The history of industrial finance in Continental Europe and beyond: towards ideal types of national development banks

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Abstract: Post-crisis literature tends to revitalize the role of state in facilitating economic recovery through countercyclical policies, especially in credit provision. In this regard, national development finance institutions (DFIs) often become the institutional tools for such countercyclical measures. Meanwhile, the importance of state-backed, long-term finance in facilitating development and innovation has been reinforced within the concept of 'entrepreneurial' state. In post-austerity policy and economic practices, the notion of a dedicated financial institution that operates at the nexus of developmental targets and financial profitability becomes relevant. Yet, very few empirical studies exist, apart from financial history of early industrialization in Continental Europe and Japan, and even less scholarly works discuss development finance institutions from conceptual point of view. Existing literature refers to a great heterogeneity of DFIs, their design and policy tasks, funding structures, etc. A few recent surveys refer to a great variety and the need to look closer at DFIs. (World Bank 2012, Deutsche Bank 2015)

Following financial history, financialization, to some extent, benefits economic development and innovation: silver coins were issued to finance construction of infamous Roman roads; speculative investments in canal- and railroad building; various regulatory and financial innovations in financing of public works in main European cities during 18-19th centuries, to name a few. In other words, Schumpeter-Minsky framework for looking at financial innovation as indispensable from economic and technological innovation and development, allows to treat industrial and financial structures as co-evolving in a dynamic environment.

Banks were an essential source of capital provision for industrialization in Continental Europe, most notably France and Germany, with first industrial investment institutions emerging in 1830s-50s. Following these developments, we trace the main aspects of evolution of industrial banking institutions, from roughly mid-19th century onwards, in order to identify ideal types of industrial and later development finance institutions, both private and public. Through extensive review of both historical accounts and contemporary cases we identify four general phases of such evolution: from very first private industrial investment banks of the mid-19th century through mixed ownership during inter-war period and a wave of reconstruction efforts after WWI to predominantly state-owned development banks of post-WWII period and gradual 'commercialization' of development finance following liberalization reforms of 1980s and related diversification of their activities.

Following historical periodization, we construct three ideal types of development banks: Continental European, Asian and Emerging Market types. Each type reflects a distinct mix of institutional linkages, and organizational forms, which enables to position a development bank within a wider institutional context, mainly national in scope. Construction of such typologies would allow for certain contextual generalizations, which can facilitate further development of comparative studies. In addition, capturing institutional dynamics would allow for more informed

conceptualization of national development finance institutions since its theoretical foundations continue being vague and highly fragmented. Our definition of a development bank is related to the type of financing it provides rather than ownership patterns (state vs private): tasked with medium- and long-term financing to underfinanced or priority segments of a national economy.

Intro

In a contemporary sense, a development bank is usually understood as a specialized banking institution, often state-owned or state-backed, usually established under a separate legal act and tasked with policy-related financing, which vary both across banks and over time. After looking at historical accounts of banking industry, however, it becomes apparent that what is today perceived as a development banking institution is largely an organizational design of post-WWII era when the idea of state-led industrial investments became institutionalized. Previously, industrial investments and expansion were financed either out of retained earnings when the pace of industrialization was very gradual – as in 18th-century England – or through privately owned investment banks, as was the case of late industrializers France and Germany as well as USA. Evolution of industrial investments included both domains, financial and organizational, with the latter taking place in financial as well as industrial firms. Namely, emergence of corporate form of ownership allowed industrial firms to increase the size of production plant and benefit from economies of scale while for banks – to consolidate financial interests and stand strong vis-à-vis industrial interests. Gerschenkron (1962) links the process of cartelization, which received the most prominent development in Germany in late 19th century, to agglomeration within the banking sector and subsequent emergence of the four Great German Banks by arguing that cartelization was largely facilitated by the banks in their pursuit of greater and more secure profits.

Historical accounts, most notably by Cameron (1953, 1961, 1967, 1992), Tilly (1982) and Cassis (1992, 2006), tend to identify financial structures and courageous private investment bankers as causes of increasing industrial activities that resulted in canal and railway construction booms – such causal relationship takes historical point of departure in arguably the first European industrial investment bank, *Crédit Mobilier*, founded in Paris by the two saint-simonians upon the inauguration of Napoleon III in 1852. On the other hand, Sraffa (1929-1930) emphasized the emerging nature of banking as industry and as a profession during that period in comparison to more mature organizational forms, an established set of professional standards and a sense of professional community already existing among industrialists. In this regard, the aim of current study is to trace the evolution of industrial investment banking following its interrelatedness with developments in industrial sector, rather than to identify causal relations between financial and industrial activities. We will see that at times banks were innovating own organizational structures by emulating practices of both industrial (private) and public sector: Trust Companies invented by German banks can serve as an illustrative case of the former and centralized supervisory function emulated by French *Sociéte Générale* from Ministry of Finance's *Inspection Genérale* – as the case of the latter.

Following the course of history, an increasing involvement of state – exemplifying socialization of investment – in financing and economic activities, was reflected in changing patterns of ownership among industrial finance institutions: from fully private industrial investment ventures of the 19th century through mixed public-private ownership during the interwar period towards fully state-owned development banks since WWII. Changes in ownership structure have been tightly linked with operational tasks, which evolved from profit-taking and return on investors' equity through export financing and reconstruction efforts towards explicit socio-economic policy mandates.

Scholarly accounts of development banks have been persistent in identifying a great variety of development finance institutions, of which today exist around 500 worldwide, as one of the main hindrances to draw sensible generalizations and develop a viable comparative approach. In addition, what comes to contemporary state-owned development banks and their unique policy-oriented functions, the evolving nature of the latter and a continuing scholarly debate on linkages between financial structures and economic development (Goldsmith 1969, Zysman 1986, Demirguc-Kunt and Levine 1996, Levine 2002) result in the lack of coherent conceptual approach to development finance institutions and development banks in particular. Existing literature mainly deals with the following lines of analysis: role of the banks in a national financial system (Culpeper 2012, Hermann 2010, Yeyati *et al* 2004, Micco and Panizza 2005, Vernikov 2009), complementarity to commercial lending (Thorne and du Toit 2009, Yasuda 1993, Fresneda 2008), linkages to financial intermediaries and diffusion of financial expertise in long-term lending (Armendariz de Aghion 1999), supplying strategic sectors (Colby 2012, Pena 2001, Sunderson 2013), technical expertise and socio-economic research (Thorne and du Toit 2009, UN 2005), political ties and legitimacy (Fresneda 2008), and supervision and corporate governance. (Diamond 1957, Luna-Martinez and Vicente 2012, Scott 2007) An emerging strain of research emphasizes mission-oriented, that is strategic and targeted, financing of development finance institutions following Schumpeterian dynamics between credit provision and technological advancement. (Mazucatto and Penna 2013, 2015) In a similar vein, scholars of innovation incorporate financing aspect into innovation studies although in a neo-Schumpeterian tradition they rarely refer to banking system and rather focus on venture capital and various incentive schemes and grants for R&D. From this point of view, contemporary literature on finance for innovation is biased towards non-bank financial institutions, although development banks continue channeling long-term financing to strategic sectors and emerging technologies, as well as play a substantial countercyclical role.

In this light, current study lies at the intersection of historical studies of banking institutions, which emphasize the importance of banks as financial intermediaries in providing long-term financing for technological productive activities; Schumpeterian-Minskyan synthesis emphasizing the importance of credit and financial innovation for development (Minsky 1988, Kregel and Burlamaqui 2006); and a body of research emphasizing evolution of organizational structures in both public and private institutions along the course of technological development. (Karo and Kattel 2014) The primary aim is to partially overcome existing fragmentation of analysis by constructing a set of ideal types of industrial / development banks. To do so we rely on extensive review of both historical and contemporary cases, which allows for certain historical periodization, and when combined with identified organizational traits, leads us to the three major types: Continental European, Asian and Emerging Market type.

The next section provides a historical account of industrial investment activities, starting from roughly 1830s onwards, and differentiates between the four major periods therein; next, various organizational forms are discussed based on both historical and contemporary cases and the three major ideal types of industrial / development banking institutions are presented; finally, the paper concludes with the basis for possible contextual generalizations and suggestions for future research.

Historical periodization of industrial finance: from 1830s onwards

An important contribution to our understanding of industrial / development banking[1] was made by extensive historical studies by Clapham (1921), Riesser (1911)[2], Cameron (1953, 1961, 1967, 1992), Tilly (1982), Cameron and Bovykin (1991), Diamond (1957), more recently by Bruck (1998, 2005), Bonin (2004, 2011), Cassis (1992, 2006), Cassis and Cottrell (2009, 2015) to name a few. From these detailed overviews of how modern banking industry has been established on Continental Europe, researchers of industrial finance could discern the patterns of how the practice of investing into industrial undertakings has been gradually developing in Belgium and France and later in the rest of Western and Eastern Europe.[3] Following Nelson's (2016, Nelson and Winter 1982) evolutionary approach to economics in general, which, if to put very broadly, emphasizes the evolving mix of institutions and organizational routines, such an institutional perspective on industrial / development finance would allow for a more complex notion thereof, involving not only capital provision *per se* (and its source) but also the extent of development of the real sector[4], coordination with other public agencies such as Central Bank, links with other financial institutions, most notably commercial banks, (often) evolving regulatory and supervisory framework, as well as internal competence building and own administrative practices.

Such a historical perspective on the evolution of industrial banking allows us to distinguish between the following four stages:

- From 1830s until WWI – first in Belgium and later in France emerged the very idea of investing into railroad construction and infrastructure projects (e.g. beautification of Paris under Hausmann in 1850s); French *Crédit Mobilier* was taken as a model in other national governments, including Industrial Bank of Japan (est. 1900) and few financial institutions in India. (Diamond 1957) Although the establishment of the profession of a banker and institutionalization of industrial investment occurred in Germany where

[1] Following scholarly literature, the term 'development baking' became dominant after WWII reflecting increasingly broader perspective on state-aided reconstruction and development projects, while the majority of earlier banks were 'industrial' in both their nature and their mandate. Current study treats the two names interchangeably, unless specified otherwise.

[2] An extensive overview of German banking industry produced by Riesser in 1911 was one of a few similar studies commissioned by the US National Monetary Commission in 1910 before establishing the Federal Reserve System (1913). For the summary of the project, see Andrew (1909).

[3] Most recent historical study of financing involves infrastructure financing in Europe, from Medieval Ages onwards. (Cassis *et al.* 2016)

[4] Involves both industry and services. The case of contemporary videogame industry and the Business Bank of Canada can serve as an illustrative example of the latter.

through a number of crises and amalgamations emerged the Great German Banks towards the end of the 19th century. (Riesser 1911) Investments in industries were predominantly private. German banks started employing technical staff to assist in project evaluations.

- Interwar period – the need for reconstruction after WWI gave a new impetus for developing long-term financial institutions. Compared with institutions of the 19th century, those established in the 20th century were more successful in diffusing their expertise in long-term finance for new industrial sectors. Ownership was often dispersed among many financial intermediaries while the founding charters prescribed loans to be supplementary thereby facilitating co-financing arrangements (e.g. Industrial Bank of Japan). (Armendariz de Aghion 1999)
- After WWII – initially established as the means to channel external funds for reconstruction banks later evolved into long-term financial institutions. The trend has been followed by less developed countries where institutions were first set up to administer World Bank loans and facilitate industrialization. The same holds true for present-day emerging economies and newly industrialized countries of Northeast and Southeast Asia.
- Post 1980s-1990s – general decline of Official Development Assistance, Latin-American debt crisis and increasing financialization made development banks to put greater emphasis on profits.[5] (Bruck 1998, 2005) Diversification of activities resulted in development finance institutions engage in provision of services additional to long-term lending such as working capital financing, VC financing, advisory and consulting services, leasing, insurance, brokerage and investment banking services, programs for entrepreneurial development, privatization, restructuring, capital market development and provision of technical assistance, and such. In addition, development banks can serve as government financial agents by providing resources to the public sector, particularly SOEs.[6]

In addition, most recent developments can be observed in relation to post-2008 – an increasing recognition of countercyclical role that development banks continue playing (e.g. privatization of Korea Development Bank called back in 2014) and a greater emphasis on infrastructure financing (initiatives in the USA and Europe) in the aftermath of Great Recession as well as green financing (British Green Bank, German KfW). An emerging strain of literature revitalizes the notion of strategic role development banks can play through mission-oriented policy initiatives. (Mazzucato and Penna 2014, 2015; Mazzucato and Wray 2015) Yet, time remains to be seen whether these are post-crisis developments or indeed a qualitative shift in approach to financing for development and innovation.

Each historical period can be characterized by certain institutional arrangements, which will be discussed in detail below, and which, in turn, would help us construct ideal types, proposed later in the section.

Institutional dynamics related to industrial finance: towards ideal types

[5] India can be considered an illustrative case. (Chandrasekhar and Parthapratim 2006)

[6] At times, such a broad scope of activities causes inability to accumulate enough of specialized expertise, which, in turn, negatively affects the implementation of development programmes (e.g. Nacional Financiera of Mexico; see Stallings and Studart 2006).

Following socialization of investments via greater involvement of the state, industrial finance institutions have developed more strategic linkages with both public institutions – most notably Central Bank and key ministries – and private actors – such as commercial banks and industry, towards the second half of the 20th century. The experiences of East Asian countries can be rather illustrative in this regard. At the same time, the experience of emerging countries – such as e.g. Turkey, Mexico, Brazil, Russia – suggest that often development banks are tasked not only with strategic investment decisions but also with broader socio-economic goals. In other words, financing for development and innovation in East Asia can be characterized by greater specialization and targeting approach, which emerging countries were lacking.

At the start, however, investments in emerging industries – mostly railroads but also chemical industry – were made by private banks, which depended on respective Central Banks for authorization of capital. In this regard, a comparison between the French and German experiences in the second half of the 19th century can be made: more active involvement of the French government in railroad construction co-existed with rather conservative policy of the Banque de France whereas German railroads were constructed by predominantly private enterprises with government acting more as a facilitator and Reichsbank – as the lender of last resort. At roughly the same time – mid-19th century – American experience suggests that strong private sector can be in charge of facilitating the creation of needed financing via establishment of investment banks without much coordination with any public agencies, including Central Banking authority. More detailed description of cases follows below.

Continental Europe in the 19th century: Germany and France

The idea of investing into industrial undertakings with the purpose of earning a profit came about during the first third of the 19th century and Belgium is arguably regarded as homeland to the first industrial investment initiatives, which came directly from the Monarch who authorized the establishment of *Société Générale de Belgique*, a joint-stock bank, in 1822 and donated substantial funds for investing into heavy industries, coal mining, metals and later railroads. Some has credited France with the first industrial bank – *Société Générale de Crédit Mobilier* (mostly known as *Crédit Mobilier*), which was in operation during 1852-1867 and which is believed to inspire bankers in Germany, Italy and latter in other countries on the Continent establish similar banks for the purpose of investing primarily in railroad construction.[7] (Gerschenkron 1962; Cameron 1953, 1961, 1967)

Speculation on railroad securities existed before the French *Crédit Mobilier*, however, it was precisely the Pereires that implemented the idea on such a large scale that paved the way for numerous enterprises not only in railroad construction but in public

[7] 1850s-1870s were the two decades of booming railroad construction in France, which aimed to catch up with England; 1860s-1880s the same was happening in Germany. Most of railroad companies were private and this is not until 1880s in France and 1890s in Germany that state authorities began nationalizing the network as a response to private overinvestment and as the industry itself was growing mature. At the same time, some of German states started building state-owned railroads from the last 1840s, which made public bodies taking advantage of the experience of the private railway companies by applying similar structures of organization. The reversal to moderate role of the state, however, was made in the late 1850s. (Mitchell 2006)

works and other industries. The Bank failed, however, due to liquidity problems and inability to raise further capital: securities of railroad companies were invested in other long-term projects, combined with high dividends and refusal of the Bank of France to authorize further increase of capital. Moreover, companies associated with the Bank where it held participations were subjects to financial mismanagement and under-supervision. The latter was largely due to the fact that the duty of supervision was not even mentioned in the Bank's founding statutes. (Liesse 1909) The relations with the Bank of France deserve a special attention due to long-term nature of investments. Sraffa (1929-1930) emphasized the importance of linkages to Central Banks in regards to industrial finance institutions: as providers of long-term financing, they are likely to face liquidity problems, which creates the need for strategic relations with the Central Bank.

It should be noted that in reality of the time the banking industry still represented merely a beginning and its organization reproduced many of the vices of the industrial organization: bankers themselves "d[id] not properly understand the extent of their functions" and only a small proportion of industrial transactions was done with their cooperation. (Sraffa 1929-1930) Moreover, they had to learn from scratch about the industry practices in controlling processes "as *Société Générale* or *Crédit Lyonnais* had to grapple with the challenges of the firm." (Bonin 2011) Industrialists have already developed a way of sharing the knowledge, corpus of methods was defined and popularized[8], *Comité National de l'Organisation Française* tackled the issues of standards of firm governance. By contrast, the banking industry did not yet have an institutionalized platform for sharing the practices until the interwar period when the banking field became more cohesive with conferences organized, associations formed and journals published (*Revue Banque*). (*Ibid*)

The failures of the French helped to identify the attributes of success – German Great Banks exemplify not only the successful practice of industrial finance but also the establishment of the banking industry itself. German universal banks emerged together with large industrial enterprises and are believed to diverge from the French banking practices from the very start. (Whale 1930) Namely, the principles of solid banking policy and one of liquidity have been highly important. Greater emphasis on prudential measures can be attributed to the fact that together with industrial investments German banks have been administering public loans on both national and provincial levels.

Another difference between the French and German banking concerns structures in corporate sector: when comparing France and Germany, Clapham (1921) puts an emphasis on greater private involvement observed in Germany as compared to France. The French state was more active in railroad investments while in Germany state authorities were effectively regulating the industry in order to avoid 'bubbles' and wasteful competition. German private companies were largely in charge of raising the capital and carrying business management of the railways. This is, however, a way before the great German banks emerged towards the last third of the century.

[8] Henri Fayol "*Administration industrielle et générale. Prévoyance, organisation, commandment, coordination, contrôle*" (1916) served as the bible of the time. (Bonin 2011)

According to Riesser (1911), Germany had by far the larger amount of credit demands thanks to its trade and industry exceeding those of France as well as greater amount of credit banks of greater diversity to satisfy those demands. In addition, the concentration of banks at the beginning of 20th century has diminished Reichsbank's ability to influence the rate of private discount market. In essence, the task of regulating the credit has been transferred to the credit banks.

An organizational innovation pioneered by German banks, among the others, is so called Trust Companies, which were in charge of evaluating the creditworthiness of industrial firms. Sraffa (1929-1930) describes the functions of such entities as highly effective in insuring that the bank is fully aware of company's financial and industrial positions. Formalities, however, prescribed that the report is given to the company rather than to the bank and it is solely up to the firm to decide whether to supply the bank with it or not. That is, unless a firm decides to do so, a bank is unaware of business and financial conditions thereof.

French bankers, on the other hand, had brought new practices into the banking industry from public sector, namely from the Ministry of Finance and its *Inspection Générale des Finances*. *Société Générale* has pioneered the banking supervision and generally became known for its role in maturing the methods of management by institutionalizing *Inspection Générale* in 1880s-90s which later has been adopted by the rest of the banking community. Both the Ministry of Finance (where the *Inspection des Finances* has become an illustrative example of the civil service conducting missions both in Paris and in provincial administrations) and the *Banque de France* (with its 250 branches all over the country) are believed to signify solid and effective administrative structures and to stand behind the evolution and maturation of French-style administration (that is "centralized, uniformed, graft-avoiding, efficient book-keeping structures, able to contribute to a state-of-the-art move of centralization"). (Bonin 2011)

To summarize, late industrialization in most dynamic economies of the Continental Europe at the time was financed by entrepreneurial bankers, which however had different relations with both industry – more strategic in Germany and less so in France – and Central Banks – more synergetic in Germany and less so in France. The matters of industrial standards, however, were more regulated in France than in Germany: in regards to railroads, French Ponts-et-Chaussées served as an example of the tradition of etatism, which implied a pool of state engineers and a formal procedure of standardization in construction and operation of railroads and supporting infrastructure; whereas in Germany the private industry was not subject to centrally administered regulations and standards due to late unification as well as greater reliance on private enterprise. (Mitchel 2006)

East Asian newly industrialized countries in the 20th century

Following post-WWII reconstruction efforts as well as industrialization strategies of newly independent states, large state-owned development banks were established during 1950s-60s throughout the world. Established by a separate act of legislation, national development banks were often tasked not only with direct lending to strategic sectors but also with broader socio-economic mandates. In this regard, the experience of newly industrialized countries of Northeast and Southeast Asia stands out due to continuity of targeted lending, interconnectedness between industrial firms and development banks through equity participation, strategic links with the national central banks and other public entities. First in Japan and later in Korea, Taiwan, Singapore and to some extent Malaysia, development finance institutions have been playing an active policy role through direct lending, equity investments into selected industries, industrial research and technology evaluation training. Regardless of whether financial policies *per se* were interventionist (Japan, Korea, Taiwan and Singapore) or rather not (Malaysia and remaining ASEAN countries), development finance institutions were active agents in channeling government loans and grants as well as accumulated savings (mostly notably in Japan) to selected sectors, following mid-term goals set by national economic planning agencies.

Japan established publicly-owned Industrial Bank (IBJ) as early as in 1902 and already in 1913 the staff members went to the US and Europe to learn project appraisal techniques in order to increase and distinguish its competences from commercial banks as well as to improve its negotiating power vis-à-vis the government. The government continued to force IBJ to finance major portion of national projects in mining, railroads, and other projects in overseas colonies (i.e. keeping it vulnerable to the political survival of military government). Privatized in the 1950s, the IBJ was one of the key agencies facilitating post-WWII reconstruction efforts while later acted complementary to the newly established state-owned Japan Development Bank. Both banks have been largely considered as the top of elite banks in Japan and had a high ratio of Tokyo University graduates among its senior executives. (Yasuda 1993) Despite highly decentralized credit-allocation institutions, the experience of Japan also demonstrates the distinct culture, which prevailed among financial bureaucrats: positioning themselves as possessing outstanding competences they rotated between top financial institutions thereby facilitating more coherent understanding of financial policy goals, of which the primary was financial stability.[9] (Calder 1993) In addition, despite private ownership, employees of Industrial Bank of Japan continued perceiving themselves as part of civil service. In addition, Yasuda (1993) argues that due to private ownership and therefore larger focus on profitability, compared to government-owned Japan Development Bank, the IBJ provided a stronger signal to private sector in terms of promising industries. Some quantitative data reveal that relative weight on each of the six major industries were similar for ordinary commercial banks and IBJ with the former providing short-term funds and the latter – long-term loans. (*Ibid*) Hence, complementarity of the two.

Similar developments were described by Thurbon (2003, 2007) and Thurbon and Weiss (2006) in their study of financial liberalization of Taiwan where Central Bank of China was largely responsible for ensuring solid financial and macroeconomic stability, which ultimately provided a stable environment for successful liberal transition. Yet, in the area of development finance, Taiwan can be described as strategic investor: despite private ownership of China Development Corporation and its reorganization into China Development Industrial Bank during late 1990s with subsequent greater emphasis on commercial banking operations, it continues being the holder of the largest industrial portfolio in the country and maintains the

[9] Calder (1993) argues that economic and industrial planners faced difficulties in controlling industrial credit, which was part of a broader confrontation between restructuring and stability – the latter effectively enforced by the top financial authorities, including the Bank of Japan and the Ministry of Finance.

reputation of an expert in industrial research and appraisal. (CDIB annual reports, various years)

The government of Malaya, and later Malaysia, has been emphasizing prudent financial management from early on. Combined with the lack of detailed targets and effective enforcement thereof, industrial finance on Malayan peninsula was less strategic and more 'distributive'. The latter refers to the tendency of national development banks – which have been highly specialized and of which currently exist 13 – to act as fiscal agents of the government rather than strategic investors by managing government-assisted schemes according to predefined contracts signed with either Central Bank, or Ministry of Finance or Ministry of International Trade and Ministry, depending on where the funds are coming from. With the exception of early years of industrialization when Malaysia Industrial Development Finance Company (est. 1960) took equity stakes in newly established industries, was building industrial sites and conducted industrial research and feasibility studies, Malaysian experience suggest that even specialized development finance institutions can have too general mandates (ethnicity-related distribution of wealth, financial inclusion) thereby somewhat resembling the experience of emerging countries, described below. This feature of Malaysian development banking becomes especially apparent when compared with Singapore, where strategic notion of state investment keeps thriving: both Economic Development Board (est. 1960) and later Development Bank of Singapore (DBS; est. 1968) were acting similar to the Great German Banks by taking minor equity interests in emerging industries and assuming temporary managerial control, by specializing in certain sectors in line with detailed targets set and effectively enforced by economic planners; currently, despite being a typical commercial bank, DBS facilitates the development of domestic financial sector (which, as such, has been one of selected industries since 1970s) as well as helping SMEs to access funds from the capital market, managing government-assisted schemes and investing into social enterprises.

Although the experiences of East Asian newly industrialized countries vary greatly and it is difficult to assess to what extent these development banks have been *re*-investing profits made on government-backed funds[10], we may conclude nevertheless that policy-lending combined with targets set by economic planners and specific competences related to industrial research and technology evaluation either took place during the initial stages of state-led industrialization (Japan, Singapore, Malaysia) or continue taking place at present day (Korea, Taiwan, and contemporary Singapore's policies in regards to financial sector promotion). In other words, successful development banks of selected East Asian countries tended to be strategic and selective.

Emerging countries in the 20th century

Unlike newly industrialized countries of East Asia, emerging countries – such as Turkey, Russia, Brazil and other countries in Latin America, India, Sri Lanka and other countries in South Asia – have been relying on foreign lending to a greater

[10] Although in some cases, bank's founding statues stipulate profitability requirements – which may also change over time and which is closely related to the sources of funds – and that may serve as a certain guidance. Empirical data may be also of help: e.g. Korea Development Bank's profits have been the lowest among region's development banks.

extent. In this regard, national development banks in these countries have had greater experience in dealing with international lenders, which, in turn resulted in less discretion over profitability requirements and sometimes affected ownership structure of newly established development banks.[11]

Further, development banks in emerging countries continue operating with broader mandates if compared to its East Asian counterparts: lending to selected industries is just one of the tasks, in addition to management of government funds (banks act as agents in managing pension funds, and such), and support to broader socio-economic policy goals. Various types of financing are provided and various types of investments are made. In this light, development banks in emerging countries seem to have less strategic notion of own competences vis-à-vis commercial banks as well as other government agencies. Exception is being made at the times of crisis when counter-cyclical measures are put in place with the assistance of these specialized financial institutions. In some cases, these banks appear as 'latecomers' in targeted financing, especially when compared to its East Asian counterparts where selective lending has been one of policy instruments: the case of Russia and China would be illustrative. Below follows the description of tentative typology of national development banks described above (Table 1).

[11] There was the general trend in preferences of international lending agencies such as IBRD, US Aid, ExIm Bank of US, and the Commonwealth Development Company to deal with privately owned development finance institutions until the WB became more flexible towards 1970s. Other lending institutions such as European Development Bank would lend to governments only. The ownership structure of the borrower affected both the terms of lending (maturity, grace period, interest rates) and hence terms of consequent domestic sub-lending. For a highly detailed study of fully private ICICI of India and the effects of capital structure on operations of DFIs see Quattara (1973).

Table 1. Suggested typologies of national development banks.

	European Continental	East Asian	Emerging Country
Ownership	Private investment banks; either limited liability companies or joint stock companies.	Largely state-owned or with state as a shareholder (Taiwan, Malaysia).	Either state-owned (Brazil, Russia, Mexico) or private (Turkey, Sri Lanka, India).
Capital provision and sources of funds	Private capital raised primarily through debentures.	Government-backed grants have been gradually substituted by government loans (1990s) and other sources (capital markets, international lending agencies). Exception is Japan with its large postal savings.	Depending on ownership structure, the share of government funds varies. Often, greater reliance on international financing agencies (WB, EIB, IBRD), which results in greater emphasis on profitability.
Mandate and types of financing provided	No differentiation between short-term and long-term lending; yet increasing long-term lending to emerging industries. Lending in pursuit of private profits (dividends).	Industrial lending, often to pre-selected industries (which change over time according to economic planning priorities). Possibility to borrow short-term (working capital loans) is conditioned by initial long-term lending contracts (Korea Development Bank, Japan Development Bank) or completely absent (China Development Corporation). Broader social objectives and financial inclusion appear in Malaysia, largely due to ethnicity-related redistribution policies.	Broad mandates, incl. financial inclusion, social development, SMEs, affordable housing. Types of loans are often not exclusively long-term but also short-term, working capital, etc. Often, government's agents in managing pension funds and similar investment roles, as well as public bond underwriting (municipal and / or state). Key agency in borrowing overseas.
Regulation and supervision	No systematic regulation and supervision of financial industry is in place yet. Focus on internal supervision (see below). Central Bank has the power to authorize additional capital.	Separate act of Parliament, often classified as non-bank institutions. Often supervised by multiple agencies in regards to both financial and non-financial aspects.	Separate act of Parliament, often classified as a non-bank institution. In some cases, employees have a status of civil servants (BNDES).
Links with the Central Bank	Start to emerge but not strategic yet, although Reichsbank tends to act as the lender of last resort.	Strategic, CB as the lender of last resort.	Less strategic, unless counter-cyclical role is invoked during economic downturn.
Links with industry	Often, long-term lending starts after relations with firms were established through short-term borrowing (overdraft used of current account) – German relationship banking.	Strategic, during both phases of the cycle (investment during boom and industry restructuring during downturn); equity investments in targeted industries. Bankers take active part in monitoring firms.	Less strategic following less selective overall economic policies as well as broader scopes of operations.
Links with commercial banks	No differentiation takes place yet. No notion of links with other banks as yet.	Strategic either through consortia lending (both domestically and, when relevant, abroad) or through wholesale funding or through guarantees issued for risky loans. Complementary to short-term lending made by commercial banks (Japan).	Less strategic, although consortia lending and issue of guarantees is equally important as for East Asian type.
Internal	Establishment of industrial	Strong notion thereof,	Often, a multitude coming

competences	research and systematic project appraisal, monitoring of borrowers as well as internal supervision.	especially during the initial stages of industrialization (1960s-70s); attracting foreign experts to train own staff in project appraisal, industrial research, feasibility studies and later supplying similar training to local government officers as well as regionally (also in case of Malaysia); strong position in technology evaluation, which is used as policy input, including today (Korea, Taiwan); consortia lending and syndicated loans abroad both to domestic firms which expanded internationally (Japan, Korea, Taiwan) and to financing international projects (Korea, also shipbuilding industry for Singapore's DBS).	from a broader mandate. Industrial research and evaluation is less important, when positioning itself vis-à-vis other government agencies or other types of banks. Proper risk-management, in part due to profitability requirements. Competences related to management of large state funds (pension funds, state investment funds, etc.).
Internal organization	A number of specialists in charge of project appraisal; separate unit for industrial and economic research (est. by Crédit Lyonnes); separate unit for assessing creditworthiness (Trust Companies in Germany); centralized internal supervision and audit.	Industrial research as a separate unit from the start; project appraisal is made by a team of specialists, which in the 1970s gets substituted by one credit officer. Separate divisions for risk-assessment appear in late 1990s. More clear differentiation between investment and development banking units also appears in late 1990s, when sources of funds started to change (decrease in government funds).	Large organizations with clear division between investment and development banking; research department as important unit (exceptions – Turkey, Mexico); emphasis on prudence and supervision: risk management as a separate department.

Source: compiled by the authors

Possible generalizations and suggestions for future research

Despite substantial differences between the cases, we may identify a number of linkages development finance institutions develop – or not – with public and private actors. Moreover, such linkages are not static but reflect the (ideal) dynamic nature of development financing. In this light, a lot has been said about 'unique' position of national development banks while few empirical studies have been made. By identifying to what extent these specialized financial institutions interact with key financial authorities (Central Banks, Ministry of Finance), related ministries (Ministry of Industry and / or Trade) and industry we can better understand the actual trajectories of development finance. This is valid for both state-owned and private development banks. Traditionally, such linkages are reflected in respective formal regulations while the latter takes long time to adjust and therefore we would benefit the most from looking into how development banks interact with relevant agencies as well as corporate actors and what are the basis for such interaction.

Besides institutional context, governance of DFIs and the various functions they perform (e.g. investment, managerial, research, socio-economic), should be incorporated into construction of 'ideal types'. Further, internal organization and competences is another aspect of institutional dynamics: the more static organization remains over time, the less likely it is to develop effective linkages with relevant actors – both public and private. Given the notion that development finance institutions evolve following the overall national economic strategy and discourse, the issue of internal competences is becoming more apparent. In this regard, further inquiry should be made into internal structures of development banks via analyzing reports, archival records and conducting interviews. This would allow for contributing to the discussion on financing for development and innovation as well as to extent studies on financial bureaucracy.

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