-never-be-as-straightforward-as-measuring-financial-returns-96020>

²⁸ We should bear in mind the relationship between pricing and additionality, and how needlessly concessional investments that crowd-out other investors can have no impact, and also that an investor's portfolio may display an absence of certain combinations of impact, risk and return because they are making poor choices, rather than because those investment opportunities do not exist.

If portfolio data measures *realised* impact and returns, then we might expect to see a positive correlation between impact and returns, even if investments with lower expected (or average) returns have higher impact. That's because *realised* impact and *realised* returns are both affected by the commercial performance of the underlying investee. That creates positive “covariance” in the differences between *expected* and *realised* impact and returns, which means that the variation of realised impact and returns around their averages is positively related. It means that when your financial returns dice rolls a high score, impact is likely to be high too. We cannot infer from this positive correlation that impact investors would have more impact if they targeted higher returns, by picking up the green dice.

The figure below shows three example portfolios, each corresponding to a different investment strategy (the red, blue and green dice). Realised impact is plotted on the vertical axis and realised financial returns on the horizontal. The expected financial return from the low-impact portfolio is roughly 10% (green dice); for the medium it is 5% (blue); and for the high impact it is 2% (red). Expected impact (measured on a notional scale) for the three strategies is 30, 40 and 50 respectively. The correlation between impact and returns within portfolios is positive, but the correlation across portfolios is negative. There are various potential reasons why higher impact portfolios might or might not have lower average financial returns; the point is merely that observing a positive correlation *within* a portfolio does not answer the question of whether investors must tolerate lower returns for greater impact.

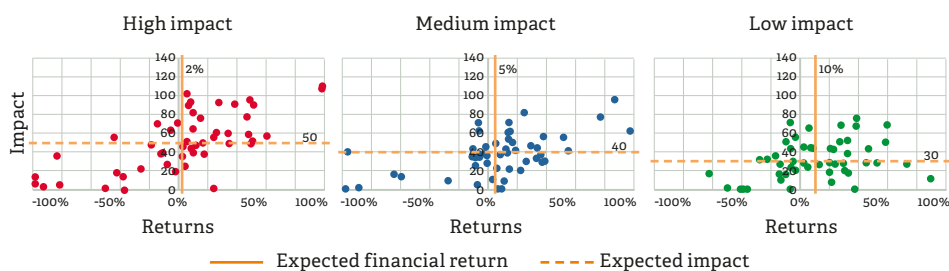


Figure 1: A negative correlation between impact and returns across portfolios, and a positive correlation within each portfolio

The correlation between impact and returns within a portfolio also reflects how that portfolio was constructed. Each example portfolio above was modelled as investments with the *same* expected return and impact, and each dot represents how the results of individual investments deviate from expectations. But in reality, DFIs select from investment opportunities that present *different* combinations of expected returns and impact.

We might expect portfolio construction decisions to introduce a negative correlation between impact and returns.²⁹ Even if there is no correlation between impact and returns in the universe of investment opportunities, investors create one in their portfolio by consistently choosing some combinations and rejecting others.

²⁹ This is an example of statistical phenomenon known as “Berkson’s paradox”. An example sometimes used in statistics classes to explain this paradox is: someone looking at celebrities may wrongly infer that talent is negatively correlated with attractiveness, because many celebrities are either attractive or talented, and some are both, whereas people who are neither talented nor attractive do not often become celebrities.

Let's say expected impact is rated low, medium, and high (and scored from 0 to 2) and expected financial returns are also rated low to high (and scored from 0 to 2). The decision to invest is taken when the sum of these scores is two or more.³⁰ That means investments with high expected impact (scored 2) are made regardless of expected financial returns; medium expected impact investments will only be made if expected financial returns are medium or high (scored 1 or 2) and low expected impact investments will only be made if expected financial returns are high (scored 2). This selection introduces a negative correlation between expected impact and return across selected investments, as shown in Figure 2:

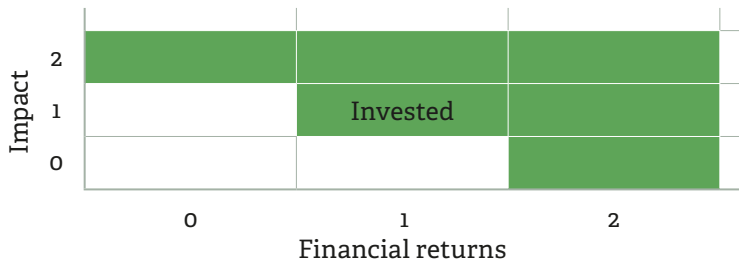


Figure 2: A negative correlation between impact and returns created by selection decisions

If we observed a portfolio that looked like this, we might infer something about the universe of investment opportunities. If we are prepared to assume the investor is not systematically missing certain types of investment opportunities and has made the correct selections from those they find, then we can infer from this pattern that there aren't enough opportunities that are both high impact and high return, so to maximise their impact the investor must accept less-appealing combinations.

³⁰ This is for the sake of illustration only. Investors are not likely to take investment decisions solely on the basis of two scoring tools. BII does not use its Impact Score as a hurdle for individual investment decisions.



05

Varieties of impact

So far, we have spoken of impact as if it is a single thing. Impact scoring systems can be designed to measure impact on a single scale, but it could also be helpful to think of different varieties of impact and consider them separately. The BII impact score is constructed from three sub-scores for productivity, sustainability, and inclusivity, for example.

A DFI's total portfolio could also be analysed as a set of sub-portfolios, each representing a distinct investment strategy – infrastructure project finance, SME financing, low or middle-income countries, and so on. We can then ask which of these strategies may, or may not, require tolerance of higher risks or lower returns.

For example, one important way in which DFIs create impact is by supporting pioneering firms. These investments can be higher impact because doing something pioneering creates social returns by producing knowledge that other investors and firms can use.

BII's Catalyst portfolio is designed to pursue pioneering impact and that requires a higher tolerance of risk than in our Growth portfolio investments, because by definition these pioneering investments lack track record and are more of a leap in the dark. That also means we must also have higher loss tolerance. But it remains to be seen how average returns will actually evolve – recall that riskier assets can sometimes be priced to produce higher returns.

A comparison of impact, risk and return between BII's Catalyst and Growth portfolios would be a first step towards optimal portfolio construction. But a portfolio could also be analysed by taking different "cuts" by impact theme, instrument, geography and so on. This may help flesh out our understanding of what combinations of impact and returns are available in the universe of investment opportunities.



06

Investing on concessional terms

If an investment cannot be agreed on terms that commercial investors will accept, there could be a case for providing concessional finance.³¹ That comes at a cost – it means forgoing the opportunity to invest elsewhere on commercial terms and it may also involve losing money in the absolute sense of making negative returns. That cost must be justified by the benefits. Concessional finance should only be used for investments where private risk-adjusted returns are below commercial hurdle rates, and the gap between social and private returns is large enough to justify the subsidy.³²

It is worth remembering that investments generate impact by creating or growing commercially sustainable private enterprises. That involves selling things for more than they cost. Overpriced equity or under-priced lending cannot fix the problem of costs exceeding revenues.³³ There is no dial that investors can keep turning to reduce returns until impact is achieved.

31 Wealthy countries routinely offer astonishingly large subsidies to their domestic industrial enterprises, in the form of grants and soft loans. Firms in lower income countries do not compete on a level playing field. See: <https://www.imf.org/en/Publications/analytical-notes/Issues/2022/04/22/Subsidies-Trade-and-International-Cooperation-516660>

32 Our strategy background paper The Economics of Development Finance describes where investments with particularly large social returns are likely to be found. <https://assets.bii.co.uk/wp-content/uploads/2021/11/04120151/The-economics-of-development-finance-1.pdf>

33 This is an oversimplification. The cost of capital can make up a large share of overall costs, where there is some scope for initial profitability to rest on cheap capital. But the notion of commercial sustainability includes the idea that eventually a business should be able to service a commercial cost of capital.

So, while concessional finance cannot turn a fundamentally unsound business into a profitable enterprise, there are cases where it can help commercially sustainable enterprises get off the ground. If the expected social returns are large enough, a subsidy is justified. It is here where lower financial returns and higher development impact can go together, and where the ability to tolerate lower portfolio returns can be necessary to increase impact. But as already discussed, DFIs must be very careful not to allocate concessional finance unnecessarily. All business owners and investors would like to benefit from concessional finance if they can get it, even if they do not need it. DFIs and MDBs have agreed guidelines to govern the allocation of blended concessional finance.³⁴

One of these principles, which related to pricing and returns, is subsidy minimisation. A smaller subsidy implies higher returns for the provider of concessional finance, so even when a subsidy is justified, it should be priced to generate as high returns as possible, subject to constraints. Subsidy minimisation requires that the investment to be structured so that all investors can expect the minimum risk-adjusted returns required to secure their participation, but no more. The subsidy is too large if it confers excess returns on investors. What matters here are expected returns at the point of investment. Because realised returns are uncertain, even if the subsidy is minimised investors will sometimes make high returns from transactions that involved concessional finance when things turn out better than expected, and they should also sometimes lose money when things turn out worse.

In some cases, it may be possible to run a competitive process to minimise a subsidy. Often, however, DFIs will be dealing with a unique project sponsor without the possibility of a competitive process to maximise their cost of capital (minimise the subsidy). Investors may be able to build a credible financial model of a project that quantifies the viability gap and derive the appropriate financial concession from there. Otherwise, where there are too many unquantifiable uncertainties for models to be credible, minimising the subsidy can be a matter of negotiating hard with counterparties and trusting mission-oriented development finance professionals not to give away concessions unnecessarily.

Investment always involves taking risks, but here the risks are heightened because DFIs are capitalised from Official Development Assistance budgets and using that money to needlessly subsidise private investment would be a painful error. But the risk of unnecessary or excessive subsidy is accompanied by the risk of failing to subsidise projects that would have generated large social benefits, had they gone ahead. Some inefficiency is inevitable in all public spending, including traditional grant-financed aid. That does not mean we should be blasé about bad allocation decisions; it means being realistic about how these risks compare across all possible forms of development spending.

Another important question is the incidence of the subsidy. In projects such as renewable energy generation, where there is usually a transparent (to those involved, if not the public) and direct connection between the cost of capital and the tariff, a larger subsidy means lower prices for electricity customers. If the concessional finance is allocated to a business in a competitive market, the subsidy can also be passed through to customers. There is some controversy over the idea of using public finance to “de-risk” or otherwise subsidise private investment, which may be partially motivated by the concern that the beneficiaries are wealthy investors and asset managers.³⁵

34 The DFI MDB “enhanced principles” are presented in the 2017 report of the DFI Working Group on Blended Concessional Finance for Private Sector Projects, available here: https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/bf/bf-details/bf-dfi The OECD uses the words blended finance to refer to the combination of public and private finance without the public finance necessarily being concessional, and the OECD Development Assistance Committee has published blended finance principles: <https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf>

35 See Adam Tooze in The Guardian for example: <https://www.theguardian.com/commentisfree/2021/nov/16/cop-26-big-business-climate-crisis-neoliberal>

This is an area where more research and evidence would be valuable.³⁶ Project sponsors struggle to credibly signal to DFIs and other providers of concessional finance that a subsidy is genuinely merited, and providers of concessional finance face difficult allocation decisions. Meanwhile, there are understandable concerns that public funds are being misused. In the context of the climate emergency, generous subsidies to accelerate investments needed to decarbonise the economy are often advocated.³⁷ Some of those subsidies would doubtless be redundant. But there is also a poverty emergency, and the case for subsidising investments that will raise living standards in lower income countries can be just as strong.

³⁶ Some useful existing references include World Bank (2018) Strategic Use of Climate Finance to Maximize Climate Action: A Guiding Framework <https://openknowledge.worldbank.org/handle/10986/30475>; IFC (2020) The Why and How of Blended Finance <https://www.ifc.org/wps/wcm/connect/768bcbe9-f8e9-4d61-a179-54e5cc315424/202011-New-IFC-Discussion-Paper.pdf>

³⁷ The book "Supercharge Me" by Eric Lonergan and Corinne Sawers makes a strong case for "extreme positive incentives for change", which includes subsidies for private investment. The argument that subsidies for renewable energy and other green technologies are better than carbon taxes is now widely accepted. See <https://noahpinion.substack.com/p/why-renewable-subsidies-are-better>



07

Wages and prices

One final area in which lower financial returns might generate higher impact has to do with the wages and prices set by the underlying enterprises that receive investment.³⁸ Investors can sometimes receive higher returns when businesses have market power, so they can hold down wages and hold up prices. In such cases, firms would have a more positive impact on society by making less money.³⁹

As a rule, DFIs do not manage the companies that they invest in, although they may sometimes have influence, by holding seats on the board for example. If we assume that the shareholders and the managers of most firms will wish to maximise shareholder returns, that implies DFIs should avoid generating financial returns in a way that is inimical to having a positive impact on society by considering market power when they take investment decisions. DFIs should try to invest in firms that are seeking profits in competitive markets, by offering better products at better prices. Competition constrains profits, so that greater benefits are felt by workers and consumers. DFIs should avoid supporting dominant firms that are making excess profits and acting anti-competitively.

Occasionally, DFIs may be able to invest in firms that are owned and managed by people with pro-social objectives, who will forgo some opportunities to raise profits when that comes at the expense of impact. One of the ways in which DFIs can be additional is by providing patient capital and enabling firms to pursue more impactful business plans than would be possible with commercial investors who may be looking to maximise earnings and exit quickly. The terms of investment and the choice of strategy are sometimes part of the same negotiation, and DFIs will often encourage firms to serve lower-income customers, for example, which investors focussed purely on maximising returns may not.

³⁸ This BII blog discusses a paper by Ben Roth, about the relationship between impact investing and pricing: <https://www.bii.co.uk/en/news-insight/research/impact-investing-a-theory-of-social-enterprises-by-ben-roth/>

³⁹ In other cases, there can be a risk of firms with access to subsidising finance selling goods at prices below which other firms can produce profitably, damaging local markets.

Through their investments, DFIs want to demonstrate that responsibly run businesses are more likely to be financially successful. In addition to ensuring that the businesses that they invest in comply with minimum standards for environmental and social practices, and business integrity, DFIs will try to add value by helping firms continue to improve their practices.⁴⁰ For example, BII will work with companies to identify opportunities to build a more productive and engaged workforce and management team by improving conditions and adopting hiring and promotion practices that encourage diversity.

There are occasions where there is a more direct relationship between impact and financial returns. The prices that DFI-backed infrastructure investments charge to users should be chosen to generate the minimum acceptable return on investment, and if there are opportunities to extract higher prices they should not be taken.⁴¹ Some other sectors, where upfront capital costs are particularly significant, such as rooftop solar, may also be able to charge lower prices because they benefit from a lower cost of capital from DFIs, on the journey to profitability.

⁴⁰ BII's Policy on Responsible Investing, which articulates the requirements we make of the businesses that we invest in, can be found here: <https://assets.cdcgroup.com/wp-content/uploads/2021/12/14074359/Policy-on-Responsible-Investing.pdf>

⁴¹ Khan et al. (2020) "Cheaper, cleaner power: De-risking as an anti-collusion strategy in Bangladesh" found that power projects with DFI involvement charge lower prices: <https://eprints.soas.ac.uk/33224/1/ACE-WorkingPaper023-CheaperCleanerPower-200603.pdf>



Conclusion

It should be evident by now that the relationship between risk, return and impact is complicated, and defies the idea of a simple trade-off.

One of the reasons for this complicated relationship is that DFIs pursue many different investment strategies, and the relationship between risk, return and impact differs across these strategies. Those differences are obscured when financial returns are considered in aggregate. And all of these nuances can be obliterated when reported returns are heavily affected by exchange rate movements and swings in market sentiment.

If we want to know whether it is necessary to tolerate lower returns to achieve more impact, we should compare average returns and impact across different investment strategies (sub-portfolios). We should not look at the correlation between realised returns and impact within a portfolio, which is likely to reflect positive covariance around averages. To enable DFIs to construct optimal portfolios, we want to know what combinations of risk, return and impact exist in the universe of investment opportunities.

The relationship between pricing and additionality may also not be obvious and is often omitted from the debate about the relationship between financial returns and impact. Some of the things that DFIs are trying to achieve require pricing that is close to commercial benchmarks.

All this said, DFIs are able to create more positive impact for society by having a higher appetite for risk and greater tolerance of lower returns across the board than commercial investors. In some areas, the ability to allocate finance on highly concessional terms will be crucial to achieve important development objectives such as decarbonising the economy and raising investment in riskier market segments and lower-income countries.

Annex: The basics of pricing debt and equity

Pricing equity involves valuing a business. Whatever the future earnings of a business are, your returns are higher when you pay less for a stake in them. Equity returns are therefore the product of two things: how much profit the business you own makes, and how much you paid for it. Of course, investors want to see their businesses grow profits, but equity investing is not as simple as high profits equals high returns. It is perfectly possible to over-pay for equity in a strong commercial performer, and hence make low returns, and it can be possible to make good equity returns by buying less profitable businesses on a low valuation. Hence, even if we thought that some businesses are more commercial and hence somehow less impactful, that does not mean equity investments in them will generate higher returns, or vice versa. It depends on the price paid.

Pricing debt involves assessing risk and setting an interest rate.⁴² As a rule, the interest rate is either fixed or tied to a variable policy rate, so the lender does not participate in any “upside” when the borrower is very profitable, and the risk is all “downside”.⁴³ Lending is typically a lower risk activity than equity investing, which reflects that fact that earnings are available for distribution to shareholders only after debt service, and also seniority in the event of bankruptcy (being at the head of the queue for what can be recovered). Lending is also a lower risk activity because lenders only have limited ability to raise rates to compensate for risk, and hence avoid it. That's because raising interest rates also raises the probability the borrower will be unable to pay. Lending produces a stream of income over time, whereas equity investors mostly make money when they sell their shares for more than they paid for them (either because profits have grown, or market valuations have) and sometimes also from dividends. The need to find a buyer to realise returns adds risk when equity markets are volatile and illiquid.⁴⁴

The two forms of finance interact – all else equal, a business that is financed by relatively more debt (is more leveraged) will magnify the return on equity when things go well but increases the risk of earnings being wiped out by servicing debt, and ultimately the risk of bankruptcy, when things go badly.

The financial returns that investors want from an enterprise is called the cost of capital. In general, that is not an easy cost for businesses to pin down.⁴⁵ It is easier to measure when projects are financed as stand-alone entities (“project finance”). The weighted cost of capital (WACC) is the product of the returns expected by equity investors and the interest rate on debt, weighted by the sum that each contributes to the overall financing package. That defines the minimum financial return that investors want the project to generate.

⁴² In more detail, the “pricing” of debt could also be said to include the terms of the loan, such as how payments are scheduled over time. Risk does not only involve default probabilities but also the prospects of recovering money upon default.

⁴³ It is possible to structure loans with some upside participation, which is sometimes called “venture debt”. Structuring loans with repayments that rise rapidly in “upside scenarios” could be a way of screening opportunistic applicants and ensuring additionality. That idea is explored here: <https://www.cgdev.org/publication/subsidy-sorting-hat>

⁴⁴ This “exit risk” is especially high for DFIs like BII who buy equity in private markets, directly and indirectly. Occasionally it is possible to exit via a listing on a stock exchange, but usually it requires negotiating a sale to another private buyer. DFIs also often invest equity to finance growth, in which case the firms will probably choose to reinvest earnings rather than pay dividends, and equity returns will be very reliant on exit price.

⁴⁵ Keloharju, Linnainmaa, and Nyberg (2022). Do You Really Know Your Cost of Capital? *Journal of Applied Corporate Finance*, 34(3), 116-128.

Measuring subsidies

In some segments of the market, loan terms and pricing are quite standardised.⁴⁶ That means it is reasonably easy to identify when a loan is concessional – although comparators will rarely be exact.⁴⁷ With equity, it is much harder. An interest rate is an objective fact but expected equity returns are subjective, and different investors will form different views about future cash flows and exit valuations. Some investors will be prepared to pay higher valuations than others, without that representing a subsidy. Nonetheless the subsidy inherent in an equity investment could be said to consist of the gap between risk-adjusted expected return on equity, and what a “typical” commercial investor would normally require in that market.⁴⁸ However, both loan pricing and equity returns are hard to interpret without some basis for assessing risk, and some of what DFIs should be doing (as exemplified by BII’s Catalyst portfolio) is to invest where there is no track record and no firm basis for gauging risk.⁴⁹ That can render calculations of concessionality less meaningful.

The relationship between returns and impact

If it is sometimes necessary to tolerate lower average returns to generate greater impact, it is not clear whether that relationship between returns sacrificed and impact gained looks much different, in expectation, for equity or debt. Whereas after investment, the relationship between realised impact and financial return is likely to be far stronger for equity than debt.

When positive “risks” (variance) materialise because an impactful business has performed very well, equity investors can make their money back many times over. When negative risks materialise, firms must prioritise servicing their debts and shareholders’ earnings can be wiped out. Equity is also junior to debt in the event of bankruptcy, so equity investors typically lose everything whereas lenders are more likely to recover something. This variance creates the potential for a strong correlation between realised return and impact, within an equity portfolio.

The range of financial outcomes for lenders is more binary and constrained. Lenders are either repaid at the agreed interest rate, or the borrower defaults (where the lender will often be able to recover something).⁵⁰ A business may fail to scale and struggle to service its debts, or grow tremendously and have a huge impact, and it is all the same to the lender, so long as those payments keep coming. Returns do not vary so dramatically with impact.

⁴⁶ Debt is sometimes priced using a “RAROC model” which stands for “risk adjusted return on capital”, the function of which is to incorporate various measures of risk and ensure that the expected return on the loan is high enough to justify the capital being employed.

⁴⁷ If subsidised debt is being allocated efficiently, it will often go to firms that differ in some important way from the commercial borrowers that form the comparators. That means we cannot observe what the interest rate available to exactly those firms would be in the absence of a subsidy, and sometimes commercial debt would not have been provided at any price.

⁴⁸ It would be very difficult to infer subsidy from realised returns, because so many factors determine realised returns other than whether the initial investment was priced over market.

⁴⁹ The distinction between risk and uncertainty is an old one. The book “Radical Uncertainty” by Mervyn King and John Kay is a recent treatment.

⁵⁰ A standard recovery assumption, on investment grade debt, is 40%.

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