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Blended Finance – An investigation into its effect on the success of development interventions

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Executive Summary

The term blended finance describes the mobilization of capital for development purposes by means of combining (blending) existing development finance with various types of other financial sources.

It has become consensus that traditional sources of development finance alone will never be able to pay for the infrastructure needed in developing countries to achieve the Sustainable Development Goals (SDGs). Development finance needs to mobilize much more other financing than before in order to deliver on its promise to help accomplishing the SDGs.

Although blended finance as a means of combining different financing sources has been a development tool for some time, its impact on development outcomes remains largely unknown. The reality is that the development finance community has never really paid a lot of attention to the financing structure and its influence on the results of development interventions.

In the modern corporate finance literature it is well known that the financing structure has an impact on a firm's investment. And in fact, there is no reason to believe that incentive effects of the financing structure - for example the disciplining effect that comes with repayment obligations - play any less of a role in the financing of development projects than in the behavior of a firm.

The goal of this study is to help to better understand the influence of the financing structure - and in particular of blended finance - on the outcome of development interventions.

The basic hypothesis is the following: As long as the financing structure is well adapted to the needs of the project, there should be no differences in a project's likelihood for a positive developmental impact due to the use of blended finance.

KfW Development Bank, Germany's bilateral development bank, has a long history of blending financing sources for development projects. The bank uses public funds to reduce the interest rate of loans funded with capital raised on financial markets by the bank itself.

There are other more outward types of blended finance the bank uses like guarantees or fund structures, which are gaining in importance. This study focusses exclusively, however, on blending that happens within KfW Development Bank itself which is - by its sheer volume - very relevant.

To compare the development impact of projects with different financing structures (pure grants, highly concessional loans and blended finance, i.e. interest rate subsidized loans), this study uses data from KfW Development Bank Evaluation Department's database, covering over 2,000 projects from 1990-2018. Projects in the evaluation database are categorized as successful if they generated an overall positive developmental impact according to KfW's evaluation methodology based on the five

OECD DAC criteria. The evaluations themselves do not explicitly take the financing structures into account, so development impact and the financing structure can clearly be separated.

Indeed, the descriptive results show that blended finance projects that use public funds to reduce the interest rate of loans are more likely to be successful than grants or highly concessional loans. Yet, statistically controlling for the environment the projects are embedded in (the region, the effectiveness of the local government, GDP per capita and alike) no discernable differences between the modes of financing with regard to project-success remain. Blended finance is used in more developed settings, but once this difference is controlled for, the projects are just as likely to be successful as projects using other financing structures.

The results thus point to the fact that in most cases the bank uses a fitting financing structure for its projects. At the least, the analysis suggests that the use of blended finance in the form of loans with reduced interest rates does no harm to the development results of projects at KfW Development Bank.

The results here pertain to a particular type of blended finance (interest rate subsidized loans) and should not easily be generalized. But they also hint at the advantages of interest subsidized loans: Agency problems among the participants of a blended finance deal that may arise with other, more complex, type of blended finance (for example when responsibilities are delegated) can by construction not be found.

At the least, the analysis suggests the use of blended finance in the form of interest rate subsidized loans does no harm to the development results of its projects at KfW Development Bank.

After considering the overall portfolio, I zoom into sub-sectors because across all sectors of intervention the actual choice for the financing structure is in many cases limited (and hence optimizing it is often out of question) which reduces the variation in the data. Building a school in a low-income country, for example, always needs to be done with grant money. Zooming into sub-sectors where the use of blended finance is more frequent, results do sometimes change and I find more evidence for an effect of the financing structure on development results. In the energy sector, a typical example of a sector with plenty of blended finance, grants are significantly less likely to lead to successful projects in terms of development impact, maybe because grants fail to unfold a disciplining effect on the project partners. Here, more research is needed.

Blended finance also comes with a higher debt-burden than other financing structures, challenging the sustainability of projects. However, results for a sub-set of the evaluation database for which there is a specific rating of the sustainability do not confirm claims that interest rate subsidized loans put an undue financial burden on project partners. Rather, blended finance projects achieve similar sustainability ratings as projects financed by other financing instruments (taking the environment into account).

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Overall, this shows that blended finance in the form of interest rate subsidized loans – if used reasonably – is able to generate positive development impact.

The results of this analysis must also be seen with a broader perspective in mind: The financing structure of development projects matters; more work needs to be done to understand how exactly. The recent discussions around blended finance have brought financing structures back into focus. They could equally be an opportunity to kick-start a discussion on how they affect development results.

Blended Finance

Blended Finance – mobilizing money

The Sustainable Development Goals (SDGs) have set an ambitious agenda regarding the provision of basic infrastructure across the world. But alarm bells are ringing: The current state of basic infrastructure suggests that unless investment for development picks-up significantly, the SDGs may not be reached in many countries.

Hence, a consensus emerges that the financing gap between financial flows, dedicated to infrastructure investment in developing countries, and investment needed is significantly larger than current sources of development finance and current locally available resources could ever achieve.

An obvious way to tackle this underinvestment in basic infrastructure in developing countries is trying to channel more money from sources previously not dedicated to development finance into infrastructure investments in developing countries.

The idea that other sources of capital may alleviate the underinvestment problem is not new. The Monterrey Consensus – the first UN Financing for Development agreement – as early as 2002 explicitly mentions foreign private investment and instruments to channel such investment to developing countries.

However, maybe thanks to the formulation of the SDGs, the idea of blending different sources for a greater overall mobilization of financial resources for development purposes has gained traction in recent years. In particular, the UN's Third Financing for Development conference, in Addis Ababa in 2015 explicitly put forward the need for mobilization of sources other than classical development assistance. (DFI Working Group, 2017) Since then, blended finance has increasingly been used as a tool in the development finance community.

How to define Blended Finance?

There is not one single agreed-on definition of blended finance. Following the OECD, blended finance means “the strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries”. (OECD, 2018)

Blended finance comes in different forms.¹ The underlying logic of blending is, however, always based on the idea that financial resources are scarce and need to be leveraged to increase the total amount of financing that is available for investment in development purposes. (Pereira, 2017)

Following the OECD, blended finance means “the strategic use of development finance for the mobilization of additional finance towards sustainable development in developing countries”. (OECD, 2018)

¹ (Pereira, 2017) discusses several institutional variants of blended finance (i.e. who is involved in the transactions). (Development Initiatives, July 2016) discusses concrete instruments that actors in the field use to structure blended finance deals (e.g. guarantees, funds, and subsidized loans).

The main lever by which blended finance is supposed to mobilize additional capital is by adjusting the risk-return relationship of a single investment. Either (and this is the more common case) by taking away part of the total risk from investors or by enhancing a project's returns. (OECD, 2018)

This study follows this very general understanding of blended finance - mixing different financial sources to adjust the risk-return profile of a single investment. Narrower definitions often refer to blended finance exclusively as a set of instruments for the mobilization of commercial capital for development purposes.

Another way of defining blended finance is looking at what blended finance is not. Naturally, public-private partnerships (PPPs) are often mentioned in the context of blended finance (OECD, 2018). However, there are good reasons not to treat PPPs as a financial instrument used for blending in the narrower sense. PPPs do not necessarily blend different financing sources but are instead a contractual relationship between the private and the public sector. (Pereira, 2017) Further, blended finance is not about co-financing between different investors already active in the field but rather about trying to unlock financing for development purposes.

Blended finance is not limited to fostering investment in private companies. Some actors - like the IFC or German DEG - naturally (due to their mandate) focus on blending as a tool to increase investment in private sector projects. Although private sector projects are sometimes the target, blending is about the financing structure and not necessarily linked to investment in private companies. (see also (DFI Working Group, 2017))

Who uses blended finance and for what purpose?

The total volume of blended finance deals is subject to debate.² It is clear, however, that currently blended finance accounts for only a very small amount of total flows to developing countries. According to (Development Initiatives, Nov 2016), in fact less than 1% of total investment flows are mobilized by blended finance.

Yet, according to the OECD, 17 of 26 DAC members use blended finance. (OECD 2018) In addition to the bilateral and the multilateral development banks and DFIs, other actors - like philanthropic foundations - engage more and more in blended finance operations. (Convergence, 2018)

Blended finance is not used uniformly across sectors and regions. Different data sources reveal different patterns, but it is clear that blended finance is most prominent in large transport and energy projects (EURODAD, 2013) and possibly also in projects in support of the local financial sectors (Convergence, 2018). Blended finance transactions follow environmental objectives more often than the average project, this being particularly true in the field of climate change mitigation. (European Commission, 2016)

Regarding the regional coverage, most blended finance transactions target lower middle-income countries with a higher institutional capacity than lower-income countries and they target also projects where expected returns are typically higher. (Convergence, 2018) Only a small amount of blended finance deals in the development sphere are targeted towards countries with very little amounts of domestic resources. (Development Initiatives, Nov 2016)

² (Convergence, 2018) contains a good overview of the current state of blended finance deals in terms of volumes, sectors and regional distribution.

The Criticism of Blended Finance

Critics of blended finance evoke a lack of transparency and a lack of ownership by partner countries. (Development Initiatives, Nov 2016) (EURODAD, 2013) This is often motivated by the fact that some blended finance structures involve the considerable delegation of responsibilities from some actors to others (for example when the EU transfers responsibilities to DFIs in some of their blended finance facilities). (Pereira, 2017) But the opposite may be true as well. What if blended finance deals, for example, meant that new actors started to adhere to environmental and social standards of traditional development finance actors (probably one of their core competencies).

Similarly, some authors also mention that blended finance deals may affect the sustainability of developing countries' debt, as blended finance deals almost always increase a country's indebtedness, whereas grant financing does not. (Convergence, 2018)

In theory blending is about leveraging additional resources and should not lead to a decline of development finance outside of blended finance deals. However, some authors speculate that blended finance could lead to a redirection of resources away from poorer countries towards countries and sectors with a higher income-generating capacity. Particularly whenever blended finance deals offer extra benefits for donors compared to other type of financing structures (e.g. more visibility due to larger overall project sizes). (Pereira, 2017)

The literature on blended finance also picks up the much-discussed question whether development finance crowds in or crowds out. The whole idea for blended finance is to crowd investment in. Yet, badly calibrated blended finance deals that involve commercial sources could create windfall gains, by tilting the risk-return profile too far in the direction of the commercial source of financing. In the worst case, blended finance may crowd out local private investment by replacing local investment with other international actors getting involved in the deals, inhibiting the rise of local investment. (Development Initiatives, July 2016)

Inspiration from Corporate Finance - Does Blending Matter?

In corporate finance, the idea that the financing structure impacts investments is deeply rooted in the respective literature. But the way this corporate finance literature looks at the relationship between the financing and investment has changed over time. The famous Modigliani–Miller theorem developed in the 1950's, claims that under perfect capital markets the financing structure of a firm is irrelevant. (Modigliani & Miller, 1958) Later, this very fundamental insight was followed by contributions showing that even under perfect capital markets, the financing structure may indeed be important (for example when the tax regime puts debt at an advantage over equity). Finally, the more recent contributions in corporate finance provide ample evidence that the financing structure does matter. Based on the insight that information between an investor and the investee is generally asymmetrically distributed, different financing structures provide different incentives for firms which in turn affect the way they invest

While the incentive effects of the financing structure on investment are well known in corporate finance, the development finance community has paid much less attention to it. There is no reason, however, to believe that incentive effects of the financing structure play any less of a role in the financing of development projects where information among actors is often highly asymmetrically distributed. It is therefore worthwhile to pay more attention to the relationship of financing structure and development results.

Critics of blended finance evoke a lack of transparency and a lack of ownership by partner countries of such transactions.

There is no reason to believe that incentive effects of the financing structure play any less of a role in the financing of development projects than in the behavior of a firm. This is why it seems worthwhile to give more attention to the relationship of financing structure and development results.

The Impact of Blended Finance - Existing Evidence

Whether or not the criticism or suspicions about blended finance are justified, or whether blended finance is able to deliver on its promises, is up for debate. Thanks to new initiatives on data-collection (that KfW is very actively participating in), we start to understand where blended finance deals happen. But to date very little evidence on the impact of blended finance on development outcomes exists.

Existing evaluations of blended finance instruments focus on operational effectiveness - for example (European Court of Auditors, 2014) - which does not necessarily imply positive development outcomes. A report from the European Commission (European Commission, 2016) analyses a larger part of the EU's blended finance facilities taking an operational regard (and not contrasting blended finance to other financing structures). The report concludes that most of the European Union-projects relying on blended finance achieve intended outcomes and that blending financing sources have added significant value to the EU's lending operation and that of DFI's.

There are several obvious reasons that make it difficult to study the impact of blended finance - or of the financing structure in general - on development results. An important reason certainly is the fact that details about development projects by classical project finance actors are not available to researchers on a comprehensive scale.

Besides, establishing perfect causality between the choice of the financing instrument and the success of development interventions is certainly impossible as any sensible financial institution would not choose the financing instrument randomly and constructing counterfactual scenarios is difficult. Development interventions are also too complex to control for every possible factor that controls project-success.

Given the variety of the parties involved in blended finance deals and the variety of blending instruments used, a general verdict on blended finance is elusive.

Nevertheless, it seems irresponsible to continue growing the use of blended finance without a better understanding of its possible effects on development outcomes and impacts.

Given the variety of the parties involved in blended finance deals and the variety of blending instruments used, a general verdict on blended finance is elusive in any case. Nevertheless, it seems irresponsible to continue growing the use of blended finance without a better understanding of its possible effects on development outcomes and impacts.

The Impact of Blended Finance on Development Results at KfW Development Bank

Blended Finance at KfW Development Bank

KfW Development Bank is the development bank of Germany and channels public funds (for the largest part provided by the German government) into development projects, but equally makes use of capital acquired by the bank on financial markets.

There are four main modes of financing the bank uses for development projects: 1) Grants that come with no repayment obligation, 2) highly concessional loans financed entirely through the use of funds provided by the German government 3) blended finance: public sources from the government mixed with funds raised by the bank on the financial market, in particular this is loans from market funds with rate subsidies from public sources³ and 4) loans entirely funded by the banks resources raised on the financial markets.⁴

The use of blended finance at KfW Development Bank (using public funds to make loans from market sources more attractive) falls within the categories of blended finance in (Pereira, 2017). It is, noticeably, not linked to private sector projects.

There are other more outward types of blended finance like guarantees or fund structures that are gaining in importance. This study focusses exclusively, however, on blending that happens within KfW Development Bank itself which is - by its sheer volume - very relevant.

Grants	Highly Concessional Loans	Blended Finance	Loans from Market Funds
<ul style="list-style-type: none"> From public funds 	<ul style="list-style-type: none"> Loans purely from public funds (highly concessional) 	<ul style="list-style-type: none"> Loans from market funds with rate subsidies from public funds Other instruments like guarantees, fund structures etc. (not covered here) 	<ul style="list-style-type: none"> Loans from market funds (not subject to ex post evaluation)

Figure 1: Financing Instruments at KfW Development Bank

The annual financing volume of KfW Development Bank is around 7-8 billion EUR. KfW's blended finance portfolio is largely in line with the overall trends in the sector. In its last report on the evaluation activities, the bank's evaluation department writes: "[...] financing more in line with market conditions is a mechanism used primarily in relatively highly developed countries and in sectors which generate income [...]. A

³ The actual technicalities behind the subsidization of the loans vary - which I omit for the sake of simplicity - but the basic idea always is to render the financing cheaper for the recipient of the loan.

⁴ It should be noted that for public funds, the bank merely acts on behalf of the German government. But for the sake of brevity, I speak of the bank's projects.

typical example would be the construction of a wind farm in Brazil. Aligning financing with the type and context of the project supported is intended to ensure that the budget funds available for FC (Author's note: Financial Cooperation) are used where they are needed most so that support achieves the greatest possible impact overall." (KfW Banking Group, 2017)

When and where blended finance structures are used by the bank is, of course, not random. But it is generally not deliberately chosen on the single project level. Instead it is the outcome of a relatively complex set of rules among which the target country (and its development), the target sector and the underlying risk are among the most important features.

Evaluation of Development Results

The Bank's Evaluation Department regularly evaluates (and rates) a large part of KfW's development interventions. The choice of projects is the result of a random sample of 50 % of all of the projects that are being completed in any given year, except for projects that are financed by market funds only. As a result, extensive evaluation data exists for projects financed by the first three financing structures described in Figure 1.

The single project evaluations that are the source of the developmental impact data in this study are carried out according to the OECD DAC evaluation criteria and are done either by staff from the evaluation department, visiting project managers from other departments that have never worked on the respective project, or external experts. Projects are first rated on each of the five OECD DAC evaluation criteria (relevance, effectiveness, efficiency, impact and sustainability) on a scale from 1 (most successful) to 6 (least successful).⁵ Finally, sub-grades are subsumed into an overall rating for the project (on a scale from 1-6 again), while all projects with a final grade from 1-3 are rated as successes and all projects with a rating from 4-6 as unsuccessful. This study focusses on the categorization of successful or unsuccessful instead of the final project grades to increase the power of the analysis.

The bias from the choice of projects to be evaluated is limited to the timing with which projects arrive in the population the sample is drawn from. However, relatively stringent rules apply as to when projects are being awarded the status completed and ready for evaluation.⁶ For this study, all evaluated projects after and including 1990 are considered. The cut-off is chosen to be 1990 as many of the control variables stop to be available before. In what follows, I mention results for other cut-offs too (they do not change significantly).

It is important to note that the rating of projects is concerned with the developmental impact of the project and less so with the quality of its design or its strategic importance for the bank. A well-designed project, which fails to unfold a developmental impact - for example because civil war made the schools that have been constructed unusable - is considered unsuccessful. That is why in this study success must be understood as a positive developmental impact according to the five OECD DAC criteria (i.e. as an overall clearly positive development result).

Statistics on Blended Finance from KfW's Evaluation Portfolio

Figure 2 shows the use of the different modalities of financing among all evaluated projects since 1990. In the data base of 2,391 evaluated projects the largest part has

⁵ The sustainability is rated on a scale from 1 (highest) to 4 (lowest).

⁶ For more details on the sampling and the evaluation procedure in general see (KfW Banking Group, 2017).

been financed by grants followed by highly concessional loans from public funding sources and about 10 % of all projects are financed by a mix of public sources and resources the bank takes up on the financial markets. KfW Development has been using this type of blended finance already for a long time. Using a sub-set of more recent evaluations only, the share of blended finance-projects does not change significantly.

Number of Projects Evaluated since 1990

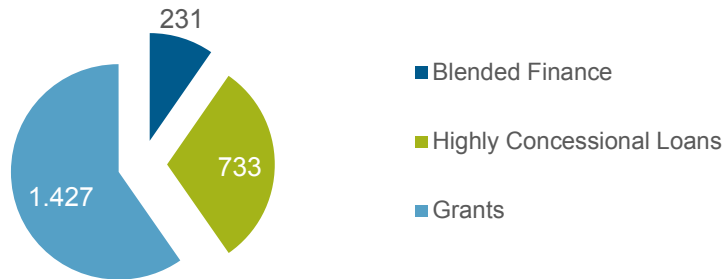
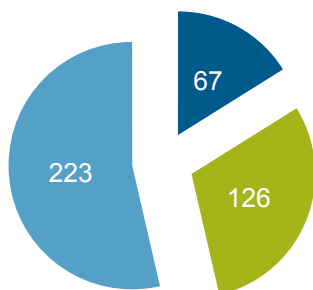


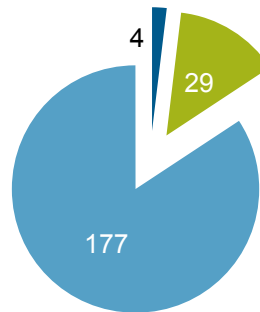
Figure 2: Number of Evaluated Projects by Financing Instrument (projects evaluated since 1990), Blended Finance = Interest Rate Subsidized Loans

Figure 3 presents the financing mix for a few selected sectors of the bank's activities. The figure reveals the high correlation of blended finance with the sector of activity. In particular sectors which try to primarily build social infrastructure (health, education) rarely use blended finance while in sectors where projects are to some extent income generating - like energy or transport- blended finance is used more often.

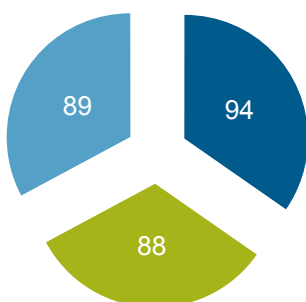
Transport and Communications



Health, Family Planning, HIV/AIDS



Energy



Education

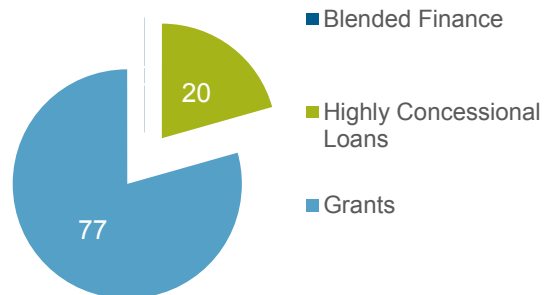


Figure 3: Number of Evaluated Projects by Financing Instrument and Sector (projects evaluated since 1990), Blended Finance = Interest Rate Subsidized Loans

The financing structure equally depends on the target region of the projects. In Sub-Saharan Africa, the bank has by far the lowest number of projects based on blended financing (see Figure 4). This is somewhat to the contrary of what other sources of data say about blended finance and its regional distribution (see (Convergence, 2018)), but this difference is probably to be explained by different definitions of blended finance in different sources. All in all, the portfolio speaks to a strategic use of different modes of financing by the bank depending on the sector and the region. Interestingly, limiting the sample of evaluations to more recent years does not considerably change the distribution depending on sectors and regions.

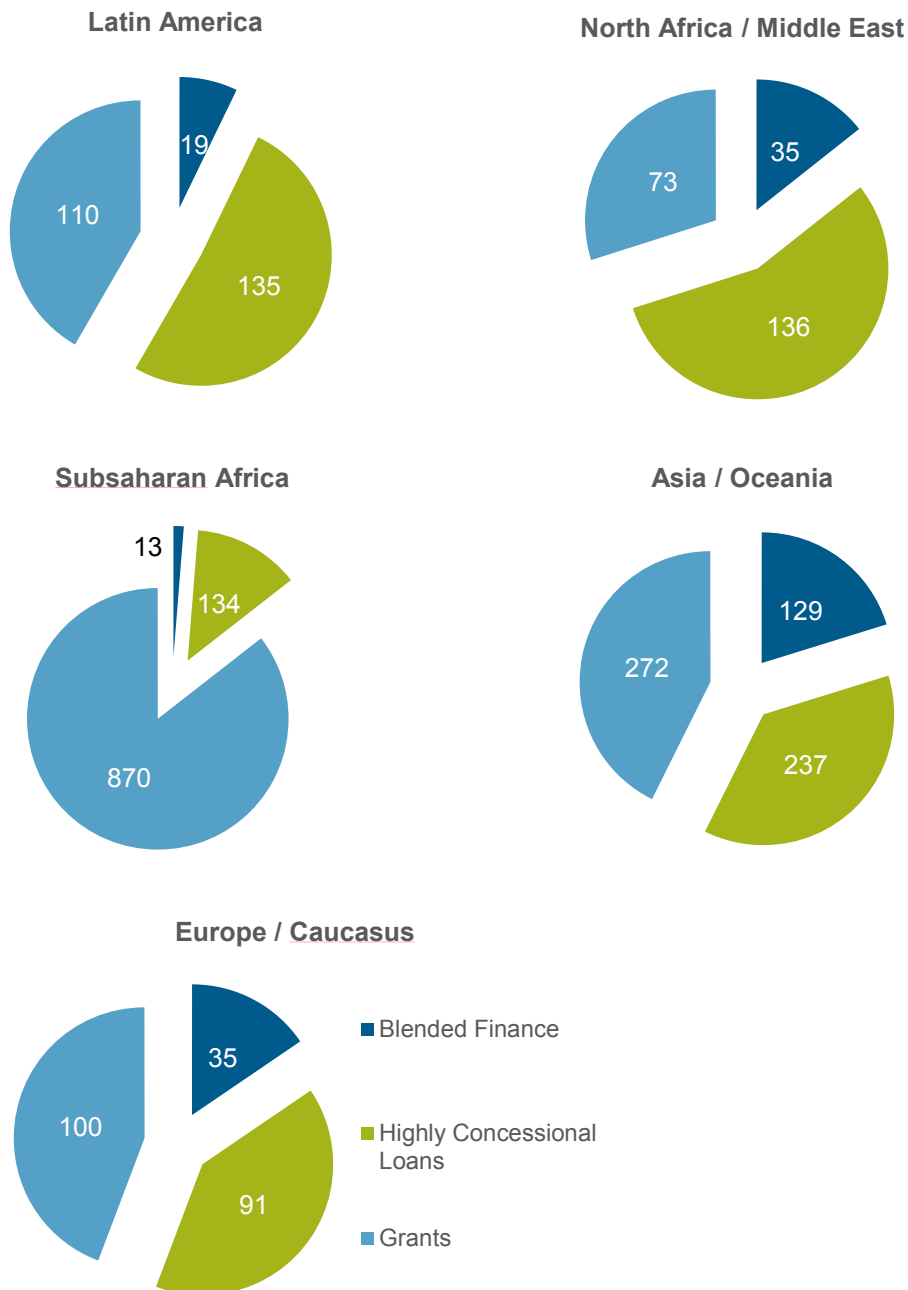


Figure 4: Number of Evaluated Projects by Financing Instrument and Region (projects evaluated since 1990), Blended Finance = Interest Rate Subsidized Loans

Blended Finance – Positive Incentive Effects?

Some of the criticism above suggests that blended finance in the form of interest rate subsidized loans compare negatively with pure grants or highly concessional loans in terms of development impact. Some argue that an undue debt burden often impedes a project's operation in developing countries because the local project partner does not have sufficient means to finance operation, maintenance and debt service at the same time.

On the contrary, some of the above arguments suggest that blended finance loans produce superior developmental impact. Foremost, projects could produce better results due to a disciplining effect of repayment obligations that are absent in grant based financing. A project partner may construct and operate infrastructure with higher care when repayment obligations in the future need to be serviced by the income stream generated by that infrastructure. Such a disciplining effect of a debt burden is even stronger in the case when defaulting on a repayment obligation with one financier automatically triggers default with other financiers as well (which is often the case in standard financing agreements).

Blended finance projects at KfW also target financially stronger partner institutions and countries with a higher level of development. Clearly, the effect of an environment that is probably more conducive to project-success needs to be controlled for. But it could also be true that the country's higher level of development and blended finance create a virtuous circle, positively affecting the project's results, on top of the fact that projects are more likely to be successful in more developed environments.

As to what to expect in this analysis this means: Whenever KfW perfectly aligns the financing structure with the project's needs for financing, there should be no visible impact of the financing structure on the developmental results of a project, once other influencing factors that correlate with the use of blended finance in the form of interest rate subsidized loans are controlled for.

Thus, the question this study answers is, whether such an alignment of the financing structure to the financing needs of the projects exist, or whether detrimental incentive effects from a poorly chosen financing structures negatively affect development results.

Results

Blended Finance and Success of Projects

Figure 5 provides a first insight into whether different types of financing correlate with project-success by showing average success rates of projects by financing structure (i.e. 83 % of all projects using blended finance in the sample were successful). Simply comparing the descriptive results by means of t-tests shows that the success rates of blended finance projects are higher than the success rates of projects financed by grants or highly concessional loans.

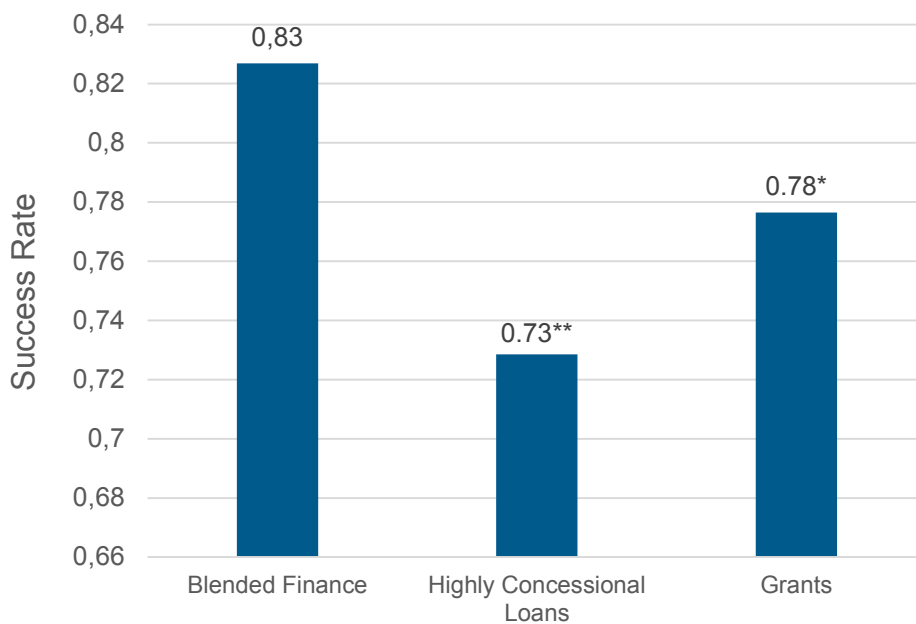


Figure 5: Success Rate by Financing Instrument (projects evaluated since 1990)⁷, Blended Finance = Interest Rate Subsidized Loans

Controlling for Macro-Factors

Different macro-environments, however, can influence project outcomes to a large extent. Blended finance is used in more developed environments that are probably more conducive to project-success. Hence, in the next step, I try to mute the influence of the different settings the projects are implemented in.

⁷ Asterisks indicate results of t-tests for an equal mean of the two groups assuming unequal variances. * p < 0.05, ** p < 0.01, *** p < 0.001

The summary statistics in Table 1 confirm: Grants are used in countries that are less developed (by means of the control variables used here), while blended financing is being used in more developed settings, in fact comparable to those settings where highly concessional loans are deployed in.

Table 1: Summary Statistics by Financing Instrument

Blended Finance

	Obs	Mean	Std. Dev.	Min	Max
Disbursement by Project (Mio. EUR)	231	46.80	50.40	1.79	399.00
GDP per Capita (constant 2010 USD)	227	2935.00	2582.19	307.03	14109.14
Life Expectancy at Birth	228	66.66	5.77	50.01	78.76
Government Effectiveness (WGI) (-2.5 - +2.5)	202	-0.19	0.37	-1.08	1.28
State Fragility Index (0-25)	201	12.24	4.12	2.00	19.00

Highly Concessional Loans

	Obs	Mean	Std. Dev.	Min	Max
Disbursement by Project (Mio. EUR)	733	15.10	23.40	0.50	340.00
GDP per Capita (constant 2010 USD)	723	3397.81	4614.46	401.00	28499.33
Life Expectancy at Birth	727	65.52	7.36	44.11	80.55
Government Effectiveness (WGI) (-2.5 - +2.5)	605	-0.20	0.53	-1.65	1.34
State Fragility Index (0-25)	605	11.54	4.56	0.00	23.00

Grants

	Obs	Mean	Std. Dev.	Min	Max
Disbursement by Project (Mio. EUR)	1427	7.80	9.00	0.16	173.00
GDP per Capita (constant 2010 USD)	1371	1329.58	1672.90	161.83	12285.05
Life Expectancy at Birth	1398	58.22	9.42	29.00	78.36
Government Effectiveness (WGI) (-2.5 - +2.5)	1258	-0.60	0.45	-1.88	1.34
State Fragility Index (0-25)	1228	14.92	4.66	1.00	24.00

I use three sets of control variables to account for the influence of factors that influence both the use of blending and the likelihood for a positive developmental result of a project in general. From the World Bank Development Indicators⁸ database, I use data on the target country's GDP per capita and on life expectancy at birth. From the World Governance Indicators⁹, I use the indicator *Government Effectiveness* that captures the general functionality of state institutions (KfW Development Bank's interventions in almost all cases target public institutions). I also use the *State Fragility Index* published by the Center of Systemic Peace¹⁰ to control for macro-level stability of the country. In terms of timing, I match these variables to the evaluation database, by using the median-year between project start (signing of the contract) and the year of the evaluation.

⁸ <https://datacatalog.worldbank.org/dataset/world-development-indicators>

⁹ All information about the WGI database can be found at <http://info.worldbank.org/governance/wgi/#home>

¹⁰ <https://www.systemicpeace.org/>

Regression results

Table 2 shows the marginal effects after a Probit regression of the project's success (a variable indicating whether a project is successful or not by the definition of the evaluation) on the financing mode. I include the financing instrument as factorial variables defining highly concessional loans as the baseline category that is omitted and that the other two categories are being compared to.

The results reveal that the difference between the success rates becomes statistically insignificant when the region and the level of development of the countries in which the projects are carried out are controlled for. Higher success rates of blended finance in the form of interest rate subsidized loans can therefore more credibly be attributed to the impact of the environment than the deployment of market funds.

In other words, I find no evidence that the deployment of market funds, i.e. blended finance, has an influence on the development results of the projects in the evaluation portfolio. The financing structure seems to fit the projects' circumstances at hand. The results hold, using only a more recent subset of evaluations.

Higher success rates of the interest rate subsidized loans (blended finance) can therefore more credibly be attributed to the impact of the environment than the deployment of market funds.

Table 2: Probit Regression - Full Sample (y=Project Success), Marginal Effects

Probit regression (y=Project Success)	Number of obs. = 2017					
	Marginal effect	Std. Err.	z	P>z	[95% Conf. Interval]	
Financing Instrument (Base Category Concessional Loans)						
Blended Finance	-0.0720	0.04	-1.73	0.08	-0.1536	0.0096
Grants	0.0294	0.04	0.70	0.48	-0.0527	0.1115
Region (Baseline Asia)						
Sub-Saharan Africa	-0.0300	0.03	-0.91	0.36	-0.0947	0.0347
Europe/Caucasus	0.0017	0.04	0.04	0.97	-0.0739	0.0773
Latin America	0.0029	0.03	0.09	0.93	-0.0624	0.0682
North Africa / Middle East***	-0.1130	0.04	-2.87	0.00	-0.1900	-0.0359
Project Volume (Million)*	0.0013	0.00	1.96	0.05	0.0000	0.0025
GDP per Capita (1000 USD)	0.0040	0.00	1.10	0.27	-0.0032	0.0113
Life Expectancy at Birth	0.0007	0.00	0.32	0.75	-0.0033	0.0046
Government Effectiveness (WGI)*	0.0610	0.03	2.32	0.02	0.0095	0.1124
State Fragility Index	-0.0035	0.00	-1.03	0.30	-0.0100	0.0031

* p < 0.05, ** p < 0.01, *** p < 0.001

Yet, to some extent, this result comes as no surprise: In the overall portfolio, the choice of the financing instrument is limited in any case, and hence optimizing it is often out of question. Building a school in a low-income country, for example, must always be done with grant money. This reduces the variation in the data significantly. Therefore it is all the more interesting to see whether the results hold for sectors in which there is an actual choice in terms of matching the financing structure to the project at hand, i.e. sectors where much more blended finance is used.

Subsector Analysis

Indeed the picture of the results changes, when limiting the sample to the sub-sector of projects in the energy sector. Again, there is a correlation between the mode of financing and the success of the projects. However, the direction is different. Energy projects are less successful when financed by grants, while the use of market funds or concessional loans correlates with higher success rates.

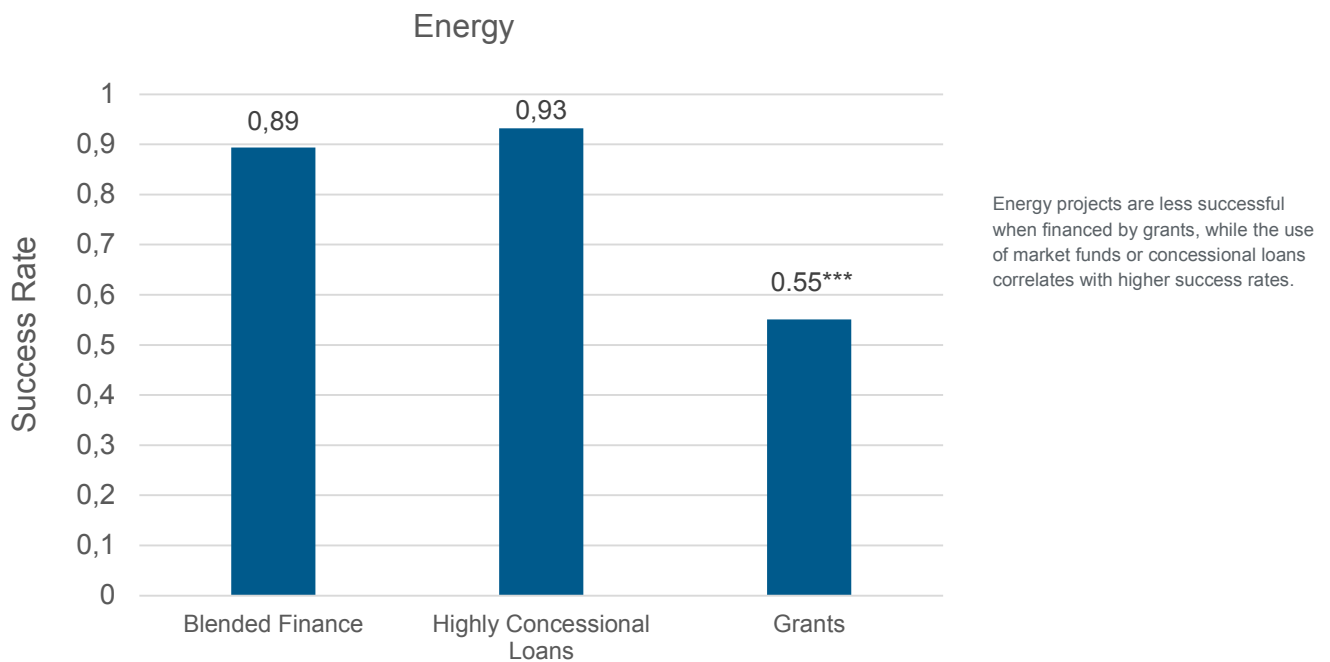


Figure 6: Success Rate by Financing Instrument (projects evaluated since 1990) / Energy¹¹, Blended Finance = Interest Rate Subsidized Loans

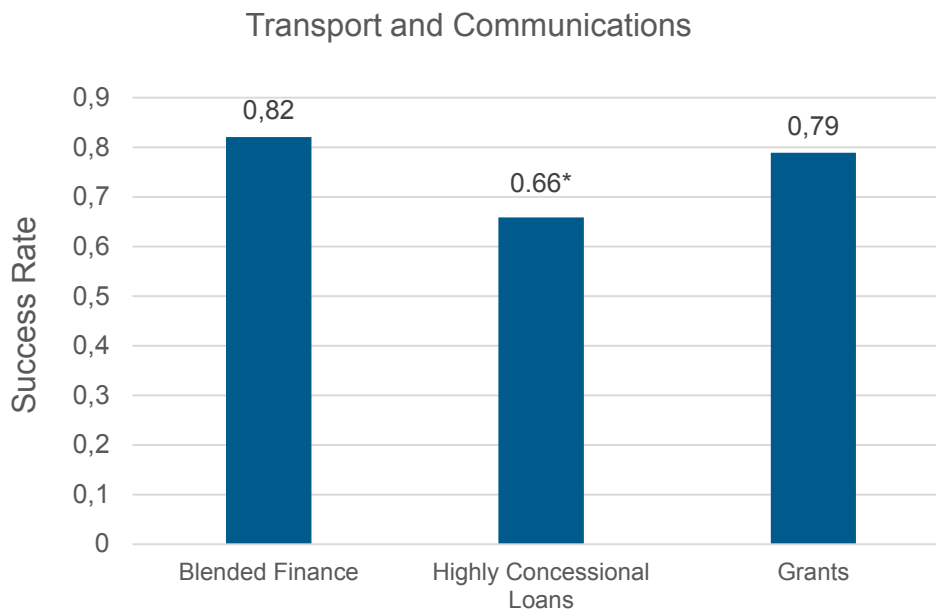
The difference holds after controlling for the same macro-level variables as before (results are in Table 3 in the annex). Pure grants in the energy sector are associated with a significant negative impact on the likelihood of a project achieving a positive development impact. A potential explanation may be, that grants in sectors that are almost always income generating, like energy, have negative incentive effects for project partners (for example by exerting less budgetary discipline for certain projects). However, to see more clearly why this may be the case, further research - for example on the actual project types - is needed.

In the transport and communications sector, a U-shaped pattern occurs. Highly concessional loans from public sources are correlated with a lower likelihood of a positive development impact and blended finance and grants fare better. The differences disappear when controlling for macro-level influence (though this could also be relat-

¹¹ Asterisks indicate results of t-tests for an equal mean of the two groups assuming unequal variances. * p < 0.05, ** p < 0.01, *** p < 0.001

ed to the decreasing power of the regression, results can be found in the annex in Table 4).

I hypothesize that the transport sector in fact is diverse in terms of projects. There are either highly income generating projects (e.g. toll-roads) or by nature non-income generating projects (e.g. rural roads or rural markets). The results may therefore suggest that a diverse sector like transport calls for a large variety of financing structures and highly concessional loans in some cases may constitute a non-optimal compromise. Again, further research is needed.



The results may therefore suggest that a diverse sector like transport calls for a large variety of financing structures and highly concessional loans in some cases may constitute a non-optimal compromise.

Figure 7: Success Rate by Financing Instrument (projects evaluated since 1990) / Transport and Communications¹², Blended Finance = Interest Rate Subsidized Loans

Sustainability

Much of the criticism of blended finance focuses on the sustainability of the debt burden blended finance instruments put onto partner countries or project implementing partners. Indeed, interest rate subsidized KfW-loans that blend public and market sources put a larger debt burden onto the project partners than grants (no debt burden at all) or highly concessional loans do.

It may well be that such debt burden impedes the operational phases of projects by straining the project's finances up to a point where maintenance or staffing suffers from a lack of funds. On the other hand, the disciplining effect of blended finance - the idea that project implementing partners put more weight on the construction, operation and maintenance of infrastructure - could be particularly relevant in increasing the sustainability of development interventions.

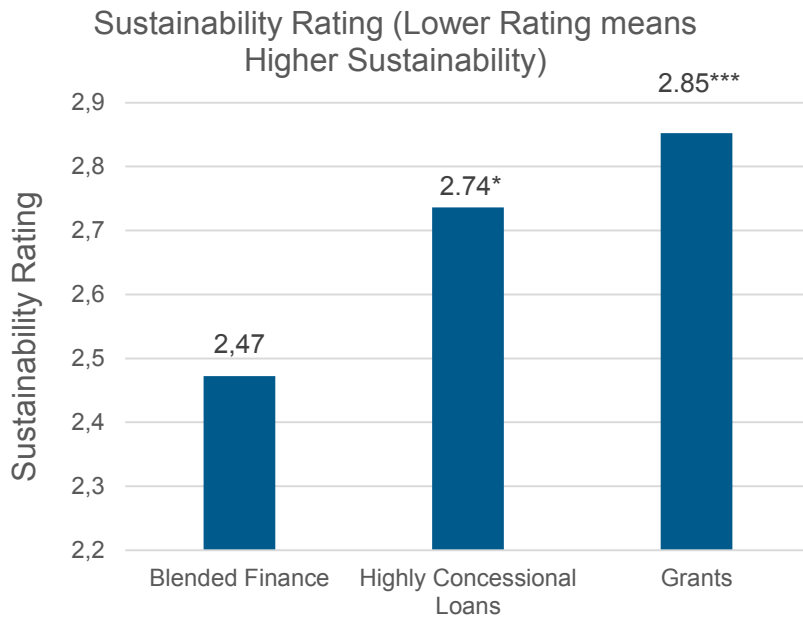
Fortunately, sustainability is one of the OECD DAC evaluation criteria and using KfW's evaluation database allows taking a closer look as to how blended finance correlates with the projects sustainability, i.e. whether or not projects' impacts can be expected to last in the future.

The results suggest that, for KfW's portfolio of projects, there is little reason to suspect that blended finance has a negative effect on the sustainability of development

¹² Asterisks indicate results of t-tests for an equal mean of the two groups assuming unequal variances. * p < 0.05, ** p < 0.01, *** p < 0.001

interventions. On the contrary, without controlling for the macro-level situation, grants fare worse (a lower rating - a better grade - means higher sustainability).¹³

Once the macro-situation is taken into account, the difference between the financing structures vanishes. Grants are implemented in more difficult environments meaning it is more difficult to achieve sustainable impacts. The data suggests that the financing structure itself is not related to the sustainability of projects.



Once the macro-situation is taken into account, the difference between the financing structures vanishes. Grants are implemented in more difficult environments meaning it is more difficult to achieve sustainable impacts. The data suggests that the financing structure itself is not related to the sustainability of projects.

Figure 8: Sustainability Rating by Financing Instrument (all evaluated projects since 2007)¹⁴, Blended Finance = Interest Rate Subsidized Loans

¹³ The sample of projects becomes smaller because in the database sustainability is rated as a separate category only since 2007.

¹⁴ Asterisks indicate results of t-tests for an equal mean of the two groups assuming unequal variances. * p < 0.05, ** p < 0.01, *** p < 0.001

Conclusions and Outlook

The financing structure of development projects can impact their developmental results.

To better understand how, this study compared the evaluation results of KfW Development Bank's projects with different financing structures, paying particular attention to blended finance projects that mix public sources and capital that KfW raises on the financial markets itself by using interest rate subsidized loans.

The results show that for the total portfolio, across all sectors, there is no reason to believe that blended finance in the form of interest rate subsidized loans has a negative effect on the results of development interventions at KfW Development Bank. Blended finance is used in more developed settings, but once this difference is controlled for, the projects are just as likely to be successful as projects using other financing structures.

But the proposition that the financing structure matters can still be confirmed: Zooming into sub-sectors with more leeway in the choice of the financing structure (in the overall portfolio the choice is limited after all) there is a stronger relationship between financing structures and development results. In the energy sector for example, grants exhibit significantly worse development results than blended finance projects or highly concessional loans.

The results here pertain to a particular type of blended finance (interest rate subsidized loans) and should not easily be generalized. But they also hint at the advantages of interest subsidized loans: Agency problems among the participants of a blended finance deal that may arise with other, more complex, type of blended finance (for example when responsibilities are delegated) can by construction not be found.

The current analysis does not tell us whether blended finance is used optimally. Currently, evaluations of development interventions – and KfW Development Bank's evaluations are no exception - do generally not take into account whether the same development results could have been achieved with a lower level of subsidization. There is thus much work to do trying to understand, what blended finance does, and what it can do to unlock more capital for the purpose of achieving the Sustainable Development Goals.

There is a broader perspective to the results as well: At least in some cases, the financing structure does matter for development results and more work needs to be done to understand how. The recent discussions around blended finance have brought financing structures back into focus. They could equally be an opportunity to kick-start a discussion on how they affect development results.

Regression Results / Energy Sector

Table 3: Probit Regression - Energy Sector (y=Project Success), Marginal Effects

Probit regression	Number of obs = 219					
	Marginal Effects	Std. Err.	z	P>z	[95% Conf.	Interval]
Financing Instrument (Base Category Concessional Loans)						
Blended Finance	0.0327	0.04	0.87	0.38	-0.0406	0.1060
Grants***	-0.4390	0.09	-4.66	0.00	-0.6236	-0.2544
Region (Baseline Asia)						
Sub-Saharan Africa	0.1123	0.08	1.36	0.17	-0.0494	0.2741
Europe/Caucasus	0.0816	0.09	0.91	0.36	-0.0942	0.2575
Latin America	0.1277	0.07	1.78	0.08	-0.0128	0.2682
North Africa / Middle East	-0.0031	0.09	-0.04	0.97	-0.1748	0.1686
Project Volume (Million)	0.0005	0.00	0.70	0.48	-0.0008	0.0018
GDP per Capita (1000 USD)	-0.0054	0.01	-0.59	0.56	-0.0233	0.0125
Life Expectancy at Birth	-0.0036	0.01	-0.65	0.51	-0.0146	0.0073
Government Effectiveness (WGI)**	0.2154	0.08	2.80	0.01	0.0644	0.3664
State Fragility Index	0.0039	0.01	0.47	0.64	-0.0126	0.0205

* p < 0.05, ** p < 0.01, *** p < 0.001

Regression Results / Transport and Communications Sector

Table 4: Probit Regression - Transport and Communications Sector (y=Project Success), Marginal Effects

Probit regression		Number of obs = 327				
	Marginal Effects	Std. Err.	z	P>z	[95% Conf. Interval]	
Financing Instrument (Base Category Concessional Loans)						
Blended Finance	-0.0912	0.09	-1.01	0.31	-0.2676 0.0852	
Grants	0.0769	0.08	0.95	0.34	-0.0816 0.2354	
Region (Baseline Asia)						
Sub-Saharan Africa*	-0.1655	0.07	-2.34	0.02	-0.3040 -0.0271	
Europe/Caucasus	-0.1679	0.19	-0.91	0.37	-0.5313 0.1955	
Latin America	-0.0819	0.11	-0.72	0.47	-0.3061 0.1423	
North Africa / Middle East***	-0.3755	0.11	-3.44	0.00	-0.5894 -0.1616	
Project Volume (Million)	0.0014	0.00	1.08	0.28	-0.0011 0.0038	
GDP per Capita (1000 USD)	0.0144	0.01	1.85	0.07	-0.0009 0.0296	
Life Expectancy at Birth	-0.0085	0.00	-1.74	0.08	-0.0180 0.0011	
Government Effectiveness (WGI)	0.1019	0.06	1.58	0.11	-0.0244 0.2282	
State Fragility Index	-0.0160	0.01	-1.87	0.06	-0.0328 0.0008	

* p < 0.05, ** p < 0.01, *** p < 0.001

Regression Results / Sustainability (Ordered Probit Regression)

Table 5: Ordered Probit Regression - Evaluations since 2007 (y=Sustainability Rating (1-4)), Marginal Effects

Ordered Probit regression	Number of obs = 817					
	Marginal Effects	Std. Err.	z	P>z	[95% Conf.	Interval]
Financing Instrument (Base Category Concessional Loans)						
Blended Finance	-0.0085	0.01	-0.57	0.57	-0.0376	0.0206
Grants	-0.0128	0.01	-0.87	0.39	-0.0417	0.0161
Region (Baseline Asia)						
Sub-Saharan Africa	-0.0145	0.01	-1.74	0.08	-0.0307	0.0018
Europe/Caucasus	-0.0095	0.01	-0.84	0.40	-0.0315	0.0125
Latin America*	-0.0241	0.01	-2.61	0.01	-0.0422	-0.0060
North Africa / Middle East*	-0.0221	0.01	-2.39	0.02	-0.0403	-0.0040
Project Volume (Million)	0.0001	0.00	0.74	0.46	-0.0002	0.0005
GDP per Capita (1000 USD)*	0.0030	0.00	2.23	0.03	0.0004	0.0056
Life Expectancy at Birth	0.0008	0.00	1.39	0.17	-0.0003	0.0018
Government Effectiveness (WGI)	0.0051	0.01	0.78	0.44	-0.0078	0.0181
State Fragility Index	-0.0002	0.00	-0.21	0.83	-0.0016	0.0013

* p < 0.05, ** p < 0.01, *** p < 0.001

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