Impacting SDG 8 in Developing Countries Through the Use of Blended Finance

A study on the effectiveness of blended finance investments in developing countries in creating impact on SDG 8, through a statistical analysis and case studies of Dutch SMEs in developing countries.

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Preface

Hereby I would like to present to you my thesis research: *"Impacting SDG 8 in Developing Countries Through the Use of Blended Finance"*. The research is based upon a mixed methods – case study approach, combining quantitative research of blended finance investment data, and a qualitative part consisting of expert interviews with employees of Invest International. The research was written in collaboration with Invest International, to complete the master's degree of Engineering & Policy Analysis at the Delft University of Technology. The research was conducted between February 2022 and the July 1st, 2022.

I wish to thank my supervisors Dr. Servaas Storm, Tim van Galen, MSc, Prof. dr. Jill Slinger, and Lieke Hüsken, MSc, for their valuable guidance and incredible insights throughout the research and writing process. Furthermore, I would like to thank the people at Invest International their willingness to share their data and the interviewees for their valuable insights and contributions, without which this thesis could not have been written.

I can proudly look back at a wonderful time at the TU Delft and especially my time at the TPM Faculty. I will bring the knowledge gained with me into a new and exciting chapter and will always try to incorporate the lessons learned into my life and work.

Enjoy reading,

Alexander Slootweg

1st of July 2022

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List of abbreviations

Abbreviation	Definition
CS-MM	Case Study-Mixed Methods Design
DGGF	Dutch Good Growth Fund
DIB	Development Impact Bond
EU	European Union
GDP	Gross Domestic Product
LIC	Lowest-Income Countries
LMIC	Lower-Middle Income Country
MDG	Millennium Development Goal
MIC	Middle-Income Countries
MM-CS	Mixed Methods-Case Study Design
NGO	Non-Governmental Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
RVO	Rijksdienst voor Ondernemend Nederland
SDG	Social Development Goal
SIB	Sustainable Impact Bond
SME	Small and Medium-Sized Enterprise
UMIC	Upper-Middle Income Country
UN	United Nations

Executive summary

For most countries, the targets set in the sustainable development goals for 2030 are far from being met. The main cause is a lack of financing, due to the relatively high risks and low rewards associated with sustainable projects. This has caused a financing gap in developing countries of upwards of 2.5 trillion US$ annually, equal to 3% of global GDP. These unattractive aspects of sustainable investment projects result in a lack of private investment, leaving public investment as the main source of funding for these projects. A vital area within the financing gap is the lack of financing for SMEs in developing countries, which are important for economic growth and job creation. The issues faced by these countries and especially SMEs have been compounded by the COVID 19 pandemic, which has claimed countless lives, but also countless jobs in developing countries and has caused extensive economic damage. In this light, achieving impact on SDG 8: '*Decent Work and Economic* Growth' was deemed critical for the whole of sustainable development.

Recently, blended finance, an investment type utilizing public and philanthropic capital to accelerate private investments, has become more popular. However, effective practices of using blended finance to foster job creation in developing countries through SME financing are lacking. Furthermore, there is little to no literature on investment decisions that goes into selecting projects for blended finance. In this light, this research aims to answer the following question: *"What are effective practices and key investment decisions in using blended finance to fund SMEs in developing countries, focusing on impact towards achieving SDG8?*

To answer this question, a literature review of the concept of sustainable development, sustainable financing methods and the role of SMEs in the developing countries was conducted. This highlighted the potential of blended finance when compared to other sustainable financing methods in being able to aid these SMEs and impact SDG 8. Afterwards, a data analysis of the performance of recent SME financing projects in developing countries, as well as a case study consisting of interviews with blended finance investment experts was conducted, in order to find effective practices of financing SMEs in developing countries to facilitate the targets set by in SDG8 and highlight how investment decisions are (to be) taken when considering blended finance projects.

It was found that even though the projects in lower-income countries within the could have stronger performance, a balance has to be struck between projects in these countries and those in slightly less low-income countries, in order to achieve consistent results. Furthermore, the use of public loan guarantees seems like a promising method but is currently suffering from a lack of willingness by banks to engage in blended finance transactions, due to solvency issues and general lower risk appetite and unfamiliarity with the methodology.

Furthermore, key investment decisions from an investor perspective lie in the specific business case of the project and whether the investment is 'additional' to the market. Furthermore, the attitude and capabilities of the entrepreneur behind the project are essential, as investors prefer projects in which the entrepreneur has enough skin in the game and is open to collaboration with a multitude of investors, such that one investor does not have to bear all the risks. Furthermore, it is important for investors to balance impact with financial performance, as only achieving impact through risky projects is not a sustainable business practice. More investment decisions could be made in the future if more and different blended finance methodologies would become more readily available. However, many of these, such as higher-leverage loan guarantees and first loss guarantees, are hampered by a lack of willingness again of private credit suppliers to engage in these transactions with public blended finance institutions. Furthermore, larger fund sizes would help investor diversity more, and thereby reach a wider range of projects and achieve more universal impact.

Therefore, it is recommended that if blended finance investments globally were to be expanded, that policy makers such as the UN, local governments, and the World Bank find ways to increase awareness of private credit suppliers and for them engage in more blended finance transactions. Furthermore, concrete law and regulation changes should be considered to the use of collateral, both physical and non-physical, by SMEs in developing countries, as to ensure SMEs will become more capable of engaging in loans with banks, which could then be supported by public investors in various blended finance arrangements. It is finally recommended that further research is done on this topic, especially at a larger scale and perhaps slightly into the future, when more projects will have been completed and therefore results will have become clearer. This could further explore the effectiveness of blended finance compared to other investment methods, and if found to be more effective, convey this to private parties. If these measures are to be taken and the knowledge on blended finance is expanded, it stands to reason that blended finance could be one of the tools to reduce the investment gap in sustainable development and aid in the creation of jobs in developing countries, where people need these most.

1 Introduction

1.1 Problem statement

Sustainable development plays an increasingly central role in all aspects of life, especially since the creation of the Sustainable Development Goals (SDGs) and its importance cannot be overstated. However, as Zhan & Santos-Paulino (2021) state, the progress of many sustainable development goals is currently behind schedule. Furthermore, they estimate that at least 2.5 trillion dollars in annually investment volume is currently lacking to achieve these goals. Therefore, an additional investment equal to 3% of the world's GDP (World Bank, 2021) is necessary annually to complete these goals. It seems unlikely that this full investment can be funded by means of public investment alone, as it stands, and the situation has gotten even worse.

Sustainable development has only slowed down further in the past two years. The COVID-19 pandemic might have appeared to have lost some of its direct effects, but its indirect effects still linger across the world. The economic damage caused by it is still apparent and felt globally, but where it is most evident is in the amount of jobs lost (Berchin & De Andrade, 2020). Especially in developing countries, where these jobs are most important as they can make or break persons' lives, job losses have been significant, setting back sustainable development in certain cases by decades (Hevia & Neumeyer, 2020). This can be regarded as indirectly also increasing the investment gap, meaning even more incremental investments are necessary.

Therefore, a major step in reaching the sustainable development goals by 2030, which has been advocated for by the United Nations (UN) itself (United Nations, Inter-agency Task Force on Financing for Development, 2021; 2022) is to catalyze private investment into achieving the sustainable development goals. The reason why this is difficult, is because many sustainable investments either offer increased risk, or decreased profits when compared to traditional investments. For profit driven, private investors this is not an attractive option (Fatemi & Foolada (2013); Taghizadeh-Hesary & Yoshino (2019). This especially hurts Small and Medium-sized Enterprises (SMEs) in developing countries, as these are largely dependent on external financing (Wellalage & Fernandez, 2019). Furthermore, these play a crucial role in job creation in developing countries (Kongolo, 2010) and are therefore a cornerstone of their economic growth. Finally, one could argue that without people finding paid employment, achieving several other SDG related goals will be difficult.

A method that aims to counter the lackluster attractiveness of sustainable projects from a financial perspective is the concept of blended finance. Blended finance is an overarching term for investment instruments in which public and philanthropic capital is used to take away initial, first loss risk for private investors (Rode et al., 2019). This reduced risk profile

makes the investment more attractive, potentially catalyzing private investment. Projects such as described in Christiansen (2021), where the initial public investment catalyzed upwards of 30 times as much private capital, have shown the potential value of blended finance. Academically however, blended financing of SMEs is not widely explored, and a fundamental understanding of best practices is also missing. This research gap will be further explored in the literature review section.

The goal of this research is to investigate what types of blended finance work best in financing SMEs in developing countries. Therefore, the aim of this research is to develop effective practices for the use of blended finance in SME financing in developing countries, to attract much needed private capital investments into the SDGs. Furthermore, insight in investment decisions on blended finance investments is also necessary, to get a clearer perspective of where and when blended finance likely excels. Gaining this knowledge could reduce poverty in those countries by providing paid employment to many citizens, and lead to more rapid completion of other SDGs. This thesis research will continue with a literature review of the concept of sustainable development, sustainable financing, and the role of SMEs in the developing economy in chapters 2 through 4. Subsequently, in chapter 5 the required research approach and methods and research hypotheses will be discussed. The results of the research will be presented in chapter 6. Finally, in chapter 7, the research discussion, conclusion, policy recommendations will ensue and suggestions for further research will be given.

1.2 Research question and relevance

Currently, the articles described in section 2.4 is all available literature on blended finance, despite the promising results of this instrument as shown in the articles. Therefore, it proves to be an incredibly under-researched area to explore, with many different potential angles. Looking at literature reviewed earlier such as Kongolo (2010) and Abraham & Schmukler (2017), it seems that an important area affected by a lack of private investment is the financing of SMEs in developing countries. However, none of the articles attempt to make the direct link between how financing of SMEs in developing can be improved by using blended finance to facilitate job creation.

Therefore, these two subjects combined seem like a natural area to explore in research, as the opportunity to for an individual to work and make a living is one of the core aspects of sustainable development. Furthermore, as it is such unexplored territory, a better general understanding of which financing structures give strong and financially effective results and thus impact, and which project characteristics are considered important as measured by investors' results, could be an important first step towards optimizing development finance for SMEs and creating valuable jobs and stimulating economic development in the countries that need it most. Therefore, the following research question arises:

"What are effective practices and key investment decisions in using blended finance to fund SMEs in developing countries, focusing on impact towards achieving SDG8?

Answering this question would give valuable insights into the relatively unexplored territory of blended finance, which could have serious ramifications for the future of sustainable investments. The next section will delve into how this research question could be approached.

1.3 Research methodology

This chapter will describe the research method and approach of this research into the best practices of blended finance in sustainable development projects. The first part will delve into the sub questions of the report and the research approach that will be used to answer these questions. Finally, the research design and methods will be provided.

1.3.1 Sub questions

The main research question of this report is the following: *"What are effective practices and key investment decisions in using blended finance to fund SMEs in developing countries, focusing on impact towards achieving SDG8?"*

The core concepts of this research question will be answered by addressing the following sub questions:

1. *What is the origin and scope of the financing gap in sustainable investment and job creation in developing countries in particular?*

2. *What current financing methods exist for sustainable investment in developing countries?*

3. *What is the historical role of SMEs in job creation in developing countries and what troubles do SMEs face in those countries?*

4. *What factors could influence the blended finance performance of a SME project in a developing country?*

5. *Which effective practices and key investment decisions can be distilled from a dataset of development projects and interviews with investment experts?*

6. *What policy recommendations can be derived for achieving the goals set in SDG 8 by financing SMEs in developing countries?*

1.3.2 Research methods

This section will discuss the methods that will be used to answer each individual sub question and which types of data are necessary to use these methods. The whole process is visualized in Figure (1).

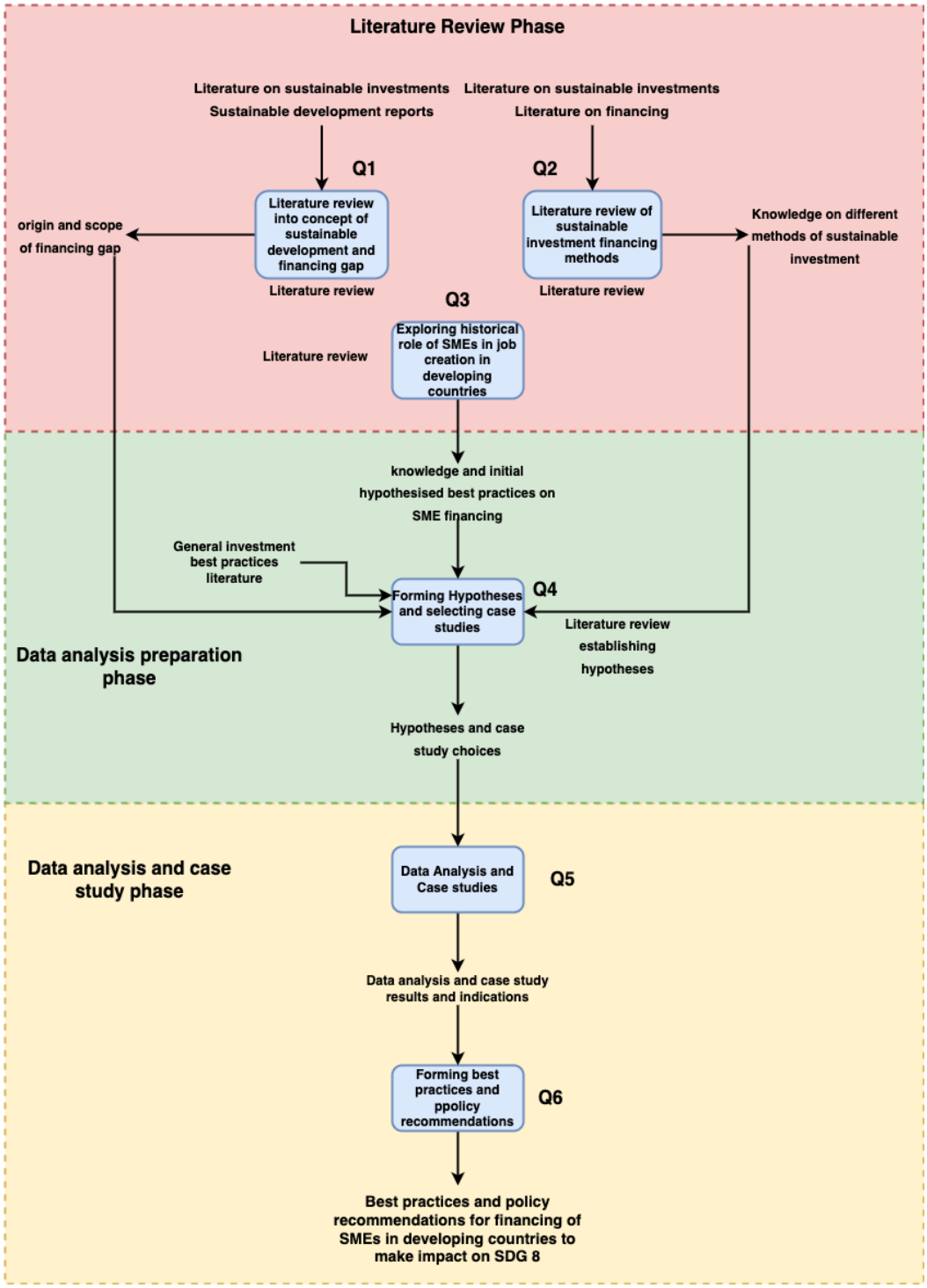

Figure (1): Research flow diagram

Sub Question 1:

What is the origin and scope of the financing gap in sustainable investment and job creation in developing countries in particular?

Sub question 1 will be answered by means of a literature review of scholarly articles through sources such as Scopus and Web of Science, as well as by reading reports by prominent governmental organizations such as the UN.

Sub Question 2:

What current financing methods exist for sustainable investment in developing countries?

Currently, multiple methods of sustainable investment exist. For instance, pure government al investments, multiple types of public-private partnerships such as blended finance, as well as pure private investment. Analyzing all methods and comparing these by means of a literature review, will lead to an increased understanding of the circumstances in which blended finance excels, compared to other financing methods. This will allow for the right types of projects to be analyzed in the modeling section.

Sub Question 3:

What is the historical role of SMEs in job creation in developing countries and what troubles do SMEs face in those countries?

Analyzing the historical role of SMEs in job creation in developing countries, is important to understand the need for financing of SMEs, as well as whether any effective practices have been identified that can be tested in the following section. Furthermore, SME financing has to be explored as well, to determine were the opportunities lie for blended finance in this regard. This section will be assessed by means of a literature review of scholarly articles, as well as reports.

Sub Question 4:

What factors could influence the blended finance performance of a SME project in a developing country?

In this section, hypotheses will be developed on what effective practices exist regarding better job creation per euro invested, project characteristics and financing structure. Furthermore, interview questions will be designed to gain more insights into investment decisions in blended finance and to verify the hypotheses. If insufficient literature is available specifically on SME projects in developing countries, investments in developed countries

could be used as a proxy. Subsequently, these hypotheses will be further tested in the data analysis section.

Sub Question 5:

Which effective practices and key investment decisions can be distilled from a dataset of development projects and interviews with investment experts?

In this section, the hypotheses developed in the previous section will be assessed by means of a data analysis on historical and current project data of financing in SMEs in developing countries, which is accessible through Invest International. The aim of this analysis is to either confirm or refute the hypotheses and to come up with key areas that will be explored in the case studies. Interviews will then be conducted to explain the findings of the data analysis and to develop greater insight into investment decisions on blended finance and the selection criteria for projects. In case further data is required, potential sources could be WWF, World Bank, FMO and the African Development Bank.

Sub Question 6:

Which policy recommendations can be derived for achieving the goals set in SDG 8 by financing SMEs in developing countries?

Finally, the report will finish with policy recommendations on how to implement blended finance effectively in sustainable investment, with a focus on achieving impact on SDG 8, based upon the patterns and effective practices identified in the previous section.

Answering these sub questions will lead to best practices in financing SME projects in developing countries. This in turn will lead to a greater ability to match the correct blended finance structure to a specific project. This could increase the impact generated by the project on the goals set in SDG 8, thus speeding up the transition towards a fairer and more equal planet.

2 The financing gap in sustainable development

Decades of unprecedented economic growth and real progress in living standards have led to slowly, but steadily increasing environmental and social burdens. These burdens pose increasing threats to our way of life and are turning the world into a much less viable place for humanity. For one, the planet is facing a climate emergency, caused by the unsustainable accumulation in the earth's atmosphere of carbon emissions, generated by human production and consumption. For another, global wildlife populations and biodiversity are declining, (micro-plastic) pollution is becoming more widespread, and the earth's land area is being degraded and deforested, while almost 1 billion persons continue to live in extreme poverty. Economic progress has thus far not been sustainable or inclusive.

In 2015, the member states of the United Nations (UN) unanimously adopted 17 sustainable development goals (SDGs) for the world to achieve by 2030, with a view to ending poverty, protecting the planet, and ensuring that all people enjoy peace and prosperity. To achieve these goals, countries, firms, and households need to invest in activities and building the infrastructure needed. However, there exists a financing gap in sustainable development (Barua, 2020; Lagoarde-Segot, 2020; Clark et al., 2018). Understanding the nature of this gap, its size, and the most critical sectors, is essential to adequately assess former, current, and future financing methods for sustainable development. Therefore, this section will delve into what this financing gap entails, that is hampering the achievement of the SDGs.

2.1 Sustainable development

Considering the entirety of human history, sustainable development is a relatively new concept. Malthus (1798) first put forth the notion that human population could outgrow the number of resources available on planet earth in his work '*An Essay on the Principle of Population'*. He argued that the human population would growth exponentially, whereas the growth of the available resources is only linear, and hence, population growth and economic progress would be constrained by resource limits, which could lead to issues such as shortages of food.

Malthusian theory has been found to be incorrect because he underestimated the potential for scientific and technological innovation to provide positive change, which allowed humanity to extract resources from the earth in a non-linear way, thus averting immediate disasters (Trewavas, 2002). However, the Earth still has been found to not have infinite resources for humanity. In their famous work, *'The Limits to Growth'*, Meadows, Randers & Meadows (1972) found that 'If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years. The most probable result will be a rather sudden and uncontrollable decline in both population and

industrial capacity.' This report was the first major one to spark the conversation about whether the global economic development needed to change in a way that made it sustainable for future generations.

One of the first definitions of the term sustainable development is due to the Brundtland Committee (1987). The Brundtland Committee defined the concept as "meeting the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs". To this day, this definition remains one of the most used definitions of sustainable development, mainly as it clearly stresses the intergenerational aspect of sustainable development (Emas 2015). Following up on the report of the Brundtland commission, the Rio 1992 UN summit specified the three main components of sustainable development: '*the concept of development',' the concept of need*s' and 'the concept of future generations' (Tomislav, 2018).

The Brundtland definition has some ambiguous elements, such as the timespan over which 'sustainable development' must be defined and what exactly the word compromising entails (Paris & Kates, 2003). Paris & Kates (2003) argue that ambiguity is often a concern with definitions of sustainable development and this ambiguity can lead to a lack of well-defined indicators for sustainable development. Opschoor & Reijnders (1991) also recognized this issue, stating that sustainable development is often not correctly captured by traditional metrics, such as GDP; nevertheless, Opschoor & Reijnders argue that quantifying sustainable development could help in measuring its progress more clearly than without indicators. The ambiguous nature of the Brundtland definition has also made sustainable development a concept that is up for interpretation. This issue is enlarged by the vast differences in economic development and socio-economic goals between countries (Tomislav, 2018). Many authors, including Mitchell (1996) and Hák, Janoušková, & Moldan, (2016), emphasize the need for a coherent framework within which 'sustainable development' can be defined. Such a framework ensures that the important linkages between different goals of sustainable development are clear because progress in one goal could facilitate progress in another goal, while there may also exist trade-offs between goals. Furthermore, they argue that it is vital that scientific opinion is used to formulate development indicators, as this ensures that they are easily measurable.

2.1.1 The Millennium Development Goals

A first attempt at formalizing global sustainable development was the establishment of the Millennium Development Goals (MDGs) at the 2000 Millennium Summit of the UN (Sachs, 2012). The millennium development goals, which are showcased in Figure (2), were meant to "meet the needs of the world's poorest" (United Nations, 2015) and set eight development goals, to be achieved by 2015. While some targets in the MDGs have been achieved, there was a lack of progress concerning environmental sustainability (Lomazzi, Borisch & Laaser, 2014). Lomazzi et al. (2014) further found that not all governments that signed the

declaration put forth equal commitments towards achieving the goals, mostly due to the 2008 global financial crisis. They further conclude that private sector involvement was hugely important towards achieving the goals, having been responsible for financing over half of its progress and that mobilizing private financing is essential, as the private sector is deemed to be the only sector large enough to be able to bear all the extensive financial commitments necessary to complete the goals.

A lauded aspect of the MDGs is the use of indicators and targets in international cooperation, as it incentivizes data collection and clarified the approach towards the targets (Manning, 2009). Ziai (2016) points out two problems with the MDGs approach. First and foremost, there is a lack of attention for solving conflicts of interest between the signing parties in achieving these goals. Furthermore, the underlying logic of the MDGs seems to imply that investment alone is enough, and that sufficient capital injections will solve poverty (Ziai, 2016). This is clearly not correct, as also recognized by Vandemoortele (2011), who states that poverty is a multi-dimensional problem, which is recognized in the MDGs – which requires a multidimensional solution, which just throwing money at the problem unfortunately is not.

Further criticism is put forth by Saith (2006). His main gripe with the MDGs is that while they paint sustainable development as an issue for developing countries, it is in-effect a global phenomenon. The MDGs neglect to set any targets for richer countries at all, and thereby steer political discussion in the wrong direction. It is argued that many issues, such as human rights issues, should also deserve attention in richer countries, not just poor countries. Therefore, making rich countries exempt from monitoring the targets, could only increase global inequality in certain areas. Furthermore, key areas affecting the lives of the impoverished are either not touched upon or are not targeted sufficiently in the MDGs. For instance, the targets towards improving health in poor countries, as well as the reduction in the number of slums are deemed insufficient. In the end, these issues stem from the lack of a formal framework on how to tackle these challenges. A final criticism of the MDGs is that they put too much emphasis on the role of foreign interference in developing countries as a way of promoting economic growth and therefore sustainable development (Vanmoortele, 2011). This notion neglects the fact that a cultural paradigm shift is necessary in order to have sustainable development in these countries, which starts with local governments and parties. This had led to development not being inclusive, but mostly experienced by the already wealthier parts of societies of developing countries.

Because of these issues, the MDGS have had mixed results. In the final report by the United Nations (2015a), much progress is described in all areas, showing the potential of quantifying sustainable development. However, progress was not uniform and a critical issue that was described is that environmental damage and climate change threaten to eliminate much of the achieved progress. Furthermore, almost one billion people remained in extreme poverty and hunger as of 2015, so still much progress is to be made in that area. Still, this first large-scale

effort towards global sustainable development, based on a concrete set of goals showed significant potential, paving a way for further exploration of this kind of framework. However, the framework would have to be considerably improved in order to be effective.

Figure (2) The eight MDGs (PBL Netherlands Environmental Assessment Agency, 2013)

In the end though, the MDGs were only meant as a framework for the developed countries of the world to aid the development of poor countries. However, the threats posed by climate change and rising global population called for a more global effort towards sustainable development (Sachs, 2012). Furthermore, the MDGs targets were starting to be regarded as too narrowminded, too ambiguous and not addressing all issues present in sustainable development. (Langford, 2016). The frustrations experienced with the MDGs called for a newer, more expansive framework for sustainable development.

Another important factor calling for a new framework was the increased awareness on the fragility of the earth's ecosystem, as well as humankind's influence on it, spurring the creation of the term the 'Anthropocene', a new era in the word's history, where the planet is dominated by mankind (Sachs, 2012). The MDGs only paid limited attention to environmental sustainability and lacked the global focus to give the earth and humanity a sustainable future. This had to go hand-in-hand with a reframing of the existing goals, which could be deemed to technical and not specific enough, leading to problems in achieving the goals (Arsel, 2020). Both these shortcomings of the MDG indicator set called for a new set of indicators, which would stretch further than just poverty reduction, but also would have to include measures against the destruction of the earth's ecosystem to facilitate economic growth. In short, a new paradigm of sustainable development was necessary. Therefore, in 2015, the SDGs went into effect by all member states of the UN unanimously signing the document *'Transforming our world: the 2030 Agenda for sustainable development'* (United Nations, 2015b).

2.1.2 The Sustainable Development Goals

The SDGs, shown in Figure (3), are 17 overarching topics, that aim to provide targets for all UN member states to complete by 2030. The goals have come together as part of a global effort by multiple countries and multiple expert consultants, deviating from the MDGs, which were conceived by UN officials themselves (Ford, 2015). This participatory nature of formulating the SDGs is one of the reasons why the framework has become relatively large, as many different actors have been able to argue for the importance of certain indicators (Langford, 2016). This is not necessarily harmful to the effectiveness of the framework, compared to narrower MDG targets as explained in the previous section.

Figure (3): The 17 sustainable development goals (United Nations, (2020)

The sustainable development goals fill the need for relevant indicators and targets for sustainable development, of which the importance has been discussed in the previous section. The overarching goal of the sustainable can be summarized with the 5 P's (UN, 2015):

1. People: End world hunger and poverty
2. Planet: Protect the planet against the negative effects of economic growth
3. Prosperity: People should be able to live prosperous lives
4. Peace: Ensure that all people can live in peace
5. Partnership: Ensure that all countries cooperate to achieve the goals, which is important as they are all linked

Comparing these goals to the MDGs, some overlap can be observed. The topic of poverty is still central to the first five goals, as the targets of the MDGs were not fully completed by

2015. The main difference is the increased focus on environmental protection and clean energy, which can be traced back to the change of global sentiment on the role of humanity in ensuring the long-term health of planet Earth.

2.1.3 SDG 8

Of the SDGs, one of the most critical ones is SDG 8 'decent work and economic growth', which like the name says provides a set of goals related to the growth of the global economy and creating decent jobs for people. Important topics include increasing GDP, increasing the participation of women in the workforce and eradicating forced labor and child labor. The full list of subgoals can be observed in Appendix A, in Table (13).

SDG 8 can be viewed as one of the more core SDGs. Creating jobs has positive effects on the performance of other SDGs. For instance, a large positive correlation exists between the creation of jobs and the access basic needs such as food and medical care (Griggs et al., 2017). Furthermore, facilitating decent jobs with safe working conditions is crucial for having people be less exposed to dangerous situations and chemicals during their working activities, diminishing health issues related to those. Economic growth can also be an important enabler of access to universal access to clean energy (Griggs et al., 2017). Economic growth can lead to increased investments in technology, education and energy infrastructure which will all contribute towards more clean energy access in all countries. In short, SDG8 plays a central role in many development aspects, as economic growth and jobs for people can facilitate progress in many other areas. Therefore, the focal point of this research will be on exploring how SDG8 can be impacted the best. However, there are difficulties in achieving sustainable development and particularly recently the trend towards achieving SDG8 has taken a t urn for the worse, which will be explored in the following section.

2.2 The slow progress of sustainable development

As of 2021, global progress towards achieving the 2030 targets set in the SDGs is insufficient (Halkos, 2021). One of the largest impact areas was in SDG 8, as millions of jobs were (in)directly lost due to the pandemic (United Nations Asia-Pacific, 2021) and economic growth was significantly halted. Looking at the other SDGs, one could argue that SDGs 1,2,3,4 and 6 could all be affected by this, and that all the SDGs after number 8require a basic level of economic growth to be fully fleshed out.

Looking at other regions, the progress is similarly slow. Africa, and especially sub-Saharan Africa is reporting stagnation and low growth towards all SDGs. The continent is also only on track to complete one of the targets, namely SDG 13 (climate action) by 2030. Again, COVID 19 is cited to be a major contributing factor towards the slowdown in sustainable development and especially SDG8 (SDG Center for Africa and Sustainable Development

Solutions Network, 2020). However, the sole blame cannot be but on COVID 19 alone, as progress was even more stagnant in 2019, before the pandemic hit. The main challenge for SDG implementation is cited, by government officials of all African countries, to be a lack of funding/resources towards sustainable development (SDG Center for Africa and Sustainable Development Solutions Network 2019).

2.2.1 Challenges for sustainable development

The slow progress of sustainable development is not necessarily surprising, as there are numerous challenges in trying to achieve sustainable development. First, transforming a country towards being sustainable, requires a full system change according to Jansen (2003). This is necessary, as going back to the Brundtland definition of sustainable development outlined in the previous section, there is an intergenerational component to sustainable development. This intergenerational approach means that certain short-term needs need to be altered to accommodate to long-term needs. Jansen identifies three factors of change which are interwoven and define the needs of a system: culture, structure, and technology. All three of these factors need to align to facilitate change to a system to become more sustainable.

One could argue that a large issue in sustainable development lies in this area. Looking at the framework for institutional analysis by Williamson (2000), which can be observed in Figure (4), the challenges towards sustainable development become apparent.

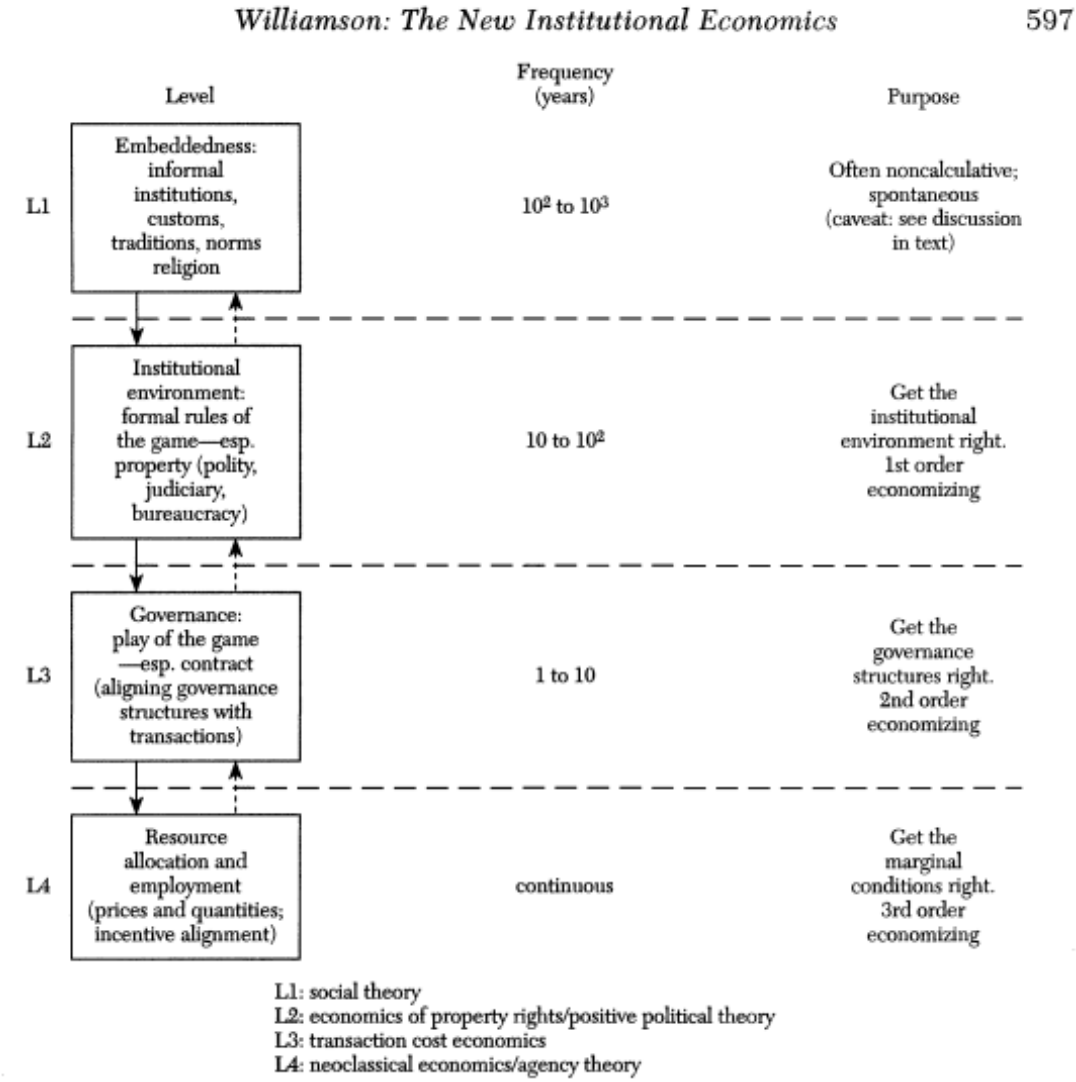

Figure (4): The New Institutional Economics Framework by Williamson (2000).

The rate of change of cultural phenomena such as customs and the ‘rules of the game’ is slow. Therefore, changing these factors towards sustainable development by 2030 would require a cultural change that is ten times more rapid than possible according to Williamson. The lower-level institutions and resource allocation could be changed more rapidly, but if the underlying cultural foundation does not yet exist, there could be frictions, which in theory could slow down sustainable development. These types of frictions, resulting from rapid external change to institutions - which the rapid change towards a sustainable world could represent – are found to cause a crowding-out effect towards people acting sustainably (Vollan, 2008).

A further factor that is outlined by Jansen (2003) as a vital component of sustainable development, is the required cooperation between a multitude of actors. Such actors include firms, workers, bankers, science & technology institutions, NGOs, and governments. Facilitating collective action is a difficult problem, as it has both political and co-ordinational

aspects. For instance, actors differ in power levels, such as is the case when comparing citizens to governmental organization or major corporations. Furthermore, the global aspect of sustainable development already comes with many cultural differences, leading to a general lack of trust between actors (Bowen et al.,2017). This lack of trust is enhanced by the existence of many trade-offs in completing the SDGs. An example of a trade-off would be the choice to either invest in the urban or rural environment, as the benefits achieved in one of those two locations will not necessarily carry over to the other (Bowen et al., 2017). This again hampers cooperative efforts and could cause more conflicts between actors in the sustainable development system.

A further barrier for the required (international) cooperation is that these actors operate at different time horizons, with especially private parties looking at shorter time horizons than the other parties. These creates barriers for sustainable development, especially regarding how the short-term focus of the private companies lines up directly against the long-term strategic thinking that is required to complete the SDGs. Jansen continues that an integral part of overcoming these barriers is active participation by governments to reverse this trend. Research question 2 will further delve into these ways of participation.

A final challenge regarding the completion of the SDGs is that there is currently a lack of accountability of nations regarding the completion of the goals, as well as monitoring the progress of the goals (Bowen et al. 2017). The lack of a formal framework to penalize countries makes it difficult for countries to be adequately held accountable for not realizing the 2030 targets, so there might be a lack of incentive for those countries to develop in a sustainable manner. Especially a lack of international accountability could be a cause for concern, as when a country does not feel the moral obligation to fulfill the SDG targets, there is no formal way to make them compliant. However, this is not necessarily in all ways problematic, as the lack of formal hierarchy does allow countries to come up with their own way of achieving sustainable development, which, given the incredible diversity between the countries that have signed the SDG declaration, takes away some of the complications of coming up with solutions sets that match all countries' agendas (Karlsson-Vinkhuyzen, Dahl & Persson, 2018).

2.2.2 The complicated case of developing countries

Jansen (2003) mainly looked at the case of developed countries, where systems change can be done through changes in formal institutions. However, what happens when these institutions are vastly different than in traditional sustainable development frameworks, or when there is even a lack of a decent standard of living, as is the case in many developing countries? The paper by Cobbinah, Erdiaw-Kwasie, & Amoateng (2015) describes some of the challenges of sustainable development in developing countries. One of the main culprits behind the lack of sustainable development is that a focus on completing some of the SDGs could directly negatively impact the standard of living for citizens in developing countries.

For instance, it is described that citizens who live in informal settlements could be highly dependent on land use that is not sustainable long term, yet is necessary for short-term survival. It is therefore difficult to convince the severely impoverished of the notion of some of the SDGs, such as SDG 14. Therefore, progress needs to happen first in the most basic needs of people and promoting SDG 8 could be one of the focal points towards doing this.

In a case study of Cameroon Mboumboue & Njomo (2016) find further issues with sustainable development in Cameroon. For instance, many implementations of sustainable development, such as solar farms, require a skilled labor force. In many developing countries such as Cameroon, this labor force unfortunately does not exist. This goes back to the previous finding that some of the sustainable development target require the foundation based in other targets before being able to be completed.

Another issue with sustainable development in impoverished countries is the lack of accountability and monitoring that arises from difficulties in data generation and collection. This has been observed in a case study of SDG implementation and monitoring in India, where a lack of data generation was named as one of the core factors hindering SDG progress (Khalid, Sharma, Dubey, 2020).

Since people in developing countries in many instances live in extreme poverty, foreign direct investment (FDI) is critical towards achieving the SDGs in these countries (Aust, Morais & Pinto, 2020). Or at least, in cases where taxation levels for the rich are not high enough, thus not enabling the governments to spend enough capital on sustainable development. Looking at the SDG completion status in these countries described earlier, it is therefore especially important to eliminate the financing gap in sustainable development investment. The next section will go into the scale and nature of this investment gap and why this financing gap exists in the first place.

2.2.3 COVID-19 pandemic impact on SDG8

The COVID-19 pandemic has had a dramatic toll on sustainable development in all areas, due to numerous social, economic and health disasters across the globe. One of the SDGs most negatively impacted by the COVID pandemic is SDG8. Economic growth slowed down drastically, and millions of jobs were lost. Just in the first three months of the pandemic, estimates put the total amount of jobs lost at up to 25 million and the global lost wage income at up to 3.4 trillion US$ (Berchin & De Andrade, 2020). Estimates of the United Nations (2021) Whereas the impacts of the COVID-19 pandemic were felt on a global scale, the largest impacts were noted in the lesser developed economies (Hevia & Neumeyer, 2020). This additional impact is attributed to the lack of possibilities in emerging economies to work remotely and governments are less capable of providing stimulus to failing parts of the economy than in developed economies. Adding to the already existing issues described in the

previous section, this poses a renewed challenge to facilitate economic growth and decent work in these countries.

2.3 The financing gap

The financing gap (or funding gap) in sustainable development is the amount of additional investment necessary to complete the 2030 sustainable development goals (OECD, 2020). A 2020 Organisation for Economic Co-operation and Development (OECD) report (OECD,2020) estimates the size of the financing gap to be 2.5 trillion US$ pre-COVID. This is equal to almost 3% of the world's annual GDP (World Bank, 2022a). Similar findings were done in the 2014 UNCTAD World Investment report (Zhan et al., 2014), which also found a 2.5 trillion (1.9 – 3.1) US$ investment gap. Furthermore, the report stresses the vital importance of private sector participation in sustainable development investments. Private investment could be especially essential, as governments do not have adequate (tax) income to cover the financing gap in those countries by means of public investment alone. This public income has even declined further due to the pandemic, with income tax revenues dropping and public expenditures having to be diverted to other needs than SDG financing (United Nations Inter-Agency Task Force on Financing for Development, 2022). This problem is even larger for developing countries, as they were not able to gain additional funds by borrowing at low interest rates, as many of the world's developed nations have. Therefore, it seems unlikely that the additional expenditures of 3% of GDP will be attainable for the least developed countries (LDC). Therefore, they will require more external (private) funding than other countries to complete the SDGs.

The six-year time gap between these two reports indicates that the investment gap is not decreasing, or at least at a rate quick enough to complete the SDGs in time. Otherwise, the second report would have described a smaller gap or a at least a new solution set. Barea (2020), further states that the financing gap is mostly prevalent in developing countries. Therefore, understanding why this is not the case is essential for determining why certain solutions are being proposed.

Multiple causes for the existence of the financing gap have been put forward in literature. The first major issue that is recognized in multiple sources is that private sector investments usually suffer from 'short-termism' (Clark, Reed & Sunderland, 2018; Barua, 2020). This entails that private investors usually will only aim to maximize profits and other gains in the short term, which directly contrasts with the notion of sustainable development that future generations should also be looked after in the present day. Unfortunately, many sustainable development projects have high surrounding uncertainties, either due to the inherent uncertain nature of developments, such as is the case with the effects of climate change, or due to the uncertainties related to the location of the project. For instance, some developing countries are more prone to regime changes, increases in global oil and commodity prices,

higher global interest rates, etc., which all add uncertainty to project outcomes, which is less than desirable for profit-driven investors.

A second explanation for the lack of sustainable investment is that the financial return to these investments is lower than the returns to unsustainable investment (in natural resource extraction, for instance) (Clark et al., 2018). According to Clark et al. (2018), this means that investment in resources such as fossil fuels were relatively cheaper than their sustainable counterparts. The study by Clark and co-authors further explains that the non-obligatory nature of investments in sustainable projects is also lowering the amount of private financing in sustainable development. If no concrete incentives are taken, private financing of more risky and less profitable projects will only happen on a limited, voluntary basis, such as with corporate socially responsible investments. However, these investments are usually not of the scale of the non-sustainable investments, increasing the gap. Barua (2020) puts forth multiple further causes behind the financing gap in a literature review. Just as in the UNCTAD report, the importance of external financing for developing countries is stressed. The lack of public investment in those countries is attributed to low tax-to-GDP ratios, as well as a lack of a coherent investment framework towards SDG investment in those countries. Again, private sector investment is put forward as the key contributing factor towards solving the financing gap.

Unfortunately, the current rates of private sector participation in SDG financing are not high enough, and the financing gap is creating greater inequality between developed and lesser developed nations regarding their SDG progress, which one could argue is even more important for developing countries. Especially in the light of the damage done by the COVID-19 pandemic to SDG progress in developing countries – the extent of the damage is estimated to be equal to upwards of 10 years in development progress for some countries (United Nations, 2021) – the 'Leave No One Behind' UN mantra has become even more relevant. Whereas developed countries were able to limit the economic impact of the pandemic by means of large-scale fiscal stimulus, again developing countries were not able to do so due to a lack of available public funds, further increasing the gap between these nations. The 2021 UN financing for sustainable development report (United Nations, 2021), stresses the critical role of private funding in alleviating the investment gap. However, it is also recognized that sustainable projects are often not compatible with short term profits and therefore a role of public capital in facilitating private investment is important. The notion of how this must be done is not clear cut. To analyze new methods of attracting private financing to sustainable development, it is first important to understand the notion of sustainable financing and how this differs from 'traditional financing'. Furthermore, it is important to understand the concept of using public capital in conjunction with private capital to achieve sustainable development.

2.4 Conclusion

The notion of sustainable development has been existence for a while, but the concrete efforts to achieve it globally have been lacking up and until the creation of the SDGs. Still, even with the clearer targets set in the SDGs and the widespread adoption of these targets, the lack of effort persists and is mostly reflected in the financing gap. With the damage caused by the COVID-19 pandemic on economic growth and job losses, especially in the countries that need them most, it is important to swiftly try to close/shrink the financing gap. Especially SDG8, one of the core SDGs that affects many of the other SDGs, was severely impacted, setting back sustainable development, especially in the lowest income countries that need it most.

Private sector involvement is stressed as the most important solution towards shrinking the gap but is it apparent with the size of the gap that current efforts towards solving the financing crisis are insufficient. Therefore, it is important to understand what new types of financing and especially what methods of involving private parties into sustainable development are currently used or could be used in the future, in order to impact SDG8 and recoup the jobs lost in the COVID-19 pandemic. Therefore, the next chapter will explore these novel sustainable financing methods and tempt to establish one method as the most promising one for shrinking the financing gap.

3 Financing sustainable development

To alleviate the financing gap, new ways of sustainable financing are necessary to catalyze private investment. Analyzing these ways of financing necessitates a deeper understanding of the concepts behind sustainable financing, and especially how sustainable financing differs in the developed world versus developing countries. This chapter will look at the main stakeholders in the sustainable financing system, as well as outline historical efforts of sustainable financing to assess what has worked and what hasn't. Finally, a literature review of current 'newer' blended finance investment methods will be conducted to outline novel ways of investment that could be used to alleviate the stressing financing gap in sustainable investment.

3.1 Sustainable financing stakeholders

Sustainable financing often involves many different stakeholders, which makes the analysis of sustainable investment systems more complex than 'regular' private sector investments. Much of sustainable development is spurred on by governments and multinational organizations such as the United Nations. Furthermore, because - as stated earlier- just public financing is not enough to cover all SDG investments, the involvement of the private sector is also important. This often leads to more complicated financial arrangements such as public private partnerships are often common when looking at sustainable development projects and sustainable financing. This section will outline the most important stakeholders in sustainable investment in order to get a stronger grasp of the sustainable financing system, both for developed and developing countries.

Individuals, households, and SMEs in need of credit

The most central stakeholder is the individual, SME or household that requires financing to either cover their basic needs or to grow their business. In the end, the people are the backbone of the SDG economy and especially in developing countries, SMEs play a critical role in achieving SDG targets. Due to the financing gap, these parties are often unable to receive financing through conventional methods, such as bank loans, as sustainable development projects are often more high risk, or lower return than conventional projects. This is especially evident in developing countries, as the risks associated with projects are even higher there than in developed countries.

National Governments

National governments play a central role in sustainable financing from multiple perspectives. Firstly, governments finance sustainable development directly in a multitude of ways. Governments invest directly into sustainable development by means of public expenditures.

Currently, public expenditures on the SDGs total more than 20 trillion US$ (Kharas & McArthur, 2019). This makes national government perhaps the most important actors in the sustainable financing system. Governments further facilitate sustainable development in multiple ways, such as subsidies and guarantees. Perhaps the most important instrument of governments is the use of policy to facilitate sustainable financing. Through policy, governments can direct cash flows towards sustainable development by implementing laws and regulations. The need for national governments to create the necessary framework for sustainable development to thrive is recognized by Kharas & McArthur (2019), who state that even with plenty of resources, many developed countries still have investments gaps in achieving the SDGs, hinting at government failures to steer the financing streams in the right directions.

Foreign Governments

In the case of rich, developed countries the need for foreign governments to achieve their sustainable development needs is not vital. For some developing countries however, capital for national public investment can be severely lacking, meaning they depend on foreign investment to meet the targets by 2030. Foreign investment can take on multiple forms, but a major source of foreign investment is public investment by other countries' governments. Investment by foreign governments in development finance is mandated in the Official Development Assistance (ODA) agreements. These agreements state that countries that are part of the OECD Development Assistance Committee should strive to spend a minimum of 0.7% of their GDP on foreign development aid (OECD, 2021). I this context, foreign development aid entails "*government aid that promotes and specifically targets the economic development and welfare of developing countries"* (OECD, 2021). Not many of the donor countries have actually managed to consistently achieve this target, again highlighting the difficulties of finding financing for sustainable development (Mawdsley, 2018) Traditionally, this was the main form of sustainable investment in developing countries, and while still important towards achieving the SDGs in these countries, it is no longer sufficient in financing all the needs of developing countries (Mawdsley, 2018).

Intergovernmental Organizations

Much of the course of sustainable financing is shaped by intergovernmental organizations, such as the UN, the European Union (EU), and the World Trade Organization. Intergovernmental organizations can set the stage for sustainable financing, with the most famous examples being the creation of the SDGs by the UN and the recent announcement of the Green Deal for Europe. Intergovernmental organizations can set the rules of the game for sustainable financing, sometimes even overruling national governments in the rules for SDG implementation. For instance, in the EU, the green deal has set new rules for sustainable financing in the European union, with regulations expected for carbon emissions, carbon

pricing, sustainable investment and the energy transition (Claeys, Tagliapietra & Zachmann, 2019).

On the flipside of the coin, international cooperation is also a major driver of sustainable investment. Through intergovernmental organizations, this cooperation can be further facilitated, though the use of meetings and promoting certain sustainable development practices and connecting stakeholders at conferences (Linner & Selin, 2013). One could argue for instance that without the role of the United Nations, a global initiative such as the Sustainable Development goals would be nigh impossible to formulate.

Intergovernmental organizations also play a role in development and sustainable financing through direct investment. The United Nations provides microcredits to projects in developing countries through the United Nations Capital Development Fund. However, it has a budget of 'only' 75 million US$ annually (United Nations Capital Development Fund, 2016), which is not likely to make major contributions towards the financing gap. The EU does do direct investments in sustainable development. 30% Of the EU's 1.8 trillion budget for the period 2021-2027 will be spent on green objectives (European Parliament Think Tank, 2021). This is a sizeable commitment, again showing the power of intergovernmental organizations in sustainable financing.

(Multinational) Development Banks

One of the most important actors in sustainable financing are (multinational) development banks, which the most prominent actor being the World Bank. Development banks have played a crucial role in curbing market failures in developing countries, that caused a lack of funding for many companies in those regions by supplying credit to project and companies that, without the funding, would not have survived, hampering economic development in the developing world (Lazzarini et al., 2002). Through their practices, development banks have in effect become 'norm-entrepreneurs', actors that have set the stage and defined the sustainable financing framework for other commercial banks to follow (Mendez & Houghton, 2020).

Historically, the World Bank has been the biggest contributor to sustainable development financing through loan and grants (Hunter & Shaffer. 2022), with investments of 67 billion US$ in 2018. The World Bank's efforts are mostly focused on middle and low-income countries and could therefore be considered a crucial actor in achieving sustainable development for the developing world.

There are more important parties, such as the African Development Bank and national development banks. They all play critical roles in the sustainable financing system through a variety of ways, which will be discussed later in this chapter.

In the Netherlands, the most important development bank is the Nederlandse Financierings-Maatschijppij voor Ontwikkelingslanden (FMO). The FMO is owned by the Dutch government for 51% and aims to aid entrepreneurs in developing countries to grow their business and in this manner achieve economic growth in these countries (FMO, 2022).

Commercial and investment Banks

Commercial and investment banks play a central role in the finance sector as a whole, and therefore also in sustainable financing. Commercial banks are the traditional providers of financing for investments through loans and other methods. In recent years, the role of commercial banks in sustainable financing has grown. For instance, several European investment banks have stopped funding coal power plants and coal mines (Urban & Wójcik, 2019). Whereas the current sustainability efforts of most commercial and investment banks are questionable, they could play a prominent role in decreasing the investment gap by helping de-risk investments for private investors in sustainable projects (Urban & Wójcik, 2019). Methods by which banks can achieve this will be described later in this chapter.

Central Banks

Central banks are set to have much potential influence over the course of the sustainable financing ecosystem. First, central banks are in charge over regulatory frameworks for commercial banks and could therefore with changes steer bank lending in a more sustainable direction (Durrani, Rosmin & volz, 2020). Furthermore, central banks could actively participate themselves in stimulating sustainable development through direct investments in, and by facilitating the green bond market ((Durrani, Rosmin & volz, 2020). The principle of green bonds will be discussed later in this chapter. Currently, 52% of the world's central banks have stated in their mandates that they will actively tempt to promote sustainable development through their policies, but unfortunately the other 48% are not mandated to pursue this goal (Dikau & Volz, 2021). Still, many are making efforts towards stimulating sustainable development in their respective countries. An issue that could arise when considering central bank influence is whether the institutions in a country could change in a way that matches the country's culture, as a central bank has to serve its own country mostly and would not want to be the cause of societal frictions (Dikau & Volz, 2021).

NGOs and Charities

Historically and increasingly so today, NGOs have played a critical role in sustainable finance, especially in developing countries (Unerman & O'Dwyer, 2010). Due to their common non-profit nature, they can finance sustainable projects in the poorest areas that most need it, where other investors would observe too many risks. Moreover, NGOs usually have a higher sense of urgency when it comes to sustainable development, as they are often founded based on activistic and idealistic principles, which translates into recognizing the

need to invest in SDG related projects (Hassan, Lee & Mokhtar, 2019). A problem with the role of NGOs in sustainable finance is that they often have a single sector focus for their investments. If these areas of focus are not well-coordinated, some areas could lack NGO financing, whereas others would receive much capital. Furthermore, it is difficult to make NGOs invest in multiple sectors, as this would require increased knowledge of the institutional environment in these sectors, as well as increase the number of uncertainties they must deal with (Hassan et al., 2019). Cross-sector cooperation with different partners could be a way forward for NGOs to have an even larger impact on sustainable development (Hassan et al., 2019). Partnerships with other actors will be discussed later in this chapter.

Institutional Investors

Institutional investors play both a direct and an indirect role in sustainable finance. They can invest directly into sustainable projects and possess large amounts of capital that can be directed towards this purpose. Another possibility is divestment into non-sustainable investments, such as fossil fuels, which will motivate companies that rely heavily on outside institutional investment to reconsider their business practices (Ayling & Gunningham, 2017). Furthermore, by mandating that their clients invest only in high impact investments, institutional investors can create a form of non-state governance (Ayling & Gunningham, 2017). This could in practice force smaller funds to mobilize their capital towards more sustainable targets, as their core limited partners in the institutional investors would otherwise seek to deploy their funds elsewhere. The important role of institutional investors in governance is also exemplified by Aggarwal et al. (2011). They found that institutional investors are even capable of creating corporate governance standards in foreign countries. These governance changes can in turn influence concrete decisions by CEOs and boards and even change shareholders value. It is therefore likely the case that these same kinds of mechanisms could also apply in the world of sustainable finance.

Private Investors

Private investment is often viewed as a critical link in the sustainable finance ecosystem. Unfortunately, there is currently a lack of private investment in the SDGs due to the relative unattractive nature of sustainable investment opportunities when compared to their ‘regular’ counterparts (Barua, 2020; Clark et al., 2018; Lomazzi et al. 2014; Zhan et al., 2014). The main cause of this is lower returns and higher risk profiles, which are both not attractive for profit-driven investors, which most private investors are. Therefore, it is critical that private finance is mobilized, through making sustainable investments more attractive. The rest of this chapter will explore methods for sustainable financing, as well as newer methods aimed at the issue described in this paragraph.

Looking at the sustainable financing system, which is summarized in Figure (5), it is a complex system of multiple actors. With three major roles, regulatory, investors and

investment targets. Some actors lie on the border of one of the two regions, such as national governments and private investors. All in all, the end receiver of financing, which are the SMEs and persons in need of credit, are dependent on a multitude of actors. Therefore, it seems important for sustainable financing methods to combine these actors to achieve the desired financing for the SMEs and should not be based on a single actor having to take action.

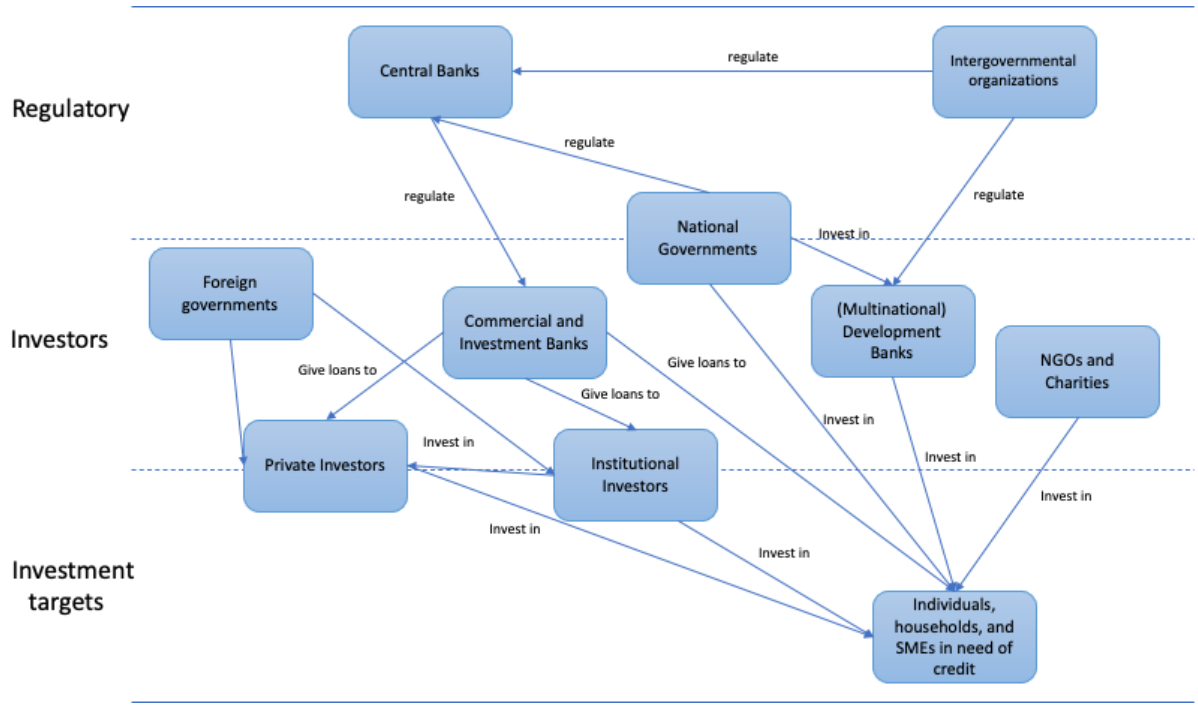

Figure (5): The system of actors in sustainable development (Slootweg, 2022)

3.2 Sustainable finance mechanisms

There are many different mechanisms and arrangement for sustainable financing. This section will give an outline of the most important and commonly used methods and will discuss the associated advantages and disadvantages. In the context of this research, sustainable finance involves financing methods aimed at achieving the sustainable development goals. This is not to be confused with sustainable energy financing, which only covers financing methods aimed at achieving lower carbon emissions.

3.2.1 Microcredit

One of the first methods used for sustainable financing is the use of microcredits. Multiple exact definitions of microcredit exist, but in general the concept involves small loans to small enterprises in developing countries, that are not eligible for conventional bank loans, usually because of a lack of collateral to be offered to the bank (Rankin, 2001). Microcredit has been widely deployed, mainly since the start of the new millennium, as a method of financing sustainable development in developing countries and has been lauded for its effectiveness,

with Muhammad Yunus even winning the 2006 Nobel peace prize for his microcredit efforts through the Grameen Bank in Bangladesh (Banerjee et al., 2013).

The reason microfinance is hypothesized to be effective, is because the return on capital follows a concave function, meaning that gains are largest in the earliest stages of an enterprise's development (Armendáriz de Aghion & Morduch, 2007), as shown in Figure (6). The reason this function is concave, is because of the law of diminishing returns, meaning that larger relative gains are usually easier to make at the start of a business cycle than at the end. In the case of microfinance, loans are originated at the start of this cycle, giver higher potential marginal returns. Therefore, in theory, the highest economic growth could be achieved by financing exactly these stages of development through microcredits.

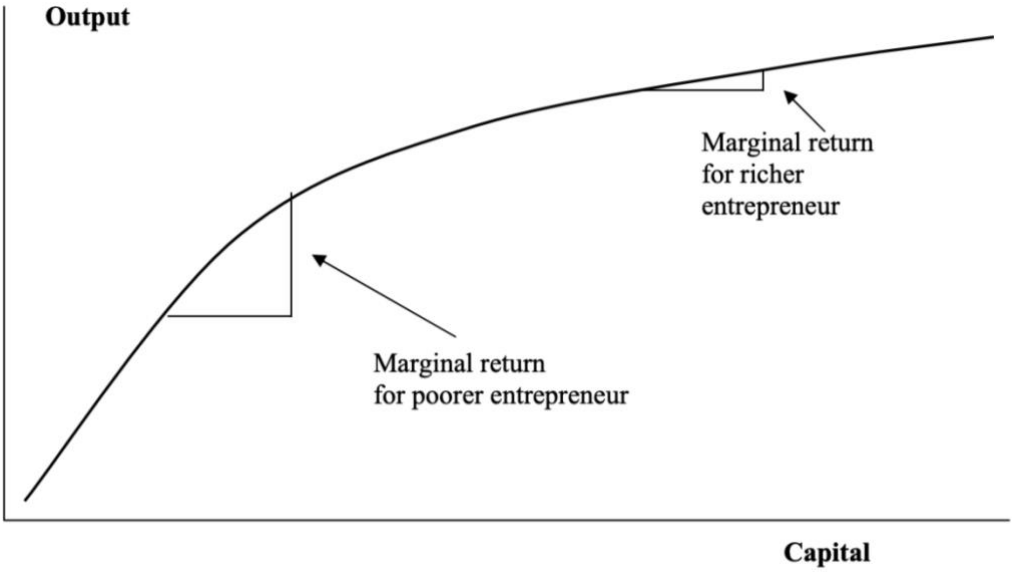

Figure (6): The concave nature of the gains of additional capital on company output (Armendáriz de Aghion & Morduch, 2007)

However, little consensus exists on whether microcredit helps eliminate poverty and promote sustainable development or worsens the financial situation of the already poor. Ideally, microcredit represents a win-win situation, in which the institution giving out the loans profits through interest payments, and the borrower profits through being able to develop their business with the obtained cash (Banerjee et al., 2013). Whereas this sounds as a promising concept, literature is not as excited about microcredit as one might consider. Mahajan (2005) poses five main reasons why microcredit is not the solution for eradicating poverty:

1. People would rather have access to financial services such as insurance and savings accounts, as this is perceived as more useful than getting credit.
2. Obtaining microcredit does not necessarily lead to an enterprise becoming successful.
3. Not all poor people want to be self-employed and therefore receive microcredit.
4. Microcredit is only used for people below the poverty line, but people just above it might profit more from it.
5. Microcredit institutions are not by definition going to be profitable enterprises.

It seems that all these points can be summarized by the notion that microcredit is only useful when given to the right persons, and not necessarily something that will magically cure poverty for all.

There are also issues with assessing the effectiveness of microcredit in a vacuum, as it is difficult to compare the performance of enterprises that did and those that did not receive microcredits (Banerjee, 2013). Many studies noted limited impact of microcredits. Tarozzi, Desai & Johnson (2015) found in a case study in Ethiopia that whereas the amount of loans had increased substantially after the introduction of microcredits in an area, there was no noticeable effect on economic growth. Angelucci, Karlan & Zinman (2015) found in a similar trial of 15,000 households in Mexico that whereas the amount of outstanding loans increased by 110%, there was also no statistically significant change in 37 different socio-economic indicators. The first point of Mahajan (2005) was also confirmed by Amin, Rai & Topa (2003). In a case study in Bangladesh, they find that microcredits are not effective for the poorest and financially vulnerable and might actually worsen their situation. In the absence of insurance against unforeseen risks, supplying microcredits might be harmful for the poorest, as they risk default on their loans. Therefore, they found that microcredits work better for people just above the poverty line with access to insurance, however this goes against the idea that microcredits should help the poorest households most.

Group lending

An alternative strategy of microfinancing is group lending. Whereas microcredits concern individual loans with individual repayment duty, group lending works by having a group be collectively be responsible for repayments. In other words, multiple individuals receive a loan, but if one person defaults on their repayment obligations, the other group members are also responsible for paying back the loan (Armendáriz de Aghion et & Murdoch, 2007). This creates greater financial security for the company originating the loan, as they are more likely to receive back all loans plus interest as there is a greater pool of people that can repay loans. This would then in turn incentivize microfinance suppliers to originate more loans than in the base case. Moreover, the individuals receiving the loans are often obliged to have weekly meetups to repay the loans, adding to the social control created by group lending. Armendáriz de Aghion et & Murdoch (2000) hypothesize that the group meetings could further improve

the performance of the respective borrowers' companies, as they could educate one another on lessons learned in the entrepreneurial process.

However, group lending does have disadvantages compared to regular microcredit. Due to the group repayment obligations, individuals could be prone to free riding, by having the other members of the group repay their loans (Alexeev, Nurmakhanova & Polishchuk, 2021). Moreover, this same mechanism makes individual achievements less rewarding, as they can be compensated by failure of other group members. Finally, groups will likely consist of a homogenous subset of individuals, meaning the loans will be issued to the same type of people. Usually, it is better for lenders to diversify their loans, so they are not exposed to the same risk multiple times (Alexeev, Nurmakhanova & Polishchuk, 2021).

As for the performance of group lending versus regular microcredit, a study by Attanasio et al. (2014) found that individuals in Mongolia that received through group lending were more likely to spend the loans on useful consumption and therefore lead to a long-term increase in consumption. They hypothesize that the increased social control created through the group liability stimulates individuals to make less risky choices and therefore pre-selects potential business ideas in a positive manner. In the end though, there was still no strong statistical evidence of long-term economic growth in the villages, like the regular microcredit mechanism.

Furthermore, some of the most fundamental issues with microfinance stem from the fact that offering the credit is not guaranteed to lead to self-employment, and that the micro-scaled businesses do not fare well when facing competition from larger, more established SMEs (Guerin, D'Espallier & Venkatasubramanian, 2015). Therefore, a focus on larger SMEs might be more a more productive angle to explore when trying to impact SDG8 in developing countries than microcredit. Finally, the notion that financial inclusion will always lead to economic development can be viewed as flawed (Mader, 2017).

In conclusion, microcredit was a promising idea in theory, but reality seems to deviate from theory; especially when trying to aid the poorest and the financially most vulnerable, microcredit falls short of its promises. It can be useful for people with incomes just below or above the poverty line and for established enterprises, however one could argue that those may have access to a wider range of financing possibilities and will usually have some form of collateral for regular loans. Finally, the impact of microcredit is on a relatively small scale, and mostly focused on individuals, whereas some other financing methods might have larger scale impacts on sustainable development.

3.2.2 Public private partnerships

Historically, much of the world's development has been through public-private partnerships (PPP). Many different types of PPP exist (Akintoye, Beck & Hardcastle, 2008), but in general The OECD (2008) defines PPPs as follows:

"*An agreement between government and one or more private partners (which may include the operators and the financers) according to which the private partners deliver the service in such a manner that the service delivery objectives are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partner. "*

The core concept behind a PPP is that a project that would usually be a government sanctioned project such as a large infrastructure project, is instead assigned to a private party by means of procurement. In turn, the private party will bear the risks of the project, in exchange for the ability to make the project profitable, for instance through mandating a toll payment.

The reason PPPs are used compared to government funding or private funding only, is because PPPs have shown success in being able to deliver projects quicker, and on budget compared to regular government funded projects (Van Ham & Koppenjan, 2001; Hodge & Greve, 2017). Furthermore, the use of PPP frees up budget for public expenditures and in some cases the expertise of the private sector could lead to increased project performance and innovative solutions (Van Ham & Koppenjan, 2001; Hodge & Greve, 2017. Private sector incentives for entering PPPs include the ability to enter new markets, being able to guarantee long term revenues due to the often-longer time span of PPP projects and the ability of public spending being used to cover some of uneconomic costs of the project (Van Ham & Koppenjan, 2001).

Depending on the project characteristics, PPPs can take on many different financial arrangements. There are too many different exact models to disseminate for this thesis projects, but the dimensions by which PPPs can differ can be generalized by looking at the degree of control by the private sector and the distribution of risk in the project. Akintoye et al. (2013) identify the following five main contract types:

1. Service Contract
2. Leasing
3. Joint Venture
4. Concession
5. Privatization

Service contract:

A service contract is the most basic version of a PPP, in which the government contracts a private party to deliver them goods and services (Robinson & Scott, 2009). This can take the form of delivering materials for projects, software, and other outsourced services. In this arrangement, the private party does not have any form of control, they just deliver the service they were contracted to do. The advantage of using a service contract from the public side is that often private parties can deliver the same goods and services at a lower costs level than would be the case if it were fully publicly sourced (Robinson & Scott, 2009). A disadvantage compared to other PPP models is that there is no real collaboration and knowledge transfer between both parties, so there are no gains in this area.

Leasing:

In a leasing contract, a private party is contracted for a set amount of time to operate a public asset. In this arrangement, the private party usually pays a leasing fee to the public party to be able to use the asset. During this time, the private party is responsible for operating the asset but is allowed to receive (part of) the profits from these endeavors. A common example of a leasing contract is a toll road, in which a road is constructed using public capital, but a private company operates the road (Zhang et al., 2013). A downside of leasing contracts is that in some cases, the leased out public services became more expensive when operated by a private party. An example of this would be toll road projects in Chicago and Indiana, where there was a contractually allowed annual raise of toll prices, which was disliked by the general public (Buxbaum & Ortiz, 2007). Still, one could argue that this is a case of a faulty contract, not a fundamental shortcoming of leasing contracts.

Joint Venture

In a joint venture, a separate company is set up that is partly owned by public capital and partly owned by private capital. Therefore, in contrast to the earlier PPP types, a joint venture is governed by both the private party and the government (Andrews, Esteve & Ysa, 2015). Usually, one of the two parties will be the majority shareholder, with the other being the minority party. Joint ventures are typically set up to increase the cooperation between the government and private parties, which is lacking in the earlier described contractual PPPs. In cases such as healthcare R&D, this increased cooperation can lead to critical knowledge transfer between both parties, which in turn can lead to innovations (Andrews, Esteve & Ysa, 2015). A downside of the use of joint ventures when compared to contractual PPP types, is that it requires alignment between both parties on their goals within the partnership. Furthermore, there will always be tensions between the parties with respect to who has the ultimate control in the company and the degree of autonomy and accountability of the respective partners (Trafford & Proctor, 2006).

Concession

Concession (sometimes called Built-Operate-Transfer) agreements work similarly to leases, but the private party is the one that constructs and maintains the asset until the end of the concession period, when the government gets ownership of the asset. During the ownership period, the private party receives the revenues generated by the project. Concessions therefore can be regarded as temporary privatization of public assets, such as critical infrastructure. A major factor in all concession agreements is the concession period: the number of years for which a private party gains control of a government asset (Ng et al., 2007). The concession period needs to be chosen in a way that balances public interest and the willingness of private parties to enter a concession agreement (Ng et al., 2007). For private parties, a longer concession period is usually desirable, as they have a longer-lasting stream of constant revenues (Feng et al., 2018). On the other hand, governments might not be willing to give control to a private party of important public assets for an extended period, as this might undermine public interest. Finding this right balance is one of the core challenges facing Concession agreements and can be a time consuming and costly process. Concessions are the most popular form of PPP, because they bring all the advantages of private participation, such as management skills, innovative solutions, and efficiency to public services, without the uncertainties that arise when a private party gains permanent control of a public asset (Zhang & Kumaraswamy, 2001).

Privatization

On the complete opposite end of the spectrum compared to service contracts lies privatization. In privatization, the government divest an asset to a private party for good by selling it. Therefore, after the sale, the government is no longer involved in the maintenance and operations of the asset (Akintoye et al., 2003). Privatization can lead to increased efficiency when a couple of factors are met, which according to Estrin & Pelletier (2018) are the following:

1. The privatization needs to be total, not partial.
2. The regulatory governance framework needs to be correct
3. Who are the new owners? Evidence suggests that outside new owners are more successful than privatizing to the current company employees and management.
4. There needs to be effective competition, otherwise the new owner is not properly incentivized to perform to high standards

The need for PPPs in sustainable finance

PPPs have been put forth as one of the ways of financing sustainable projects and can also have a contribution towards SDG8 through job creation in the public service sector. In SDG 17, an explicit emphasis has been put on the use of various types of partnerships in order to achieve the SDGs (Zapatrina, 2016). Zapatrina (2016) puts forth three main reasons are put forth why this is the case:

First of all, Modern infrastructure is crucial as a basis for sustainable development and especially the energy and climate related goals. A large part of the investment gap, almost 1 trillion US$, is in infrastructure for developing nations. Their governments will not be able to do these investments by themselves, requiring the need for private capital in conjunction with public capital to finance the infrastructure gap in developing countries. Therefore, using PPPs could be an effective way to get more financing in this area.

Secondly, the nature of the global challenge posed by the 2030 sustainable development agenda calls for a multi-actor approach, as many of the challenges faced are highly complex and therefore not solvable by single actors alone. Using a PPP therefore already involves more parties, with their own expertise, therefore making it more likely that projects will be delivered as necessary.

Thirdly, PPPs promote inclusive development, because for there to be inclusive development, public and private parties need to have mutual trust, which is promoted by the use of PPPs.

This final notion is also recognized by Berrone et al. (2019). They find that PPP have increased potential compared to private financing to stimulate social developments next to economic benefits alone, such as improved education and healthcare systems. The governments influence on the projects can steer the project benefits more in the direction of environmental and social benefits through cooperation with the private parties and defining the nature of the agreements. Furthermore, PPPs can play an important role in fulfilling the targets in SDG8, especially through infrastructure investments. Infrastructure can serve as an important backbone of the economy as it has a multiplier effect on multiple factors, such as the creation of jobs and consumption (Ivanov & Shamanina, 2021). Especially in developing countries, PPP's relatively lower costs for governments, and the willingness of private parties to take slightly higher risks than governments can be critical in ensuring the development of infrastructure, spurring on multiple economic benefits (Berrone et al., 2019).

PPPs can also play a role in regional development through partnerships with SMEs (Von Malmborg, 2003). However, SMEs have been observed to be hesitant to engage in these partnerships due to a disconnect of goals between SMEs and local public authorities. The reasons cited are the differing perspectives on the timeline for achieving certain goals. SMEs generally operate based on one-to-two-year goals, mostly economic, whereas governments

think in longer timespans. Furthermore, SMEs regard sustainability in more economic terms whereas governments are also more concerned with social and ecological sustainability (Malmborg, 2003). Chapter three will explore the financing of SMEs more deeply.

Challenges for PPP in sustainable finance

An important variable determining the effectiveness of a PPP on sustainable development is the distribution of investment between the public and private parties in the agreement (Shen et al., 2016). Because this distribution has to be assessed for each individual project, it can become a challenge if many projects are to be undertaken by a government. Furthermore, the biggest problem challenge with PPP in general, but also increasingly in sustainability-oriented PPP if the requirement for multiple actors to work together and align goals (Klein & Teisman, 2003). Moreover, partially because of this reason, PPP arrangements often take a long time to formulate, to ensure the social impact of a project (Ismail & Harris, 2016). The political aspect that therefore originates from PPP negotiations can cause delays for projects. Furthermore, in developing countries, PPPs can suffer from a lack of government guidelines and clear ideas on how PPPs should be implemented in those nations. In developed nations, where more formal guidelines for PPPs exist, difficulties have been observed in implementing sustainable criteria in PPPs (Hueskes, Verhoest & Block, 2017). Therefore, it is difficult to find the most sustainable alternatives in the public procurement process, especially regarding factors that are difficult to quantify. Furthermore, sustainability in general is mostly focused on environmental aspects, but less in social and economic aspects. Finally, PPP is not useful in investments that are not public service-related and therefore will not be able to cover the financing gap in other areas than infrastructure mostly. For these areas, such as financing local SMEs in developing countries, other financing methods are necessary, of which the most exciting and up and coming method is blended finance, which will be described in section 2.2.4.

3.2.3 Social impact bonds

A third way of attracting private investment towards sustainable investments are social impact bonds (SIBs). In a SIB contract (Figure (7)) a public institution will offer a guaranteed return to up-front investors in a sustainable project, to be executed by a service provider, if the project at the end of its lifecycle has reached certain social impact targets (Warner, 2013). Otherwise, the investors will not be repaid. An external party will oversee assessing the project outcomes, during and at the end of the project, to ensure that the project outcomes will be satisfactory (Nazari Chamaki, Jenkins, & Hashemi, 2019)

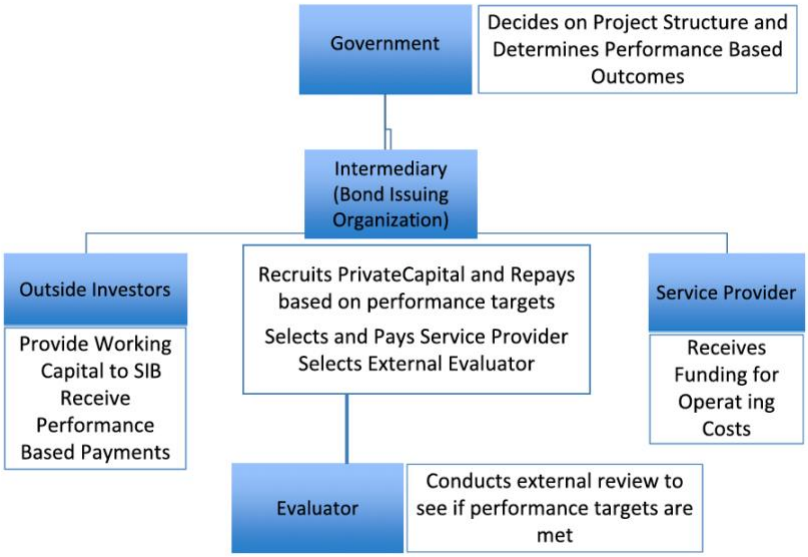

Figure (7): The workings of a social impact bond (Warner, 2013)

SIBs are meant for projects that otherwise would offer a financial return that would not be satisfactory for private investors compared to other projects, but which do offer a social impact. In contrast to PPPs, social impact bonds do not always concern public services and the only role of the government in a SIB transaction is target setting and paying out a financial return in case the project succeeds. So, it is not involved during the project itself. The risk in this transaction is borne by the private investor, and hence not the government, taking away risk for the government in providing social impact (Warner, 2013). Furthermore, the use of SIBs can reduce costs for the government.

What makes SIBs attractive is that it also takes away risks from the service provider, due to them not having to use their own capital for a project. This could open the way for experimentation and innovation by these service providers in order to achieve stronger results (Edmiston & Nicholls, 2018). Furthermore, SIBs are theorized to lead to better social outcomes, lower costs and should be able to attract large quantities of additional private investment in the social sector. The presence of private capital investors and the performance-based nature of the projects puts greater emphasis on achieving project outcomes and the reduced risk for social service providers frees them up more to focus on their task at hand.

Since SIBs are a relatively new investment form, not many empirical results have been generated as of 2022. According to an overview study by Gustafsson-Wright, Gardiner & Putcha (2015) has found SIBs to show relative successes, but that much is still to be determined regarding to the best use of SIBs. The selection of actors, setting up the goals of the agreement and monitoring of SIBs were found to be diverse yet complex, which could scare off governments to employ these.

SIBs in sustainable finance

SIBs in essence are already a form of sustainable finance, focusing largely on generating social impact. However, the concept could be taken further in order to facilitate all kinds of sustainable development. Not much research has been done on this subject to date, but exploratory research by Rizzello & Kabli (2020) has shown that SIBs could be leveraged for various sustainable development projects, as all projects analyzed showed the same financing structures but concerned different subjects. Therefore, it stands to reason that SIBs could be used for a variety of investment opportunities. SIBs also fit within the paradigm of SDG 17 that encourages (international) cooperation to achieve the SDG targets.

SIBs also seem promising as a tool for realizing SDG impact in developing countries (Rizzello & Kabli, 2020). Another term for SIBs in developing countries is development impact bond (DIB). DIBs can differ from SIBs in that it is not necessarily the local or national government in the project country that pays out the return when the project is successful, but rather external development agencies (Alenda-Demoutiez, 2020). Furthermore, a relatively unexplored subject, DIBs have been cited to have the potential to make an impact on the SDGs (Oroxom, Glassman & McDonald, 2018). In a case study in Cameroon, they found that the most important differentiator for DIBs is which parties are involved in the agreement. Furthermore, as the guarantor is not a government party, DIBs will be subject to international governance instead of local governance (Alenda-Demoutiez, 2020). This will move the focus of the projects more on short-term results than long-term vision for development. Finally, the specific targets could sometimes make the service providing party lose sight of the overall goals of development, and only focus on targets that will earn the investors a financial return.

Challenges for SIB and DIBs

One of the main challenges for SIBs is the need for coming up with clear, measurable indicators that can be used to assess the performance of a project and thus determine the payments to investors (Fraser et al., 2018; McHugh et al., 2013). Furthermore, SIBs are criticized by the fact that achieving social impact is not often done through one intervention, but is a more complex problem than can be solved using a singular SIB. Furthermore, pay-for-performance schemes are not an automatic indicator that performance will actually increase, which takes away some of the main promise of using SIBs, compared to regular financing methods (Fraser et al., 2018). Furthermore, there are concerns that due to the performance-based payment structure, the parties involved in the SIB will try to ‘game’ the monitoring company into believing they are achieving certain performance targets, whereas in practice they might not be the case. Criticism is also put forth by Berndt & Wirth (2018), who question whether SIBs are not too ambiguous and contradictory in their approach. Especially the role of the state is vague in the sense that it is involved in setting the performance targets and the procurement of the project, but then takes a hands-off approach

in which it lets the market dictate the course of the project. Moreover, in general, the lack of palpable results obtained by SIBs makes it difficult to assess the worth of the method, which might make parties hesitant to engage in these relatively complex contract forms.

Finally, regarding SDG8, SIBs are not directly used to create jobs or stimulate economic development, but more for improving existing services. Of course, one could envision a scenario in which one of the performance targets is job creation or economic growth, but this generally will happen when projects do well, or companies grow in an organic way, due to modern sustainable financing methods. The next section will touch upon the concept of blended finance, a highly promising sustainable financing concept that has had some promising initial results.

3.2.4 Blended finance

Blended finance is in broad terms the use of public ODA funds in conjunction with other sources of public or philanthropic capital, together with private capital to foster sustainable development projects (Pereira, 2017). This can entail many different construction and combinations of financing, but the main goal of blending is usually to attract private finance in sustainable development. Furthermore, the exact definition of blended finance differs between large public institutions such as the EU, OECD, DFI Working Group on Blended Concessional Finance and the Convergence Global Network on Blended Finance (Spratt, Lawlor & Coppens, 2021). Still, the overarching idea behind blended finance is that non private capital is used to make investment opportunities in sustainable projects more attractive for private investors, mostly by (in)directly reducing the project's risk profile, thus giving the projects a more favorable risk-reward ratio when compared to other market alternatives. This process is often called, 'mobilizing private finance (Spratt, Lawlor &. Coppens, 2021). Within mobilizing private finance, there is a distinction between direct and indirect mobilization (Attridge & Engen, 2019). In direct mobilization, development finance parties are directly involved in bringing private parties to the agreement, whereas in indirect mobilization the involvement of development capital attracts outside private investors to a project.

Looking at the importance given to increasing private finance involvement in sustainable development, the blended finance method fits as a way to alleviate the financing gap towards completing the SDGs discussed in the previous chapter. Blended finance schemes can be summarized in the following arrangements (Pereira, 2017)

1. Investment grants
2. Technical Assistance
3. Loan guarantees
4. Structured finance focusing on first loss
5. Equity investment

Investment Grants
Investment grants are grants that are aimed to cover the costs of new capital expenses for companies, so that the overall change that a company succeeds increases.

Technical Assistance
Technical assistance entails taking care of transaction services for the target company, in order to lower transaction costs of transactions, which is beneficial for companies as they are able to allocate capital for investments and other sources that grow the business.

Loan guarantees

In loan guarantees, public and philanthropic capital guarantees that part of a loan to for instance a bank will be paid back, even if the company that gets the loan ends up not being able reach the productivity levels required to generate enough income to pay back the loan. This arrangement makes private investors and banks more eager to give loans to companies, as the risk of the loan is reduced. The principle of a loan guarantee is shown below in Figure (8).

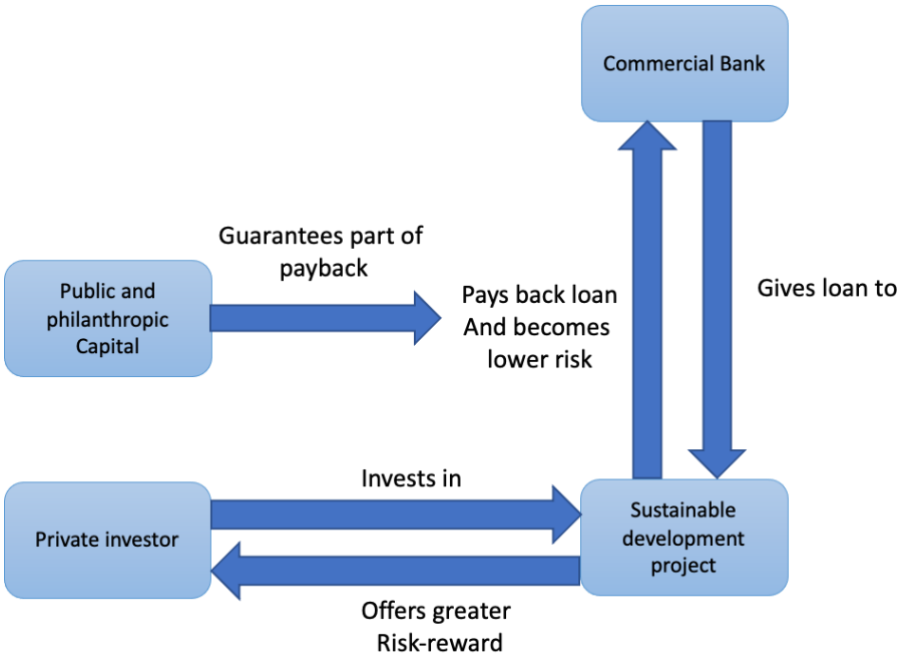

Figure (8): The loan guarantee blended finance scheme (Slootweg, 2022)

Structured finance: first loss piece

First loss is similar to loan guarantees, but instead of guaranteeing part of a loan, the company will guarantee that part of the investment or equity a private investor has put into a company is repaid. This again takes away risk for equity investors, making a project more attractive from a risk-reward perspective. The first loss scheme is shown in Figure (9) below:

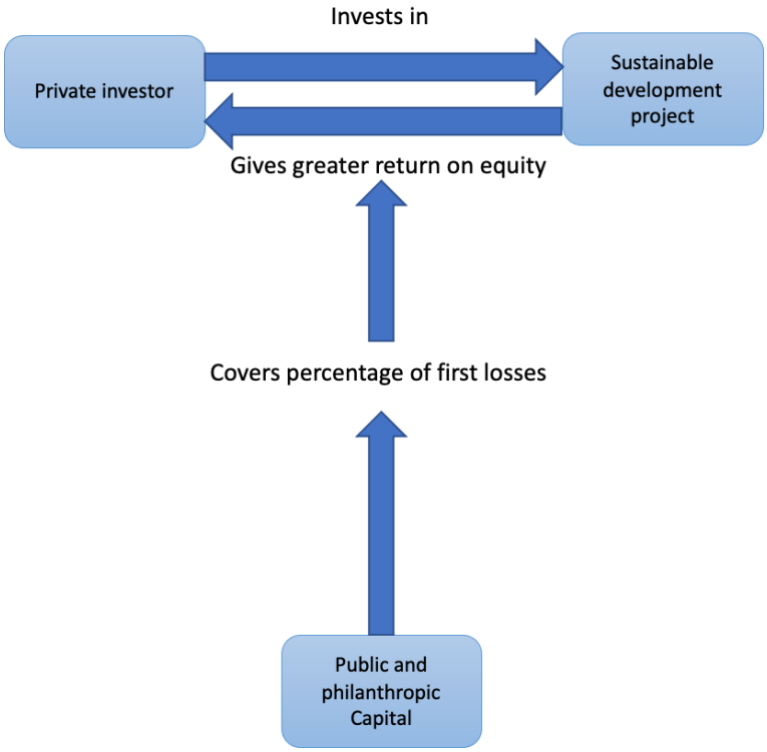

Figure (9): The first loss guarantee scheme (Slootweg, 2022)

Direct equity investment

Public, development, and philanthropic capital can also be used to make direct equity co-investments with private parties. This directly gives the company or project at hand additional capital to invest into their business. Together with proving that the project is a viable one, this will result in a project potentially being able to attract more private income. Compared to investment grants, the public or philanthropic party will receive part of the equity in the project, thus becoming a co-owner of the company.

Looking back, it is not difficult to understand how all these types of blended finance can mobilize private finance. The lower risk profile created. By the investments is a direct boost to the attractiveness of a project from a private investor standpoint. Blended finance has had increased output over the past couple of years. According to Spratt, Lawlor & Coppens (2021), the amount of private capital mobilized by blended finance has increased from 15.3 billion US$ to 48.4 billion US$ in 2018. This amount pertains to the direct mobilization of private investments, and not the indirect mobilization which is more difficult to measure.

Therefore, the true figure might be higher than stated in the report. Of this raised capital, most is mobilized by means of loan guarantees. Still, there is must room for improvement towards reducing the financing gap's size of 2.5 trillion US$. One of the reasons why not enough funding is going into blended finance projects, is because there is a lack of a blended finance framework on which structures are best for which types of projects (Attridge & Engen, 2019).

Still, the potential of blended finance is well recognized due to its ability to solve market imperfections. These are especially prevalent in developing countries, where the financing gap is largest (Attridge & Engen, 2019). Moreover, blended finance is only necessary in the initial stages of a project or investments in a sector, as when these sectors develop to become more profitable, blended finance is no longer necessary as the risk/reward ratioss will then most probably have converged towards the normal market rate.

Still, blended finance faces a couple of challenges before it can be implemented most effectively. First of all, the estimate between how effectively blended finance can be used to raise additional private financing varies and appears to be less effective than promised. In lower-middle income countries, each dollar of public investment mobilizes 1.06 US$ of financing, whereas in lower-income countries the figure is only 0.37 US$ in financing (Attridge & Engen, 2019). The shortcomings of blended finance for the lowest income countries will be discussed in the following section, but in short is caused by a lack of investable opportunities for MDBs (Attridge & Engen, 2019). Pereira (2017), also finds that blended finance projects can suffer from poor monitoring, leading to the impacts realized being lower than the desired levels. Moreover, the combination of public and private capital can sometimes cause frictions between project outcomes and management, which is in line with some of the shortcomings of other forms of PPP (Pereira, 2017). Furthermore, coordination between development banks and bilateral agencies is insufficient, whereas bilateral agencies play a key role in blended finance for the LDC, as development banks are less keen on investing in projects in those countries due to the higher associated risks (Attridge & Engen, 2019; Pereira, 2017).

Still, even with these issues, blended finance has shown promising results. Furthermore, a forest conservation project in the Amazon rainforest has been successful through the use of blended finance and even a combination of multiple blending arrangements (Rode et al., 2019). One of the recommendations put forth by the report is that it important to match the correct type of blended finance to the project at hand. Going back to the lack of a best practices framework for blended finance found in Attridge & Engen (2019), it appears to be even more important to try and find ways projects can be matched with the correct type of blended finance and gain insights in how blended finance investments can be done in a more effective way.

In the context of SDG8, blended finance could be an interesting prospect. If a lower amount of investment is able to catalyze additional capital investments for projects that can stimulate job creation and economic growth, this could be a major way to do so. However especially in the areas where SDG8 could be most impacted, blended finance, together with the other methods discussed in this section, is not as effective as one would hope. Still of all the methods, blended finance appears to be the most flexible option, due to the various arrangements and the ability to catalyze private finance, without the need for complex PPP contracts or social bond contracts. Moreover, it can be used for projects of any scale unlike microfinance, which falls short when trying to create larger impacts in the lowest income countries especially and will therefore be the focal point of the rest of this research. The next section will delve into why all methods and especially blended finance perform more poorly in developing countries, and what a potential solution might be.

3.3 Differences between developed and developing countries

All methods of sustainable financing described in the previous section perform more poorly in developing countries than in developed ones. This might come as a surprise, as much of sustainable development must be done in exactly these countries and the financing methods are focused on delivering impact in higher risk investment opportunities, which many of the projects in developing countries are. This section will delve into the issues faced in using sustainable finance in developing countries against the developed world. Furthermore, potential solutions to these problems will be discussed.

Microcredits

In general, many of the methods described perform better in middle-income countries (MIC) than in the lowest income countries (LIC). For microfinance, multiple barriers have already been discussed in the previous section on microfinance. Barriers include that people do not have the entrepreneurial expertise to use the microcredits, people need other aid first before they can use loans and that in general people in LIC might prefer to be employed than to own their own enterprise. Therefore, it might not be the best method to create jobs and economic development in the poorest countries, as it goes against the nature of the problems that people face in those countries. In developed countries, microcredits are not really used, so the comparison is difficult to make.

PPP

PPPs face problems in that they are usually used for large infrastructure projects and offer less flexibility than blended finance. A number of prerequisites for successful PPP are also not necessarily always present in developing countries, whereas they are in developed countries. Therefore, the use of PPP is more widespread in developed countries than in developing countries. Sharma (2011), states that these factors are: macroeconomic stability, political stability, the presence of effective governance mechanisms and the potential for

currency crises. All these factors increase the risk of PPP projects, which as they are often large by nature, are very considerable. Smaller projects, such as SMEs, carry less individual risk but together could still be able to generate considerable economic growth and employment, but financing these is more suited to solutions such as blended finance than PPP, as PPP only entails public services and not all industries. Finally, as PPP usually focuses on infrastructure, it only covers part of the financing gap, whereas blended finance has the potential to cover a wider spectrum of this same gap and could even be used to fund certain infrastructure projects.

SIB and DIB

One of the main criticisms with DIBs and SIBs in general is that the performance-based nature of the DIBs does not always align well with achieving sustainable development in those countries (Alenda-Demoutiez, 2020). Focusing all development on a metric such as 'bring education to more girls' can underestimate the difficulties surrounding such metrics regarding socioeconomic and cultural factors in those countries. Furthermore, regarding SDG8, Whitfield (2015), has found that SIBs and DIBs usually worsen working conditions for those projects than when all funding would have been public financing. This is not in line with the objectives of SDG8, which aims to provide *decent* work and not just any form of employment. Finally, existing data on DIBs is very limited, making it difficult to evaluate the potential of DIBs for developing countries. Therefore, more empirical data is required before DIBs can be assessed properly and are therefore not explored further in this research. SIBs appear to be more promising for developed countries, in which they can be used to improve social issues which are already being addressed, instead of having to find financing for new issues with a performance-based metric.

Blended Finance

The effectiveness of blended finance has been shown to be relatively lower in the LIC, compared to the MIC. Attridge & Engen (2019), give a few potential reasons for this lower efficiency. First of all, even though the risk profile of these investments can be reduced, they still bear high risks, which is not an attractive proposition for development banks. This is because many development banks require an AAA rating by mandate and can therefore not engage in too many risky projects. This is also why most concessional finance in the LIC is done by bilateral institutions, such as the FMO in the Netherlands or Invest International. Finding the correct amount of concessional financing is also difficult in developing countries (Spratt, Lawlor & Coppens, 2021), as is the correct type of blending instrument (Attridge & Engen, 2019). These two factors together again hint at the lack of established common practices and effective uses of blended finance in developing countries. Investigating this is therefore the focal point of this research. Regarding SDG 8, it is important to establish where employment and growth can be realized in developing countries. Looking at the more rural nature of those countries, it stands to reason those smaller investments in SMEs can be an

appealing option, which is already one of the main ways blended finances is used and one of the main investments most bilateral institution do.

3.4 Conclusion

In this chapter, multiple sustainable financing methods have been assessed and compared. The results of this analysis are summarized in Table (1) below.

Table (1): Sustainable financing methods with advantages and disadvantages

Method	Description	Advantages	Disadvantages
Microfinance	Give small loans to people who want to start a business	Theoretically low cost- high impact Moderate Succes has been observed on an empirical level	Still no definitively proven to work Misses impact on people it is designed for
Public-Private Partnerships	Contracts between government and private parties for the delivery of public services	Combining expertice of public and private parties More efficient, lower costs	Less effective in developing countries Only used for public services, not other sectors
Social- and development impact bonds	Pay-for-performance scheme for delivering services in social welfare and development projects	Pay-for-performance scheme incentivizes strong results Flexible scheme, can be used for many different types of projects	Difficult to establish concrete indicators and targets Not necessarily used for job creation Little to no data in developing economies
Blended finance	Using concessionary public and philantrophic capital to catalize private investments	Flexible and efficient scheme Direct impact on projects and therefore job creation	Lack of knowledge on investment decisions and effective practices Can be less effective in the least developed countries

The methods were afterwards assessed for their performance in developing economies, as those are the focal target group of this research, as the finance gap is largest for those countries. Of the methods, the current most promising and most practical method to use appears to be blended finance, due to its concrete approach and the flexibility of the different schemes. Furthermore, the concessional capital that is used in blended finance does not have to necessarily come from local governments, which is important as those generally are lacking in available investment capital and can therefore not adequately support business through concessionary investments. Furthermore, DIBs have been applied very little in practice and microcredits have doubtful historical performance and look to work less well in economies where it is needed most. Therefore, blended finance will be explored as the main sustainable finance methodology going forward.

The final important aspect of this research that needs to be covered is which parts of the economy are most important to invest in. The next chapter will explore the role of the most obvious candidate for investments, SMEs, in the developing economy and the challenges faced by these companies in obtaining financing for their activities.

4 SMEs financing in developing countries and the role of blended finance

Having established blended finance as the main sustainable financing method of interest, it is important to explore the potential role of blended finance in the financing of local SMEs in developing countries, to stimulate economic growth and job creation, the focal points of SDG 8. First, the role of SMEs in the developing economy and therefore SDG8 will be explored, next the problems behind SME financing in developing countries will be investigated, and finally the current and potential role, but also the unknowns for the use of blended finance in these types of projects will be assessed.

4.1 The role of SMEs in the developing economy

SMEs are the main employers of people in most low- and middle-income countries and therefore play a critical role in the developing economy, which is why they are one of the main targets for development financing worldwide (Kersten, Harms, Liket & Maas, 2017). The 2017 International Labor Office report on world employment found that in low-income economies, 52% of people are employed through SMEs, compared to 40% in developed economies (International Labour Office, 2017). In some of the poorest countries, the share of SMEs in job creation even grows to 71% (Nasr & Rostom, 2013). In South Africa, this figure is even larger, with 91% of companies in that country being SMEs, which are responsible for 61% of jobs (Kongolo, 2010). Especially in the light of the COVID-19 pandemic, restoring these jobs can be regarded as an important process in sustainable development. The International Labour Office report also highlights SMES as the main creators of jobs in developing countries, as well as the important role of private companies in financing these companies (International Labour Office, 2017). The important and often leading role of SMEs in job creation and economic growth in developing countries is also well documented in literature (Aris, 2007; Chege & Wang, 2020; Eniola, 2014; Kersten et al., 2017; Kongolo, 2010; Nasr & Rostom, 2013; Ngek & van Aardt Smit, 2013). Therefore, SMEs are a very promising target for sustainable financing, in order to achieve the targets, set in SDG 8 in developing countries.

SMEs are also not only important for job creation, but also important for the types of jobs that are created. SMEs play a critical role in in the transition of rural, agriculture-based economies to more modern industrial economies (Kongolo, 2010). Furthermore, SMEs in developing countries are also responsible for creating safer jobs for people, especially women and children (Chege & Wang, 2020). One of the reasons why SMEs perform so strongly in developing economies, is because they are more flexible due to their size than larger corporations. In developing countries, with continuously changing political, social, and economic environments, this flexibility allows SMEs to thrive (Kongolo, 2010). Moreover, the strength of SMEs is that they provide endogenous growth to countries and have more

local impact (Aris, 2007). This is logical, as smaller companies will more often employ people living in the surrounding region than larger enterprises, as they have less capital to pay for transport costs. Finally, SMEs are also a key driver of innovation and capable of improving the social status of people in developing economies, who were previously of lower social status (Eniola, 2014).

Due to their critical role in the developing economy, one would expect SMEs to receive large funding in these countries, but this is far from the case. In the Middle East and North Africa for instance, SMEs only receive 10-20% of the total company financing in those countries, whereas being responsible for far more jobs and job creation than larger corporations (Nasr & Rostom). The financing gap for SMEs in those countries is close to 125% of what they currently have outstanding in loans. The workings behind this financing gap for SMEs in developing countries will be discussed in the following section.

4.2 SME financing problems

Globally, but especially in developing countries, SMEs suffer from a lack of financing. The size of the global SME financing gap is 5.2 trillion US$ (World Bank, 2022b), which even dwarfs the SDG financing gap of 2.5 trillion US$. This financing gap is the most important problem SMEs face when trying to grow their business (Kersten et al., 2017). Many reasons have been put forth for the lack of financing for SMEs. The main reason, especially in developing economies, is that banks are less willing to give loans to SMEs, due to the higher associated risk of these loans (World Bank, 2022b). In developing countries, an additional problem is that there is very limited credit risk and financial data for SMEs, which also scares away banks from originating loans for these enterprises (Abraham & Schuckler, 2017; Kersten et al., 2017). In addition, there are higher relative costs for banks associated with selling SMEs in case of loan default, which even adds to the higher risk profile for traditional credit suppliers (Kersten et al., 2017).

The increased risk profile of SMEs is also perceived as such by banks due to asymmetric information, as in contrast to larger corporations, banks cannot adequately assess the risk profile of a SME and thereby match the correct interest rate to the risk profile (Beck, 2007). Because of this, the relative transaction cost compared to loan sizes are higher for loaning to SMEs than to large corporations from the perspective of banks. Transaction costs are also higher relatively for SMEs, resulting in them having an even lower chance of repaying credit to the banks. In developing economies, the relative transaction costs and information asymmetry between borrower and lender are even greater, making obtaining loans even more difficult for local SMEs (Beck, 2007).

In developing countries, there is a lack of institutions for the types of collateral that can be used for bank loans and enforcement of these loans through judicial procedures (Abraham & Schmuckler, 2017). This worsens the situations for SMEs, as in theory their higher risk

profile could be compensated by raising the amount of collateral. However, the lack of rules about which types of collateral is considered acceptable makes this process more difficult. Finally, the rapidly shifting political and socio-economic landscape in developing countries also scares away commercial banks from supplying loans to SMEs (Beck & Cull, 2014). As a result, SMEs in developing countries pay on average 30 percent more for credit than larger corporations (United Nations, Inter-agency Task Force on Financing for Development, 2022). Moreover, a third of the SMEs in developing countries face problems in achieving their financing goals. Finally, commercial bank financing of SMEs in developing countries is only equal to 5 percent of GDP, versus 15 percent for developed countries.

The lack of financing for SMEs is concerning given their previously discussed role in growing developing economies and creating jobs. The level of financing of SMEs is directly correlated with numerous important factors such as job creation. Furthermore, the level of external financing of a SMEs directly correlates with firm level innovation (Wellalage & Fernandez, 2019). Another concern with the lack of financing by conventional means, leads entrepreneurs in developing countries to seek the help of their own network for financing, but also illegal loans through loan sharks, which can sometimes lead to dangerous situations for the entrepreneurs if they are not able to repay the loans (Rao et al., 2021).

The necessity of financing SMEs has also only increased since the start of the COVID-19 pandemic. SMEs were among the hardest hit parts of the economy due to the pandemic. Many SMEs required government stimulus during the pandemic, and whereas this was still an issue in developed countries, the problems were even larger in developing countries, where governments do not have the capital or other means to provide emergency stimulus on a large scale (United Nations, Inter-agency Task Force on Financing for Development, 2021). The problems caused by the pandemic for SMEs are compounded by the fact that SMEs generally do not have as much emergency liquidity as larger enterprises and as discussed before face more problems in obtaining financing. As a result, 34 % of SMEs in developing countries risked shutting down as early as August 2020, which would be a severe blow to those economies.

Therefore, it seems evident that SME financing needs to be improved worldwide and would go a long way towards realizing the goals in SDG 8 through their function as job creating engines and facilitators of local economic growth. The next section will explore SME financing and in particular the potential of blended finance for financing SMEs.

4.3 SME financing and the potential of blended finance

Multiple solutions towards shrinking the SME financing gap have been put forth in recent years. First of all, Abraham & Schmukler (2017) argue for a couple of possible interventions: increased transparency for credit ratings, tailoring markets towards SMEs and facilitating the acceptance of movable collateral (Machines, accounts receivable etc.). Improved credit rating transparency would help banks in determining whether they would like to originate loans to SMEs, which is currently difficult as they cannot properly determine the firms' credit ratings. Creating new capital markets specifically for SMEs could also have benefits, as it can be used as a way for SMEs to receive financing outside of the traditional banking system. A downside of this method is that there have been limited practical successes observed to date, even though it might work in theory. Finally, improving the regulations for accepting moving collateral would mean that SMEs are more easily able to provide collateral to banks to guarantee their loans.

All these methods, however, just deal with bank financing, and do not make the investments more attractive for private investors and thus do no mobilize this additional source of financing, which does happen in the case of using blended finance. Therefore, blended finance is being put forth as a promising solution towards alleviating the SME financing gap in developing countries. It takes away a lot of the risk associated with SME financing in developing countries, which could help make bank loans for these companies more attractive, but most importantly, can help mobilize financing sources from other private investors through a limited amount of concessionary capital (United Nations, Inter-agency Task Force on Financing for Development, 2022). One of the main concerns raised is that the capital used for the various types of blended finance investments could also be used in other forms of development aid. Therefore, it is important that the public and philanthropic capital resources are used adequately as to not take away from other necessary forms of sustainable development (United Nations, Inter-agency Task Force on Financing for Development, 2022).

However, as discussed before, research on investment decisions and effective practices of using the correct blended finance mechanisms for the right types of projects is lacking. This reaffirms the necessity of this research into exactly these investment decisions and effective practices, as to ensure that the precious development and limited public and philanthropic capital is being used in the most effective way, to catalyze important investments in SMEs in developing countries. Especially in the light of the COVID-19 pandemic induced job losses and reversed economic growth in developing countries, reversing this trend through aiding SMEs should be the most logical step towards shrinking the financing gap and fostering sustainable development.

4.4 Conclusion

This section has found that SMEs are the most important part of the developing economy when it comes to employment and job creation. In the light of trying to impact SDG 8, SMEs therefore should be a logical target for investments and financing aid. However, the literature review in this section has also found that SMEs, and even more so the ones in developing countries, suffer from a lack of financing, mostly due to their higher risk profile and therefore the inability to get bank loans. Furthermore, a variety of other factors, such as lack of institutions concerning collateral and institutions concerning banks' ability to enforce their loans make it so SMEs in developing countries pay higher premiums even in the case wherein, they manage to secure them compared to larger corporations. Luckily, blended finance should be a promising method to use to finance SMEs, as its main concept of reducing the risk profile of the SME for outside investors and credit guarantors such as banks, can be used to curbs some of the financing issues of SMEs.

The next part of this research will try to establish effective ways of using blended finance for the financing of SMEs in developing countries from the perspective of impact investors through a data analysis of current and historical blended finance projects and interviews with investment experts in the field of blended finance. These effective practices and investment considerations could then help investors to make effective use of their investment capital to then through their investments in SMEs help create jobs in countries where people need these most and in turn boost the economic development in those nations.

5 Methodology and formulating hypotheses

In this section, the data analysis and case study methodologies will be explained. Furthermore, a description of the data set that will be used for these analyses will be given, together with its limitations in the context of internal and external validity. Furthermore, hypotheses will be established for effective practices regarding blended finance investments in SMEs in developing countries. Finally, the setup of the qualitative interviews that will shed light on the validity of the quantitative results, as well as delve into investment decisions regarding blended finance, will be given.

5.1 Explanation of Invest International

The data that will be used for this research is data obtained from investments by Invest International. Invest International is a joint venture that is part-owned by the Dutch Ministry of Finance for 51% and by FMO for 49% (Invest International,2022). Invest International was founded in 2019 and its mandate is codified in Dutch law in the 'Oprichtingswet Invest International as 'to contribute to the future earning capacity of the Netherlands and 2) to create impact on the Sustainable Development Goals'. The primary focus is on SDG 8, 'decent work and economic growth' and SDG 13, 'climate action'. Invest International is a public investment firm, as it uses capital from public sources.

In order to fulfill its mandate, Invest International invests in Dutch companies in developing countries, in order to make an impact on the SDGs locally in those countries (Invest International, 2022). The investments at hand are often higher-risk investments, which cannot obtain the necessary financing from conventional private sources only, and therefore require a form of public investment, to survive and generate impact. Furthermore, it is mandated that Invest International's investments are additional to the market, meaning they cannot interfere with the local financial markets.

Currently, Invest International has been put in charge of the already existing 350 million euros Dutch Good Growth Fund (DGGF), which was originally managed by the Rijksdienst voor Ondernemend Nederland (RVO). Through DGGF, Dutch entrepreneurs who have a business in developing countries can get financing through either public loans or public loan guarantees, forms of blended finance (Invest International, 2022b). The size of the public loans and guarantees cannot exceed 10 million euros, and generally are to be repaid in 7 years. The dataset used for this research will consist of financial data for 38 DGGF portfolio companies.

5.2 Explanation of the dataset

5.2.1 Variables in the dataset

To formulate or get an indication of effective investment practices for using blended finance to achieve an impact on SDG 8 through investing in SMEs in developing countries, this research used a dataset of historical and current blended finance investments in Dutch SMEs in developing countries. The fact that the SMEs are Dutch is important to acknowledge in the sense that they are not owned by people who come from developing countries. Nevertheless, much of the impact generated by these companies is at a local scale in the developing countries, especially when it comes to creating jobs and the resulting economic growth in those countries. For the sake of confidentiality, the names of the companies are not stated in the dataset.

Of the projects, multiple financial indicators are known. The most important variables, that will be used for this research are shown in Table (2) below.

Table (2): Explanation of variables in dataset

Variable	Description
Country	The country in which the project is located and in which the impact will be measured
Sector	The sector in which the project operates
Income Group	Income group of project country, as classified by the World Bank (World Bank, 2022c)
Financing type	The type of financing that has gone into the project by Invest International
Number of jobs before intervention (distinction between male and female)	The number of FTEs employed by the company before the investment
Target Number of jobs (distinction between male and female)	The desired amount of jobs in a company at the end of the investment period
Direct Jobs created (distinction between male and female)	The amount of jobs created since the start of the investment
Targeted outgrowers (indirect job creation)	The number of targets outgrowers after the investment period
Realized outgrowers (indirect job creation)	The amount of outgrowers
Target trained outgrowers (indirect job creation)	The amount of targeted trained outgrowers
Realized trained outgrowers (indirect job creation)	The amount of currently trained outgrowers

Total investment	The total amount of capital committed to the project by Invest International
Expected Jobs per million euros pear year	The number of expected jobs created per million euros per year invested
Risk rating start	The risk rating of the project at the start of the investment
Risk rating end	The risk rating of the project at the end of the project
Risk rating difference per year	The absolute change in risk rating divided by the number of years a project has run
Revolver % start	Expected percentage of loan that will be recouped after the investment at the start of the project
Revolver % end	Expected percentage of loan that will be recouped after the investment at the current moment

5.2.2 Descriptive statistics

In the tables below, some descriptive statistics are given to paint a clearer picture of the dataset.

Table (3): Number of loans and guarantees

Variable	**Frequency**
Guarantees	12
Loans	26

As can be observed in the table, there are more loans in the dataset than guarantees, which means that the variable guarantees are more prone to outliers.

Table (4): Country classification frequencies

Country classification	**Frequency**
LIC	8
LMIC	25
UMIC	5

As can be observed, most investments are in LMIC and less in LIC, which is probably because the set of LIC is smaller, and it is really difficult to start a business in these countries.

Table (5): Country list, Classification, and frequency

Country Name	Classification	Frequency
Colombia	UMIC	1
Egypt	LMIC	1
Ethiopia	LIC	3
Ghana	LMIC	2
India	LMIC	4
Indonesia	LMIC	1
Kenya	LMIC	5
Madagascar	LIC	2
Morocco	LMIC	1
Mozambique	LIC	1
Nigeria	LMIC	1
North-Macedonia	UMIC	1
Pakistan	LMIC	1
Peru	UMIC	2
Senegal	LMIC	2
South Africa	UMIC	1
Tanzania	LMIC	2
Uganda	LIC	2
Vietnam	LMIC	5

The dataset includes a wide variety of countries across multiple continents, with a focus on Asian and African countries. Because of this, the dataset reflects sustainable development in a wider scope.

Table (6): Distribution of Industries

Industry	Frequency
Agriculture	12
Business and other Services	2
Fishing	4
Industry	15
Medical Services	2
Transport and Storage	3

The most common industries are agriculture and industry. In lower income economies, it is no surprise to observe these two as the largest group, especially considering that low cost of labor and warmer climates are factors that exist in many of the developing countries in the dataset, and which are not present in the Netherlands. Therefore, these are attractive industries for Dutch entrepreneurs to start a business in, in developing countries as opposed to the Netherlands.

Table (7): Descriptive Statistics of Investment Size

Statistic	**Value (euros)**
Mean	3595694,74
Standard Error	543370,558
Standard Deviation	3349561,08
Sample Variance	1,122E+13
Minimum	465000
Maximum	13400000

Finally, the descriptive statistics of the investments are shown, which shows the range of the investment size in these projects. There is a decently sized spread and high sample variance and deviation. Still, all the investments indeed do fall in the range of SMEs, and not any micro level companies or larger corporations.

5.2.3 Limitations of dataset

The dataset has two important limitations. First of all, there is no control dataset to directly compare the difference between having or not having a blended finance intervention. Obtaining a control dataset for these types of projects is unfortunately not possible, but the research method has been chosen in accordance with the characteristics of the dataset. The reason that the lack of a control dataset is problematic, is because it decreases the internal validity of the research. Effects caused by the financial interventions might be caused by the financial interventions themselves but might also be caused by other factors. Not having a control dataset without these interventions makes it so that these can never be fully confirmed.

The second issue with the dataset is that it does not concern a large dataset, and some data are lacking. This decreases the power of the dataset, when used for statistical analysis. Furthermore, not all projects are fully completed or at the same stage of maturity. This again, might take away from some of the validity of the results. Again, the next section will explain the research methodology used to counteract this problem.

5.3 Research methodology

This research will attempt to find effective practices for investors and general investment considerations for blended finance investments in SMEs in developing countries by means of a mixed methods approach, combining multiple two sample t-tests to find differences between means, together with supportive case studies. The reason a mixed methods approach is chosen, is because of the previously stated concerns regarding the size of the dataset and the issues with internal validity. Basing all the conclusions of this research on just this dataset therefore might cast doubts on the validity of the research, or at least might take away some of the practical use applications of the results. Therefore, the data analysis will be supported by case studies, which will look more deeply into why some of the patterns in the dataset were (or were not) found and will try to confirm these findings. The next three subsections will further explain the use of mixed methods, the data analysis, and the case studies.

5.3.1 Mixed methods

Mixed methods research entails using a combination of multiple research methodologies. In the case of this research, this involves the use of both quantitative data analysis, as well as qualitative case studies to validate hypotheses. Mixed methods can be used for a variety of reasons, but in the context of this research, the rationale behind using mixed methods lies in the concerns about the internal validity of the research due to the lack of control group data. Supporting a data analysis with qualitative research can help shed light on whether there is a critical lack of validity in the quantitative results (Kelle, 2006). Moreover, as the dataset is not that large, there is a chance that findings will not be statistically significant. Using mixed methods can also help in this regard, as quantitative findings will be able to explain some of the uncertainties in the statistical findings (Kelle, 2006). Finally, the results of the quantitative data analysis will be able to help guide the selection of case studies from the set of potential projects (Kelle, 2006).

The combination of statistical analysis and case studies is described in literature. There are two main types of mixed methods designs that involve case studies, the Case Study-Mixed Methods Design (CS-MM) and the Mixed Methods-Case Study design (Guetterman & Fetters, 2018). The two different designs are depicted in Figure (10) below:

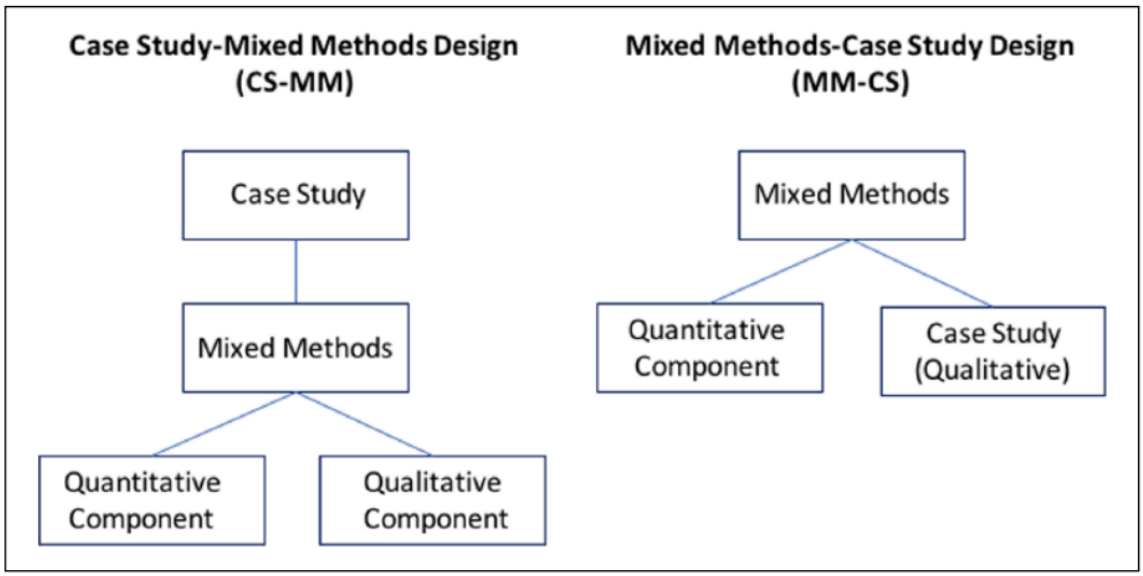

Figure (10): The two general methods for combining Case studies with quantitative components (Guetterman & Fetters, 2018).

In CS-MM, the case study itself is a mixed methods design, which has a qualitative component and a quantitative component. In contrast, in MM-CS, the case study is a qualitative component of an overarching mixed methods design. This research will take the form of MM-CS, with a quantitative statistical analysis of the larger dataset, and qualitative case studies on three projects within the dataset. The main use of the MM-CS design is to merge the two main parts of the research into a clearer conclusion. The reason this research is not considered CS-MM, is because the set of projects in the dataset are heterogenous, especially considering that they are all in different countries and sectors. Therefore, the dataset cannot be called a single case study, or at least not a very homogenous one. The next section will present the hypotheses that will be tested in the context of this research. The two sections afterwards will delve further into the details of the statistical data analysis and the case study part of this mixed methods research.

5.3.2 Hypotheses and statistical data analysis methods

The main question that must be answered is which types of blended finance methods work better in general, or perhaps with different types of projects with the main KPI being the creation of jobs through the investment. In order to properly compare projects with one another, it is important to normalize the jobs created by a project to a figure that does not depend on the size of the project, as a larger project with larger financing is generally expected to create more jobs than a smaller project. Furthermore, not all projects have had the same runtime, so comparing them directly is not fair given that a project that has run for longer generally will have achieved more impact. Finally, another factor that needs to be considered is the sustainability of the jobs created, in the sense that if the company defaults or if the employees get fired, the created jobs cease to exist. It would therefore be unfair to

attribute the full number of jobs created to a company that is close to defaulting. Therefore, the main independent KPI for this research will be the number of jobs created per euro invested per year. This KPI is especially relevant for public and philanthropic when trying to maximize the impact of their investments. If investing in multiple smaller projects can yield a higher job per million per year, this would be a preferable strategy over investing in one large project which might create many jobs but is less effective at doing so. The base for the hypotheses will therefore be different potential ways in which the jobs created per million euros per year invested can differ. The hypotheses that will be tested by means of the dataset are shown below:

1. Public loan guarantees create more expected jobs per million euros per year invested than direct public loans

$$H_0: \quad \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{loans} = \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{guarantees}$$

$$H_1: \quad \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{loans} < \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{guarantees}$$

2. Public Investments in higher income countries will yield more expected jobs per million euros per year invested than in the lowest income countries

$$H_0: \quad \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{LIC} = \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{LMIC\ \&\ UMIC}$$

$$H_1: \quad \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{LIC} > \frac{E[\Delta Jobs]}{\frac{Million\ euros}{year}}_{LMIC\ \&\ UMIC}$$

3. Public loan guarantees keep the risk rating of a project more stable than public loans

$$H_0: \quad \frac{Abs(\Delta Risk)}{year}_{loans} = \frac{Abs(\Delta Risk)}{year}_{guarantees}$$

$$H_1: \quad \frac{Abs(\Delta Risk)}{year}_{loans} > \frac{Abs(\Delta Risk)}{year}_{guarantees}$$

The first hypothesis is that the use of guaranteed and first loss is more effective than the use of direct investment, as it is not guaranteed that all the committed public and philanthropic capital will have to be paid out. For instance, if a company is able to repay a loan or pay out dividends to investors without the first loss ever happening, the total amount invested by public or philanthropic capital would be zero euros, whereas if they invest directly, they will have committed more capital that they could have allocated elsewhere.
Therefore, it is expected that on average, the amount of euros paid per job will be lower than for direct equity investments, where the full amount of capital will have to be committed. This would also be in line with the general thinking of blended finance, in which a preferably lower amount of concessionary capital is used to mobilize private investments by improving a project's risk reward ratio than by conventional methods.

The second hypothesis is that the blended finance interventions will work better, the higher the income of the country in which the project happens is. As literature has already shown blended finance generally appears perform better regarding private capital mobilization in countries with a more developed and diversified economy (Attridge & Engen, 2019). Looking at jobs created, one could hypothesize that this pattern will also hold for jobs created, as when less additional capital is mobilized, the company will be less able to grow and thus create additional employment. Knowing whether this hypothesis is true is important to investors, as they would be able to allocate their capital more effectively. Although one could argue that his will mean that there will be less investments in the least developed countries, one could state that knowing the differences between investments in Lower-Middle Income Countries (LMIC) and Upper-Middle Income Countries (UMIC), and the lowest income countries could present investors with a tradeoff between efficiency and impact, which is also important to be aware of.

The third hypothesis states that the risk rating of a company is kept more constant by means of loan and equity guarantees than by direct loans. The reason for this is that if a loan defaults, the company will still repay part of the loan, but through guarantees, no additional credit is put into the company that it must repay. In the case of a loan, a company would either pay back the loan or probably a smaller part in case of default. Therefore, the risk profile would be larger than in the case of a guarantee. Therefore, the risk a company has towards other investors is likely to be more constant in the case of guarantees versus loans, which would be beneficial to the company, given the notion of transaction costs and information asymmetry stated in chapter 4 (Beck, 2007). If this hypothesis holds true, it could mean that by means of stabilizing the risk rating and thus decreasing a SME's volatility, the company would more easily be able to obtain additional loans from banks to grow its business. Knowing this is important to investors, as this could mean that using guarantees can in some cases be effective to stimulate private investment, even more so than giving direct loans.

Hypothesis testing

All three hypotheses entail comparisons between two group, namely the regular loans/investments and the guarantee/loan combinations for hypothesis 1, low-income countries and LMIC and UMIC for hypothesis two, and again loans versus guarantees for hypothesis three. In the statistical analysis, to prove the hypotheses, a statistically significant difference between the means of the two will have to be found. This will be done by means of a two-sample t-test, as the two groups are not dependent on each other, in which case a paired t-test would be necessary. If the difference is found to be statistically significant at a 5% confidence interval for a one tailed test, this would mean that the H_0 hypothesis would be rejected in favor of the H_1 hypotheses.

5.3. Case study

The case study that will be conducted is a series of interviews with investment experts in blended finance projects, in which the 'other side' of the dataset will be explored. The other side are the projects that have not been selected for financing, which are the ones that would usually serve as the control group of the dataset. Unfortunately, due to these not being in the portfolio of Invest International and perhaps also not in the portfolio of other companies, it is very difficult, if not impossible to construct such a control group dataset within the scope of this research. Therefore, the interviews will serve to shed light on the considerations made by blended finance investors in SMEs in developing countries. Analyzing these considerations can help discover certain factors determining in which circumstances blended finance investments are deemed useful, and in which circumstances they are not deemed so.

Due to the concerns previously stated with the dataset and the lack of a former control group, adding additional qualitative results can create a stronger foundation for the findings of the quantitative data analysis. This in turn can also strengthen the internal validity of the research and validate or invalidate the hypotheses formulated in the previous chapter. Furthermore, the interviews might be able to lead to new, additional findings as well next to the previously found patterns in literature and the dataset. Whether supporting or contradictory, any additional knowledge and deepening of findings is useful in a relatively unexplored subject such as blended finance.

The interview questions are divided in three main parts:

1. Establishing the uses of blended finance and general considerations of blended finance investments
2. Establishing considerations when investing in a singular project and reasons for not investing in projects
3. Discussing the results of the quantitative analysis and validations of the hypotheses

The full set of interview questions are shown in appendix (B).

The background and credentials of the interviewees are shown in Table (8) below.

Table (8): Interviewees and their credentials

Name	Function
Tim van Galen	Senior Investment Manager at Invest International
Menno Van der Sluis	Senior Officer Risk and Compliance at Invest International
Miriam Valstar	Investment Manager at Invest International

The set of interviewees is a single case study of employees of invest International, who are all knowledgeable on the companies within the dataset and can therefore more clearly talk about what the investment decisions were behind selecting these companies for investment. Furthermore, they could elaborate on their extensive experience with blended finance investments to describe where blended finance can be sued best, and perhaps also where it fails. Finally, given their different functions, the interviewees should be able to approach the questions from a different angle of expertise, leading to a more varied set of answers. Therefore, the case study is one with great depth, that can really go into detail on some of the investment decisions, instead of a larger set of interviews in which less detail can be discussed. These aspects of the interview case study make it perfectly capable of serving as the basis to generalize some of the findings (Flyvbjerg, 2006).

The reason only interviewees from invest International where considered is because they are the only company in the Netherlands that does the types of investments that are observed in the dataset. Outside interviewees would therefore not be able to comment on why the companies are chosen for these investments, and why the results of the data analysis might be as such. For further research, with a larger and more diverse dataset, it would most certainly be interesting to interview experts on other types of blended finance and other types of investment targets.

6 Data analysis and case study results

This section will present the results of the analysis of the SME dataset, as well as further explore the results of the interviews with blended finance experts. The first section will give preliminary findings related to whether the established hypotheses are 'true' based on the data. First, the statistical findings related to each hypothesis will be given and discussed, and subsequently the main findings of the interviews will be presented. In the context of these analysis, unless another method is explicitly named, the types of blended finance that are discussed are the use of public loans and public loan guarantees. Public loans are a loan by Invest International to a company in need of credit, that needs to be repaid in 7 years, with possibilities for extending this period. Public loan guarantees are the mechanism described in Figure (8) in chapter 3.2.4. Within this scheme, Invest International is the party that guarantees the bank loan with public capital.

6.1 Data analysis results

6.1.1 Hypothesis 1

The results for the two-sample t-test underlying hypothesis 1: "Public loan guarantees create more expected jobs per million euros per year invested than direct public loans". are shown in Table (9) below:

Table (9): Results of two-sample t-test for hypothesis 1

	Loans	*Guarantees*
Mean (expected jobs per million per year)	7,41548767	15,7477539
Variance	246,758389	796,918197
Observations	26	12
Hypothesized Mean Difference	0	
Df	14	
t Stat	-0,9564024	
P(T<=t) one-tail	0,17754689	
t Critical one-tail	1,76131014	
P(T<=t) two-tail	0,35509377	
t Critical two-tail	2,14478669	

The results of the analysis are not in line with what was hypothesized, namely that public loan guarantees create a higher number of expected jobs per year per million euros than regular public loans do. Even though the mean of guarantees is nearly twice as large as the mean of loans, the difference between these two means is not statistically significant, with the one-tailed P-value (0.177) being higher than the critical value of 0.05. In effect, this means that there is no difference between the means as the distributions overlap too much. This statistical insignificance is most likely due to the combination of the small sample size and the large variance within both samples. The next section will delve deeper into this finding through analyzing the interviews on the subject. The expert views of the interviewees provide an additional – qualitative – source of information which may or may not be in line with my statistical finding. The experts could indicate that there are reasons to think that guarantees are a more effective investment method from a financial perspective and in creating jobs, even if this is not shown by the statistical analysis.

6.1.2 Hypothesis 2

The results for the two-sample t-test underlying hypothesis 2: "Public Investments in higher income countries will yield more expected jobs per million euros per year invested than in the lowest income countries" are shown in Table (10) below:

Table (10): Results of two-sample t-test for hypothesis 2

	Low Income	*LMIC & UMIC*
Mean (expected jobs per million per year)	19,1518432	7,61869935
Variance	508,586643	382,9275222
Observations	8	30
Hypothesized Mean Difference	0	
df	10	
t Stat	1,32001392	
P(T<=t) one-tail	0,1081238	
t Critical one-tail	1,81246112	
P(T<=t) two-tail	0,21624761	
t Critical two-tail	2,22813885	

The results of the two-sample t-test between the groups low income and lower-middle and upper-middle income countries shows a result contrary to what was expected based on literature, which was that blended finance investments would work better in the low-middle income countries. Even though the mean of low-income countries is higher than for LMIC & UMIC the result is statistically insignificant, meaning that the variances within the groups are relatively large and the two distributions overlap, because the variance is large compared to the mean, and given the small size of the dataset, the difference between the group means is found to be statistically insignificant. Still, it is important to also have experts evaluate this result, because it is at odds with findings in literature (Attridge & Engen, 2019).

6.1.3 Hypothesis 3

The results for the two-sample t-test underlying hypothesis 3:" Public loan guarantees keep the risk rating of a project more stable than public loans", are shown in Table (11) below:

Table (11): Results of two-sample t-test for hypothesis 3

	Guarantees	*Loans*
Mean (Risk rating %change per year)	0,01142157	0,03622815
Variance	0,00022088	0,00338844
Observations	12	26
Hypothesized Mean Difference	0	
df	31	
t Stat	-2,0340703	
P(T<=t) one-tail	0,02528876	
t Critical one-tail	1,69551878	
P(T<=t) two-tail	0,05057752	
t Critical two-tail	2,03951345	

The results of the final two sample t-test of the risk rating stability difference between guarantees and loans is in keeping with the hypothesis. Public loans guarantees are more effective at keeping the risk rating of projects stable, which is an important result to know, as this means it could be a more effective method from the perspective that banks are more likely to give loans to companies with stabler risk ratings. This would mean that using more guarantees over loans could lead to more private loans becoming available to countries. This could again be of help in alleviating part of the financing gap, as mobilizing private finance is exactly what is necessary to reduce it. The mean absolute risk rating change is more than twice as small per year for public loan guarantees versus public loans, at 0.5% per year

versus 1.2% per year. This result is statistically significant, with the one tailed P value lying below the critical value of 0.05 at 0.039. This result will also be verified though the interviews, but a greater weight can be given to this result because of the statistical significance.

6.2 Interview analysis

This section will present the research findings based on the interviews that were conducted with the blended finance investment experts. Full recordings of all interviews are also available.

6.2.1 Investment decisions and when and why to use blended finance

According to all interviewees, blended finance is recognized to have advantageous aspects for both the private and public parties in the agreement. From the private (investor) side and from the project side, the main advantage of blended finance is that the risk profile of a project is reduced considerably, leading to more opportunities for financing for the project from private sources. Looking at the earlier findings in chapter 3, this is in accordance with literature (Attridge & Engen, 2019), being the key strategy behind blended finance. Furthermore, as Menno van der Sluis indicated in his interview[1], the use of blended finance through public loan guarantees requires less capital per investment opportunity from the investor side than conventional investment methods such as loans or direct equity purchases. Because of this, investors are able to (in)directly invest in more projects than they would otherwise be able to do. This should indeed be beneficial, as this is good for diversification, as well as the ability to achieve impact in multiple projects. From the public side, blended finance has advantages in that the public capital can be allocated towards companies that achieve desirable impact, such as CO_2 reduction, social impact or in the context of this research job creation in developing countries. This also seems like a desirable outcome, as the public party would like to have some level of control over achieving the SDGs directly.

The interviewees outlined several considerations behind whether to invest in a project or not. Invest International has two core mandates, which are to maximize their revolvency, which is ratio of capital invested to capital returned and to create local impact through creating jobs and financing companies. They are not necessarily looking for profits such as other private investors and can therefore take on more risky projects. Looking at investment decisions concerning projects, fundamentally, the most important aspect of a project from the perspective of a public investor is still the underlying business case. The business case can be described as how likely it is that a project will succeed and how its risks and returns compare. Factors that outline a project's business case are factors such as financial performance, management, whether the market will grow or shrink, what risks and opportunities exist,

[1] The full recording of the Menno van der Sluis interview is available for reference

related to suppliers, whether the customer base is diversified etc. In general, blended finance investors are more lenient regarding business cases than private investors, especially if they are also impact investors and a project has a high impact. However, it is no miracle cure and if a business case is underperforming in several aspects, blended finance is also not considered as a means to support a project. Saving these types of projects would not be a smart allocation of the limited amount of capital available worldwide for sustainable development.

Two other factors are also deemed important, namely the project industry and project size which together with the project maturity and stage of a project can determine the type of blending that is necessary. This indeed shows the flexibility of blended finance, which is required when investing in a variety of projects. For instance, a project in its infant stages is less likely to receive loans from commercial parties or banks, and therefore is less likely to use a public loan guarantee scheme than more mature projects, which might only need a smaller loan guarantee to receive a bank loan. Therefore, it is logical that parties with a higher risk appetite are necessary to originate loans to these companies in their infancy, and this is where blended finance comes in, through sources such as public capital and philanthropic capital originating the loans to these companies and thus lowering the risk profile of the company (Attridge & Engen, 2019).

The choice to invest in SMEs was also explained by the interviewees. Tim van Galen[2] expanded on the fact that SMEs are critical for creating jobs in developing economies, which is in accordance with literature (Aris, 2007; Chege & Wang, 2020; Eniola, 2014; Kersten et al., 2017; Kongolo, 2010; Nasr & Rostom, 2013; Ngek & van Aardt Smit, 2013), and are especially strong at creating jobs locally, where the impact is most needed. Furthermore, Menno van der Sluis stated that the reason SMEs are also an interesting target group, is because they experience greater difficulties in obtaining necessary financing, due to the limited items on their balance sheet that can be used as either collateral or to keep solvency in the case their performance drops or unforeseen risk inducing events occur, which are more commonplace in developing countries. This is in line with what literature describes about SME financing (Abraham & Schuckler, 2017; Beck & Cull, 2014; Kersten et al., 2017). The combination of creating impact, but also being financially vulnerable makes the choice for SMEs as investment target a logical one.

Menno van der Sluis expanded on this by stating that of course there are obvious exclusion criteria such as unsafe working conditions, which goes against the core principle of ‘decent jobs’ in SDG 8 but also that the entrepreneurs behind the project play a critical role. They need to be able to speak the language and have experience setting up a business, which is especially critical in developing countries where all the systemic and country risks already make building a business more difficult than in developed countries. Furthermore, it is

[2] The full recording of the Tim van Galen interview is available for reference

important to not have too much ‘skin in the game’ in the form of equity of debt as an investor. Especially as a public party, this is can be viewed as an issue, because this disincentivizes entrepreneurs and management to fully commit to a project, as they hardly bear any risks. This falls in line with traditional economic concerns when multiple actors are involved such as moral hazard, the principal-agents problem and free-riding, described for instance in (Berger & Hershey, 1994).

Therefore, one could reject projects on the basis that the entrepreneurs appear to be improperly motivated or incentivized, even though the rest of the business case can be viewed as promising. This can be categorized as a logical investment decision, as management is always an important party and unmotivated management can be regarded by parties such as banks as a risk factor, which could cause the company not to get necessary credit down the line. Furthermore, Menno van der Sluis stated that in general, a public investment agency such as Invest International has a higher risk appetite, due to the lack of required profitability and availability od ample capital to support projects with slightly inferior business cases if they achieve a lot of impact, but still that most projects do not even get into the analysis phase as there are too many problems with their respective business cases. Looking at companies in developing countries, it does appear that it would still be difficult to accept many projects, given the large systemic risks in those countries (Beck & Cull, 2014).

Another disconnect that can occur between investors and the companies that makes them less suitable for investment was described by Miriam Valstar[3]. An issue that occurs with many entrepreneurs is that their companies require equity financing but ask for debt financing. Equity financing is preferable for companies in the sense that they do not have to pay back the capital that the investor puts in, in contrast to debt financing, which a company has to repay. However, entrepreneurs are often reluctant to accept equity financing, as this has them relinquish part of their control in the company and makes them have to share profits with investors. The problem is that many of the companies have a high-risk profile, making them less capable of repaying debt, which makes investors reluctant to sponsor them. Again, this goes back to the general problems with sustainable development, and SME financing. Therefore, it is perhaps unnecessary that many projects are already rejected on this basis alone and shows that not only the investors can be problems in sustainable development, but also the entrepreneurs themselves, again highlighting that it is a complex issue.

This ties in with that companies, according to Miriam Valstar, are less attractive to investors if they have fewer partners, because this means an investor like Invest International would have to bear all the risk of financing. This goes back to the ‘skin in the game’ concept, where issues such as moral hazard can loom. Looking at this problem, it could be argued that more projects could be financed if entrepreneurs in developing countries were more willing to take

[3] The full recording of the Miriam Valstar interview is available for reference

on equity financing, which can also be done in blended arrangements. Perhaps if more formal mechanisms for this could be constructed, which could be interesting for future research, more projects can be reached in sustainable development. These concepts also already exist in literature, such as described by Pereira (2017).

Industry and country profile is also deemed important for a project, by the interviewees as this can determine the system risks facing a project. For instance, primary agriculture, especially in countries with harsh climates, is inherently a riskier sector than manufacturing and has a similar risk profile to but lower financial returns than tech startups. The type of industry does not disqualify a project for receiving financing, but it will have to change the blended finance setup, and therein especially the risk split between all parties involved. In general, the lower a company's risk profile, the more risk is borne by the private parties in the blending structure, whereas more risky projects or projects with a lower financial return have more risk put on the backs of public or philanthropic capital. This flexibility of blended finance, being able to be tailored to specific project characteristics by shifting the risks borne by all parties, makes it a flexible arrangement.

A problem that is also recognized in literature was also mentioned by Miriam Valstar as one of the main issues why it is difficult for projects in developing countries to receive their financing, even though their underlying business cases might still be interesting. In many developing countries, the laws & regulations and institutional environment are not protective enough of collateral and therefore makes it difficult for both regular private investors and banks to give loans to these projects (Abraham & Schmuckler, 2017). These difficulties are worsened if the collateral is also physically located in another country, such as Madagascar. In cases such as these, the physical collateral will have to be transported to the country of the bank giving the loan, which is impractical and also expensive. Because of this reason, there is also an increased demand for investors with higher risk appetite to decrease the risk profile of loans such as these by means of guarantees or other methods.

After blended finance has proven its worth in these areas where it is currently more effective, the proven track record can be expanded upon by widening the use of blended finance to the even riskier projects. This is possible in theory, as the amount of public leverage can always be adjusted to each project to still make it financially viable for other private investors. However currently, problems exist for public parties to engage in further blended finance opportunities, especially in higher risk market segments, due to insufficient providers of credit and general reduced risk appetite of banks. According to Miriam Valstar, this is in part because the banks have very strict solvency requirements and sometimes require loan guarantees to even meet these requirements. This is a logical observation, as it is well known that banks have to conform to stricter solvency requirements since the financial crisis of 2008 and are to have more cash reserves available for each loan. Perhaps in the case of financing for sustainable development, this might be something that has to change. This explains why the banks might not even consider the possibility that public capital can be used to guarantee

parts of loans in developing countries, as they do not even consider the projects in the first case. This notion would have to be further confirmed in future research by also assessing the motivations of banks regarding handing out loan for sustainable development projects. Nevertheless, if this were the case, playing with solvency requirements for sustainable development projects could be an important policy lever to make banks more willing to engage in these types of transactions.

Looking at the distinction between public loans and public loan guarantees, it quickly became clear where both types have their uses. According to Tim van Galen, loans are a better tool for companies with a higher risk profile in the earlier stages of its development, whereas guarantees are more useful for slightly less risky projects in a later stage. The reason guarantees are more used for later stage companies with more steady cash flows and income, is because these companies are more likely to receive a bank loan or are at least close enough in risk profile to the risk appetite of a bank that this use of a loan guarantee can 'push the bank' over the edge to originate the loan. This is logical, as companies that have a higher risk profile are less likely to be able to obtain a bank loan, even with the help of public loans guarantees. Those companies are therefore best helped by obtaining public loans, with the idea that the additional capital and thereby lower risk of default can catalyze private investments. This falls in line with the general principle of blended finance to bring a company's competitive position more towards the market, and thereby catalyze investment.

Another important consideration with blended finance for single projects, but also with the concept, as described by Tim Van Galen, is to use it to take away and not to create market imperfections. In the basis, blended finance can be interpreted as a form of government intervention in some cases, and it is therefore essential that the risk reward ratio of projects offering high impact on SDG 8 are shifted towards or equal to the market rate, without exceeding the performance of the market. From a holistic sustainable development perspective, this is essential as if projects would suddenly exceed market performance, this would crowd out other companies in the same sector, leading to unhealthy competition. Miriam Valstar says that Invest International can only be 'additional to the market', so can only intervene if a company would not be able to for instance get private credit or bank loans without Invest International. Unhealthy competition, especially in developing countries where every additional job created is of higher impact than in other countries, is undesirable if suddenly jobs were to disappear due to blended finance interventions. Therefore, it is important to consider how much a project's risk profile will fare after the intervention when compared to the market standard, as to not actually creating additional market imperfections when trying to remove exactly those. Market imperfections are already plentiful in those economies (Lazzarini et al., 2002). On a smaller scale, especially local and for single projects this is not that problematic, aimed at creating local impact in markets that are unsaturated but if blended finance interventions are to grow in frequency and size, it is going to be an increasingly important consideration when choosing projects for blended finance investments. Furthermore, investors should take care not to make in this case Dutch SMEs

perform better over local SMEs, as this would be an undesirable form of foreign market penetration that goes against the ideas of sustainable development. One the other hand, one could also argue that helping sustainable project to perform better than the market in the short term could be beneficial, to promote sustainable development over non sustainable business practices. However, this would have to be researched further to determine whether this would not hamper markets too much.

One of the downsides of blended finance as used in its current form through loans and guarantees by Invest International is that it is not an adequate method for meeting short term capital needs for SMEs. As Menno van der Sluis described, short term capital needs should be met by short term liabilities and long-term capital needs met with long term liabilities. Public loans and guarantees are both tools used for long term capital requirements, so they are not that useful for companies, usually with high capital expenses, who need emergency liquidity. Indeed, a seven-year loan term can be regarded as excessive when trying to finance a one-time purchase by a manufacturing company. So therefore, the current tools used by Invest International should serve to finance more long-term capital needs. In general, it should be logical to meet specific capital requirements with specific capital tools, as this would be most efficient. One could argue however that arrangements should not get too complex, as it appears this could scare away many of the parties involved.

Therefore, the use of tools discussed in this thesis such as technical assistance (Pereira, 2017) would be a useful addition to the use of loans and guarantees, to fill small gaps in financing of a project during the time a larger loan is still to be repaid. Moreover, Menno van der Sluis described how he regards opportunities for the use of blended finance arrangements which are capable of carrying even higher risk, such as guarantees which cover larger portions of bank loans and direct equity investments by public parties as promising. For these solutions to succeed, especially in the case of the Netherlands, is to expand the network of private parties that are willing to provide the loans to SMEs in developing countries, other than the couple of banks present in the Netherlands. If more parties are involved, public investors will have more flexibility of choosing parties to engage in blended finance arrangements with, and thus are able to finance a larger and more diverse set of projects, which can in the end generate more global impact and hopefully shrink the financing gap further. Given the history of banks being hesitant to give loans to SMEs, (Abraham & Schuckler, 2017; Beck & Cull, 2014; Kersten et al., 2017) from a research perspective it appears to be plausible that some form of public policy or involvement could help in this regard. Furthermore, the amount of different blended finance product that can be offered by an investor depends on the fund size of the investor, as Miriam Valstar describes that if you want to diversity your portfolio, you need to be able to do a sufficiently large quantity of all investment types to spread risks. Therefore, it seems like a logical next step for public policy makers to look at blended finance to ensure that if they want to offer more different product to involve larger numbers of investors and aid more projects, that they get together enough capital within the same funds, instead of spreading it around too much, in order to be able to diversify.

6.2.2 Discussion of data analysis results

Hypothesis 1: ‘Public First loss guarantees create more expected jobs per million euros per year invested than direct loans’

The rejection of the null hypothesis was a surprise to interviewee 1, as the interviewee expected that loans would give a higher job created per million per year than guarantees. This is because loans are usually given to companies in an earlier stage of development, in which additional cash flow is usually capable of more growth than further established enterprises. However, it was hypothesized by Tim van Galen that a reason the mean of guarantees could actually be higher is probably because the number of jobs created, are adjusted based on the probability of default of the company. Therefore, companies at a later stage, which are less likely to default and more likely to get loan guarantees, might create fewer jobs, but more expected jobs due to the risk adjustment. Looking at this result, an additional two sample t-test was conducted between guarantees and loans, in which the jobs created were not adjusted for their risk profile, in which the same result was found, which can be observed in Table (15) in appendix C. Still the result is not statistically significant, so again this calls for further research. If the higher mean would also be found in further research at a statistically significant level, then there might be more to guarantees performing better than loans than their lower risk profile.

The pre-selected nature of the guaranteed projects is viewed by Menno van der Sluis and Miriam Valstar as the main reason why guarantees could have a higher mean in this portfolio. This is logical, as banks would not have supplied credit to projects that did not have the potential of achieving market returns. Nevertheless, Menno van der Sluis also recognizes the utility of guarantees in earlier stage companies, by adjusting the amount of leverage used to match the risk appetite of commercial banks. He also observes the need of involving more different stakeholders, especially more banks so more flexibility is created regarding choosing parties to get a loan from for SMEs. Involvement of many stakeholders is documented in SDG17 as one of the main ways forward for sustainable development (United Nations, 2015c), so this seems to be a logical conclusion. Moreover, the increased need for the involvement of banks has also been described by Urban & Wójcik (2015). Again however, one could pose the question as to how these different stakeholders are going to be involved, which might open the possibility for the ones shaping the rules of the game in sustainable finance to step in, such as Development Banks (Mendez & Houghton, 2020), intergovernmental organizations through connecting stakeholders (Linner & Selin, 2013) and governments (McArthur, 2019).

This makes further investigating this hypothesis an interesting direction for future research. Establishing whether the pre-selection is the cause, or the overall performance of using loan guarantees is better than using loans. If this is the case, this could provide a guideline and effective practice in the use of blended finance to create jobs in developing countries. As if

guarantees can be employed in all stages of a company's lifecycle in a more effective way than public loans or direct equity purchases, than this would be a preferable method over conventional loans and could be able to shrink the investment gap and mobilize private finance. This could be done by combining banks' capital reserves with the increased risk appetite position that can be taken by public or philanthropic capital,

A final interesting observation is one by Menno van der Sluis, who described that what is currently lacking and could be even further expanded, is that incremental insights into how to efficiently allocate capital would be important, as currently projects are mainly selected on whether they check financial viability boxes and whether they generate impact. Currently, there are no formal considerations between whether one investment would be more efficient than another one, from a 'bang for your buck' perspective', as capital has not been scarce at Invest International forcing them to choose. A literature review shows that this is indeed still a knowledge gap, and considering the size of the investment gap, creating more efficient practices would certainty seem helpful. Looking at an even larger scale, a direct comparison between blended finance and other investment types would also be an important research topic. Blended finance seems effective, but perhaps other methods could also deliver similar results. Therefore, in the future, and in the sustainable investment ecosystem as a whole, this knowledge would be important to establish. This, therefore, confirms the need for formalized effective practices in using blended finance investments.

Hypothesis 2: 'Public Investments in higher income countries will yield more expected jobs per million euros per year invested than in the lowest income countries'

The result of this analysis was a surprising one to all interviewees. Lower-Middle and Upper-Middle income countries are inherently more stable, due to the decreased level of country risk and other factors compared to Low-Income countries. Therefore, projects in these countries were expected to more likely succeed in the long run and therefore grow to create durable jobs. According to literature, this was also expected (Attridge & Engen, 2019).

However, in the analyzed sample of blended finance projects, this was not the case. A potential explanation for this was offered by Menno van der Sluis, who described how the cost of labor is lower in the lowest income countries, and how the projects in these countries usually fall within industry and agriculture, which are both sectors that are more labor intensive than other sectors. There are indeed relatively many companies in agriculture in the low- income countries in my sample. The lower labor costs could explain that for the same amount of capital, more jobs can be created than in countries with higher labor costs. This would also mean that more impact is generated in those countries. The reason this result still is up for debate, is because these countries have inherently more risks, and therefore there are still doubts whether these new jobs can be maintained sufficiently long in these countries.

Tim van Galen indicated in his interview that he also expected that the efficiency of the use of blended finance might be lower from a financial perspective in lower-income countries. But there is still an argument that this efficiency can be balanced against the impact generated by investing in the lowest-income economies. He also agreed with the notion that the projects are more labor intensive and have lower costs of labor than projects in countries with higher income levels. Especially in agriculture, operations are less capital intensive and require fewer machines and therefore more manual labor. Therefore, from a total quantity of decent jobs created, low-income countries seem interesting from an investor perspective for the use of blended finance. Miriam Valstar expanded upon this by stating that inherently in an entire investment portfolio, a balance needs to be created between lower- and higher-risk projects. The higher-risk project could in theory create more jobs, but these same jobs could be lost due to the rapidly changing laws and other circumstances in developing countries, which are also recognized by literature (Beck & Cull, 2014). Therefore, taking some projects which are lower risk but also create fewer jobs, is important both from an impact perspective, as well as from the perspective that a fund still needs to break even, even if it has a higher risk appetite. This balancing act can be generalized to blended finance as a whole and is something potentially fund managers and public institutions should consider when implementing this method.

Still, the risks are higher in these countries, so it could be that the jobs created in the end will be durable. Therefore, from a research perspective, it would be interesting to revisit the dataset in a couple of years. Finally, Tim Van Galen mentioned that from an impact perspective it would be interesting to define the type of impact one wishes to create, as some of the jobs in LMIC and UMIC countries could be jobs that educate people more, which is also a beneficial type of impact. One could argue that improving the quality of jobs is also important, but it is up to further research to assess whether quantity prevails over quality or vice versa, when looking at SDG 8 impact.

Hypothesis 3: ‘Loan guarantees keep the risk rating of a project more stable than loans’

All interviewees supported the conclusions of the final hypothesis. This goes back to the findings regarding the first hypothesis, in which it was concluded that companies that receive guarantees are already more successful and less risky enterprises, and therefore more able to cope with unforeseen circumstances and operational and revenue issues than companies that receive public loans. Therefore, inherently the risk rating of these companies will become more stable over time. It is therefore difficult to establish whether the use of guarantees over loans also has an impact on keeping the risk rating more stable, given the selection bias in the projects. If this were the case, then again it would be interesting to also explore the use of guarantees for riskier projects by upping the public leverage within the guarantees. Exploring these types of projects would also in general shed a clearer light on the effectiveness of guarantees, due to having a more diversified dataset to explore.

Another reason why guarantees might perform better than loans in this dataset, is because the initiative to engage in loan guarantee agreements usually comes from the projects and the banks at first. The sequence, according to Tim van Galen and Menno van der Sluis, is that companies ask a bank for a loan, but the bank might be hesitant due to the risk profile of the company and then approaches a (semi)public investor such as Invest International on whether they are able to provide a guarantee to the loan. A reason why companies with guarantees are able to perform better, is because banks might be more capable of assessing which projects are going to be successful, and the projects that receive guarantees are therefore already more likely to be successful companies. Again, this shows a level of selection bias, so it would be interesting for further research to again investigate the use of guarantees in higher risk companies, which unfortunately currently is a less common practice.

6.3 Overall conclusion

From both the data and the interviews, it seems that blended finance can be an effective tool for aiding SMEs and other project and companies with a moderate risk profile, that strive to achieve both impact on the SDGs as well as financial performance. However, this is within the confines of the dataset provided, and based on the expertise of the interviewees. There has been no direct comparison with a control group, as this was impossible to arrange within the time limits of this thesis research. A larger scale research with a control group could help shed further light on the effectiveness of blended finance when compared to other methods. Considering the underlying methodology of blended finance of reducing risk, the fact that risk ratings have remained relatively stable for companies receiving a public loan guarantee, indicates that there is merit to blended finance.

Blended finance might not be useful for every segment of the market. The largest corporations and other lower-risk companies could become more efficient than the market through the use of blended finance, and the highest-risk companies in the poorest countries are, even with the use of risk reducing measures through public capital, still prone to default and therefore do not offer sustainable job creation. For this reason, blended finance seems most effective for the companies situated between these two groups, namely SMEs. This is an important finding, as SMEs are, as previously explained, major economic forces and creators of jobs in developing countries. Further exploration of the use of blended finance in this area therefore seems to be an interesting proposition, even though more direct comparisons should be made to other financing methods.

Furthermore, both the management behind the projects and the resulting business case are key factors when trying to determine whether a project is going to be successful through the use of blended finance. Blended finance itself is not a very restrictive tool, as it can be tailored to the situation at hand by varying the amount of risk taken by both the public and private parties in the blending structure. In addition, it is important to strike a balance between risky and less risky projects in the entire portfolio, and to consider the size of the

overall portfolio, when deciding to diversify into different types of blended finance product in order to reach more projects and catalyze more private investment.

Currently, a substantial bottleneck in expanding the use of blended finance is the lack of bank finance, caused by unfamiliarity of banks with the concept and therefore an unwillingness to participate in certain transactions, even though these might not be undesirable from a pure risk perspective. Furthermore, concerns over rules around and the physical collateral of SMEs in developing countries, makes banks and other private credit originators more hesitant to engage in blended finance arrangements. Higher leverage of the public parties might help, but leverage can only be pushed to a certain extent, as an investor does not want to be responsible for all the risk in case of a SME's default. Therefore, more involvement of banks in this sector is going to be required to make the most use of the potential of blended finance. Furthermore, if ways could be determined to expand the viability of the use of different types of collateral, blended finance could also be used more than it currently has been and can be deployed for a wider range of potentially high-impact projects.

Regarding the different types of blended finance, guarantees seem more effective and blended finance appears to be more effective in terms of job creation in the lowest income countries. The effectiveness of guarantees can be caused by the pre-selective nature of the less risky projects that receive guarantees, but it could also be that the public loan guarantee structure is an effective tool for higher risk companies. However, currently the feasibility of these structures is hindered by the lack of private credit providers with risk appetites that are required for investing in these types of countries. Furthermore, the effectiveness of blended finance in lower income countries based on the dataset could change in the coming years, as those projects are more prone to default than those in the LMIC and UMIC. The next chapter will present the limitations and discussion of the research, and also shine light on what policy recommendations could further improve the use of blended finance in developing countries, and what further research would help in establish the confirmed necessary effective investment practices for blended finance projects in developing countries.

7 Discussion, conclusions, and policy recommendations

7.1 Discussion and limitations

The main limitation of this research lies in some of the inherent biases and resulting concerns with internal validity that arise from the preselected group of companies in the dataset. The companies in the dataset are inherently already considered viable companies by Invest international, and they are all companies set up by Dutch entrepreneurs. For this reason, they can benefit from forms of support that other similar startups by native entrepreneurs would not have access to. Furthermore, some companies are even more preselected, as they have also been found financially viable by banks for loans. The lack of a control dataset therefore does mean that the internal validity of this research is lower than it could have been. However, practically, it is difficult to establish a control dataset of companies that did not receive blended finance interventions within this thesis research, especially in developing countries, where problems with access to data exist more often. Therefore, the internal validity has been increased by conducting interviews to both confirm and expand upon the results of the statistical analysis, as well as to shed more light on the companies that are not in the dataset, and why they are not considered to be viable targets for blended finance investments. Establishing these considerations has highlighted more implicit, effective practices and investment decisions and has therefore increased the internal validity of the research. By also conducting deep and detailed interviews around the case study, the external validity of the research, and the associated ability to generalize the results to similar situations of using public loan guarantees and public loans to finance SMEs in developing countries and to investment decisions underpinning the selection of these projects for a potential investment, has also increased (FLyvberg, 2006).

Another limitation of the dataset is its size and also to an extent a slight lack in comparison groups. Due to the smaller size and more specifically the large variance in the dataset, two of the hypotheses did not show statistical significance. This issue can always be solved by expanding the size of the dataset, but unfortunately this was not possible for this particular research and would therefore be an interesting angle for further research on this topic. Only two types of blending were used in the dataset, namely public loans, and public loan guarantees of private bank loans. Therefore, other types of blended finance could not be analyzed statistically, but were analyzed by means of the interviews, as well as partly in a literature review. Furthermore, the types of companies that were more suited for other forms of blending or even other types of financing were also identified. Further research could delve into these other financing instruments in more detail and assess how they compare to the financing types explored in this research, and in which situations these work best and how these can be used in the most effective manner.

Another limitation is that the projects in the dataset were not all at the same stage of development as some projects had already been completed, whereas other projects had only just started. To somewhat offset this issue, the number of jobs created was adjusted to a per annum basis. Still, a completed project yields more information than one that is still running. Furthermore, there can be a delay in job creation, as some projects require a run-up period before jobs are being created. In order to eliminate these issues, one could either expand the size of the dataset to average out the results, use a dataset with only completed projects or monitor projects in real-time. All these options were unfortunately not feasible because the dataset would get too small when only completed projects would be used and because on-site and detailed monitoring of projects in developing countries was out of the scope of this research. Finally, this issue is partly alleviated by the fact that young companies usually have worse risk ratings and therefore have been discounted in the total results, due to the adjustment of jobs towards expected jobs.

7.2 Conclusions

First the conclusions to all sub questions will be given, in order to answer the main question: *"What are effective practices and key investment in using blended finance to fund SMEs in developing countries, focusing on impact on achieving SDG8?"*

7.2.1 Sub question 1

"What is the origin and scope of the financing gap in sustainable investment and job creation in developing countries in particular?"

This question was answered by means of a literature review. Sustainable development can be best described through the definition of the Brundtland commission (1987) as: "meeting the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs". Recently, this definition has been put into practice through the SDGs of which SDG8 is regarded as an incredibly important one, given the economic damage and mass job losses caused by the COVID-19 pandemic, especially in developing countries. This has increased the already existing financing gap in sustainable development, which amounts to 2.5 trillion US$ annually in developing countries, equal to 3% of global GDP. The gap is mainly caused by a lack of attractiveness of sustainable development projects due to either high risk, lower reward or a combination of both, to private investors, and by a disconnect between the short-term thinking of most parties versus the long term needs of the planet, which goes against the natural pace of large societal change. Therefore, a significant need exists for private investors to be more involved in sustainable development in developing countries, especially given the fact that governments in those countries do not possess adequate means to provide this type of financing themselves.

7.2.2 Sub question 2

"What current financing methods exist for sustainable investment in developing countries?"

Through literature review, multiple promising methods for sustainable development were identified and compared on their applicability in creating jobs in developing countries and their overall strengths and weakness. The results of this analysis are shown in Table (12) below.

Table (12): sustainable investment methods summary

Method	Description	Advantages	Disadvantages
Microfinance	Give small loans to people who want to start a business	Theoretically low cost-high impact Moderate Succes has been observed on an empirical level	Still no definitively proven to work Misses impact on people it is designed for
Public-Private Partnerships	Contracts between government and private parties for the delivery of public services	Combining expertise of public and private parties More efficient, lower costs	Less effective in developing countries Only used for public services, not other sectors
Social- and development impact bonds	Pay-for-performance scheme for delivering services in social welfare and development projects	Pay-for-performance scheme incentivices strong results Flexible scheme, can be used for many different types of projects	Difficult to establish concrete indicators and targets Not necessarily used for job creation Little to no data in developing economies
Blended finance	Using concessionary public and philantrophic capital to catalize private investments	Flexible and efficient scheme Direct impact on projects and therefore job creation	Lack of knowledge on investment decisions and efficient practices Can be less effective in the least developed countries

In the end, blended finance showed the most promise and was deemed the most practical method for the context of this research due to the available data for analysis. This research will focus on developing efficient practices for blended finance in terms of value for money

and investigate what types of investment decisions are involved when looking at which projects to invest in.

7.2.3 Sub question 3

"What is the historical role of SMEs in job creation in developing countries and what troubles do SMEs face in those countries?"

This sub question was also answered by means of literature review and found that SMEs are the largest employers, as well as the largest job creators worldwide, and especially in developing countries, where its share in total employment can exceed 60% of all jobs. Nevertheless, SMEs face difficulties obtaining financing through regular means such as bank loans, when compared to larger corporations. These difficulties are experienced even more so in developing countries. The lack of financing possibilities for SMEs are mostly caused by the following factors:

- SMEs have less means to avoid situations of financial distress and are therefore more prone to default and therefore less likely to receive bank loans than larger companies.
- SMEs lack the ability to present adequate collateral for loans, especially in developing countries where less formal regulations exist regarding what types of collateral are acceptable than in developed countries.
- Even when companies are able to obtain loans, these will be more expensive than those of larger corporations and even more so in developing countries
- Lower financial reporting quality and more information asymmetry makes banks more hesitant to give loans to SMEs

It was finally concluded that blended finance could play a critical role in alleviating the SME financing gap, especially in developing countries, as the core concern for most private financing providers, the high-risk profile of SMEs, is directly addressed by the risk lowering strategy of blended finance.

7.2.4 Sub question 4

"What factors could influence the blended finance performance of a SME project in a developing country?"

The most useful method for investigate the potential of blended finance, based on the available means and data was determined to be a Mixed Methods-Case Study approach. The choice of Mixed Methods was mainly motivated by concerns around the internal validity of the research, which is caused by a lack of a control group within the dataset, and the inherent

bias within the dataset, as all projects within it are in part pre-selected to be successful projects.

Within this design, one part of the research has been conducted by means of a data analysis, testing three hypotheses based on the dataset of blended finance, as well as a case study, consisting of interviews with investment experts on blended finance, in order to discuss the data analysis findings and get deeper insights into investment decisions regarding the choice of projects and blended finance investing as a whole. The three hypotheses tested were determined based on literature and are as follows:

1. Public loan guarantees create more expected jobs per million euros per year invested than direct public loans
2. Public Investments in higher-income countries will yield more expected jobs per million euros per year invested than in the lowest income countries
3. Public loan guarantees keep the risk rating of a project more stable than public loans

These hypotheses were tested in the next section, both quantitatively and qualitatively.

7.2.5 Sub question 5

"Which effective practices and key investment decisions can be distilled from a dataset of development projects and interviews with investment experts?"

The data analysis showed a higher mean for public loan guarantees in hypothesis 1, but not at a statistically significant level. The same held true for low-income countries in hypothesis 2, but again not on a statistically significant level. This was mostly caused by high variance within these datasets and was therefore discussed further in the interviews, to assess whether the observed patterns might actually still be explained, as the case study findings are regarded to be more telling than the data, due to mentioned data limitations. Hypothesis 3 showed a statistically significant result in favor of public loan guarantees, indicating that these indeed keep the risk rating of projects more stable than public loans do.

From the interviews, it became apparent that both the quality of the business case and the attitude and capabilities of the entrepreneurs behind the projects prevail in selecting projects for investment. Furthermore, not creating market imperfections and being additional to the market is important, as to not cause unnecessary imbalances. Furthermore, the choice of which projects to invest in is largely guided by the availability of banks to collaborate with. Even when faced with lower risks, banks are still hesitant to engage in blended finance agreements, due to unfamiliarity with markets and a lack of adequate collateral of SMEs, both regulatory and the mere physical distance between the bank and the SME with the physical collateral.

Regarding hypothesis one, the observed pattern was both expected and not expected. Guarantee projects are often lower risk, more established companies, which might not create as many jobs for the same amount of capital as the higher risk, newer projects that usually get loans. On the other hand, the pre-selected nature of public loan guarantee projects by investors but also by banks with lower risk appetite, might mean that these companies are more sustainable when it comes to creating jobs and also may simply be better-run companies. Still, opportunities for guarantees were observed for higher-risk companies, but these would require cooperation of banks as well, in order to be able to engage in these higher-leveraged, but also potentially high-risk transactions.

The observed mean difference in testing the second hypothesis was mostly expected, as projects in lower-income countries have lower labor costs and are more labor-intensive in the types of jobs. Still an argument could be made for projects in LIMC and UMIC countries, as jobs created in these countries are often more stable, and therefore in the end offer higher impact. In addition, diversifying the portfolio with more stable job creation and more impactful job creation is deemed necessary, to ensure the success of a portfolio as a whole.

Finally, guarantees were expected to have more stability in the risk rating profile, again due to the pre-selected nature of the projects. Still, it was concluded that it is interesting to observe the effect of higher-leverage public loan guarantees versus public loans of a similar risk profile, in order to establish whether the cooperation between bank and public investor is also more effective in this case.

7.2.6 Sub question 6

"What policy recommendations can be derived for achieving the goals set in SDG 8 by financing SMEs in developing countries?"

Blended finance shows promise in achieving impact by creating jobs in developing countries in the lowest income economies for creating a bulk of jobs and in LMIC and UMIC by creating more complex job positions with higher expected job sustainability, by reducing risk profiles of these companies. Therefore, initially focusing on these areas to prove the concept of blended finance further seems like a logical step, instead of trying to fix areas that require completely different types of financial instruments, such as subsidies.

If the effectiveness of blended finance will have been proven more in the coming years in practice, it would be important for governments across the globe and development banks and intergovernmental organizations to connect private loans providers to public capital providers worldwide and to shape the investment environment in a way that incentivizes banks to supply more credit to support blended finance arrangements. In addition, in general, raising awareness of banks that these types of transactions can be fruitful, will be important if blended finance is to be employed more, but might require more time for more success

stories related to blended finance investments. If these parties can be brought together, more potential projects, especially in the countries where jobs are limited and every job counts, can be financed directly and indirectly due to private capital mobilization. This could make blended finance a more effective tool in reducing the financing gap in sustainable development and help to create jobs and stimulate economic development in the areas where it is most needed, as capital can be allocated efficiently, without private parties having to take unnecessary risks.

Another issue facing blended finance that pertains to sustainable development in its core, is that one of the reasons banks are having problems financing high-risk projects, is due to solvency issues that are incurred when they provide high-risk loans. One policy recommendation towards incentivizing banks to take on more such loans would be to lower the banks' solvency requirements in the case of financing a sustainable project. Of course, this would have to be properly regulated to make sure that banks do not wrongfully use this ruling, but it could be made part of the new upcoming Basel Accord and as such could pave the way for a large increase in capital flows into sustainable investment and job creating projects in developing countries, in order to positively impact SDG 8.

Finally, it could also help if rules around the use of collateral in blended finance transactions in developing countries are expanded to include the use of more different types of collateral. This can allow for higher-leveraged transactions as well as more potential bank loans, that in turn can be supported by public guarantees, in order to achieve impact on a wider range of companies. Even outside of blended finance, this would give companies in developing countries better chances of receiving foreign capital and could perhaps even the odds with companies in developed economies. Moreover, better ways of making sure real assets such as equipment can be used as collateral in transactions would help blended finance be more effective, as this would allow for a greater availability of foreign public financing in developing countries that are distantly located from the investors, which would open up more investment possibilities, which could in theory generate more impact on SDG 8.

7.3 Final conclusion

In conclusion, to answer the main research question of using blended finance as an investment method in SMEs in developing countries in order to catalyze private investment and create an impact on SDG8, seems like a promising method. Job creation in developing countries in SMEs was observed in the smaller dataset provided by Invest International. However, it is unclear whether this is the direct result of the intervention, as there was no control group. Furthermore, the insights by the interviewers showed potential, but also limitations in the current use of blended finance and its possibilities. These limitations lie mostly in that blended finance still suffers from the similar problems that have plagued sustainable development and SME financing in developing countries, such as the inherent country risks of developing countries and the lack of private willingness to invest in those

countries, even with lower risks. However, blended finance seems better positioned to deal with those limitations than some other financing methods that do not have risk reducing mechanisms and similar flexibility to blended finance.

Effective practices in blended finance are observed in investing in lower income countries using public guarantees loan, and core investment decisions are impacted by the project themselves, but also whether investors are able to work with banks to do blended finance projects. Policy recommendations to alleviate these issues mainly lie in having public authorities across all levels incentivize banks to engage in a wider range of blended finance transactions, and thereby lead to way for more projects to get financed. If the effectiveness of blended finance is proved further in practice, this would help create the more impact on SDG8, which many countries desperately need. Finally, some research suggestions outlined in the next section could help to further explore the concept of blended finance, which could aid authorities even better in expanding this potentially impactful investment methodology.

7.4 Suggestions for further research

The main suggestion for further research is to combine multiple datasets of multiple blended finance investors, in order to get a larger number of observations and to be able to do a more detailed analysis on a wider range of blended finance methods. This larger scale data research can also be supplemented by more in-depth case studies, looking at specific projects, to assess how these projects benefit from the use of blended finance, while at the same time assessing what could have been improved in these cases. This would remove some of the shortcomings of this research, such as concerns with internal validity due to bias, and statistically insignificant results due to large variance and also explore further applications of blended finance, to get an even clearer picture of where to apply the various methodologies. Furthermore, this could be expanded into a larger research effort, as comparing the performance of blended finance to other investment methodologies is also interesting, as it might be that other methods are even better equipped to finance sustainable development than blended finance in some cases.

In addition, it would be scientifically interesting to conduct the same research, but in a couple of years' time, so that all the projects in the dataset will have been completed, to conduct an ex-post analysis of the entire portfolio to assess what the final results will be. Another interesting research angle would be to explore more deeply how to combine impact with financial viability and to assess how impact on SDG 8 between different companies compares. This could lead to interesting insights for both investors and public parties to optimize their limited investment capital in achieving maximal impact. Finally, it would be important to also conduct larger-scale research on how to incentivize banks to supply credit to blended finance arrangements, and to spread awareness on the potential effectiveness of these methods in those arrangements, such that the method can be even more widely employed to reduce the investment gap.

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Appendices

Appendix A: SDG 8

Table (13): The SDG 8 goals and respective measurement indicators (United Nations Department of Economic and Social Affairs, 2022)

Goal	Indicator
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	8.1.1 Annual growth rate of real GDP per capita
8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labor-intensive sectors	8.2.1 Annual growth rate of real GDP per employed person
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	8.3.1 Proportion of informal employment in non-agriculture employment, by sex
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavor to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	8.4.1 Material footprint, material footprint per capita, and material footprint per GDP 8.4.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities 8.5.2 Unemployment rate, by sex, age and persons with disabilities
8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training	8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	8.7.1 Proportion and number of children aged 5-17 years engaged in child labour, by sex and age
8.8 Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	8.8.1 Fatal and non-fatal occupational injuries per 100,000 workers, by sex and migrant status 8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	8.9.1 Tourism direct GDP as a proportion of total GP and in growth rate
8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	8.10.1 Number of commercial bank branches and automated teller machines (ATMs) per 100,000 adults 8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider
8.a Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-Related Technical Assistance to Least Developed Countries	8.a.1 Aid for Trade commitments and disbursements
8.b By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization	8.b.1 Existence of a developed and operationalized national strategy for youth employment, as a distinct strategy or as part of a national employment strategy

Appendix B: Interview questions and introduction

Table (14): Interview Questions

Blended finance and its general uses according to investors
1. How would you define blended finance? 2. What made you decide to start doing blended finance investments? 3. What are in your opinion the biggest reasons behind the lack of global sustainable investments, especially private sector investments? 4. How do you think blended finance can help shrink the global investment gap?
Project specific questions
5. Would you consider SMEs to be the most important drivers of economic growth and job creation in developing countries? 6. Which specific issues facing a sustainable project investment would you consider are best alleviated by using blended finance over conventional investment methods? 7. What do you consider to be, if any, the advantages of using blended finance over other methods of sustainable project financing? 8. What kind of factors do you consider when looking at a potential blended finance investment opportunity? 9. What are characteristics of a project that have a negative influence on its viability for blended finance investments? 10. What are characteristics of a project that have a positive influence on its viability for blended finance investments? 11. Would you say blended finance investments are most effective in certain industries? 12. How receptive are entrepreneurs for blended finance investments?
Questions about hypotheses
13. ** Question about results hypothesis 1 ** 14. ** Question about results hypothesis 2 ** 15. ** Question about results hypothesis 3 **

Appendix C: Additional data analysis results

Table (15): Results for verification test hypothesis 1 with realized jobs

	Guarantees	*Loans*
Mean (**Realized jobs per million per year**)	18,7610913	9,25258778
Variance	876,437402	378,033936
Observations	12	26
Hypothesized Mean Difference	0	
df	16	
t Stat	1,01605936	
P(T<=t) one-tail	0,16236016	
t Critical one-tail	1,74588368	
P(T<=t) two-tail	0,32472032	
t Critical two-tail	2,1199053	

Table (16): Results for verification test hypothesis 2 with realized jobs

	Low Income	*LMIC & UMIC*
Mean (**Realized jobs per million per year**)	19,1518432	7,61869935
Variance	508,586643	382,927522
Observations	8	30
Hypothesized Mean Difference	0	
df	10	
t Stat	1,32001392	
P(T<=t) one-tail	0,1081238	
t Critical one-tail	1,81246112	
P(T<=t) two-tail	0,21624761	
t Critical two-tail	2,22813885	