National Development Banks as Active Financiers: The Case of KfW

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1. Introduction

National development banks (NDBs)[1] were originally hailed as critical institutions to rebuild war-torn Europe and ameliorate economic bottlenecks, but by the early 1980s interest in them had waned significantly (Verdier 2000). The spread of the neoliberal school of thought and the lack of financial firepower severely curtailed both their abilities and influence. Yet beginning in the late 1990s, and accelerating after the 2008 Global Financial Crisis, national development banks were once again in vogue across Europe. Armed with both expanded mandates and larger balance sheets, supporters argued that NDBs could intervene in the domestic economy when private actors were unwilling or unable to do so. More recently, support for NDBs grew after the European Commission highlighted the critical role that NDBs could play in catalyzing long-term finance, countering the procyclicality of the macro economy, promoting the green economy, and fostering innovation (European Commission 2015). In particular, this growth in interest in NDBs has elevated the profile of Germany's KfW, the largest NDB in Europe. With a total balance sheet of EUR 500 billion and new yearly loan issuances of EUR 80 billion, KfW serves as one of Germany's largest financial institutions. KfW has participated in financing numerous domestic economic programs ranging from SMEs to housing efficiency projects to student loans, and has been instrumental in the retooling of the German economy for innovation and green technology. As such, KfW operates as a classic NDB, supplying financing to important projects that may be underinvested in by private actors.

While the activities of KfW have been well documented, less scholarly attention has focused on *why* KfW has grown to strategic importance. We contend that KfW's status as a

[1] In Europe, these institutions are often called national promotional banks (NPBs), yet they are functionally equivalent to a NDB.

quasi-state organization is central to understanding its influence. On the one hand, KfW is tasked with implementing policy objectives of the German government. In order to do so, KfW receives the full financial backing of the federal government, which allows it to borrow cheaply on capital markets and follow social, economic, and environmental goals rather than purely commercial ones. In this way KfW can ameliorate market failures and compensate for the underprovision of private capital. On the other hand, the operations of KfW are largely conducted according to market principles; KfW creates a spectrum of investment support instruments, takes advantage of its easy access to the capital market, and cooperates extensively with the commercial banking sector. This chapter aims to explore this duality. In particular, we ask the following questions: how is KfW able to bridge the objectives of the public and private sector? More importantly, how does this position at the nexus between the public and private impact the ways in which KfW can contribute to reaching policy objectives – particularly in areas where regulatory standards and economic competitiveness are often seen as antagonists?

We argue that the key to understanding the role of KfW in the German economy extends beyond its official tasks of ameliorating market failures or providing countercyclical financing. Rather, KfW's importance rests on its active participation within the domestic policy cycle, ranging from project proposal to evaluation. Since KfW is able to dynamically engage with the German government at all stages of policy, KfW can profoundly impact *how* these policies are determined, designed, implemented, and evaluated. KfW derives this legitimacy as an important policy actor through three characteristics: (1) KfW acts on the financial market with a government backing to pursue economic—rather than purely commercial—objectives; (2) as a government agency, KfW has privileged access to officials and regulators; and (3) it has extensive technical and engineering expertise. Consequently, KfW has advantages that other institutions—both public and private—do not. For one, KfW's stronger financial position can be leveraged to pursue beneficial investments from a societal perspective that would otherwise go unfunded. In addition, KfW exists within a protected policy space in which it serves as an expert actor, allowing it to coordinate with government policy and impact the commercial and regulatory environment in which it operates. KfW has a role in developing these policies, such as providing technical advice or collaborating in the program design. In this way, KfW can create and expand the policy space in which it operates. This potent dynamic results in KfW being an active and effectual economic institution, provided that none of these channels are systematically abused by either the government or the public bank. This close operational relationship allows KfW and the German government to achieve policy synergy, where regulation and financing can be simultaneously coordinated for maximal benefit within the domestic economy.

The chapter proceeds as follows. First, we examine the particularities of the relationship between KfW and the German government within the policy cycle. We highlight how the three aforementioned characteristics profoundly impact the ability of KfW to operate and implement programs from project proposal to implementation. Next, we examine this dynamic through the lens of two cases studies, the structural change towards a low-carbon economy and the financial sector after the 2008 Global Financial Crisis. Finally, we conclude with thoughts on the replicability of KfW's institutional model to other countries, noting both the advantages and limitations of such an approach.

2. The Nexus between Private and Public: KfW, the German Government, and the Policy Cycle

National promotional banks are unique entities because they are institutions that occupy a space between the private market and government, allowing them privileged access to both policymakers and the commercial market. As opposed to the government, which typically limits its engagement to macroeconomic policy and regulatory spheres, a public national promotional bank (NPB) engages as a modified market participant; it plays by the rules, but does not behave entirely with commercial motivations. As Europe's largest NPB, KfW has served this function since the end of WWII. Yet while the particular programs have changed, KfW has persisted as one of the most important domestic German financial institutions, and has consistently served to finance policy priorities that are underserved by the private market. As such, KfW has served an important role throughout the policy cycle.

2.1 KfW in Historical Context

KfW was originally established in 1949 to expedite the reconstruction of post-war Germany. KfW received its initial capitalization through the European Recovery Program (ERP), colloquially known as the Marshall Plan, and channeled American funds for investment in the housing, agricultural, power, and heavy industrial sectors (Grünbacher 2004). By the end of the 1950s, as the *Wirtschaftswunder* took hold in Germany, there existed less need for a purely reconstruction credit agency. Yet rather than eliminating KfW, the objectives of KfW were adapted to the new challenges facing the German economy. Beginning in the 1960s, KfW assumed more global responsibilities, and began providing financing for foreign investments to secure primary commodities for German manufacturers as well as for international development aid projects. Domestically, KfW began emphasizing SME financing, vocational training, and more advanced industrial projects. From an early stage, KfW emphasized prudent investment over subsidization. Rather than providing a one-time grant to a specific project, KfW would instead extend a loan or provide a guarantee that did not erode its capital base. Any earned profits would be used to expand the capital base and reinvested to support new promotional programs. Over the next few decades, the particular emphasis of KfW vacillated between domestically- and internationally-oriented projects, yet KfW's mission of promoting economic development via targeted financing remained largely unchanged. The reunification with East Germany and the fall of the Soviet Union ushered in a greater role for KfW in the early 1990s, when it became more active in SME financing, technical assistance, and governance and transparency initiatives (Harries 1998). Ultimately, KfW was critical in financing German reunification.

Today, KfW is one of Germany's largest financial institutions and one of Europe's largest bond issuers. In 2015, KfW had total assets worth EUR 503 billion and issued EUR 79.3 billion in new development activities, of which EUR 50.5 billion was targeted domestically (KfW 2015, 2). SME financing still accounts for a substantial portion of KfW's domestic activities; in 2015, EUR 20.4 billion was committed to SME promotion and development. Significant expenditures were also recorded in housing investment (EUR 16.44 billion), education and social development (2.64 billion), infrastructure (4.95 billion), and state promotional banks (4.69 billion). Outside the domestic promotion bank, KfW also has 27.9 billion in international activities, with a majority (20.2 billion) directed towards German export promotion. KfW's Development Bank and DEG account for a relatively small portion of total activities, comprising only 6.8 billion in 2015. In the past few years, KfW has also become very profitable, earning EUR 2.17 billion in consolidated profits in 2015.[2]

2.2 KfW within the Policy Cycle

As one of the largest economic institutions in Germany, KfW has certainly impacted how the German government implements domestic economic priorities. In order to gain analytical traction into this dynamic, we examine the relationship between the German government and KfW using the heuristic of the policy cycle (Blum and Schubert 2009). The policy cycle identifies how a particular policy is created from initial conception, through implementation, to finally evaluation. According to Abbott and Snidal (2009), the policy cycle can be conceptualized as a five-stage process consisting of agenda setting, negotiation, implementation, monitoring, and enforcement (46). By focusing on how a single policy is developed from beginning to end, we can limit the scope and better understand the mechanisms through which KfW affects policies, project implementation, and outcomes. The disaggregation of the process into five distinct stages also allows a detailed analysis at each stage, and permits comparisons across different policies across time and space.

Yet defining the scope and steps of the policy cycle does not explain the dynamics of this process. In order to better understand the actions of KfW within this policy cycle, we utilize the theoretical framework of new institutionalism within organizational sociology (DiMaggio and Powell 1983; Powell and DiMaggio 1991), combining it with resource dependency theories that assign a greater degree of agency to organizations in shaping their environment (Pfeffer and Salancik 1978; Oliver 1991; Wry et al 2013). We make two assumptions. First, we assign institutional agency to KfW—that is, we expect KfW not to be merely a passive actor in policy cycle, but rather be cognizant of its preferences and environmental limitations and, critically, to strategically operate to achieve these desired outcomes. Moreover, as resource dependency theories posit, we can expect the institution to attempt to shape the environment within which it operates. Second, and a key assumption of new institutionalism, we assume that organizations seek legitimacy within their environment. As such, they will adopt scripts and behavior that will

[2] https://www.kfw.de/KfW-Group/Newsroom/Aktuelles/Pressemitteilungen/Pressemitteilungen-Details_353088.html

raise their legitimacy vis-à-vis their peers, independent of economic efficiency or rational-choice considerations. Consequently, we expect that KfW will act strategically within the policy cycle in order to both achieve legitimacy within its operating environment and pursue its interests, broadly defined.

A cursory examination of KfW's actions in the policy cycle bears this out. Rather than passively serving as the German government's financing agency, KfW has instead actively participated in affecting the outcomes of policy at each of the five stages. As will be detailed in the two case studies, KfW has routinely assisted the government in selecting targeted policy areas, designing projects and programs, implementing and financing them, monitoring the progress, and finally adjudicating the results that then inform the next iteration of the program. Throughout the process, KfW is keenly aware of its institutional objectives. It is careful to create programs that do not strain its resources (most critically, ones that ensure a continuation of its AAA credit rating), that allow it to better use available, but possibly unused, resources (such as manpower), and that allow it to expand its business operations in a fiscally responsible manner. Moreover, KfW has demonstrated an understanding of its environmental limitations. Since it engages actively with both the German government and financial markets, in particular bond markets and rating agencies, KfW must constantly adjudicate between the competing pressures of the public and the private.[3] On the one hand, the Ministries of Finance, Economy, Environment, and Economic Cooperation seek to guide KfW towards a public mission; on the other hand, KfW also relies on financial markets and rating agencies to raise funds. Navigating these various demands can be challenging, as KfW must therefore balance technical government requests while maintaining high-quality standards in its credit decisions that allow it to operate on a commercial basis. The necessity of obtaining consent from the Ministry of Finance as a prerequisite to fund disbursement adds to these challenges.

Yet KfW's status as a quasi-public institution bridging the public and private spheres also affords it significantly more flexibility than other institutions, both public and private. For instance, KfW often has an information advantage. As a consequence of its proximity to policymakers KfW may know more about policy trends and government priorities than its

[3] There is an argument to be made that commercial banks also play an important role, but because of space constraints, it will not be addressed here.

commercial peers. Due to its nature as a bank it also better understands how commercial investment and financing decisions are undertaken than most government ministries. Additionally, KfW is acutely aware of the demands of the rating agencies, as well as the technical limitations of policy objectives. This information arbitrage assists KfW in navigating between the public and private spaces. More specifically, we identify three reasons as to why KfW is able to so successfully pursue its objectives within the policy cycle: a broad economic objective with government financing, proximity to both policymakers and regulators, and extensive technical expertise.

1. A Financial Market Actor with an Economic Objective and Government Financing: KfW's objectives are to compensate for market failures and promote socially- or environmentally-beneficial projects. These projects tend to be public goods, which are desired from an economic or social objective, but are underprovided by the private market, yet they have included a spectrum including innovation, a broad spectrum of clean energy through renewable energy or housing energy efficiency programs, technical and financial support for SMEs, revitalizing post-industrial economies, and student loans. KfW is able to support these underfunded projects largely because of its government financial backing. In exchange for implementing the government's policy objectives, the German government also effectively guarantees the institution. KfW receives the same credit rating as the government, and this AAA/Aaa rating provides a huge advantage on the bond market as KfW can borrow more cheaply than its commercial banking counterparts. The indirectly subsidized financing (via government guarantees) compensates KfW for undertaking financial projects that the commercial sector deems insufficiently profitable. In order to prevent KfW from undercutting the commercial banks,[4] KfW typically does not directly lend to businesses or consumers. Instead, it relies on the network of commercial banks to assess risk, distribute the loans, and monitor repayment. Finally, even though KfW receives both its mandate and its financing advantage from the government, the German government gives KfW a remarkable

[4] The challenge to avoid crowding out commercial financing by public financing institutions is, however, omnipresent and an issue of constant concern for an NDB and its government.

amount of flexibility in project implementation. This allows KfW to more quickly adapt to funding needs and respond to market conditions. Perhaps more critically, since it is able to retain any profit it earns, KfW has an incentive to prudently invest.

2. Proximity to Policymakers and Regulators: By virtue of its institutional structure as a government agency, KfW has close ties with multiple German ministries. In fact, the Federal Minister of Economic Affairs and Energy and the Federal Minister of Finance are the Chairman and Deputy Chairman of KfW's Board of Supervisory Directors, respectively. Numerous members of the Bundestag, state parliaments, and trade unions similarly serve on the supervisory board.[5] KfW regularly communicates with the parliament[6], it also has direct relationships with the Federal Ministry for the Environment, the Federal Ministry for Economic Cooperation and Development (BMZ) and its implementing agency, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and many other ministries. These relationships distinguish KfW from its commercial banking counterparts. On the one hand, the proximity to policymakers can increase the amount of pressure they exert on KfW to implement new policies. This means that KfW may in fact be required to implement policies it would otherwise have little interest in independently supporting. KfW is frequently called upon to provide its expertise on potential policy programs and, as a trusted independent voice, has a substantial amount of influence. Perhaps more importantly, KfW and the government can coordinate policy, usually in a carrot and stick dynamic. For example, the federal government may increase the stringency of environmental regulations (the stick), but KfW will simultaneously provide a new subsidized financing instrument (the carrot). This institutional dynamic creates policy synergy, and allows the economy to more quickly respond to policy directives.

[5] https://www.kfw.de/KfW-Group/About-KfW/Vorstand-und-Gremien/Verwaltungsrat-und-seine-Aussch%C3%BCsse/

[6] Bernau, Patrick. "Der Staat als größter Lobbyist," *Frankfurter Allgemeine Zeitung*. 29 Nov 2015. http://www.faz.net/aktuell/wirtschaft/wirtschaftspolitik/lobbyisten-liste-des-bundestags-kfw-und-gkv-spitzenverband-vorne-13939161.html

3. Technical Expertise: A substantial portion of KfW is also dedicated to technical expertise beyond what is required for a technical credit decision. As a primarily financial institution, it is unsurprising that a lot of these specialists examine the financial sector. These experts have profound knowledge of capital markets, risk assessment, bond issuance, and even financial securitization. They assist both KfW's in-house operations as a financial institution as well as its investments in the domestic economy or, on occasion, in an exchange with other public institutions and authorities. However, KfW additionally employs experts with specific—often engineering-type—sector knowledge in agriculture, energy, transport, water, natural resources, and civil engineering, to name a few. This substantively distinguishes KfW from the commercial banking sector. This allows KfW to base its investment decisions on a broader set of criteria from internal employees rather than relying on the market generally or external actors, such as consulting firms. This deeper understanding of sectors and the related markets is also essential not only to identify market imperfections, but also to anticipate the consequences of the respective interventions and programs. This knowledge further increases the likelihood that a particular project will be more successful from a socioeconomic as well as a commercial perspective. Technical expertise further allows KfW to serve as an important conduit between its investments in the private sector and government policy, adding to its information advantage. Finally, KfW's stamp of approval can effectively signal to other private investors that the project is viable.

In short, these three characteristics ultimately allow KfW to more effectively operate within the policy cycle. At each stage, KfW can leverage its financial advantages, access to policymakers, and technical expertise to both satisfy its institutional objectives and obtain legitimacy within its operational environment. For instance, in the first stage of agenda setting, KfW has an incentive to seek projects that are coterminous with its objectives. Since KfW must clarify to the ministries why and how this matters, its connections and extensive technical knowledge help bolster the legitimacy of KfW's analysis. KfW also actively organizes conferences, temporarily loans employees to the ministries, and provides information events for parliamentarians. While the role of KfW in the agenda setting phase is probably less direct than in other phases, together, these all serve to establish the parameters of the debate. In the second phase, or negotiation phase, KfW transforms a policy objective into specific policies, standards, programs or combinations thereof. In this phase, KfW often seeks to protect its financial reputation, due to requirements by rating agencies. KfW therefore pushes the projects into areas where it perceives to have expertise and/or where it seeks to develop expertise, all while using financial instruments that will keep it financially secure. In cases when these projects are not bankable, even with a government guarantee for its debt, KfW will attempt to secure additional financing such as supplementary grants from the German government. During the implementation phase, KfW is afforded substantial operational latitude, yet solutions are always performed with an eye towards its legitimacy and financial sustainability. Finally, the stages of monitoring and enforcement refer to reflecting on whether rules are followed or offered programs used, but also on what can be learnt to improve policies. For KfW, in monitoring as well as evaluation, pressures arise from both the markets—which require adequate financial performance—and the government—which prioritizes policy outcomes and socioeconomic gains. Consequently, KfW has an interest in generating performance metrics that are favorable to the institution, as well as influencing how certain policies will be negotiated and implemented. The relative success of the project also determines the nature of the subsequent project, informing KfW of the best course of action to achieve the economic objectives.

The outcomes of this active participation of the policy cycle are dual. First, KfW can better achieve its stated social objectives by coordinating its capabilities with the government policy. With a staff of technical experts on hand, KfW can provide recommendations to the government on the best strategy to achieve those desired policy outcomes, whether it be in the project design phase or the project evaluation phase. Moreover, KfW can coordinate with the government to achieve policy synergy. It can also signal to the government if the demands are too strenuous. For example, KfW has directly requested additional funds or risk guarantees from the government in order to implement their desired policies in case these are assessed as not being directly economically viable. Elsewhere, it is often argued that "credit agencies […] are having a substantial and negative impact on the ability of MDBs to undertake their development mission" (Humphrey, 2016). Second, and more critically, KfW can also serve to influence those very policies, thereby creating or expanding KfW's policy space. As noted before, KfW will frequently advise the government on the different possibilities for the implementation of projects. Both their technical and on-the-ground knowledge is useful for policymakers, and this provides opportunities for KfW to guide the creation and implementation of the policy. Possessing the ability to establish the parameters of the policy that the same institution implements is a substantial advantage.

Taken together, KfW's active engagement in the policy cycle ultimately assists in its pursuit of serving as Germany's national development bank. Since KfW possesses greater knowledge of on-the-ground factors, as well as having a wide range of in-house technical experts, KfW can better interact with policymakers throughout the policy cycle to implement more effective development and promotional policies. In the past, this has enabled KfW to provide extensive support for structural transformation, critical infrastructure projects, and underfinanced programs such as SME financing. More recently, KfW has been critical in supporting Germany's economic transformation to a green economy, both in terms of supply (through the support of green technology firms) as well as demand (through the financing of solar and wind power) (c.f. Griffith-Jones 2016). KfW's active engagement in the policy cycle has therefore enhanced its capabilities as a national development bank, though, as will be addressed later, it may not be entirely reproducible in other economic contexts.

It is important to note that the policy cycle is a heuristic to better understand how the processes of KfW function, and neither provides answers to all available questions, nor does it provide predictive power (Blum and Schubert 2009, 102). In practice, the policy process is also infinitely more complex. It should not blind the analysis to the fact that anticipation of problems with respect to, for example, monitoring and enforcement do not already shape the behavior of KfW at the agenda setting or negotiation phase. We are observing experienced policy shapers (at least that is the assumption), who having that experience about the policy cycle of tools shape the tools to be implemented in the future. However, we maintain that by using the framework of the policy cycle, we can achieve a better understanding of the complex process by which policy is created. The next two case studies explore these policy cycle dynamics, detailing how KfW's unique role as a government institution-cum-commercial bank has shaped investment and policy in the structural change towards a low-carbon economy and the financial sector after the 2008 global financial crisis.

3. Greening the Economy

One prominent aspect of KfW's domestic promotional mandate is the support of the structural change towards a low-carbon economy. While this particular shift has adopted added urgency with the German government's recent *Energiewende* program, this shift towards supporting environmentally sustainable practices on a comprehensive scale has its roots decades earlier. As such, KfW has had an active and important role throughout the numerous iterations of the policy cycle. This is particularly evident in two areas: energy efficient housing for consumers, and energy saving and renewable energy promotion for businesses.

Housing quickly became an economic and social political priority in post-war Germany, if for no other reason than to neuter potential social tensions that could lead to increased support for radical political parties (Harries, 1998). In 1949, KfW allotted DM 34 million to building homes; in 1950 that figure grew to DM 400 million, and continued to rise in the subsequent years. While KfW unwaveringly supported housing, it was not until 1990 that energy efficiency became an important component within KfW's housing policy. In particular, the German government faced the daunting task of reunification; increasing energy efficiency was seen as a positive step forward for both business and East German residents alike, particularly with regards to the installation of modern heating systems. KfW had a natural role in shaping this phase of agenda setting and negotiation as it was already experienced in housing finance for decades. The first step in implementation seemed almost business as usual. A scalable program was designed that managed to modernize about 3.2 million flats by the end of 1997; some estimate that this was half the housing stock in the GDR before reunification (Harries, 1998). However, a closer look reveals another role that KfW played in the monitoring and enforcement phase. Despite the government providing funds to reduce the interest rate by 3% relative to the market, the program was insufficiently attractive to induce modernization of the pre-fabricated, low-quality apartment complexes ("Plattenbauten"). KfW identified that owners (often municipal cooperatives) were not even able to pay interest on their old pre-unification loans after the West German currency was introduced. Consequently, the government and the governments of the "new" states absorbed approximately DM 29 billion (EUR 14 billion) as *old debt assistance* ("Altschuldenhilfe"). The federal government and the states then asked KfW to completely administer the corresponding liquidation process. After a controversial discussion within the KfW board, it was decided that KfW would—as a bank—take on this purely administrative task (Harries, 1998), which would normally be the task of a government agency[7]. Following this change in 1993, the pace of apartment complex modernization accelerated[8]. Those who received the relief invested Euro 45 billion to modernize their flats until the end of 1999.

The policy cycle in energy efficiency took another turn in 2010, when the government decided to substantially increase its efforts in reducing the energy consumption of buildings. KfW, armed with long-term experience and established connections with related research institutions, contributed to the design of the strategy put forward by the Ministry for the Economy ("Energieeffizienzstrategie Gebäude"). The strategy as published by the government emphasized the parallel approach through "Informing, Promoting and Challenging." It explicitly referred to the KfW program "Energy Efficient Building and Renovating" as an important pillar of implementing the strategy. During the negotiation phase of this new policy, KfW—with the help of its internal technical/engineering expertise in energy efficiency in buildings—played a critical role by defining the standards for an energy-efficient house. This standard referred to the baseline as defined by the government in the building code (minimum standard in the so-called EnEV). For a new building, this indicates how much energy it will take to heat the house; a KfW Efficiency-house 55, for example, means that the house can be expected to only need 55% of what is required by the building code. If the building code changes, this relative standard changes accordingly. In addition, the Efficiency-house standard determined the level of financial support offered by KfW. As of January 2017, all loans within the program are offered at slightly below-market rates, 0.75%, yet as a result of the low-interest environment the level of support is reflected in a parallel grant support that is expressed as a fraction of the loan size. Highest grant

[7] In 1993, a law was passed, that defined this "old debt" and at the same time created an interest subsidy which fully covered interest payments for about two years at first. In the years to follow, a significant part of this debt would be paid for by a newly created public fund ("Erblasten Tilgungsfonds") if the housing cooperatives (or private owners) who applied for the relief agreed to sell or privatize 15 per cent of the flats over the coming years. https://www.kfw.de/KfW-Konzern/%C3%9Cber-die-KfW/Auftrag/Sonderaufgaben/Altschuldenhilfe-f%C3%BCr-ostdeutsche-Wohnungsunternehmen/, accessed on 15th of May 2017.

[8] https://www.kfw.de/KfW-Konzern/%C3%9Cber-die-KfW/Auftrag/Sonderaufgaben/Altschuldenhilfe-f%C3%BCr-ostdeutsche-Wohnungsunternehmen/, accessed on 15th of May 2017.

support (27.5% of the loan) is offered if the effort to be financed leads to the building consuming less than 55% of what the building code mandates. Still 12% (of the loan volume) are granted if a renovation leads to the building consuming less than 115% of what would be required for new buildings.[9] On top of determining the support level, the standard is established on the real estate markets as a quality signal and typically part of the basic description of the house[10].

Additionally, KfW has routinely engaged in the monitoring and evaluation of its housing energy efficiency programs. Typically on an annual basis, KfW's internal department for research commissions a monitoring report of the building efficiency programs.[11] The monitoring exercise tracks loans, the number of flats, expected CO2 emission savings, as well as quantitative estimates of employment effects of the program. Less frequently, KfW asks research institutions to examine specific topics looking beyond the program itself. One recent example of this evaluative research has been an empirical analysis of the most relevant drivers of the decision whether to engage in an energy-efficiency investment in buildings or not.[12] In this case, the scope included surveying households that had decided against energy efficiency investments. The objective was to identify the reasons why these households did not participate in the program, and subsequently provide recommendations as to how to improve future programs.

Similar to the area of energy efficient housing, improving energy savings and the use of renewables by businesses has its origins in policy initiatives from decades ago. In the late 70s, after having faced two oil crises, the German government asked KfW to support its economic stimulus policies. As part of the request, KfW was involved in two ways. First, it executed programs on behalf of the government where the full volume of the loans that were provided

[9] This is more than 100%. Note that this support targets the renovation of already existing buildings. Energy efficiency requirements for new buildings in the building code show strongly increasing ambition over time. Therefore, bringing the efficiency of an old building even close to what is required from a new one (e.g., 115%) is considered to qualify for some support.

[10] https://www.immobilienscout24.de/bauen/baulexikon/kfw-55.html , accessed on 15th of May 2017.

[11] Monitoring der KfW-Programme „Energieeffizient Sanieren" und „Energieeffizient Bauen" 2015; https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-alle-Evaluationen/Monitoringbericht_EBS_2015.pdf, accessed on 26th of January 2017.

[12] Einflussfaktoren auf die Sanierung im deutschen Wohngebäudebestand Ergebnisse einer qualitativen Studie zu Sanierungsanreizen und -hemmnissen privater und institutioneller Eigentümer; https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-alle-Evaluationen/Einflussfaktoren-auf-die-Sanierung-im-deutschen-Wohngebäudebestand_2016.pdf; accessed on 26 of January 2017.

came from the government budget rather than from KfW’s own funds. Second, KfW expanded its “own” so-called M-Program, which supported SMEs via funds that KfW itself raised on the capital market. Those were lent at below-market interest rates. When KfW decided to keep the artificially low interest rate in 1981, despite the rising market interest rate, the institution recorded very low profit margins while strengthening its ties to German policymakers. More importantly, these events established the pattern of cooperation between the German government and KfW, whereby KfW would raise funds on the capital market and then would combine them with government funds to subsidize interest rates.

As opposed to the 1970s and 1980s, when energy efficiency promotion was a consequence of a global petroleum shock, in the recent years the promotion of SMEs using clean energy is strongly driven by climate concerns. One important program targeting SMEs demonstrates how KfW engages in all stages of the policy cycle, ultimately leading to an improved program design. The program “Renewable Energy (Standard)” began in 2009. As the program is implemented via on-lending through commercial banks, as per normal guidance, those institutions are responsible for finding customers and selecting the projects that are supported. The commercial banks have contact points at KfW, with whom they regularly discuss the programs and provide market feedback. Since 2010, KfW received increased feedback that customers were expressing demand for financing the storage attached to photovoltaic (PV) installations—something that was not possible to finance under the current program. KfW then entered into discussions with relevant government agencies such as the grid-regulator and the ministry for the economy, which was also independently interested in potentially promoting storage. KfW suggested a change in the program, further discussed this with the ministry, which approved the new version in 2016.

Finally, there are examples where excess institutional capacity has prompted KfW to seek expansions of existing environmental programs. This example has its origins in a program that substantially differs from traditional on-lending programs such as the “Renewable Energy (Standard).” In the aftermath of the 2007 Global Financial Crisis, KfW operated an economic stimulus program to mitigate the negative economic consequences (see following section). During the implementation of the stimulus package, KfW had to quickly act to build-up expertise in direct lending to medium, but also larger, corporations. As opposed to the case of on-lending through commercial banks (where the commercial bank takes the loan risk), in this case, the loan would go to corporations directly, involving the corresponding risk. The goal of this intervention was not to provide an interest-rate subsidy, but rather the immediate goal was to compensate for the consequences of commercial banks' reluctance to lend, that is KfW did counter-cyclical lending. The end of that stimulus package coincided with the emergence of the *Energiewende* as a policy priority, during which this policy had gained bipartisan momentum. While there was a continuous exchange between KfW and the government regarding the investment side of the *Energiewende* and what KfW could contribute, KfW initiated a discussion about programs that would in a broader way support companies driving the structural change forward. This would have the added benefit of utilizing the direct corporate-lending expertise that was just built-up in the context of the stimulus package. Discussions with the government shaped the program further, and the new promotional program "Financing Initiative Energiewende," later renamed to "Konsortialkredite Energie und Umwelt" (consortium loans for energy and environment) was then designed and implemented. In the case of this program, the design keeps KfW in the role of a catalyzer rather than a driver "picking" companies or technologies. The program finances only jointly with other banks, and KfW will not finance more than 50% of any one deal. Neither does it offer conditions more favorable than other commercial co-financiers. Correspondingly it is not using funds from the government budget and KfW is actually taking investment risk.

These cases illustrate that the full promotional effect of KfW can only be achieved through positive interactions of NDBs with the national policy and domestic financial sector throughout the policy cycle. Through this relationship, NDBs can serve an important role in serving as technical experts that can aid both policy creation and investments from the financial sector.

4. Financial Crisis and the Aftermath

The involvement of KfW in the turmoil of the financial crisis and its aftermath shows both the advantages and challenges of having KfW as the intermediary between the government and the commercial banks. Before the crisis, KfW actively supported the installation of a (synthetic) securitization market in Germany, engaging in substantial purchases of loans bundled in asset-backed securities. These purchases were undertaken with clear industrial policy goals, seeking to increase the provision of both SME loans and housing loans to German SMEs and households respectively while mitigating declining profitability across the banking sector (Asmussen 2006, Mertens 2016). In particular, the upcoming Basel II regulations and their feared negative impact on SME loan provision were an important element in these considerations (Kraemer-Eis 2000). Due to regulatory and taxation issues, KfW in the beginning mostly engaged in synthetic securitization, selling CDS to banks for specific loan portfolios, bundling the revenues of these CDS in turn and selling credit-linked notes based on these revenues through a special purpose vehicle.

In order to strengthen this synthetic form of securitization, KfW established the Promise Platform in December 2000 and the Provide Platform for mortgage related loans in 2001. Until the summer of 2007, credit risks for more than EUR 100 billion were transferred to financial markets, freeing up banks' balance sheets to expand lending. Due to its promotional duties, KfW passed any gains to be had from this business onto the banks originating the loans, thereby assuring the approval of commercial banks regarding this business.[13] In this policy initiative, KfW was already active in the agenda setting stage, seeking a role in the upcoming business of securitization (Kraemer-Eis et al 2001). Engaging in synthetic securitization in the 2000s was an attractive role for the KfW, signaling its prowess as a modern commercial bank. Its engagement in capital markets exposed KfW to these trends and made it keen to apply them in the German market. In the negotiation phase with the government as well as the banks, KfW secured a certain amount of fee business to compensate for manpower and risks taken, arguing for a cautious stance with respect to the evaluation of credit default risks of SMEs without hindering the takeoff of the market (interview March 2015). Implementation and monitoring was based on experts stemming from the capital markets division, which were actively learning about the techniques and were vital in disseminating knowledge on the new form of financing and its advantages (c.f. Ranne 2005). Nevertheless, such expertise could not prevent that the well-known problems of SME loan securitization, in conjunction with the financial crisis and

[13] More than 2/3 of the loans insured by KfW were mortgage-related loans, indicating that the mortgage-related Provide Platform was more successful than the insurance of SME loans.

structural constraints in the German financial system, would lead to the termination of both of the platforms KfW had set up (interview KfW March 2015, Mertens 2016). As part of the push of the German government for more true-sale securitization (BCG 2004),[14] KfW became the central player in a consortium of 14 private and public commercial banks, which set up the True Sale Initiative in 2004. The True Sale initiative acted and still acts as a catalyst for securitization in Germany, providing knowledge, platforms for securitization as well as a true sale certificate, reducing transaction costs for engaged commercial banks.

Yet the most illustrative engagement of KfW with securitization occurred through a quasi-subsidiary of KfW, the IKB. The IKB was a medium-sized SME lender that was to become infamous during the financial crisis due to its off-balance sheet engagement in the Asset-Backed Commercial Paper market. In the 2000s it became a major player in the issuance of SME-related securitization, a direction it had taken under the supervision of KfW and the Ministry of Finance. KfW had become the major shareholder of that bank in 2001, when two large German insurers were selling their stakes in the bank. Thereby, the independence of IKB came into question as foreign banks were interested in taking over the lender. Through its relationship with the German government, KfW was advised to acquire the shares (interview KfW official March 2015). In line with the policy goal of creating and shaping the market for asset-backed securitization for SMEs in Germany, a goal KfW has pursued since 1999, IKB also began to set up large Asset-Backed Commercial Paper programs with the goal of securitizing portfolios of SME loans through this vehicle. Approved by both the Ministry of Finance and KfW, IKB, in order to build up the size of its ABCP program, began to acquire billions of US RMBS, which led to large losses once the crisis erupted in 2007. As the majority shareholder, KfW had the task of stabilizing IKB during the financial crisis, and eventually became liable for losses of several billion Euros.[15] The government guarantee, which continued to secure cheap

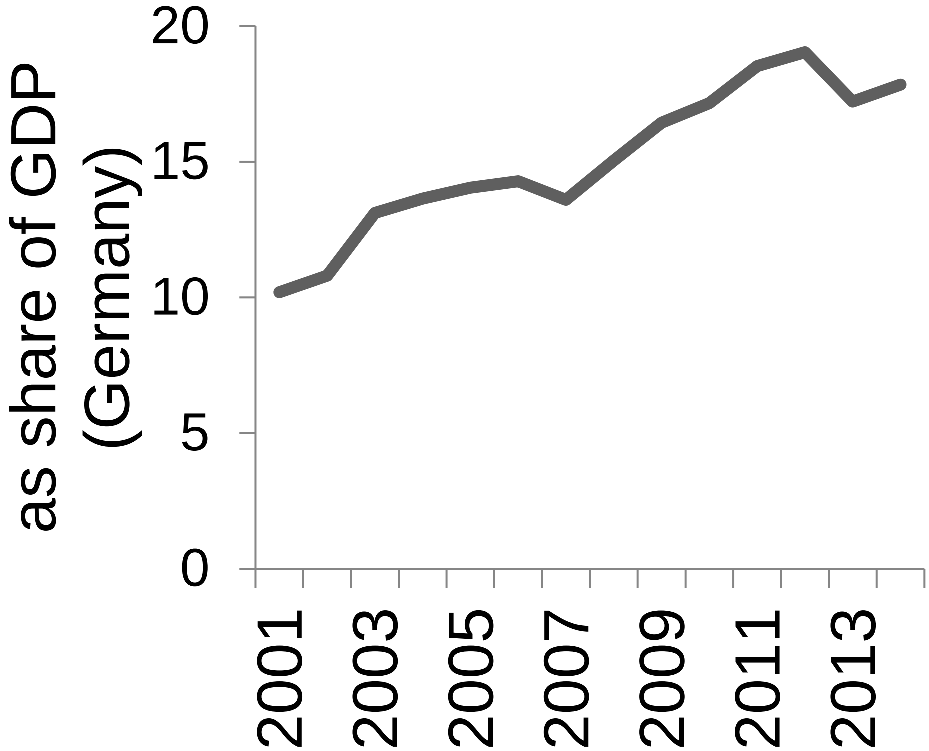
[14] True sale refers to the actual transfer of assets from banks' balance sheet. The initiative was initiated by the Ministry of Finance in 2003, when it assigned the Boston Consulting Group the task to investigate the optimal conditions for such a true sale in Germany.

[15] In addition to those protracted rescuing efforts for IKB, the KfW had its fair share of criticism when in 2008 it sent about 300 Million Euro in payment to Lehman Brothers the day after it declared bankruptcy, earning it the title of "the dumbest bank in Germany."

financing and the equity capital accumulated during the years of successful business before, provided the cushion to deal with this particular aspect of the crisis.

Once the crisis reached the real economy in the fall of 2008, however, the advantages of having a large national promotional bank became fully visible. KfW acted as the primary countercyclical lender, expanding its on-balance sheet loans in 2008, and most dramatically in 2009, despite a substantial reduction in securitization activities. As a consequence, its balance sheet, which made up 340 billion Euros in 2005, reached 441 billion Euros in 2010 (KfW 2010, s. figure 1 below).

Figure 1: Balance sheet size of KfW 2001-2013 as a % share of GDP (source KfW Annual Reports)



Furthermore, KfW programs became a major policy tool for the German government when implementing the government's economic stimulus packages.[16] In particular, it played a central role in administering the Deutschlandfonds, a program which had a maximum size of 115 billion Euros, backed by government guarantees and risk capital (Welt 2010). The latter allowed KfW to expand lending to SMEs by 7.2 billion Euros in 2009, both directly and indirectly via lending programs through large commercial banks and state guarantees. Overall, the program helped 11,000 enterprises; 94% of the number of loans and about half of the overall volume went to SMEs (Welt 2010, Augsburger Allgemeine 2010). For this program, the capacity of KfW to quickly implement and properly monitor these loan programs was of great advantage to the

[16] https://www.kfw.de/Download-Center/Finanzpublikationen/PDF-Dokumente-Berichte-etc./2_Jahresberichte/Jahresbericht_2008_D.pdf

German government. One needs only to compare the positive effects of this program with the failure of the British Government to achieve similar results by incentivizing private British banks to increase lending during the slump (Macartney 2014). Without a public development bank and with no capacity to force private banks to expand lending, the British government failed to implement anti-cyclical policies and SME lending basically remained flat.

The KfW programs during the financial crisis were also designed to address liquidity needs of SMEs, whose liquidity lines through commercial banks had shrunk and whose existence was thus put in peril. Indeed, this part of the program would make up the majority of the 3,700 applications and more than 7.4 billion Euros of credit granted to SMEs, thereby making up the majority of the volume of the entire program (Pichler 2010). The task of providing liquidity to these companies during a financial crisis highlights the problems of information asymmetries and adverse selection as several of the companies that were not receiving continued financing were excluded from refinancing for business reasons. Separating unsound companies from healthy ones that were merely suffering from the reduced lending capacity of private lenders, due to the fallout of the financial crisis, was a particularly difficult task that KfW had to face. Nevertheless, overall welfare can be enhanced if the losses caused by the closure of otherwise viable companies and the destruction of human and physical capital it entails can be avoided. Countering the volatility of the financial system in order to provide the social benefits of liquidity assistance requires a risk absorption capacity that private, profit-making activity could not provide. Luckily for the German government, KfW had begun to engage in this task already by 2003 on a much smaller scale (BBP 2003, 152). Hence, at that moment, the government could rely on an existing program and scale it up in order to deal with the problem of market disruptions. In the negotiation process with the government, KfW sought to make sure it was not forced to take excessive losses, seeking to protect its triple A credit rating, which was seen as the foundation of the business model. For that reason, KfW requested budgetary means from the government in order to bear the losses it would undoubtedly accrue when expanding its program, a subsidy of several hundred millions which it received (interview KfW official 24th of May 2016). Its financial expertise allowed KfW to better assess the problem of separating insolvent firms from illiquid ones than a simple government agency could have done and it was able to avoid using the entire subsidy granted (same interview). [17]

These measures undoubtedly helped the German economy absorb the shock of the financial crisis. Based on its financial expertise, KfW was thus able to stabilize the provision of capital from a financial system that has become ever more unstable. KfW officials further supported government efforts to cost-effectively mitigate the financial crisis when they were assigned to the bad bank FMS, which the German government founded in 2010, to deal with the “toxic loans” accumulated before the crisis.[18]

Since then, KfW has continued its engagement in ABS transactions, purchasing more than 1 billion Euro worth of high grade ABS in 2015, thereby stabilizing the ABS market during the downturn (KfW 2015). Furthermore, it has collaborated with the European Investment Fund (EIF) of the EIB and engaged in InnovFin and other European platforms for the securitization of SME loans. In 2016, in conjunction with the EIF the European National Securitization Initiative (ENSI), it founded a platform for European SME loans, taking the idea of Promise to the European level. Expanding this platform to the European level allows KfW to pursue its promotional mandate itself at the European level, seeking to relieve the balance sheets of banks to allow for more SME financing. While limited in size, this activity, as several others, points to KfW increasingly expanding its function at the European level in the wake of the crisis (Mertens and Thiemann 2016).[19] In these processes, KfW was acting as a policy entrepreneur, seeking to extend its capacities to the European level. Overall, during the crisis, KfW did not only offer the German government a capable bureaucratic apparatus that could execute anti-cyclical policies, but it also provided it with an infrastructure of already existing and tested programs (such as the liquidity assistance for SMEs), which could be scaled upwards to meet the challenges of the crisis.

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[17] An important aspect here was also the rapidly improving economic situation in Germany, which itself was partially caused by the quick intervention of the German government.

[18] Arguably, government action could have been more forceful. Using the expertise of KfW officials, the restructuring of newly partially state-owned banks such as the Commerzbank could have been more extensive.

[19] Such as the issuance of loans of more than 1 billion to the Spanish promotional bank ICO during the crisis.

5. The Case for Replication: Prospects and Limitations

KfW's unique role between the public and private sectors has allowed it to have substantial success in the promotion of the domestic German economy. As the two case studies illustrate, KfW has played an integral part in the support of the development and use of green technology and the financial sector precisely because of a combination of its general economic mandate, its hybrid financing structure, its technical expertise, and its participation in national policymaking. The recent successes of KfW have also attracted attention elsewhere in Europe, especially following the financial crisis when governments sought to increase the amount of countercyclical financing for SMEs and the private sector. KfW has served an advisory role in the establishment of other NDBs, including the Portuguese Development Financial Institution, the Strategic Banking Corporation of Ireland (SBCI), and the UK's Green Investment Bank. KfW has also partnered with the European Investment Bank (EIB) to promote innovative financing schemes across Europe. These include some of the traditional domains of NDB financing, such as financing for underprovided sectors, as well as more recent goals, such as encouraging Europe's structural transformation to a green and innovative economy. Thus far, billions of euros have been raised through various investments funds, a trend that is likely to continue.

While by most accounts KfW has successfully promoted the German government's economic and social policies, this does not mean the results are easily replicable in other contexts. A few cautionary notes are warranted. First, KfW's institutional model largely functions because of a strong legal framework. With such close proximity between business and government, there is a significant risk that investment decisions ultimately become determined by political interests rather than societal objectives. This can lead to a slow siphoning off of funding from other investments that reduces the positive impact that the NDB is designed to engender. At its extreme, NDBs can serve as an extra-budgetary balance sheet that can channel funds to lavish political projects, and can likewise become fertile grounds for corrupt transactions. Therefore, even though KfW may be a government-owned institution, it requires operational autonomy that is legally protected. Moreover, this separation allows the NDB to function in conjunction with financial markets, a move that, at least in theory, engenders market discipline.

Second, NDBs require a relatively well-functioning domestic financial system to achieve optimal results. Even though in KfW's fledgling days the German economy was in ruins, there was still an underlying commercial banking sector with significant technical expertise that could be revived. Modern financial instruments also require deeper financial markets than before. Today, KfW both leverages its own funds on the domestic capital markets and distributes loans through the commercial banking sector. Without the private financial sector, these operations would not be possible. It is therefore necessary for the government to establish a well-functioning financial system as a precondition for an NDB, as the purpose of NDBs is to exploit the financial markets for the objectives of government policy, not to create these financial markets *de novo*. In this regard, NDBs are not substitutes for a functioning financial market. Moreover, this also means that NDBs may not be the most effective instruments in countries with shallow financial markets or weak economic protections, or, the KfW is at least not immediately replicable in other institutional and macroeconomic contexts.

Finally, enormous technical capacity is required to achieve positive economic outcomes. The operations of KfW are inherently difficult because it is not always apparent *a priori* whether a particular instance of an underprovision of financing constitutes a market failure. There is an inherent risk that NDBs will artificially prolong investment in a project that is either economically inefficient or socially unbeneficial. In order to mitigate these risks, NDBs must have extensive knowledge in capital markets, banking, regulation, and, most importantly, the individual sectors in which it is supporting. NDBs cannot wholly rely on the financial market to allocate these resources and therefore must possess the technical capacity to do so independently. Relatedly, it requires policy clarity on the part of the government. Policymakers must implement clear guidelines on what the priority of the NDB should be and, moreover, having faith in the NDB to independently implement these goals.

Despite the limitations to exact replicability across the developing world, KfW serves as an important example of how a national development bank can successful serve the interests of the public while simultaneously maintaining its connection to the private sector. In this regard, the model of KfW provides important lessons on how national development banks can operate.

For instance, developing country governments should ensure that NDBs are incorporated into the policymaking process, yet also operate independently in domestic financial markets. Resources should be provided to NDBs so they can develop in-house technical capacity. Perhaps most importantly, NDBs should be promoted as part of a broader and more coordinated strategy of policy change, enabling a synergy to develop between NDBs, policy, and regulation. Under these conditions, NDBs can serve as an important tool to compensate for market failures, promote economic sectors, and encourage structural transformation of the economy.

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