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Authors
Beichen Huang,
Tianyang Xi, Jiajun Xu

Checks and balance, Political Leadership, and Bureaucratic Autonomy: Evidence from National Development Banks

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Checks and balance, Political Leadership, and Bureaucratic Autonomy: Evidence from National Development Banks

Beichen Huang
National School of Development, Beijing, China

Tianyang Xi
National School of Development, Beijing, China

Jiajun Xu
Institue of New Structural Economics, Beijing, China

Abstract
A long standing view in the political economy of bureaucracy holds that the quality of political governance is the foundation of high quality development agencies. However, the existing literature does not provide an adequate account of how political leadership shape the capacity of development agencies. Motivated by the discrepancy between formal political institutions and large within country variation of bureaucratic governance in reality, this paper argues that the governing structure and capacity of development agencies crucially depend on the interaction between formal institutional constraints entrenched in the political system and the strength of political leadership. Specifically, neither institutional constraints nor strong leadership alone guarantees a sufficient degree of bureaucratic autonomy for development agencies. Without strong leadership, institutional checks and balance may give rise to excessive veto points in policy making and undermine bureaucratic autonomy. Without proper institutional checks and balance, development agencies' autonomy and capacity tend to compromised by the moral hazard of strong leadership. In turn, our theoretical argument predicts that development agencies exhibit strong autonomy and capacity with the presence of both strong leadership and institutional constraints. We use a cross-country dataset of national development banks to test the theory. The regression results and case studies of national development banks are consistent with the theory.

Keywords
National Development Banks, Bureaucratic Autonomy, National Executives, Institutional Constraint

Résumé
Selon une opinion répandue depuis longtemps dans l'économie politique de la bureaucratie, la qualité de la gouvernance politique est le fondement des agences de développement de grande qualité. Cependant, la littérature existante ne rend pas compte de la manière dont le leadership politique façonne la capacité des agences de développement. Motivé par le décalage entre les institutions politiques formelles et la grande variation de la gouvernance bureaucratique dans la réalité, ce rapport soutient que la structure et la capacité de gouvernance des agences de développement dépendent de manière cruciale de l'interaction entre les contraintes institutionnelles formelles ancrées dans le système politique, et la force du leadership politique. Plus précisément, ni les contraintes institutionnelles ni un leadership fort ne garantissent à eux seuls un degré suffisant d'autonomie bureaucratique pour les agences de développement. Sans un leadership fort, les contrôles et l'équilibre institutionnels peuvent donner lieu à un nombre excessif de points de veto dans l'élaboration des politiques et miner l'autonomie bureaucratique. En l'absence d'un équilibre institutionnel approprié, l'autonomie et la capacité des agences de développement ont tendance à être compromises par le risque moral d'un leadership fort. Notre argument théorique prédit donc que les agences de développement font preuve d'une autonomie et d'une capacité fortes en présence à la fois d'un leadership fort et de contraintes institutionnelles. Nous utilisons un ensemble de données transnationales sur les banques nationales de développement pour tester cette théorie. Les résultats de la régression et les études de cas confirment cette théorie.

Mots-clés
Banques nationales de développement, autonomie bureaucratique, cadres nationaux, contrainte institutionnelle

JEL Classification
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Introduction

There are over 400 national development banks (NDBs) in the world, providing a large amount of loans to millions of enterprises and households. The corporate governance and performance of NDBs varies greatly around the world. There are very professional and competent development banks and also development banks which are just "cash withdrawal machine" of governments without any expertise in long-term finance.

The conventional wisdom holds the opinion that national institution is one of the most important determinants (World Bank, 2015). However, country-level institutional quality cannot fully explain the variation of bureaucratic governance of development agencies. For example, Brazilian Development Bank (BNDES) and Nigerian Industrial Development Bank (NIDB) are both established in a fragmented political system with serious problem of patronage. However, BNDES is praised by its professional independence while NIDB is doubted of frequent political intervention. Another perspective generates from literature emphasizing the importance of national leaders. This perspective is necessary but also insufficient to explain why there are agencies established by similar leaders have different characters. Both as agencies built under strong leadership using the strategy of import substitution, Brazilian Development Bank (BNDES) and Nacional Financiera (NAFIN) show very different patterns of corporate governance [1] . Inspired by the cases above, we take a approach combining a perspective of both formal institution and national leader.

This paper argues that the independence of development banks crucially depend on the interaction between formal institutional constraints entrenched in the political system and the strength of political leadership. Specifically, neither institutional constraints nor strong leadership alone guarantees a sufficient degree of bureaucratic autonomy for development agencies. Without strong leadership, institutional checks and balance may give rise to excessive veto points in policy making and undermine bureaucratic autonomy. Without proper institutional checks and balance, development agencies' autonomy and capacity tend to compromised by the moral hazard of strong leadership. In turn, our theoretical argument predicts that development agencies exhibit strong autonomy and capacity with the presence of both strong leadership and institutional constraints.

To measure the independence of development banks, we use a Principle Component Analysis method to condense relevant variables into one index. The principle component thus contains the information of whether the board members are independent from governments, and whether their terms are fixed and staggered so that government would have difficulty to exert influence. We combine the development bank data from Second Global Survey on

[1] For example, according to the 2016 Second Global Survey on Development Banks by World Bank Group, 18% board members in NAFIN are independent (not affiliated with government or government agencies), while 100% board members in BNDES are independent.

Development Banks by World Bank Group and the leadership data from Shi et al. (2020) and the checks and balance index from Heinsz (2002). In our baseline model, we explores the interactive effects of leadership (with the proxy of variety of experience (VOE) of national leaders) and checks and balance index on the board independence of NDBs, using an ordinary least square interaction model. Consistent with the core argument, we find a significant positive coefficient of the interaction model, and only the combination of strong leadership and strong checks and balances predicts high-level of corporate independence of NDBs. A natural correlated question is whether this independence is desirable for policy makers. We find higher independence is positively correlated with the probability of having non-performing ratio neither too high nor too low (between 1% and 15%), which means the independent development banks might be neither too commercialized nor too inefficient. In Robustness check, we change the measurement of dependent and core independent variables and the results are robust. To sum up, countries with both strong checks and balance and strong leadership could have more independent NDBs, and independent NDBs are desirable in terms of appropriate non-performing loan ratio.

The remainder of this paper is organized as follows. Section 2 investigate the institutional view and autonomous view and develop the hypothesis. Section 3 discusses the sources of data, sources and definitions of variables, and the empirical strategy. Section 4 presents the empirical results. Section 5 provides two case-studies. Section 6 concludes.

I – Theory and Hypothesis Development

The political economy literature holds two different views on how state actors affect policy making and economic development. The institutional view maintains that the behaviors of policy makers and bureaucrats are largely set by institutional constraints. In an influential study on central bank independence, Keefer and Stasavage (2003) argue that central banks are more likely to pursue independent monetary policies and make credible policy commitment with strong checks and balance by veto players. By contrast, the autonomous view argues that state actors play an independent role in creating and maintaining formal institutions, and they also shape a fundamental role in shaping growth-enhancing policies and economic development. For example, Glaeser et al (2004) argue that economic takeoffs in developing countries were often attributed to pro-growth policies implemented by leaders of non-democratic regimes. Evans (2012) proposes the concept of embedded autonomy argues that the success of state intervention in economic development hinges on the alignments of interests of state actors, private sectors, and transnational corporations.

This divergence in understanding the interplay between state actors and institutions in shaping economic development shed lights on the debate over the governance of national development banks (NDBs). The conventional wisdom holds that the failure of NDBs stems primarily from poor institutional environments. Good governance is difficult to establish in weak institutional environments (World Bank, 2015). Consequently, poorly-governed developing countries should address institutional limitations nationwide instead of establishing NDBs. A report by the World Bank in 2015 argues that "There is little evidence, however, that direct efforts to promote long-term finance by governments and development banks—for example through directed credit to firms or subsidies for housing—have had sustainable positive effects. These policies have generally not been successful because the underlying problems remain and because political capture and poor corporate governance practices undermine the success of direct interventions by governments" (World Bank, 2015).

However, this position is insufficient to explain the considerable across country variations in the governing features and the performance of NDBs around the world. The insufficiency might lies in two aspects. First, from the point of institutional view, this position regards the "micro" institution of different bureaucracy as simply a replication of the national institution. Second, from the point of autonomous view, this position ignores the role of national leaders.

From the perspectives of institutional view, a lot of central bank literature could help us to understand the political interplay in the determination of bureaucratic independence. "Even though central banks' activities involve a great deal of technical knowledge, they are unavoidably political institutions" (Fernández-Albertos, 2015). Likewise, development banks, by its nature, providing a secret and safe way to subsidize political supporters[2] is therefore a important tool in the political arena[3] (Rajan and Zingales, 2003). Carvalho (2014) documents the loans of development banks might play a role in the Brazilian local government elections. Real expansions in employment in regions with allied incumbents near reelection years are associated with greater borrowing from development banks. Enlightened by this approach, the role of veto players and checks and balance in shaping central bank independence might also be crucial determinants of development bank independence[4] (Alesina, 1997; Lohmann, 1997; Bernhard, 1998; Hallerberg, 2002; Keefer and Stasavage, 2003). The development bank independence could be generated in a more complicated political interplay than simply the replication of the national institution.

Moving to the autonomous view, the role of leader might be an important but neglected factor when analyzing NDB's independence. Literature has documents that more experienced leaders are able to promote higher economic growth (Shi et al., 2020), and more educated leaders are more likely to initiate economic or political liberalization reforms (Dreher et al., 2009; Li, Xi and Yao, 2020). However, the role of leaders is not always positive. Leaders with prior military experience are more likely to start militarized disputes or wars (Horowitz and Starn, 2014). Many leaders are essential in the process from democracy to dictatorship. And it is common in weak institution for voters to support populist leaders to dismantle the checks and balances (Acemoglu et al., 2013). Therefore, the role of leaders should be taken into account in different political contexts in explaining the independence of NDBs.

Our theoretical framework will combine the institutional view and the autonomy view in analyzing how the interplay between formal institutional constraints and leaders induces different types of equilibria with varying degree of independence of NDBs. Particularly, in context of strong checks and balance and weak leadership, NDBs could heavily be influenced by party politics and thus has low independence. In context of weak checks and balance and strong leadership, NDBs could easily be controlled by the national leader and thus has low independence. The co-existence of strong leadership and strong checks and balances could create a equilibrium where leader and legislative veto players both want the institution to be independent.

[2] For example, according to the 2016 Second Global Survey on Development Banks by World Bank Group, 18% board members in NAFIN are independent (not affiliated with government or government agencies), while 100% board members in BNDES are independent.

[3] Although central bank is a macroeconomic institution and development bank is in charge of micro-level distribution, more and more development banks are taking the counter-cyclical macroeconomic role. Besides, their both share the politically-neutral veiling and political nature in terms of wealth redistribution.

[4] There is a consensus in the literature on the role of veto players in the central bank independence. Veto players are individuals or groups or institutions that could legally hinder the change of policy from status quo (Tsebelis, 2002). The existence of veto players like strong system of checks and balances (Tsebelis, 2002), strong subnational governments (Hallerberg, 2002), heterogeneous policy preferences within the executive (Bernhard, 1998) and two parties in the coalition governments all contributes the central bank independence in different political contexts. Their mechanisms are different. Strong subnational governments promote the central bank independence in order to reduce the influence from the federal government (Hallerberg, 2002). Two parties in the coalition governments acknowledged the equilibrium of an independent central bank is better than turn-taking control of monetary policies in the long term.

Hypothesis 1. Countries with both higher checks and balances and more experienced leaders have more independent development banks.

Table 1: **The Interactive Effect of Leadership and Checks and balance**

<table>
<tr><td colspan="2" rowspan="2"></td><td colspan="2">Leadership</td></tr>
<tr><td>Strong</td><td>Weak</td></tr>
<tr><td rowspan="2">Checks and balance</td><td>Strong</td><td>High independence</td><td>Low independence</td></tr>
<tr><td>Weak</td><td>Low independence</td><td>Low independence</td></tr>
</table>

Note: This table aims to show our conceptual framework.

The significance of our analysis also lies on the fact that the independence of NDBs is desirable. The importance of governance and expertise of NDBs is emphasized in the academic paper (Aghion, 1999) and policy reports (World Bank, 2015). The independence of NDB, as one part of the governance, is however, not directly tackled in the quantitive academic papers. The desirability of bureaucratic independence is proved on the cases of central banks or privatisation institutions. A more independent central bank could reduce the concern of time-inconsistency problem and lead to lower inflation (Friedman, 1968). A more independent privatization institution also provides a stronger signal for the degree of privatization and implement the policy more thoroughly (Theodoro and Pitcher, 2016). Since the provision of long-term loan is the most common and important task of development bank in the world, we generate the following hypothesis.

Hypothesis 2. More independent development banks have better long-term loans performance.

II – Data and Variables

2.1. Board Independence of NDBs

The data comes from 2016 Second Global Survey on Development Banks by World Bank Group. This sample contains 62 development banks from six continents all over the world. We use the board independence as proxy for the independence of development bank. The board of directors is the institution with the highest power in most development banks. Therefore, development banks with board of directors independent from the control of government could be viewed as highly independent government in this aspect. According to case studies on development bank independence (Willis, 1995), an independent board should contains two aspects of feature: (1) The personnel should be independent; (2) The allocation of loans should be independent. Because whether the allocation of loans are intervened by political factors are unobservable to some degree, we focus on the independence of personnel. Relevant variables include: (1) the ratio of independent board members; (2) whether the term of directors are fixed; (3) whether the term of directors are staggered (which means they do not expired at the same time, indicating that government are not able to replace all the members at the same time). A board with most directors not affiliated to governments, with fixed and staggered terms of directors, would ideally be an independent board which can direct the development bank to operate professionally. We use Principle Component Analysis method to condense the three variables mentioned into one principle component[5].

$$Board\ Independence = \quad 0.7 * \ IndependentRatio + 0.68 * Fixed + 0.62 * Staggered$$

The weights are generated automatically by the Principle Component Analysis method and the component score is demeaned automatically by Stata. The Kaiser-Meyer-Olkin (KMO) value is 0.57, indicating that it is not perfect to use the method. The eigenvalue of the first principle component is larger than 1, therefore we could use the first principle component to represent the rest of three variables. The first principle component explains 38% of the whole variation in the three raw variables.

2.2. Leaders' Experiences

The national leader data is from the work of Shi et al.(2020). National leaders are defined as the chief executive of the administration (president in presidential systems and the prime minister in parliament systems). The president is defined to be the chief executive if the president has the constitutional power to remove the Prime Minister (Przeworski, 2013; cited in Shi et al., 2020). The general secretary of the communist party is defined to be the chief executive in communist countries (Goemans, Gleditsch and Chiozza, 2009; cited in Shi et al., 2020). Following the work of Shi et al.(2020), we construct an aggregate variable which is the aggregation of dummy variables of experience[6]. Our measurement is different from theirs

[5] For more details about the variables like "independent ratio", we include them in the appendix.

[6] For more details about the variables like "vice president experience", we include them in the appendix.

for they only include public experience while we combine public experience and private experience.

$$\begin{aligned} Variety\ of\ Experience \\ &= Vice\ President\ Experience\ +\ Minister\ Experience\ +\ Governor\ Experience \\ &+ Legislator\ Experience\ +\ Private\ Sector\ Experience \end{aligned}$$

2.3. Checks and balance

The checks and balance index is from the seminal work of Heinsz (2002) and subsequent dataset, for 234 countries from 1800 to 2017. This checks and balance index "estimates the feasibility of policy change (the extent to which a change in the preferences of any one actor may lead to a change in government policy)", and contains three aspects: "(1) the extent to which there are effective legislative veto points; (2) the extent to which these veto points are controlled by different parties from the executive's; and (3) the extent to which the majority controlling each veto point is cohesive" (Lupu, 2015). Therefore, the measure not only captures the institutional aspects of veto points (institutional checks and balances) but also the real political actors in different time in this country, and is very suitable for our analysis of the interaction of president, congress and development bank. The checks and balance index is a continuous variable ranging from 0 to 1, with 0 indicating that legislature is completely aligned and 1 indicating that legislature is completely independent.

2.4. Economic and political variables

Following the literature of central bank independence and corporate finance (Eijffinger and De Haan, 1996; Cukierman, 1992; Heller, 1991), we include a set of control variables from national level to bank level. We include ***Polity***[7], which is a continuous variable ranging from -10 to 10, with -10 indicating the close dictatorship and 10 indicating mature democracy. ***Stability*** is a continuous variable indicating the score of political stability and non-violence in 2016 (the most recent year). GDP per capita is included to control for the economic development stage of the country. ***Asset, Equity and Employee*** is respectively the total asset, total equity, and total number of employees of the development bank in 2015 (the most recent year). ***Supervised*** is a dummy variable indicating whether the development bank is supervised by the same supervisor (central bank in most cases) as the commercial bank in their country. To distinct the character of leaders' experience from other personal characters, we include more leader-level variables like ***Leader College,*** reflecting whether the leader has a college degree, and ***Leader Served,*** indicating the years he served as a national leader and ***Leader age.***

[7] For the data sources of these economic and political variables, we make a form to show them in the appendix.

2.5. Merging method

Many development banks claim them to originate from old entities, which, however, differ greatly from the current banks in terms of legal status or internal structure. Our measurement of board independence is based on the 2016 Second Global Survey on Development Banks. To tackle this problem, we define the founding year of development banks as the last time she changes both her name and structrue. To explore the political environment in the time of establishment or last essential reform for the 62 development banks, we merge checks and balance index and leader data with the founding year of development banks. There are 9 development banks could not be matched exactly with the leader data. Based on the assumption that closer leader shared more characters with his predecessors, we match the 9 development banks with their closest successor national leader.

III – Empirical Results

3.1. Baseline results

The baseline model estimates the interactive effect of experience and checks and balance on the independence of NDBs.

$$Board\ Independence_i = Political\ Constraint_j + Leader\ Experience_k + Political\ Constraint_j * Leader\ Experience_k + \chi_{ijk} + \varepsilon_{ijk} \qquad (1)$$

In equation (1), the interaction of checks and balance and leader experience is of our interest, with subscript attributing the level of the variable: i-bank, j-country, k-leader. χ_{ijk} stands for control variables in different levels, and ε_{ijk} stands for error term. Heterogeneous-robust standard error is used.

The empirical results are consistent with our hypothesis. In column (1), variety of experience of leaders and checks and balance are all significantly correlated with board independence. In column (2), interaction term of checks and balance and leader experience is added. The significant positive coefficient of interaction term supports our Hypothesis 1: more experienced leaders are more able to establish independent development banks where executive power is strongly constrained by legislative institution. Combining the coefficient of Experience (-0.669) and the coefficient of interaction term (1.471), one can conclude: (1) In a country with no checks and balance (when checks and balance index=0), experienced leaders are more likely to build dependent NDBs (with -0.669 unit decline in board independence score); (2) In a country with full checks and balance (when checks and balance index=1), experienced leaders are more likely to build independent NDBs (-0.669+1*1.471=0.802, with 0.802 unit increase in board independence score).

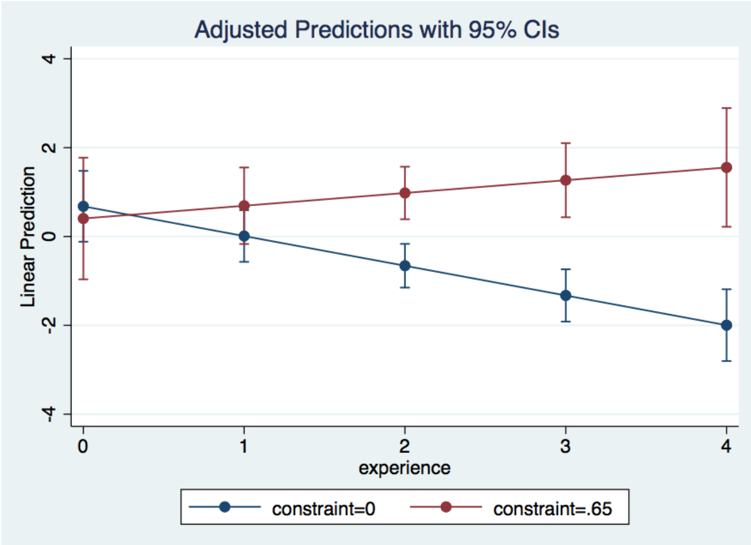
Table 2: **The Interactive Effect of Variety of Experience and Checks and balance**

Variable	**Board Independence**	
	(1)	(2)
Checks and balance	2.359***	-0.422
	(0.839)	(1.409)
Variety of Experience	-0.263*	-0.669***
	(0.147)	(0.156)
Checks and balance # Variety of Experience		1.471**
		(0.575)
Length served	0.0568***	0.0453**
	(0.0195)	(0.0210)
Leader age	-0.00733	-0.00758
	(0.0166)	(0.0177)
Leader college	1.079***	1.319***
	(0.389)	(0.406)
Polity	-0.0205	-0.0411
	(0.0344)	(0.0338)
Stability	0.444***	0.507***
	(0.144)	(0.128)
GDP per capita	-3.485	-2.240
	(9.721)	(9.634)
Asset	2.632	4.960
	(3.918)	(3.514)
Equity	47.46	16.79
	(76.86)	(70.38)
Employee	-58.75	-75.57
	(44.09)	(46.31)
Found year	1,597	-3,412
	(4,962)	(4,744)
Supervised	0.351	0.166
	(0.297)	(0.279)
N	50	50
Adj-R2	0.412	0.479

Note: Heterogeneous-variance-robust standard errors are reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

To better interpret the interaction effect, we draw the predictive margins with checks and balance and variety of leaders experience varying from the sample minimum to sample maximum. It could be interpreted from the figure that: (1) In a country with the lowest checks and balance and lowest variety of experience of leaders in our sample, the development bank in that country is predicted to be 0.92 ; (2) In a country with the highest checks and balance and lowest variety of experience of leaders in our sample, the development bank in that country is predicted to be 0.4 ; (3) In a country with the lowest checks and balance and highest variety of experience of leaders in our sample, the development bank in that country is predicted to be -1.8 ; (4) In a country with the highest checks and balance and lowest variety of experience of leaders in our sample, the development bank in that country is predicted to be 1.65.

Figure 1: Prediction of Board Independence



Note: This figure shows the linear prediction result from our baseline regression in Table 2. The y-axis stands for the linear prediction value of our dependent variable: board independence, with checks and balance index taking the value of 0 (sample minimum) and 0.65 (sample maximum), with variety of experience of leaders taking the value from 0 (sample minimum) to 4 (sample maximum), with other covariates taking the value of sample mean. The confident interval takes the value of significance of 95%-level for all the linear coefficients.

Table 3: Results of Figure 1 in Table Form

Prediction of board independence	Weak Leadership =0	Strong Leadership =4
checks and balance =0	0.88 [-0.05, 1.81]	0.5 [-1.31, 2.31]
checks and balance =0.65	0.41 [-1, 1.82]	-0.55 [-1.12, -0.02]

Note: This table writes down the coefficients shown in figure 2. The 95% confidence interval of prediction (due to the variation in all the linear coefficients) is contained in the brackets. For example, when checks and balance is 0 and leadership is 0, the prediction of board independence is 0.88.

Table 4 tests Hypothesis 2: whether more independent development banks have better long-term loans performance. ***Appropriate*** is a dummy variable indicating that whether the non-performing loan ratio is between 1% and 15%. Non-performing loan ratio in this range is desirable for the reason that NDBs of this type might be neither so commercialized that they do not invest in the necessary area nor so bad-governed that they cannot distinct bad programs from good programs. ***Long-term Share*** is the share of loans with maturity more than 5 years in this NDB. ***Max maturity*** is the maximum maturity (time of lending) of loans from this NDB. All the data is in year 2015 (the most recent year).

Combining the 3 columns, one can conclude: NDBs with higher independence implements their mandates more properly, with higher probability of achieving neither too low nor too high non-performing loan ratio. Their share of long-term loans and maximum of maturity is slightly larger than NDBs with less board independence. However, this correlation is not statistically significant.

Table 4: **The Effect of Board Independence**

Variables	Appropriate	Long-term Share	Max Maturity
	(1)	(2)	(3)
Board Independence	0.125*	0.0263	0.468
	(0.0717)	(0.0477)	(1.105)
Polity	-0.00366	0.0100	0.0171
	(0.0139)	(0.00918)	(0.188)
Stability	-0.137	0.0514	3.834***
	(0.122)	(0.0661)	(1.235)
GDP per capita	0.326	3.890	-45.09
	(6.591)	(2.525)	(103.5)
Asset	-3.541	-0.177	13.68
	(2.607)	(1.309)	(44.86)
Equity	15.98	-5.139	589.6
	(53.87)	(31.37)	(710.6)
Employee	60.48*	-10.77	364.8
	(30.07)	(13.83)	(703.1)
Found year	-2,401	-3,784*	-42,802
	(3,653)	(2,023)	(61,854)
Supervised	-0.0702	-0.0605	0.539
	(0.179)	(0.103)	(2.273)
N	43	43	49
Adj-R2	0.007	0.045	0.054

Note: Heterogeneous-variance-robust standard errors are reported in parentheses. ***p < 0.01, **p <

3.2. Robustness check

In robustness check, we change the independent and dependent variables. The results are robust and consistent with our baseline results. First, we changed the dependent variable to the Independent Board Ratio (the ratio of board members who are not affiliated with government) in each NDB. There is slightly change of significant levels and change of coefficient for that the magnitude of dependent variable has changed.

Table 5: **Robustness Check for Dependent Variable**

Variable	**Independent Board Ratio**	
	(1)	(2)
Checks and balance	1.457***	0.769*
	(0.295)	(0.440)
Variety of Experience	-0.0172	-0.118**
	(0.0364)	(0.0483)
Checks and balance # Variety of Experience		0.364**
		(0.148)
Length served	0.00729	0.00445
	(0.00890)	(0.00897)
Leader age	-0.00718	-0.00724
	(0.00563)	(0.00560)
Leader college	-0.0342	0.0251
	(0.143)	(0.151)
Polity	-0.0196*	-0.0247**
	(0.0112)	(0.0119)
Stability	0.0871	0.103*
	(0.0589)	(0.0587)
GDP per capita	1.114	1.422
	(3.310)	(3.173)
Asset	0.862	1.439
	(1.119)	(1.103)
Equity	53.18**	45.59**
	(20.67)	(20.33)
Employee	-9.111	-13.28
	(11.74)	(9.890)
Found year	556.9	-683.8
	(1,927)	(1,959)
Supervised	-0.160*	-0.206**
	(0.0877)	(0.0883)
N	50	50
Adj-R2	0.473	0.512

Note: Heterogeneous-variance-robust standard errors are reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

Second, we changed the independent variable to another measurement of checks and balance in Heisnz (2002). This measurement is also computed from the political model in in Heisnz (2002) and is however, missed in some countries for the problem of application. The result is also similar to the baseline model.

Table 6: **Robustness Check for Independent Variable**

Variable	**Board Independence**	
	(1)	(2)
Checks and balance (V)	1.934**	-1.566
	(0.914)	(1.280)
Variety of Experience	-0.266	-0.957***
	(0.189)	(0.281)
Checks and balance (V) # Variety of Experience		1.479***
		(0.493)
Length served	0.0592**	0.0475
	(0.0283)	(0.0295)
Leader age	-0.0146	-0.0272
	(0.0164)	(0.0179)
Leader college	1.441**	1.828***
	(0.539)	(0.500)
Polity	-0.0575	-0.0409
	(0.0429)	(0.0393)
Stability	0.177	0.314*
	(0.171)	(0.180)
GDP per capita	8.166	10.76
	(9.928)	(10.40)
Asset	-8.286	-10.55
	(6.935)	(6.302)
Equity	5.820	2.289
	(104.9)	(80.01)
Employee	15.33	44.63
	(53.43)	(42.64)
Found year	4,785	8,573
	(11,155)	(9,654)
Supervised	0.248	0.311
	(0.363)	(0.314)
N	39	39
Adj-R2	0.283	0.432

Note: Heterogeneous-variance-robust standard errors are reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

IV – Case Study

We implement a comparative case study of Brazilian Development Bank (BNDES) and Nigerian Industry Development Bank (NIDB) to explore (1) how political institution and leadership affect the independence of development banks (2) how independence of development banks affects their financial and social performance. Brazil and Nigeria in the post-World War II era shared many points in common. (1) Bureaucratic systems are characterized by low efficiency and corruption. (2) Political systems are fragmented and there are many veto players who limit the power of executive (under democratic regime). (3) There is strong voice for indigenization and import-substitution. (4) There are military coups. However, there are differences in the national leadership of the two nations. BNDES was founded under a strong leadership of Getulio Vargas. The interplay of strong leadership and strong checks and balance finally resulted in the bureaucratic independence of BNDES. The time of NIDB saw 40 years of repeated military coups and 7 out of 10 leaders are overthrown by coups. No leader is able to break the limit of status quo and carried out an effective reform on the corporate governance of the bank. The difference on independence is correlated with very different pattern of economic and social performance, where BNDES is highly praised for its excellent control of non-performing loans and sometimes criticized of its competition with commercial banks; NIDB is acknowledged for its contribution to industrialization and criticized of political capture and poor management of loans.

4.1. Brazilian Development Bank: strong leadership, strong checks and balance, high independence[8]

The Brazilian Development Bank (BNDES), founded in 1952 in the Fourth Republic of Brazil, under the leadership of Getulio Vargas (variety of leadership index is 4), with strong checks and balance (checks and balance index is 0.2). BNDES is the largest development bank in Brazil. Its disbursements make up around 20% of all credit in Brazil over the past decade. It has an reputation for being very independent (Geddes, 1990; Willis, 1995; Colby, 2013), according to our sample, the board independence score of BNDES is 1.58, among the top 1% of our sample of 62 development banks in the world.

Three factors account for the evolution of an independent BNDES. First, the longstanding problem of patronage provoked urgent appeal for building political-insulated and competent institutions. Second, it was the president, Vargas, with mighty political strength, who strongly supported developmentalism, influenced the establishment of BNDES and many other institutions. Third, the checks and balance constrained the president or financial minister to exert excess influence on the independence of BNDES.

[8] To avoid ambiguity in language, this "strong leadership, strong checks and balance" refer to the national institution.

Before the establishment of BNDES, Brazilian politics was characterized by low efficiency, patronage, and fragmentation. As for the lack of efficiency, Geddes (1990) describe the efficiency of Brazil bureaucratic system, especially before Vargas become the president, is “poor”, with the evidence that “At one point, Brazil could not determine how much it owed foreign lenders because copies of the loan agreements went missing”. As for patronage, the whole bureaucratic system was under the shadow of patronage. “Public employment does not in reality aim at rendering any public service, but rather at subsidizing clients (Jaguaribe 1958, 22-23; cited in Colby, 2013).” Politicians and many people in society were aware of the severe question in the government system, but there were still strong vested interests in favor of patronage and against reform. Besides, the presidential power was strictly constrained by the veto power of the legislative institution in the 1950s. Vargas, however, broke the limit of political opponents and interest groups favored for patronage. An independent development bank was created in his term.

Getulio Vargas, was one of the most influential politicians in modern Brazilian history. He served as interim president from 1930 to 1934, constitutional president from 1934 to 1937, and the absolute ruler from 1937 to 1945. After resigning in 1945, Vargas returned to power as the democratically elected president in 1951. Since 1930s, Vargas had resolved to replace the system of patronage and inefficiency with meritocracy[9]. A lot of politically-insulated and competent bureaucracies are established under his first and second term, and BNDES was an extraordinary representative among them.

The corporate governance structure of BNDE has been designed to be autonomous and insulated from politics (Colby, 2013). The development bank was founded as an Autarquia[10], and so the budget of BNDE did not need to be approved by the Congress. The two committees with the highest power in the company, were appointed by executive power instead of the legislative institution. Therefore, BNDE was insulated from the influence of Congress both in terms of funding and personnel[11].

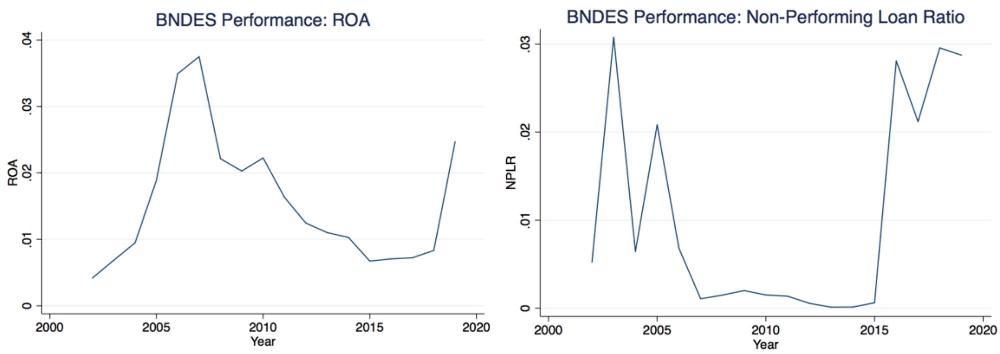
The early years of BNDES was relatively influenced by the executive power when “rules and procedures governing the relationship between the Bank and the executive were unclear” (Colby, 2013). However, the influence from president was gradually undermined by technocrats in the bank and political opponents from the opposite party. For example, the majority of programs financed by the BNDES in the early years must show their contributions to the Lafer Plan (under the name of the minister of finance, Hordcio Lafer[12]). Nevertheless, after a BNDES loan preapproved by Minister Lafer without the permission of the bank, the

[9] In his first term, he implied the civil service reform and establish DASP[9] (Departamento Administrativo do Serviço Público) to carry on the reform. During his second term, he held public exam again, and over 5,000 public employees were affected or dismissed because of their incompetence (Geddes, 1990). The reform during the time of Estado Novo (English: “new state”) was the first trial to build efficient bureaucracy during his first term. And institutions like BNDES “represented the institutional legacies of the Estado Novo in the democratic era” (Colby, 2013).
[10] Autarquia is a kind of special legal entity in Brazil. See below for its special status. Autarquias had control over financial and personnel decisions that other state agencies did not. They could develop independent funding sources, apply a distinct system for hiring and firing personnel, and use a different pay scale."(Colby, 2013)
[11] As Colby (2013) describes, “it is difficult for a senator or congressman to dictate the terms under which the BNDES receives funding.” However, BNDE was partly dependent on executive power during its early years.
[12] Hordcio Lafer, as the minister of finance, is also the supervisor of BNDES (Colby, 2013).

board of directors asked the loan to be returned because of the violation in procedure. Finally, the Minister compromised that "the advancing of Bank credit without prior consultation was a bad precedent that was not to be repeated". After this event, not a single "preapproval" case happened again, shown by a document review of the bank (Willis, 1995; Colby 2013).

While some members in the board are appointed by Vargas to exerted political influence, after one precedent after another set by the technocrats in the bank, the board become more and more independent. In 2016, according to the Second Global Survey on Development Banks, all the members in the board are independent. The independence contributes greatly to make BNDES one of the most competent and effective development bank in the world. The ROA was competitive and non-performing ratio is relatively low[13]. It is also a crucial planning agency in Brazilian bureaucracy, "the most important source of economic expertise in Brazil" (Geddes, 1990).

Figure 2: The Performance of BNDES



Source: BNDES official website. ROA means return on asset. NPLR means non-performing loan ratio.

To sum up, the story of BNDES could be described in this way: in a corrupted and inefficient institution environment,

a strong leader managed to build an independent development bank under strong checks and balance. The development bank grew more independent utilizing the political constraint between different agencies, and became a magnificent developement institution.

[13] For specific figures on these financial performance, we include them in the appendix.

4.2. Nigeria: unstable leadership, strong checks and balance , low independence[14]

The Nigerian Industry Development Bank, founded in 1964 in the First Republic of Nigeria, under the leadership of

Nnamdi Azikiwe (variety of leadership index is 3), with strong checks and balance (checks and balance index is 0.42). NIDB was the second biggest development bank in Nigeria in 2000. It was merged into Bank of Industry[15] after 2001. We only focus on the 37 years (1964-2001) when it was an independent entity. The independence of NIDB is doubted by some scholars[16]. Ezeoha (2007) notes that "there is a preponderance of government appointees in the board of the bank (NIDB), a factor that is capable of weakening its operational autonomy" and "it (NIDB) was designed to depend greatly on government for its operational finances". The development bank set up its first functional board at 1992, 28 years after her establishment[17](World Bank, 2000).

Two factors account for the evolution of a dependent NIDB. (1) The urgent demand to finance different regions and national firms (indigenization policy) limited the choice of loans and independence of the bank. (2) The lack of strong leadership was associated with no successful reforms on the corporate governance.

NIDB was built to finance for the first "real" national plan in Nigeria. After World War II and the emergence of Keynesian theory, the idea of planning was popular around the world. Meanwhile, with a vast area and increasing population, the Nigerian economy became more and more complex, where "conscious planning continues to play an important role" (Akintola-Arikawe, 1983). The British administration initiated several plans[18] and regional governments "have their diverse development program activities during the medium-term (four- or five-year) development plan periods[19]". However, there was no real "national plan" which dedicated to the balance of regional equity and national unity.

The south and north part of Nigerian was very different in terms of location and natural resource endowment. The south part had many good ports and was therefore more involved in the international economy, exposed to Western religion, lifestyle and education, ruled direct by British administration. The north part was inland and traditional agriculture was dominant form in the northern economy, ruled indirectly by British colonials. The vast land of Nigeria was fragmented by different tribes since ancient time and became a state

[14] To avoid ambiguity in language, this "unstable leadership, strong checks and balance" refer to the national institution in the time when NIDB was established. The checks and balance is strong in the First Republic of Nigeria while declined after the civil war and military coups.

[15] The structure and mandate of Bank of Industry and Nigerian Industry Development Bank is very different, therefore, is beyond our case study.

[16] For our sample did not include the bank, our score of independence did not apply to this bank.

[17] According to the World Bank, the whole Nigerian development financial sector is faced with the problem of "lack of quality internal direction given an absence of qualified Boards of Directors" and "politicization of lending associated with government ownership".

[18] Ten-year Plan of Development and Welfare for Nigeria, 1946; Economic Development Plan, 1955-1960.

[19] In 1949, Nigerian Local Development Board (NLDB), which is founded for financing 1945 Ten-Year Development Plan, was stratified into four to accommodate four regions in the country (Ezeoha, 2007).

only after the amalgamation of the Northern and Southern parts by the British in 1914. In the way to integrate different regions into one nation, an urgent goal was to build a real national plan which could balance the development of different regions. A development bank was needed to finance the plan. NIDB was founded in this background, "explicitly designed to give Nigerians a good measure of control over national economic affairs" (Government of the Federal Republic of Nigeria, 1962, p. 3; cited in Ezeoha, 2007).

The Nigerian economy was characterized with high dependency on foreign capitals (Ogbuabu, 1983). According to this situation, the mandate of the bank was set to finance medium and large firms with connections to the Ten Year National Plan. This strategy was utterly criticized because that means benefiting mostly foreign firms. The mandates of bank were forced to be changed under the pressure of public sentiment.

However, the indigenization policy, aiming to transfer most resources to government and domestic firms "at the expense of foreign firms" (Ezeoha, 2007), greatly limited the choice of the bank and undermined its independence. In July 1970, the Nigerian government issued a directive to command the bank that no less than 80% of its total loans should be disbursed to domestic enterprises (Central Bank of Nigeria, 1970). The reform tried to make NIDB finance more domestic firms while many domestic firms were "unable to meet the bank's lending conditions and terms" (Ezeoha, 2007). The sanction disbursement rate was as low as 27.9% and 20.9% in 1973 and 1974 (NIDB Annual Reports, 1973, 1974; cited in Ezeoha, 2007). According to the internal report of the bank, the loans granted to domestic firms and the Nigerian-controlled client companies "portrayed bad management and poor-response to their debt-servicing obligations" (NIDB, 1972, p.6; cited in Ezeoha, 2007). Many of the projects financed under the domestic mandate could not survive the test of time. The serious non-performing loan problem made the bank too dependent on the transfer of government and the World Bank, ultimately undermining its professional independence.

Comparing the Nigerian political environment and leaders with the Brazilian counterpart, the two development banks are built in similar fragmented and constrained political system, however, leadership differed a lot between the two countries in that era. Bank, by its nature, provides a secret and safe way to subsidize political supporters[20]; therefore, development banks are important tools in the political arena (Rajan and Zingales, 2003; Carvalho, 2014). Only great national leader will not be limited by partisanship and dare to provide development bank with technocratic autonomy. Nigeria, however, lacked great leaders serving long terms in the time of NIDB.

Before the independence, there was widespread concerns that Nigeria lacked a great leader to unify the whole federation. Smythe (1958) stated that Nigeria was fractionalized[21]

[20] There are many reasons. (1) The provision of loan is naturally accompanied by asymmetric information. Therefore, the provision of loan to political supporters is much more secret than providing subsidies. (2) The performance of loan will only be revealed after the maturity. Therefore, political opponents can not speak out against the ruling group of the poor performance of their development bank in the short term.

[21] "In the East there is clamor from some sections for the formation of separate states... over the West the Midwest state problem is stirring up trouble...And in the North the leadership speaks out against any attempt to substract part of the southern fringe of its territory for the formation of a Middle Belt State" (Smythe, 1958).

and there was no national leadership. He called for a person “who can attract a national following, one in whom Nigerian of every description can trust and believe…”. Nnamdi Akiziwe was the only one who gained national support (he was the chief inspirer of Nigerian nationalism) and international fame (Smythe, 1958). Nevertheless, he did not take effective measures to contain corruption, but rather rewarded his supporters who was corrupted with important positions (Ogbeidi, 2012). The First Republic Era, when the NIDB was founded, was criticized by scholars for its corruption[22]. In the 21st century, there were still criticism[23] for lack of real national leadership in Nigeria for the whole 40 years after independence, reflecting that no great leader ever showed in the time of NIDB (1964-2001).

Criticism about leaders might be subjective. Using a more neutral approach, if we only focused on the reason for leaving office of all Nigerian presidents, it was obvious that none of the leaders’ status were stable. 7 out of the 10 leaders[24] were assassinated or dismissed in a coup. Nobody in the 10 leaders ruled over 9 years. Therefore, even there had been some leader “of good character” (Ogbeidi, 2012) or “of personal example” (Achebe, 1984), the instable political environment would make him seize the power and unable to increase the independence of development bank which might undermine his control of economic power.

The lack of independence and political interference is correlated with the bad debt problem of NIDB[25]. For example, “55% of the present borrowers in its December 1998 portfolio were losing money or being liquidated”. From 1998 to 2000, the bank “made no new approvals or disbursements” and was “focusing almost entirely on collecting old loans” (The World Bank, 2000).

To sum up, established in a similar political environment as BNDES, the lack of national leadership led to essential measures to protect NIDB from the intervention of indigenization movement and other political pressures, finally undermining its expertise in long-term finance.

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[22] “The First Republic under the leadership of Sir Abubakar Tafawa Balewa, the Prime Minister, and Nnamdi Azikwe, the President, was marked by widespread corruption” (Ogbeidi, 2012). “In fact, it appeared there were no men of good character in the political leadership of the First Republic” (Ogbeidi, 2012).

[23] “Nigeria’s real disease is lack of leadership; I disagree with all those who say our major national disease is financial corruption; rather, the real disease has been the absence of true leadership” (Ogbeidi, 2012). “The fact is obvious that there really was never a golden age of great leadership in the history of Nigeria. The lack of competent, responsible leaders with integrity, vision, high moral values has been the bane of the country” (Ogbeidi, 2012). “The trouble with Nigeria, is simply and squarely a failure of leadership. There is nothing basically wrong with the Nigerian character. There is nothing wrong with the Nigerian land, climate, water, air, or anything else. The Nigerian problem is the unwillingness or inability of its leaders to rise to their responsibility, to the challenge of personal example, which is the hallmark of true leadership” (Achebe, 1984).

[24] We include in the Appendix “the reason for leaving office” of the 10 presidents in the time of NIDB.

[25] The performance of the bank, at least in terms of non-performing ratio, had fallen on hard-times since the reform . However, there is voice indicating that the NIDB is performing well in terms of its social contribution. “As of December 1998, it (NIDB) had mobilized $540 million from multilateral and regional agencies and invested N5.9 billion, of which 3% was in equity, in 987 projects involving N20.3 billion and generating an estimated 320,000 jobs” (The World Bank, 2000).

Conclusions

National development banks are important in terms of post-war reconstruction, industrialization, and financing for areas which is both important and difficult to raise money. The independence of NDBs varies greatly around the world and this variation is unexplored in the literature. In this paper, we draw on the literature on central bank independence and leadership to argue that independent NDBs are more likely to be established in a country where both checks and balance and national leadership are strong. To test this argument, we compute board independence index using Principle Component Analysis method, and we regress an interaction term of national leadership (with the proxy of variety of experience of leaders) and checks and balance on the independence of NDBs and find a significant positive correlation. To justify that independence is desirable for a development bank, we find that independence of NDBs are associated with a non-performing ratio which is neither too low nor too high. These results are robust after changing the measurement of dependent and core independent variable. Our case studies are consistent with this argument. The case of Brazilian Development Bank (BNDES) shows how strong leadership and checks and balance interact to produce an independent and professional development bank, despite the corrupted national institution; the case of Nigeria Industrial Development Bank (NIDB) show how fragmented political system and lack of strong leadership lead to a politically-captured development bank.

Our study shed new light on the old debate of “institution versus leadership” in the explanation of policy making. Strong checks and balance or strong leadership alone may not be a desirable thing, at least in terms of their influence on bureaucratic independence of newly-established institutions. A mature regime should be able to both select qualified leaders and exert enough constraint on the man in power.

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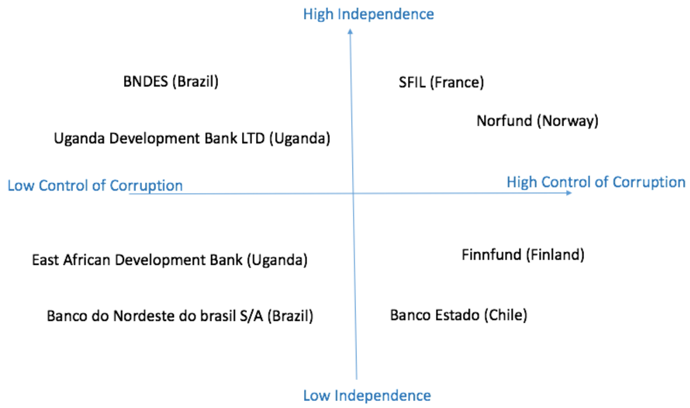
Appendix

Figure A.1: Non-significant relationship between national institution and development bank independence



Note: Independence is generated from Principle Component Analysis method using the corporate governance variable from the World Bank Second Global Survey on Development Banks 2016. Control of Corruption are drawn from World Bank Database for Worldwide Governance Indicators 2016.

Table A.1: Non-significant Relationship Between National Institution and Development Bank Independence

	Board Independence
	(1)
Control of Corruption	0.123
	(0.291)
Polity	0.0335
	(0.0259)
Stability	0.316
	(0.239)
GDP per capita	-8.599
	(9.915)
Asset	2.785
	(3.117)
Equity	87.81
	(78.68)
Employee	-120.4*
	(65.72)
Found year	3,731
	(5,384)
Superivised	0.113
	(0.410)
N	56
Adj-R2	0.097

Note: Control of Corruption are drawn from World Bank Database for Worldwide Governance Indicators 2016.

Heterogenous-variance-robust standard errors are reported in parentheses. ***p < 0.01, **p < 0.05, *p < 0.1.

Table A.2: Descriptive Statistics of Main Variables

Variable	mean	p50	sd	min	max	N
Board Independence	0	0.0850	1.171	-2.520	1.585	62
Variety of Experience	2.101	2	1.24	0	4	55
Checks and balance	0.259	0.329	0.216	0	0.65	61
College	0.789	1	0.411	0	1	57
Leader served	7.123	4	10.226	1	69	57
Long-term Share	0.321	0.300	0.226	0	0.938	46
Max maturity	17.47	16.50	8.369	5	41	52
Asset	14000	2159	40000	4.700	280000	59
Equity	1303	406	2197	0.0300	9460	59
Employee	1319	337	2608	3	14000	61
Founding Year	1982	1990	25.66	1896	2016	62
Supervised	0.733	1	0.446	0	1	60
Stability	-0.126	-0.0970	0.870	-2.337	1.306	62
GDP per capita	14180	9278	17958	747.2	80450	61

Note: The units of Asset, Equity are million US dollars. The unit of GDP per capita is US dollar.

Table A.3: The Definition of Component Variables of Board Independence

Survey questions		
How many board members are independent (not affiliated with the Government or Government agencies)	*Independent Ratio*	A continuous variable ranging from 0 to 1, computed by the ratio of independent members in the whole board
Are the board members appointed for fixed terms (i.e. certain number of years)? (Yes/No)	*Fixed*	A dummy variable, taking the value of 1 if the answer is "Yes"
Are the terms of the Board Members staggered, that is, they do not expire at same time? (Yes/No)	*Staggered*	A dummy variable, taking the value of 1 if the answer is "Yes"

Note: We choose the 3 variables based on those rationales. (1) The larger ratio of independent board members, the more influence independent members could exert. (2) With fixed terms, board members could direct the company more independently. (3) With staggered terms, the possibility of board members being removed simultaneously by the government will decrease.

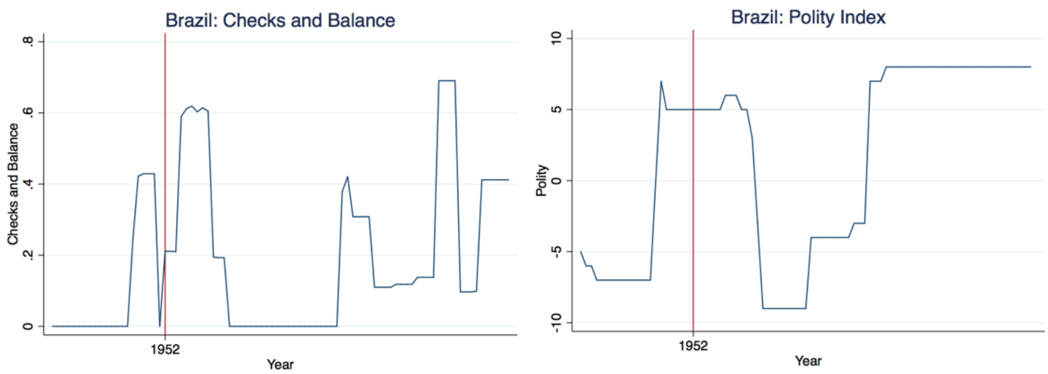
Table A.4: The Definition of Variables Composing the "Variety of Experience Index of Leaders"

Variable	Meaning
Vice President Experience	whether the executive served as the vice president (or vice prime minister if the prime minister is the chief executive)
Minister Experience	whether the executive served as minister or head of a bureaucratic agency
Governor Experience	whether the executive served as chief executive of local, provincial, or state government (i.e. jurisdiction above the county level)
Legislator Experience	whether the executive served as a lawmaker in the lower or upper chamber
Private Sector Experience	whether the executive served in the private sector

Table A.5: Data Source of Main Variables

Variable	Source
Board Independence	World Bank Second Global Survey on Development Banks 2016
Variety of experience	(Shi et al., 2020)
Checks and balance	Checks and balance Index Dataset, from Henisz (2002)
Polity	Polity IV Project: Political Regime Characteristics and Transitions, 1800-2013
Stablity	World Bank Database for Worldwide Governance Indicators 2016
Leader college	(Shi et al., 2020)
Leader served	(Shi et al., 2020)
Leader age	(Shi et al., 2020)
GDP per capita	World Bank national accounts data
Supervised	World Bank Second Global Survey on Development Banks 2016
Asset	World Bank Second Global Survey on Development Banks 2016
Equity	World Bank Second Global Survey on Development Banks 2016
Employee	World Bank Second Global Survey on Development Banks 2016
Founding year	World Bank Second Global Survey on Development Banks 2016

Figure A.2: Basic Political Environment in the Founding Year of BNDES



Note: Checks and balance index is from Checks and balance Index Dataset, invented by Henisz (2002), and is a continous variable ranging from 0 to 1, measuring the constraints faced by executives when making policy changes. Polity index is from Polity IV Project: Political Regime Characteristics and Transitions, 1800-2013, and is a continous variable ranging from -10 to 10, with -10 meaning close dictatorship and 10 meaning mature democracy. As shown in the figures, the checks and balance index is high in the Fourth Brazilian Republic (1946-1964).

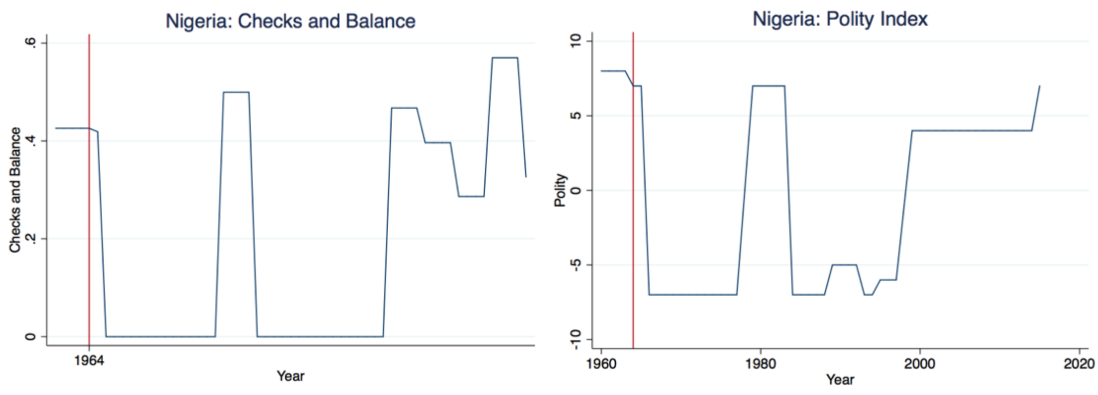
Table A.6: **Contribution of BNDES to Brazilian National Priorities**

Program	Industry	Year
reformatting the main cargo and passenger lines between Rio de Janeiro-São Paulo-Belo Horizonte	Transportation	1953
expanding the Galeão International Airport	Transportation	1956
creating the Federal Railway Network (RFFSA), comprising a total of 18 regional railways	Transportation	1957
creating Pan-Americana Têxtil, Papel Simão and Companhia Suzano de Papel e Celulose	Paper and pulp production	1967
supporting to open Siderurgia Brasileira S.A. (Siderbrás), supporting projects linked to the National Development Plan II	Diversified	1970s
construction of the Tucuruí Plant in the state of Pará, focused on meeting demand for electric energy in the North Region	Energy	1970s
managing National Privatization Program (PND)	Diversified	1990s
pioneering financing line for foreign acquisition of Embraer's ERJ-145	Transportation and farming machinery	1997
support for national cinema productions and projects	Culture	1990s
support micro, small and medium-sized companies (MSMEs), accounting for 31.8% percent of its disbursements	Diversified	

Note: This table shows the national priority of Brazil and the role of BNDES. Source: BNDES official website[26]

[26]https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Hotsites/Annual_Report_2012/Capitulos/2_Gerando_valor_para_a_sociedade_estrategia_e_visao_de_futuro/2_1_Gerando_valor_para_a_sociedade/2_1_3_conhecimento_e_experiencia_institucional.html

Figure A.3: Basic Political Environment in the Founding Year of NIDB



Note: Checks and balance index is from Checks and balance Index Dataset, invented by Henisz (2002), and is a continuous variable ranging from 0 to 1, measuring the constraints faced by executives when making policy changes. Polity index is from Polity IV Project: Political Regime Characteristics and Transitions, 1800-2013, and is a continuous variable ranging from -10 to 10, with -10 meaning close dictatorship and 10 meaning mature democracy. As shown in the figures, the checks and balance index is high in the First Nigerian Republic (1963-1966).

Table A.7: Reasons for Leaving Office of Nigerian Presidents in the Era of NIDB

Time	Name	Ethnicity	Government	Reason of leaving office	Comments in (Ogbeidi, 2012)
1960.11-1966.1	Nnamdi Azikiwe	Igbo	First Republic	Dismissed in a coup	Corrupted
1966.1-1966.7	Johnson Aguiyi-Ironsi	Igbo	Military	Assassinated in a coup	Short-lived
1966.7-1975.7	Yakubu Gowon	Tiv	Military	Dismissed in a coup	Corrupted
1975.7-1976.2	Murtala Mohammed	Hausa-Fulani	Military	Assassinated in a coup	Declaring his assets; Short-lived
1976.2-1979.10	Olusegun Obasanjo	Yoruba	Military	Resign voluntarily	Corrupted
1979.10-1983.12	Shehu Shagari	Hausa-Fulani	Second Republic	Dismissed in a coup	Unable to limit corruption; Corrupted
1983.12-1985.8	Muhammedu Buhari	Hausa-Fulani	Military	Dismissed in a coup	Controling corrpution; No respect for human rights
1985.8-1993.8	Ibrahim Babangida	Gwari	Military	Resign	Corrupted
1993.8-1993.11	Ernest Shonekan	Yoruba	Third Republic	Dismissed in a coup	Corrupted
1993.11-1998.6	Sani Abacha	Kanur	Military	Death	Corrupted

Note: This table shows the reasons of leaving office for presidents in Nigeria from 1964 to 1998.

Source: Chen, J. (2017)

Agence française
de développement
5, rue Roland Barthes
75012 Paris l France
www.afd.fr

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