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Revisiting the Stabilization Role of Public Banks:
Public Debt Matters

by H. Elif Ture

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I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

Fiscal Affairs Department

Revisiting the Stabilization Role of Public Banks: Public Debt Matters

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Abstract

This paper revisits the stabilization role of public banks and analyzes whether weak public finances may hinder this role. During the global financial crisis (GFC), public banks were widely used to counter the private credit crunch and prop up the economy. Using cross-country bank-level data for 125 advanced and developing economies for 1999–2018, the paper finds public bank lending to be less procyclical than private bank lending on average, particularly during busts. A key result, however, is that in developing economies with high public debt levels, public bank lending has been more procyclical, particularly outside of the GFC period. This finding suggests high public debt can limit the stabilization role of public banks during domestic busts, likely reflecting higher financing costs public banks face and lower subsidies they receive in economies with tighter budget constraints.

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Keywords: Public banks, countercyclical lending, economic stabilization, high public debt

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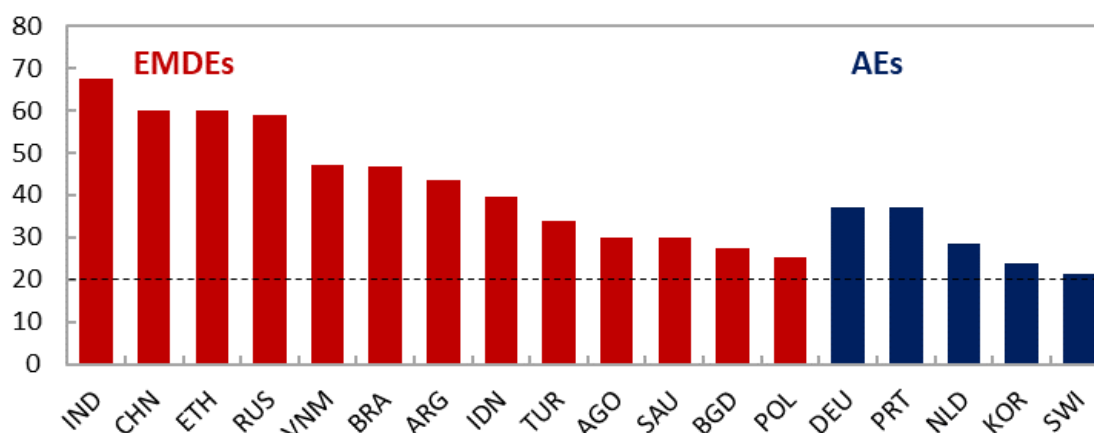
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I. INTRODUCTION

Public banks have been enjoying greater interest in recent years, thanks in part to their potential countercyclical role in times of crisis.² They were widely used in both advanced and developing economies to counter the private credit crunch and prop up the economy during the global financial crisis of 2008–09 (GFC).³ They are also widely used to step up credit during the COVID-19 crisis (Medas and Ture 2020). Studies have shown public bank lending to be less procyclical than private bank lending in developing economies, and even counter-cyclical in developed economies.⁴ This paper revisits the stabilization role of public banks and analyzes whether weak public finances may hinder this role, particularly in developing economies, where public banks typically hold significant market shares (Figure 1).

Figure 1. Public Banks' Share of Banking System Assets, 2016 (in percent)



Sources: The World Bank, Bank Regulation and Supervision Survey (2019); The Central Bank of Ethiopia; and CEIC (China).

² See, for instance, “National development banks are back in vogue” (The Economist, March 2019) and “National Development Banks: What they are, why they matter” (World Economic Forum, May 2019).

³ Several countries injected capital into their public banks during the GFC to rollover or expand credit to small businesses and exporters (Canada, Chile, Korea, Tunisia), large firms (Brazil), and the corporate sector (Poland). Others raised the credit ceilings of their public banks (Finland, Korea) or set up new credit facilities (India, Tunisia) and special guarantee programs (Mexico) for public banks to support key markets and firms (World Bank, 2012).

⁴ See Cull and others (2017) for a comprehensive review of the literature. The bulk of the literature focuses on the period leading up to the GFC using cross-country bank-level data (Micco and Panizza 2006; Calderon 2012; Brei and Schclarek 2013; Bertay and others 2015; Duprey 2015) or country case studies (Foos 2009 for Germany; Jia 2009 for China; Fungacova and others 2013 for Russia; Önder and Özyıldırım 2013 for Turkey; Bonomo and others 2015 for Brazil), and on the GFC period particularly (Leony and Romeu 2011; Cull and Martinez-Peria 2013; Coleman and Feler 2015; De Haas and others 2015; Chen and others 2016; Choi and others 2016; Allen and others 2017) or the financial crises in Asia and Latin America in the 1990s (Hawkins and Mihaljek 2001).

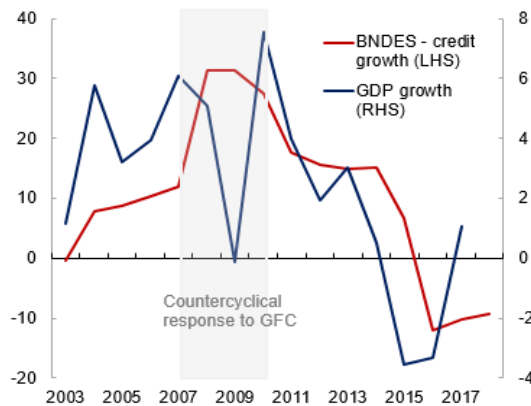
Note: Public banks are those with more than 50 percent of equity owned by the government.
EMDEs = emerging market and developing economies, AEs = advanced economies.

Using cross-country bank-level data for 125 advanced and developing economies between 1999 and 2018 and panel fixed effects regressions, the paper finds (1) private bank lending to be procyclical in developing economies, and procyclical during booms but countercyclical during busts in advanced economies; (2) public bank lending to be less procyclical than private bank lending on average, particularly during busts and in economies with low public debt, but not in developing economies with high public debt levels and outside of the GFC period. This likely reflects higher financing costs public banks face and lower government subsidies they receive during “domestic” busts in developing economies with tighter budget constraints. High debt developing economies are likely to face higher external borrowing costs, especially during “domestic” busts”, which will also increase the borrowing costs of their public banks. In this case, highly indebted governments may not be able to fund public banks and may even need to fund themselves through public banks, for instance through increased dividends. “Global” busts, like the GFC, are exceptional because sovereign and bank borrowing costs likely remain favorable in developing economies, given low global interest rates entailing loose monetary policy in advanced economies.

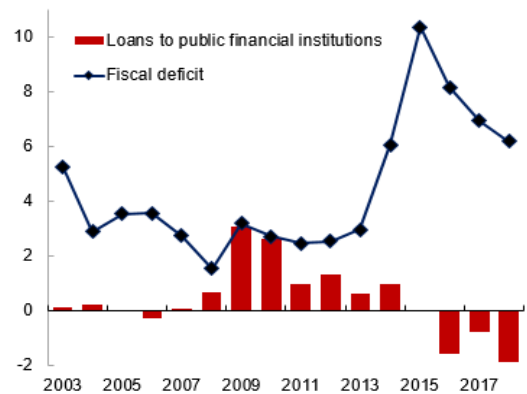
In the case of Brazil, for instance, which is identified as a developing economy with high public debt in the sample (that is, public debt is above the 75th percentile of the sample distribution, which roughly corresponds to 60 percent of GDP for developing economies), lending by the Brazilian development bank, BNDES, surged during the GFC and for a few years during the post-crisis recovery owing to a large capital injection by the state, but declined sharply and procyclically during the domestic recession of 2014–16, once soaring public deficits and debt closed the door on policy lending to public banks (Figure 2).

Figure 2: BNDES Credit and Brazil’s Public Finances

(In percent)



(In percent of GDP)



Sources: IMF World Economic Outlook database; and BNDES.

The findings suggest a rather limited role for public banks to help stabilize the economy, particularly when public debt is high and given concerns about the quality of such rapid

credit growth. In the case of BNDES, for instance, studies show the bulk of the subsidized credit during the GFC benefitted large firms without credit constraints, likely crowding out private credit (World Bank 2012), and often benefited political allies during the strong post-crisis recovery (Lazzarini and others 2011). And in the case of India, government guarantees allowed public banks—even vulnerable ones—to expand credit during the GFC, but led to a subsequent deterioration in the loan quality of these vulnerable public banks, increasing the overall financial sector fragility (Acharya and Kulkarni 2019).

In sum, while public banks—if financially sound and well resourced—could be a part of a toolkit for macroeconomic stabilization, particularly in economies with low public debt, their potential stabilization benefits should be weighed against their potential economic and fiscal costs, including from the misallocation of credit and the materialization of contingent liabilities, for instance from extensive government guarantees.

The remainder of the paper describes the data sources and definitions (Section II), presents the empirical methodology, results, and robustness checks (Section III), and concludes with policy implications (Section IV).

II. DATA SOURCES AND DEFINITIONS

The paper mainly relies on cross-country bank-level data from Fitch Connect, which provides comprehensive information on bank balance sheets and income statements for the past 30+ years. The empirical analysis focuses on 1999–2018, when data coverage is better. Fitch Connect also provides data on (1) the sector specialization of banks, which allows for differentiating between commercial and development banks, and excluding from the analysis banks with special mandates and operations (such as central banks; islamic banks; supranational banks; and asset management, securities, and insurance firms) and (2) the shareholders of banks, which allows for differentiating between public and private banks.⁵

Public banks are identified as those reported as “government sponsored enterprises” or “public entities” in the dataset, or those with state ownership share of over 25 percent.⁶ “Local and regional governments” providing banking services are excluded from the analysis as they are part of the general government, not state-owned banks or enterprises. National development banks, the majority of which do not have ownership data, are identified as

⁵ A caveat is that Fitch Connect provides shareholder data only for the latest year, which prevents identification of the changes in bank ownership over time, for instance from nationalizations or privatizations.

⁶ A public bank is often defined in the literature as (1) more than 20–25 percent government owned (La Porta and others 2002; Dinc 2005; Cornett and others 2009; Frigerio and Vandone 2018), which is seen as sufficient to control a company, or ii) more than 50 percent (majority) government owned (Brei and Schclarek 2013; Cull and Martinez-Peria 2013; Bertay and others 2015). The former assumption allows for sufficient data to separately analyze the behavior of public commercial and development banks in advanced versus developing economies and during booms versus busts. Assuming majority state ownership does not change the main findings qualitatively (see robustness checks).

public banks,⁷ as governments often have substantial influence on their operations and funding (for example, in the Philippines, see Aldaba 2011).

The sample is restricted to banks with total assets over US\$5 billion to avoid skewing the results by the large number of small banks in the dataset. To eliminate the duplicate entries in the dataset, only the latest data from the original financial statements covering a 12-month period and reported at the end of the year are used. Nonconsolidated data are used when available, and consolidated data otherwise. Banks without at least two years of consecutive data are dropped from the analysis.⁸ After cleaning the data and eliminating the outliers, the sample contains more than 4,000 (3,000) banks from 45 advanced and 80 (75) developing economies for 1999–2018 (2010–18), of which around 7 (8.5) percent are public.⁹

Table 1 reports descriptive statistics for the banks in our sample. Accordingly, public banks tend to have (1) more assets than private banks, especially in advanced economies; (2) more net loans as a share of assets, particularly in developing economies, and thus less liquid assets, (3) higher nonperforming loan ratios, particularly in developing economies; (4) lower capitalization rates; (5) lower deposit funding ratios only in advanced economies, likely reflecting the large number of public employees using public banking services in developing economies; and (6) lower profitability, measured by the returns on average assets.

Table 1: Descriptive Statistics of the Sample (averages over time for the median bank)

Financial Indicators	1999–2018								2010–2018							
	Advanced Economies				Developing Economies				Advanced Economies				Developing Economies			
	Private		Public		Private		Public		Private		Public		Private		Public	
	Count	Median	Count	Median	Count	Median	Count	Median	Count	Median	Count	Median	Count	Median	Count	Median
Asset Size (billions of US\$)																
Total Assets	2,930	11.3	146	31.8	823	10.1	139	13.3	2,122	12.8	133	37.0	730	11.3	134	16.2
Loan Size and Quality (%)																
Net Loans / Total Assets	2,847	62.9	146	65.0	816	52.0	137	57.9	2,045	63.1	132	65.6	724	53.3	133	60.4
Net Loan Growth	2,751	8.7	144	7.2	763	15.3	134	15.0	1,967	3.8	129	3.8	673	11.5	130	12.2
Nonperforming / Gross Loans	2,276	1.8	106	2.0	737	3.1	126	6.2	1,732	2.2	91	1.8	672	2.7	122	5.0
Liquidity (%)																
Liquid / Total Assets	2,922	11.0	146	14.1	823	18.7	139	14.2	2,117	10.7	133	14.2	730	17.2	134	14.0
Capitalization (%)																
Equity / Total Assets	2,930	7.1	146	5.6	823	9.2	139	8.8	2,122	7.7	133	6.3	730	9.4	134	8.5
Funding (%)																
Deposits / Total Liabilities	2,771	84.3	122	61.5	813	84.9	126	83.3	1,995	89.7	112	61.1	722	85.1	122	84.0
Profitability (%)																
Return on Average Assets	2,901	0.5	145	0.3	817	1.1	139	1.0	2,102	0.5	132	0.3	725	1.1	134	0.9

Sources: Fitch Connect; and author's estimates.

⁷ Relaxing this assumption does not change the main findings qualitatively (see robustness checks).

⁸ Dropping the banks without at least eight years of consecutive data between 2005 and 2012 to address the survival bias, that is to make sure each bank was operational and had at least three years of data both before and after the GFC, does not change the main findings qualitatively (see robustness checks).

⁹ Data cleaning includes eliminating banks with total equity or total employees less than zero, limiting relevant financial ratios (for example, deposits over total liabilities) to range between 0% and 100%, financial returns (for example, return on average assets) to range between -100% and 100%, and remaining financial indicators (for example, growth of net loans) to remain within the 1st and 99th percentiles of their distribution.

All country-level macro-fiscal data (GDP growth, public debt and so on) come from the October 2019 vintage of the IMF's World Economic Outlook database, and the financial development index comes from the IMF's Financial Development database.¹⁰

III. METHODOLOGY AND RESULTS

A panel fixed effects model is used to analyze the cyclical behavior of bank lending.¹¹ This wipes out bank level fixed effects in the data, along with country level fixed effects (such as the level of development or the quality of institutions) since the host country of a bank is also fixed over time. Equation (1) presents the baseline empirical model used to estimate the impact of bank ownership on bank lending over the cycle, in economies with high versus low public debt levels:

$$(1) \Delta Net Loans_{i,t,j} = Cycle_{i,t} + Public Bank_{i,j} * Cycle_{i,t} + High Public Debt_{i,t} + Public Bank_{i,j} * Cycle_{i,t} * High Public Debt_{i,t} + Financial Development_{i,t-1} + \Delta Net Loans_{i,t-1,j} + Bank Controls_{i,t-1,j} + Bank Fixed Effects_j + Year Fixed Effects_t + u_{i,t,j}$$

Accordingly, the growth rate of net loans in current US dollars in country i , year t , and bank j is set as the dependent variable, and the growth rate of GDP per capita relative to its average growth rate in the past 20 years is set as the baseline cyclical indicator. The latter is interacted with a public bank dummy, and a dummy for high public debt identifying economies with general government debt levels above the 75th percentile of the sample distribution, which roughly corresponds to a 100 percent of GDP for advanced economies and 60 percent of GDP for developing economies. The model controls for the lagged values of the dependent variable (for persistency), the level of financial development, and various bank characteristics such as bank size (log of total assets), capitalization (equity over assets), liquidity (liquid over total assets), profitability (return on average assets), funding (deposits over liabilities), loan size (net loans over assets), and loan quality (nonperforming loans over gross loans). Year fixed effects are also included. Standard errors are robustified to correct for potential autocorrelation and heteroskedasticity.

The analysis finds that lending by public banks has been less procyclical than private bank lending on average, but not in developing economies with high public debt levels and outside of the GFC period. Table 2 presents the baseline estimation results from model (1).

Accordingly:

- When growth rises relative to its trend, private banks increase lending procyclically in developing economies (coefficients for “cycle” are positive and significant for developing economies in columns (1) to (12)), while keeping lending acyclical in

¹⁰ The [financial development index](#) developed by IMF staff summarizes how developed financial institutions and markets are in terms of their size, liquidity, access, and cost efficiency.

¹¹ The Hausman test specifies that a fixed effects model is appropriate in this case.

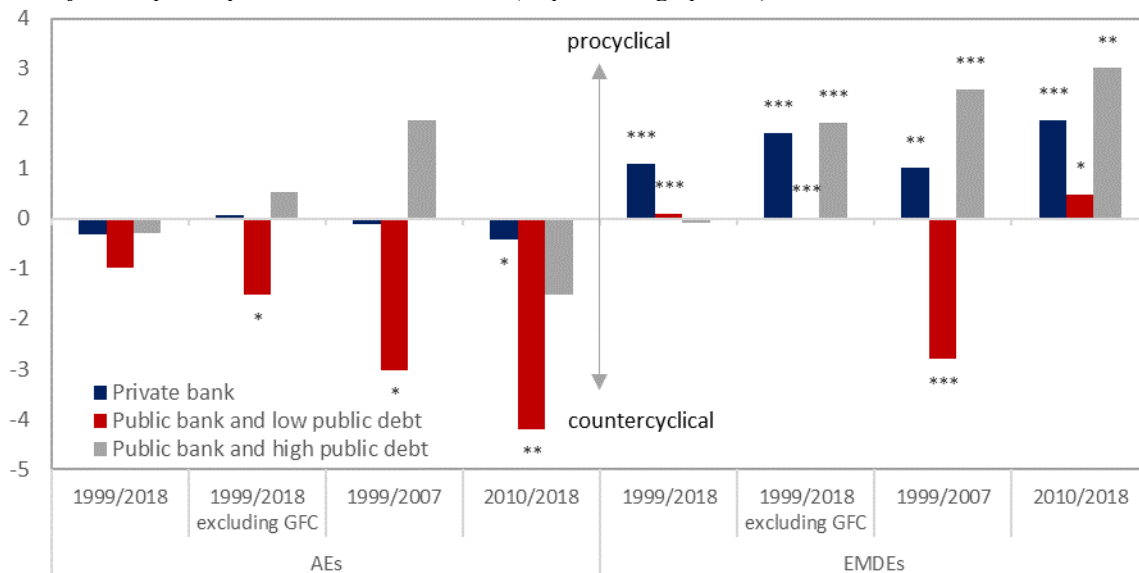
advanced economies (coefficients for “cycle” are smaller, mostly negative, and insignificant for advanced economies in columns (1) to (12)).

- In contrast, public banks increase lending significantly less than private banks do, particularly in developing economies (coefficients for “public bank * cycle” are negative in columns (1) to (4)). But averages mask heterogeneity.
- While lending by public banks is less procyclical than private bank lending in economies with low public debt levels (coefficients for “public bank * cycle” are negative in columns (5) to (12)), this is not the case for lending by public banks in economies with high public debt levels, particularly in developing economies and outside of the GFC period (coefficients for “public bank * cycle * high public debt” are positive in columns (7) to (12)).

In the decade after the GFC (in columns (11) and (12)), for instance, the growth rate of private bank net lending increases by 2 (-0.4) percentage points in developing (advanced) economies in response to a 1 percentage point increase in the growth rate of GDP per capita relative to its trend. Public banks’ net lending, on the other hand, grows 1.5 (3.8) percentage points less in developing (advanced) economies with low public debt levels in this period, resulting in a less procyclical (or countercyclical) lending by public banks in developing (advanced) economies with low public debt levels. When public debt is high, however, public bank net lending grows 2.5 (2.7) percentage points more in developing (advanced) economies compared to when public debt is low, pointing to a more procyclical public bank lending behavior in economies with high public debt, although the difference is statistically significant only for developing economies. Figure 3 summarizes these findings.

Figure 3. Cyclical Behavior of Bank Lending

Change in the growth rate of net loans in response to a 1 percentage point increase in the growth rate of GDP per capita relative to its trend (in percentage points)



Sources: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: ***, **, and * indicate statistical difference of blue bars from zero, and red/gray bars from the preceding blue/red bars at 1, 5, and 10 percent significance level, respectively. AEs = advanced economies, EMDEs = emerging market and developing economies.

The control variables in model (1) also affect bank lending behavior in expected directions, supporting the validity of the model specification. Net lending tends to grow faster in developing economies with higher levels of financial development and in banks with (1) lower loan size in the previous period, reflecting a base effect; (2) lower size (proxied by total assets), likely reflecting smaller banks taking on higher risk and expanding loans more aggressively; (3) higher capitalization rate, particularly in advanced economies, lower nonperforming loan ratios, and higher profitability, particularly in developing economies, reflecting financial health, (4) higher deposit funding ratios in developing economies, with banks in advanced economies likely having greater access to other funding sources; and (5) lower liquidity ratios in developing economies, with these banks expanding credit rather than holding more liquid assets.

As a robustness check, Table 3 presents the estimation results using the growth rate of net loans in constant local currency terms as the dependent variable (instead of current US dollar terms). The main results for public bank lending behavior remain qualitatively unchanged. While lending by public banks in economies with low public debt are less procyclical than private bank lending (coefficients for “public bank * cycle” are negative in columns (5) to (12)), this is not the case for lending by public banks in economies with high public debt, particularly in developing economies and before the GFC (coefficients for “public bank * cycle * high public debt” are positive in columns (7) to (12)). In the decade after the GFC, however, the coefficients for developing economies (in column (12)) remain no longer statistically significant.

Various other robustness checks do not change the main results materially (see Tables 4-7). These include: (1) dropping banks without eight years of consecutive data between 2005 and 2012 to make sure each bank was operational and had at least three years of data both before and after the GFC (to address the survival bias that the results are driven by weakest banks disappearing after the GFC); (2) relaxing the assumption that development banks are public banks; (3) identifying public banks as majority (that is more than 50 percent) government owned; (4) using the GDP per capita growth rate as a cyclical indicator (instead of the gap).

Table 8 presents the estimation results differentiating between booms and busts over the cycle, identified as positive versus negative GDP per capita growth relative to its trend. Accordingly:

- Private bank lending is procyclical during both booms and busts in developing economies (coefficients for “cycle+/-” are mostly positive and significant for developing economies in columns (1) to (12)) and only during booms in advanced economies (coefficients for “cycle+” are mostly positive and significant for advanced

economies in columns (1) to (12)), while it is countercyclical during busts in the latter (coefficients for “cycle-” are negative and significant for advanced economies in columns (1) to (12)).

- Lending by public banks, on the other hand, is less procyclical on average, particularly during busts (coefficients for “public bank * cycle+/-” are negative in columns (1) to (4)), and also in economies with low public debt levels (in columns (5) to (12)).
- In economies with high public debt, however, public bank lending is procyclical during booms (coefficients for “public bank * cycle+ * high public debt” are mostly positive in columns (5) to (12)), and also during busts in developing economies and particularly after the GFC (coefficients for “public bank * cycle- * high public debt” are positive in columns (8) and (12)).

Finally, Table 9 presents the estimation results differentiating between public commercial and development bank lending over the cycle. Commercial banks typically provide competitive banking services to often underserved individuals and firms with funding coming mainly from customer deposits, whereas development banks typically provide credit for development-related projects, usually at subsidized rates, with funding coming mainly from the government budget or raised on capital markets with government guarantees. The analysis finds a similar cyclical behavior for both public commercial and development banks despite their different business models. While lending by public commercial and development banks in economies with low public debt levels are less procyclical than private commercial bank lending (coefficients for “public commercial/development bank * cycle” are mostly negative in columns (5) to (12) of Table 9), this is not the case for lending by public commercial and development banks in economies with high public debt levels, particularly in developing economies and outside of the GFC period (coefficients for “public commercial/development bank * cycle * high public debt” are mostly positive in columns (7) to (12) of Table 9).

The findings suggest high public debt levels could hamper the countercyclical role played by public banks, particularly in developing economies and during “domestic” busts. As the sovereigns and their public banks typically face higher borrowing costs, especially during domestic busts, sovereigns may not be able to fund public banks, and may even need to be funded by them through higher dividends given tighter budget constraints. At the same time, there is evidence that public banks have been used with limited success for socio-economic purposes, at times leading to significant fiscal and economic costs. Numerous studies have shown greater public bank ownership is associated with lower levels of financial development and deepening, lower economic growth, higher financial instability, and more politically motivated lending, raising concerns about the quality (or misallocation) of public

bank loans.¹² The evidence also suggests that public commercial banks operating in developing economies have lower profitability, lower interest margins, higher overhead costs, and higher nonperforming loan ratios than private banks.¹³ Public banks may also complicate the sovereign-bank nexus. Public banks may be used to fund the government, often via “moral suasion” (see Ongena and others 2019 in the case of public banks in the euro area during the European debt crisis) and at the expense of corporate lending (Becker and Ivashina 2018), while also getting support from government, often unjustifiably (see Acharya and Kulkarni 2019 in the case of India’s weak public banks), potentially exacerbating each other’s financial vulnerabilities and resulting in a sovereign-bank doom loop (Dell’Ariccia and others 2018).

In sum, while public banks—if financially sound and well-resourced—can potentially serve as a tool to help stabilize the economy, particularly in economies with low public debt, their potential counter-cyclical role should be weighed against their potential fiscal and economic costs, including from the materialization of contingent liabilities and operational and allocative inefficiencies from their lending. This trade-off, however, could potentially be mitigated through strengthened governance and oversight of public banks.

IV. CONCLUSION

The Global Financial Crisis (GFC) has rekindled the question whether public bank lending can be an effective tool to help stabilize the economy, for instance during the COVID-19 crisis. Public banks were widely used to counter the private credit crunch and prop up the economy during the GFC, in some cases financed by direct support from the governments’ budget (e.g., loans or capital injections by Brazil, Canada, India), and in others through raising credit ceilings (e.g., Finland, Korea) or issuing special guarantees (e.g., Mexico) for public banks to support key markets and businesses in the economy (World Bank 2012). Countries are also stepping up credit to their economies through public banks to support the COVID-19 recovery (Medas and Ture 2020).

There are, however, limits to the effectiveness of public banks in helping stabilize the economy. Using cross-country bank level data for 125 advanced and developing economies between 1999–2018 and panel fixed effects regressions, this paper shows public bank lending has been less procyclical than private bank lending on average in the past 20 years, particularly during busts and in economies with low public debt levels, but not in developing economies with high public debt levels and outside of the GFC period. This limitation likely reflects higher financing costs of and lower government subsidies to public banks in

¹² See, for instance, Caprio and Martínez-Pería (2002), La Porta and others (2002), Barth and others (2004), Dinc (2005), Beck and others (2008).

¹³ See, for instance, Iannotta and others (2007), Micco and others (2007), Berger and others (2009), Farazi and others (2013).

economies with tighter budget constraints during “domestic” busts that make it harder for these banks to increase lending countercyclically.

The findings suggest public banks—if financially sound and well-resourced—could be a part of a toolkit to help stabilize the economy under certain circumstances, particularly in economies with low public debt vulnerabilities. However, given the often-dissatisfying performance of public banks in achieving their socio-economic mandates while maintaining sound financials, potential stabilization benefits of public banks should be weighed against their potential fiscal and economic costs, including from excessive government guarantees and subsidies, and the misallocation of credit within the economy.

Experience with the GFC shows that public bank loans and guarantees can be effective but involve fiscal risks and costs. In India, for instance, government guarantees allowed public banks—strong and vulnerable ones alike—to expand credit during the GFC, but led to a subsequent increase in the non-performing loans of these vulnerable public banks, increasing the overall financial sector fragility and contingent liability risks (Acharya and Kulkarni 2019). To make the most out of public bank lending, it is important to ensure transparency, clarify rationale for state intervention, assess and disclose risks and costs, take risk mitigation measures, and make provisions in the budget for the materialization of risks.

Data permitting, future research could consider the role played by government guarantees in boosting banks’ ability to lend during crises. Whether such guarantees are disproportionately utilized by public banks—including through moral suasion—could be a reason for their stronger countercyclical role during busts compared to private peers.

Table 2. Cyclical Behavior of Bank Lending
(in current US dollars)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Loan Growth												
GDP pc Growth Gap (Cycle)	-0.166 (0.202)	1.114*** (0.198)	0.230 (0.205)	1.718*** (0.286)	-0.300 (0.196)	1.111*** (0.197)	0.0710 (0.197)	1.727*** (0.284)	-0.113 (0.434)	1.011** (0.465)	-0.416* (0.213)	1.978*** (0.384)
Public Bank * Cycle	-0.506 (0.529)	-1.088*** (0.312)	-1.205 (0.789)	-0.698* (0.414)	-0.686 (0.540)	-1.014*** (0.361)	-1.595* (0.880)	-1.706*** (0.574)	-2.907* (1.486)	-3.813*** (1.188)	-3.780** (1.807)	-1.497* (0.806)
High Public Debt (HD)					0.0753*** (0.00952)	-0.0532* (0.0316)	0.0610*** (0.0105)	-0.0461 (0.0351)	-0.181*** (0.0382)	-0.125 (0.0989)	0.122*** (0.0127)	-0.0613* (0.0344)
Public Bank * Cycle * HD					0.704 (1.526)	-0.175 (0.572)	2.054 (1.761)	1.904*** (0.699)	4.985 (4.074)	5.389*** (1.434)	2.678 (2.052)	2.530** (0.999)
Financial Development = L	-0.0303 (0.0861)	0.434*** (0.117)	-0.175* (0.0987)	0.686*** (0.131)	0.0304 (0.0864)	0.439*** (0.119)	-0.0744 (0.101)	0.682*** (0.132)	-0.868*** (0.155)	1.314*** (0.358)	0.315** (0.155)	0.927*** (0.200)
Loan Growth = L	0.0213 (0.0134)	0.0241 (0.0189)	0.0213 (0.0143)	0.0361* (0.0206)	0.0213 (0.0134)	0.0249 (0.0190)	0.0217 (0.0142)	0.0361* (0.0206)	0.0381* (0.0209)	0.0478 (0.0421)	-0.0353* (0.0188)	-0.00207 (0.0308)
Log of Total Assets = L	-0.200*** (0.0115)	-0.189*** (0.0206)	-0.188*** (0.0126)	-0.174*** (0.0214)	-0.209*** (0.0116)	-0.191*** (0.0208)	-0.194*** (0.0126)	-0.176*** (0.0213)	-0.359*** (0.0272)	-0.242*** (0.0666)	-0.262*** (0.0208)	-0.250*** (0.0421)
Equity/ Total Assets = L	0.381** (0.165)	-0.221 (0.223)	0.244 (0.191)	-0.00870 (0.265)	0.323* (0.167)	-0.211 (0.224)	0.206 (0.192)	0.0265 (0.267)	0.375 (0.299)	0.0997 (0.610)	0.522* (0.288)	0.549 (0.375)
Liquid Assets/ Total Assets = L	0.0663 (0.0563)	-0.227*** (0.0716)	0.138** (0.0616)	-0.258*** (0.0777)	0.0560 (0.0548)	-0.234*** (0.0719)	0.125** (0.0605)	-0.258*** (0.0780)	0.379*** (0.118)	-0.389* (0.197)	-0.00197 (0.0972)	-0.330*** (0.104)
Return on Average Assets = L	0.474 (0.372)	1.431*** (0.484)	0.561 (0.372)	1.568*** (0.501)	0.393 (0.368)	1.406*** (0.485)	0.529 (0.371)	1.436*** (0.517)	0.765 (0.869)	0.439 (0.662)	-0.279 (0.367)	1.740** (0.755)
Deposits/ Total Liabilities = L	-0.0193 (0.0325)	0.107** (0.0512)	-0.0587 (0.0372)	0.130** (0.0530)	-0.0612* (0.0339)	0.110** (0.0517)	-0.0881** (0.0385)	0.129** (0.0527)	-0.335*** (0.0999)	0.211 (0.164)	-0.0348 (0.0608)	0.0284 (0.0697)
Net Loans/ Total Assets = L	-0.428*** (0.0521)	-0.722*** (0.0831)	-0.348*** (0.0546)	-0.719*** (0.0872)	-0.445*** (0.0508)	-0.736*** (0.0840)	-0.365*** (0.0536)	-0.722*** (0.0878)	-0.338*** (0.0974)	-0.953*** (0.266)	-0.665*** (0.0979)	-0.999*** (0.128)
Nonperforming/ Gross Loans = L	-0.660*** (0.0874)	-0.524*** (0.122)	-0.700*** (0.0910)	-0.445*** (0.147)	-0.667*** (0.0887)	-0.512*** (0.124)	-0.693*** (0.0926)	-0.445*** (0.149)	-1.177*** (0.239)	-0.336 (0.266)	-0.379*** (0.134)	-0.282 (0.220)
Constant	0.888*** (0.0931)	0.739*** (0.0932)	0.945*** (0.107)	0.575*** (0.0993)	0.895*** (0.0930)	0.762*** (0.0939)	0.908*** (0.108)	0.591*** (0.100)	2.207*** (0.195)	0.713*** (0.250)	0.957*** (0.177)	0.895*** (0.171)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,908	3,401	12,294	2,965	13,908	3,401	12,294	2,965	5,228	813	7,066	2,152
R-squared	0.176	0.284	0.170	0.301	0.182	0.285	0.174	0.304	0.185	0.213	0.199	0.295
Number of Banks	1,930	623	1,889	610	1,930	623	1,889	610	1,102	234	1,484	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies

Table 3. Cyclical Behavior of Bank Lending
(in constant local currency)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Loan Growth												
GDP pc Growth Gap (Cycle)	0.226 (0.207)	-0.181 (0.212)	0.537*** (0.202)	0.595** (0.270)	0.189 (0.204)	-0.185 (0.212)	0.511*** (0.197)	0.598** (0.269)	1.611*** (0.428)	0.233 (0.435)	-0.131 (0.215)	0.589 (0.399)
Public Bank * Cycle	-0.842 (0.578)	-1.398*** (0.366)	-1.208 (0.825)	-0.616 (0.442)	-1.101* (0.602)	-1.204** (0.482)	-1.771*** (0.832)	-1.473** (0.749)	-2.816*** (0.969)	-3.345*** (1.075)	-4.253*** (1.823)	-1.288 (1.200)
High Public Debt (HD)					0.0192** (0.00923)	-0.0413 (0.0289)	0.0116 (0.0101)	-0.0453* (0.0272)	-0.106*** (0.0337)	-0.0740 (0.0780)	0.0387*** (0.0124)	-0.0845*** (0.0325)
Public Bank * Cycle * HD					1.319 (1.588)	-0.478 (0.658)	3.185 (2.480)	1.629* (0.836)	8.411 (5.541)	4.765*** (1.316)	3.208 (2.238)	2.017 (1.314)
Financial Development = L	0.0472 (0.0796)	0.154 (0.121)	-0.00141 (0.0871)	0.460*** (0.139)	0.0601 (0.0806)	0.162 (0.123)	0.0134 (0.0900)	0.457*** (0.140)	-0.608*** (0.142)	0.777** (0.336)	0.217 (0.163)	0.683*** (0.236)
Loan Growth = L	-0.0279** (0.0138)	-0.0248 (0.0203)	-0.0205 (0.0147)	0.00814 (0.0209)	-0.0272** (0.0138)	-0.0244 (0.0203)	-0.0200 (0.0147)	0.00837 (0.0210)	0.000760 (0.0201)	0.00517 (0.0416)	-0.0853*** (0.0179)	0.000538 (0.0294)
Log of Total Assets = L	-0.172*** (0.0107)	-0.160*** (0.0191)	-0.166*** (0.0116)	-0.144*** (0.0204)	-0.175*** (0.0108)	-0.161*** (0.0192)	-0.168*** (0.0117)	-0.145*** (0.0203)	-0.324*** (0.0245)	-0.192*** (0.0562)	-0.209*** (0.0200)	-0.205*** (0.0392)
Equity/ Total Assets = L	0.476*** (0.166)	-0.208 (0.222)	0.373* (0.191)	-0.000373 (0.257)	0.461*** (0.166)	-0.201 (0.224)	0.363* (0.191)	0.0326 (0.259)	0.601* (0.309)	0.567 (0.555)	0.680** (0.270)	0.506 (0.386)
Liquid Assets/ Total Assets = L	0.0360 (0.0564)	-0.178** (0.0711)	0.0909 (0.0623)	-0.195*** (0.0727)	0.0335 (0.0559)	-0.185*** (0.0715)	0.0876 (0.0619)	-0.196*** (0.0733)	0.326*** (0.116)	-0.237 (0.177)	0.0135 (0.104)	-0.291*** (0.108)
Return on Average Assets = L	0.654* (0.375)	1.595*** (0.481)	0.771** (0.375)	1.688*** (0.458)	0.634* (0.374)	1.588*** (0.483)	0.762** (0.375)	1.573*** (0.472)	1.570* (0.943)	0.186 (0.607)	-0.0822 (0.363)	2.484*** (0.781)
Deposits/ Total Liabilities = L	-0.0331 (0.0322)	0.0385 (0.0502)	-0.0458 (0.0376)	0.0664 (0.0521)	-0.0444 (0.0338)	0.0416 (0.0507)	-0.0516 (0.0390)	0.0659 (0.0516)	-0.209** (0.0908)	0.181 (0.144)	-0.0141 (0.0656)	-0.0122 (0.0761)
Net Loans/ Total Assets = L	-0.454*** (0.0525)	-0.606*** (0.0754)	-0.395*** (0.0562)	-0.611*** (0.0776)	-0.458*** (0.0518)	-0.619*** (0.0763)	-0.397*** (0.0556)	-0.614*** (0.0783)	-0.424*** (0.0933)	-0.979*** (0.215)	-0.679*** (0.104)	-0.909*** (0.135)
Nonperforming/ Gross Loans = L	-0.517*** (0.0839)	-0.580*** (0.119)	-0.504*** (0.0874)	-0.504*** (0.139)	-0.519*** (0.0842)	-0.568*** (0.121)	-0.503*** (0.0878)	-0.501*** (0.141)	-0.744*** (0.195)	-0.541** (0.233)	-0.518*** (0.143)	-0.371 (0.237)
Constant	0.751*** (0.0868)	0.765*** (0.0903)	0.740*** (0.0980)	0.570*** (0.0987)	0.755*** (0.0871)	0.782*** (0.0912)	0.737*** (0.0986)	0.585*** (0.0999)	1.784*** (0.175)	0.737*** (0.208)	0.876*** (0.181)	0.781*** (0.181)
Observations	13,913	3,411	12,299	2,973	13,913	3,411	12,299	2,973	5,225	817	7,074	2,156
R-squared	0.145	0.164	0.143	0.157	0.146	0.165	0.143	0.160	0.180	0.166	0.174	0.149
Number of fid	1,931	625	1,890	611	1,931	625	1,890	611	1,101	235	1,485	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

Table 4. Cyclical Behavior of Bank Lending
(in current US dollars)
(dropping banks without eight years of consecutive data between 2005 and 2012)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Loan Growth												
GDP pc Growth Gap (Cycle)	-0.0403 (0.233)	0.860*** (0.250)	0.456* (0.268)	1.427*** (0.361)	-0.310 (0.235)	0.864*** (0.250)	0.142 (0.261)	1.437*** (0.362)	0.844 (0.560)	0.413 (0.808)	-0.673** (0.321)	1.617*** (0.464)
Public Bank * Cycle	-0.253 (0.604)	-0.987*** (0.350)	-1.237 (0.919)	-0.568 (0.522)	-0.694 (0.657)	-1.227*** (0.423)	-1.821* (1.050)	-2.187*** (0.679)	-5.479*** (1.077)	-3.413*** (1.292)	-2.248 (1.557)	-2.115** (0.951)
High Public Debt (HD)					0.0860*** (0.0107)	-0.00469 (0.0404)	0.0705*** (0.0116)	0.00232 (0.0452)	-0.161** (0.0672)	-0.0506 (0.119)	0.129*** (0.0138)	-0.0192 (0.0416)
Public Bank * Cycle * HD					2.080* (1.108)	2.665 (0.641)	3.170*** (1.909)	8.605** (0.913)	6.713*** (4.012)	1.207 (2.003)	3.935*** (1.801)	1.207 (1.216)
Financial Development = L	0.0101 (0.0979)	0.263* (0.143)	-0.182* (0.110)	0.559*** (0.159)	0.0915 (0.0991)	0.255* (0.143)	-0.0341 (0.114)	0.542*** (0.157)	-0.814*** (0.203)	1.019** (0.451)	0.176 (0.188)	0.798*** (0.240)
Loan Growth = L	0.0434** (0.0182)	0.0253 (0.0235)	0.0453** (0.0211)	0.0440* (0.0238)	0.0427** (0.0180)	0.0250 (0.0235)	0.0458** (0.0209)	0.0458* (0.0239)	0.0846** (0.0353)	0.0438 (0.0398)	-0.0407* (0.0230)	0.0256 (0.0375)
Log of Total Assets = L	-0.172*** (0.0123)	-0.178*** (0.0265)	-0.157*** (0.0131)	-0.157*** (0.0262)	-0.185*** (0.0125)	-0.178*** (0.0266)	-0.166*** (0.0133)	-0.162*** (0.0259)	-0.304*** (0.0376)	-0.0909 (0.0816)	-0.244*** (0.0214)	-0.294*** (0.0551)
Equity/ Total Assets = L	0.546*** (0.198)	0.0213 (0.307)	0.409* (0.229)	0.511 (0.385)	0.421** (0.199)	0.0234 (0.308)	0.329 (0.231)	0.521 (0.391)	1.041** (0.465)	1.460 (1.086)	0.386 (0.337)	0.761 (0.504)
Liquid Assets/ Total Assets = L	0.0518 (0.0664)	-0.273*** (0.0937)	0.121* (0.0734)	-0.289*** (0.1000)	0.0392 (0.0638)	-0.271*** (0.0946)	0.103 (0.0713)	-0.285*** (0.101)	0.386** (0.166)	-0.738*** (0.232)	-0.120 (0.0956)	-0.300* (0.156)
Return on Average Assets = L	0.280 (0.497)	1.458* (0.759)	0.685 (0.454)	1.955*** (0.713)	0.120 (0.482)	1.430* (0.766)	0.600 (0.446)	1.895** (0.754)	1.612 (1.626)	0.899 (1.062)	-0.337 (0.449)	1.828** (0.899)
Deposits/ Total Liabilities = L	-0.0376 (0.0408)	0.0681 (0.0662)	-0.0783* (0.0453)	0.0972 (0.0679)	-0.0942** (0.0430)	0.0684 (0.0665)	-0.115** (0.0469)	0.0960 (0.0668)	-0.563*** (0.160)	0.0124 (0.170)	0.00818 (0.0735)	-0.000189 (0.0868)
Net Loans/ Total Assets = L	-0.436*** (0.0622)	-0.770*** (0.106)	-0.373*** (0.0645)	-0.774*** (0.107)	-0.458*** (0.0605)	-0.768*** (0.108)	-0.395*** (0.0634)	-0.770*** (0.107)	-0.423*** (0.143)	-1.108*** (0.423)	-0.670*** (0.107)	-1.135*** (0.141)
Nonperforming/ Gross Loans = L	-0.690*** (0.111)	-0.442*** (0.123)	-0.762*** (0.115)	-0.363** (0.160)	-0.712*** (0.114)	-0.446*** (0.123)	-0.765*** (0.118)	-0.387** (0.158)	-1.029*** (0.262)	0.172 (0.319)	-0.596*** (0.161)	-0.333 (0.244)
Constant	0.762*** (0.102)	0.830*** (0.118)	0.857*** (0.117)	0.594*** (0.120)	0.781*** (0.102)	0.832*** (0.122)	0.802*** (0.117)	0.598*** (0.124)	2.149*** (0.266)	0.592 (0.384)	1.006*** (0.199)	1.151*** (0.207)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	9,013	1,986	7,944	1,715	9,013	1,986	7,944	1,715	2,664	419	5,280	1,296
R-squared	0.175	0.298	0.174	0.324	0.186	0.298	0.181	0.330	0.193	0.226	0.194	0.333
Number of Banks	997	264	988	261	997	264	988	261	507	117	956	257

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

Table 5. Cyclical Behavior of Bank Lending
(in current US dollars)
(without identifying national development banks as public banks)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Loan Growth												
GDP pc Growth Gap (Cycle)	-0.171 (0.203)	1.091*** (0.197)	0.208 (0.205)	1.687*** (0.284)	-0.302 (0.197)	1.087*** (0.196)	0.0466 (0.197)	1.699*** (0.282)	-0.104 (0.433)	0.965** (0.460)	-0.486** (0.226)	1.969*** (0.382)
Public Bank * Cycle	-0.455 (0.580)	-1.018*** (0.325)	-0.930 (0.798)	-0.538 (0.424)	-0.451 (0.608)	-0.893** (0.381)	-0.981 (0.957)	-1.527** (0.622)	-2.806* (1.555)	-3.279** (1.287)	-1.999 (1.687)	-1.440* (0.872)
High Public Debt (HD)					0.0751*** (0.00953)	-0.0531* (0.0316)	0.0608*** (0.0105)	-0.0458 (0.0350)	-0.181*** (0.0382)	-0.126 (0.0980)	0.122*** (0.0127)	-0.0612* (0.0344)
Public Bank * Cycle * HD					-0.500 (1.542)	-0.280 (0.586)	0.0661 (1.290)	1.747** (0.744)	0.514 (1.790)	4.896*** (1.474)	0.969 (1.932)	2.434** (1.050)
Financial Development = L	-0.0291 (0.0862)	0.438*** (0.117)	-0.172* (0.0990)	0.686*** (0.131)	0.0334 (0.0864)	0.444*** (0.119)	-0.0691 (0.101)	0.688*** (0.131)	-0.866*** (0.156)	1.326*** (0.355)	0.314** (0.156)	0.934*** (0.198)
Loan Growth = L	0.0212 (0.0134)	0.0245 (0.0189)	0.0215 (0.0143)	0.0360* (0.0206)	0.0211 (0.0134)	0.0254 (0.0190)	0.0218 (0.0142)	0.0360* (0.0207)	0.0384* (0.0208)	0.0487 (0.0421)	-0.0349* (0.0188)	-0.00203 (0.0308)
Log of Total Assets = L	-0.200*** (0.0115)	-0.189*** (0.0206)	-0.188*** (0.0126)	-0.174*** (0.0214)	-0.209*** (0.0116)	-0.191*** (0.0208)	-0.194*** (0.0126)	-0.175*** (0.0213)	-0.359*** (0.0272)	-0.236*** (0.0670)	-0.261*** (0.0208)	-0.251*** (0.0421)
Equity/ Total Assets = L	0.379** (0.165)	-0.219 (0.222)	0.239 (0.191)	-0.0164 (0.263)	0.322* (0.167)	-0.211 (0.224)	0.203 (0.193)	0.0132 (0.265)	0.374 (0.302)	0.164 (0.611)	0.512* (0.290)	0.512 (0.370)
Liquid Assets/ Total Assets = L	0.0665 (0.0563)	-0.228*** (0.0716)	0.139** (0.0616)	-0.257*** (0.0777)	0.0562 (0.0548)	-0.235*** (0.0719)	0.126** (0.0605)	-0.258*** (0.0780)	0.381*** (0.118)	-0.392** (0.198)	0.000663 (0.0978)	-0.329*** (0.104)
Return on Average Assets = L	0.475 (0.373)	1.433*** (0.482)	0.567 (0.372)	1.566*** (0.503)	0.394 (0.369)	1.413*** (0.482)	0.537 (0.372)	1.453*** (0.513)	0.766 (0.869)	0.409 (0.660)	-0.274 (0.367)	1.781** (0.744)
Deposits/ Total Liabilities = L	-0.0191 (0.0325)	0.107** (0.0511)	-0.0582 (0.0372)	0.130** (0.0530)	-0.0603* (0.0338)	0.110** (0.0516)	-0.0873** (0.0384)	0.129** (0.0527)	-0.334*** (0.0999)	0.210 (0.163)	-0.0342 (0.0609)	0.0283 (0.0697)
Net Loans/ Total Assets = L	-0.428*** (0.0520)	-0.720*** (0.0828)	-0.348*** (0.0544)	-0.717*** (0.0868)	-0.446*** (0.0507)	-0.734*** (0.0838)	-0.366*** (0.0534)	-0.717*** (0.0874)	-0.338*** (0.0977)	-0.947*** (0.267)	-0.662*** (0.0981)	-0.992*** (0.127)
Nonperforming/ Gross Loans = L	-0.660*** (0.0874)	-0.525*** (0.122)	-0.699*** (0.0911)	-0.449*** (0.147)	-0.666*** (0.0887)	-0.512*** (0.124)	-0.692*** (0.0926)	-0.449*** (0.149)	-1.177*** (0.239)	-0.330 (0.267)	-0.375*** (0.134)	-0.291 (0.225)
Constant	0.887*** (0.0932)	0.736*** (0.0930)	0.942*** (0.108)	0.573*** (0.0991)	0.891*** (0.0931)	0.759*** (0.0937)	0.903*** (0.108)	0.586*** (0.0999)	2.206*** (0.196)	0.686*** (0.250)	0.953*** (0.177)	0.892*** (0.171)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,908	3,401	12,294	2,965	13,908	3,401	12,294	2,965	5,228	813	7,066	2,152
R-squared	0.175	0.284	0.170	0.301	0.182	0.285	0.174	0.303	0.184	0.208	0.198	0.294
Number of Banks	1,930	623	1,889	610	1,930	623	1,889	610	1,102	234	1,484	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

Table 6. Cyclical Behavior of Bank Lending
(in current US dollars)
(using majority government ownership share to identify public banks)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Loan Growth												
GDP pc Growth Gap (Cycle)	-0.166 (0.202)	1.124*** (0.198)	0.240 (0.205)	1.729*** (0.286)	-0.302 (0.196)	1.121*** (0.197)	0.0789 (0.197)	1.740*** (0.283)	-0.113 (0.434)	1.029** (0.464)	-0.425** (0.212)	1.976*** (0.383)
Public Bank * Cycle	-0.590 (0.556)	-1.163*** (0.312)	-1.610** (0.789)	-0.788* (0.421)	-0.787 (0.541)	-1.134*** (0.362)	-2.048** (0.836)	-1.990*** (0.593)	-3.139** (1.506)	-4.998*** (1.268)	-4.091** (1.936)	-1.547* (0.828)
High Public Debt (HD)					0.0754*** (0.00952)	-0.0532* (0.0316)	0.0610*** (0.0105)	-0.0463 (0.0351)	-0.181*** (0.0382)	-0.120 (0.0992)	0.122*** (0.0127)	-0.0614* (0.0344)
Public Bank * Cycle * HD					1.012 (1.941)	-0.0558 (0.572)	2.902 (2.118)	2.184*** (0.723)	7.715 (6.106)	6.660*** (1.564)	2.757 (2.221)	2.583** (1.020)
Financial Development = L	-0.0309 (0.0860)	0.436*** (0.117)	-0.177* (0.0986)	0.689*** (0.131)	0.0297 (0.0862)	0.440*** (0.119)	-0.0768 (0.101)	0.687*** (0.132)	-0.867*** (0.155)	1.310*** (0.356)	0.330** (0.154)	0.931*** (0.199)
Loan Growth = L	0.0213 (0.0134)	0.0240 (0.0189)	0.0212 (0.0143)	0.0362* (0.0206)	0.0213 (0.0134)	0.0246 (0.0190)	0.0217 (0.0142)	0.0364* (0.0206)	0.0381* (0.0209)	0.0475 (0.0421)	-0.0355* (0.0188)	-0.00187 (0.0308)
Log of Total Assets = L	-0.200*** (0.0116)	-0.189*** (0.0206)	-0.188*** (0.0126)	-0.174*** (0.0214)	-0.209*** (0.0116)	-0.191*** (0.0208)	-0.195*** (0.0126)	-0.177*** (0.0212)	-0.359*** (0.0272)	-0.250*** (0.0671)	-0.262*** (0.0208)	-0.250*** (0.0421)
Equity/ Total Assets = L	0.382** (0.165)	-0.217 (0.223)	0.246 (0.191)	-0.00544 (0.265)	0.323* (0.167)	-0.207 (0.225)	0.208 (0.192)	0.0359 (0.268)	0.370 (0.297)	0.0605 (0.613)	0.521* (0.288)	0.557 (0.376)
Liquid Assets/ Total Assets = L	0.0661 (0.0563)	-0.227*** (0.0716)	0.137** (0.0616)	-0.258*** (0.0776)	0.0559 (0.0548)	-0.234*** (0.0719)	0.124** (0.0605)	-0.258*** (0.0780)	0.379*** (0.118)	-0.367* (0.195)	-0.00166 (0.0972)	-0.330*** (0.104)
Return on Average Assets = L	0.472 (0.372)	1.438*** (0.484)	0.553 (0.372)	1.578*** (0.501)	0.392 (0.368)	1.407*** (0.486)	0.520 (0.372)	1.444*** (0.518)	0.759 (0.869)	0.533 (0.663)	-0.280 (0.367)	1.735** (0.755)
Deposits/ Total Liabilities = L	-0.0193 (0.0325)	0.107** (0.0512)	-0.0588 (0.0373)	0.130** (0.0530)	-0.0614* (0.0339)	0.110** (0.0516)	-0.0882** (0.0385)	0.128** (0.0525)	-0.335*** (0.1000)	0.198 (0.162)	-0.0346 (0.0608)	0.0284 (0.0697)
Net Loans/ Total Assets = L	-0.428*** (0.0521)	-0.724*** (0.0831)	-0.348*** (0.0546)	-0.721*** (0.0873)	-0.445*** (0.0508)	-0.737*** (0.0841)	-0.364*** (0.0536)	-0.724*** (0.0878)	-0.336*** (0.0972)	-0.938*** (0.264)	-0.663*** (0.0979)	-1.000*** (0.129)
Nonperforming/ Gross Loans = L	-0.659*** (0.0872)	-0.523*** (0.122)	-0.696*** (0.0904)	-0.444*** (0.147)	-0.665*** (0.0884)	-0.511*** (0.124)	-0.688*** (0.0918)	-0.445*** (0.148)	-1.175*** (0.239)	-0.284 (0.263)	-0.361*** (0.133)	-0.283 (0.220)
Constant	0.889*** (0.0930)	0.740*** (0.0932)	0.947*** (0.107)	0.576*** (0.0993)	0.895*** (0.0929)	0.762*** (0.0939)	0.910*** (0.107)	0.592*** (0.100)	2.207*** (0.195)	0.725*** (0.250)	0.941*** (0.176)	0.893*** (0.171)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,908	3,401	12,294	2,965	13,908	3,401	12,294	2,965	5,228	813	7,066	2,152
R-squared	0.176	0.285	0.170	0.302	0.182	0.286	0.175	0.305	0.185	0.218	0.200	0.295
Number of Banks	1,930	623	1,889	610	1,930	623	1,889	610	1,102	234	1,484	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 50 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

Table 7. Cyclical Behavior of Bank Lending
(in current US dollars)
(using GDP per capita growth rate instead of gap as a cyclical indicator)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Loan Growth	loangr	loangr	loangr	loangr	loangr	loangr	loangr	loangr	loangr	loangr	loangr	loangr
GDP pc Growth Gap (Cycle)	-0.166 (0.202)	1.114*** (0.198)	0.230 (0.205)	1.718*** (0.286)	-0.299 (0.196)	1.111*** (0.197)	0.0683 (0.197)	1.726*** (0.284)	-0.130 (0.433)	1.025** (0.463)	-0.404* (0.213)	1.979*** (0.384)
Public Bank * Cycle	-0.506 (0.529)	-1.088*** (0.312)	-1.205 (0.789)	-0.698* (0.414)	-0.623 (0.542)	-0.945** (0.378)	-1.285 (0.818)	-1.417** (0.608)	-2.415* (1.385)	-3.757*** (1.244)	-4.435*** (1.440)	-1.160 (0.809)
High Public Debt (HD)					0.0748*** (0.00949)	-0.0517 (0.0316)	0.0604*** (0.0106)	-0.0524 (0.0359)	-0.185*** (0.0392)	-0.141 (0.102)	0.117*** (0.0128)	-0.0703** (0.0357)
Public Bank * Cycle * HD					0.314 (1.183)	-0.352 (0.565)	0.362 (1.206)	1.367* (0.767)	2.625 (2.969)	4.874*** (1.493)	3.785*** (1.043)	1.925* (1.059)
Financial Development = L	-0.0303 (0.0861)	0.434*** (0.117)	-0.175* (0.0987)	0.686*** (0.131)	0.0309 (0.0864)	0.441*** (0.119)	-0.0722 (0.101)	0.685*** (0.132)	-0.862*** (0.155)	1.306*** (0.359)	0.315** (0.155)	0.925*** (0.201)
Loan Growth = L	0.0213 (0.0134)	0.0241 (0.0189)	0.0213 (0.0143)	0.0361* (0.0206)	0.0212 (0.0134)	0.0251 (0.0190)	0.0215 (0.0142)	0.0361* (0.0206)	0.0385* (0.0208)	0.0477 (0.0422)	-0.0374** (0.0187)	-0.00310 (0.0308)
Log of Total Assets = L	-0.200*** (0.0115)	-0.189*** (0.0206)	-0.188*** (0.0126)	-0.174*** (0.0214)	-0.209*** (0.0116)	-0.191*** (0.0208)	-0.194*** (0.0126)	-0.176*** (0.0213)	-0.359*** (0.0272)	-0.238*** (0.0660)	-0.260*** (0.0208)	-0.250*** (0.0423)
Equity/ Total Assets = L	0.381** (0.165)	-0.221 (0.223)	0.244 (0.191)	-0.00870 (0.265)	0.324* (0.167)	-0.215 (0.225)	0.208 (0.193)	0.0314 (0.268)	0.376 (0.300)	0.117 (0.608)	0.531* (0.288)	0.566 (0.380)
Liquid Assets/ Total Assets = L	0.0663 (0.0563)	-0.227*** (0.0716)	0.138** (0.0616)	-0.258*** (0.0777)	0.0561 (0.0548)	-0.235*** (0.0719)	0.125** (0.0605)	-0.258*** (0.0781)	0.380*** (0.118)	-0.393** (0.198)	-0.00568 (0.0973)	-0.327*** (0.104)
Return on Average Assets = L	0.474 (0.372)	1.431*** (0.484)	0.561 (0.372)	1.568*** (0.501)	0.394 (0.368)	1.411*** (0.483)	0.532 (0.371)	1.483*** (0.511)	0.772 (0.868)	0.483 (0.658)	-0.245 (0.367)	1.836** (0.728)
Deposits/ Total Liabilities = L	-0.0193 (0.0325)	0.107** (0.0512)	-0.0587 (0.0372)	0.130** (0.0530)	-0.0605* (0.0338)	0.110** (0.0517)	-0.0874** (0.0385)	0.131** (0.0528)	-0.333*** (0.0997)	0.228 (0.165)	-0.0313 (0.0608)	0.0291 (0.0697)
Net Loans/ Total Assets = L	-0.428*** (0.0521)	-0.722*** (0.0831)	-0.348*** (0.0546)	-0.719*** (0.0872)	-0.445*** (0.0507)	-0.737*** (0.0841)	-0.365*** (0.0534)	-0.722*** (0.0881)	-0.338*** (0.0974)	-0.931*** (0.266)	-0.662*** (0.0978)	-0.994*** (0.128)
Nonperforming/ Gross Loans = L	-0.660*** (0.0874)	-0.524*** (0.122)	-0.700*** (0.0910)	-0.445*** (0.147)	-0.667*** (0.0888)	-0.509*** (0.125)	-0.693*** (0.0926)	-0.448*** (0.150)	-1.177*** (0.239)	-0.314 (0.266)	-0.385*** (0.135)	-0.300 (0.225)
Constant	0.894*** (0.0931)	0.709*** (0.0933)	0.938*** (0.108)	0.521*** (0.101)	0.904*** (0.0927)	0.732*** (0.0939)	0.904*** (0.108)	0.536*** (0.102)	2.208*** (0.192)	0.661*** (0.248)	0.966*** (0.179)	0.825*** (0.175)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,908	3,401	12,294	2,965	13,908	3,401	12,294	2,965	5,228	813	7,066	2,152
R-squared	0.176	0.284	0.170	0.301	0.182	0.285	0.174	0.303	0.184	0.211	0.201	0.293
Number of Banks	1,930	623	1,889	610	1,930	623	1,889	610	1,102	234	1,484	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

Table 8. Cyclical Behavior of Bank Lending
(in current US dollars)
(differentiating between booms and busts)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES												
Positive GDP pc Growth Gap (Cycle+)	1.226*** (0.418)	1.149*** (0.304)	1.174*** (0.395)	1.473*** (0.351)	1.135*** (0.394)	1.164*** (0.304)	1.095*** (0.374)	1.515*** (0.348)	1.706** (0.683)	1.826*** (0.671)	0.417 (0.327)	1.300*** (0.418)
Negative GDP pc Growth Gap (Cycle-)	-1.217*** (0.261)	1.090*** (0.334)	-0.742** (0.326)	1.986*** (0.500)	-1.381*** (0.267)	1.077*** (0.335)	-0.988*** (0.334)	1.958*** (0.503)	-3.047*** (0.845)	-0.683 (1.312)	-1.145*** (0.338)	2.459*** (0.617)
Public Bank * Cycle+	-1.007 (1.018)	-1.020** (0.463)	-0.413 (1.132)	-0.156 (0.541)	-1.556 (0.979)	-0.795 (0.718)	-0.841 (1.031)	-0.532 (0.825)	-3.663* (1.925)	-1.269 (1.214)	-1.783 (1.940)	-0.466 (1.186)
Public Bank * Cycle-	-0.441 (0.609)	-1.164** (0.513)	-2.414** (1.098)	-1.659* (0.993)	-0.611 (0.652)	-1.161** (0.464)	-3.274** (1.421)	-4.086** (1.630)	-1.557 (3.228)	-9.392*** (2.773)	-5.025* (2.787)	-2.634 (1.831)
High Public Debt (HD)					0.0756*** (0.00960)	-0.0532* (0.0317)	0.0628*** (0.0106)	-0.0388 (0.0347)	-0.176*** (0.0385)	-0.0836 (0.102)	0.122*** (0.0127)	-0.0610* (0.0347)
Public Bank * Cycle+ * HD					5.958 (5.849)	-0.363 (0.809)	5.979 (5.947)	0.924 (0.907)	15.73 (11.26)	3.149*** (1.123)	8.949* (5.039)	3.900*** (1.447)
Public Bank * Cycle- * HD					0.376 (1.413)	-0.118 (1.251)	2.243 (2.017)	4.111** (1.667)	-3.554 (4.414)	-3.674 (3.706)	1.786 (2.970)	1.937 (1.838)
Financial Development = L	-0.00809 (0.0857)	0.434*** (0.119)	-0.156 (0.0983)	0.669*** (0.133)	0.0533 (0.0857)	0.443*** (0.122)	-0.0506 (0.100)	0.692*** (0.133)	-0.710*** (0.162)	1.261*** (0.351)	0.324** (0.156)	0.841*** (0.203)
Loan Growth = L	0.0211 (0.0134)	0.0239 (0.0189)	0.0229 (0.0144)	0.0371* (0.0207)	0.0211 (0.0134)	0.0246 (0.0190)	0.0233 (0.0143)	0.0369* (0.0207)	0.0402* (0.0210)	0.0581 (0.0422)	-0.0329* (0.0188)	0.00173 (0.0307)
Log of Total Assets = L	-0.198*** (0.0115)	-0.189*** (0.0207)	-0.188*** (0.0125)	-0.175*** (0.0213)	-0.207*** (0.0115)	-0.190*** (0.0208)	-0.194*** (0.0125)	-0.179*** (0.0213)	-0.355*** (0.0270)	-0.284*** (0.0701)	-0.263*** (0.0208)	-0.251*** (0.0423)
Equity/ Total Assets = L	0.410** (0.164)	-0.220 (0.222)	0.271 (0.190)	-0.0195 (0.265)	0.350** (0.165)	-0.213 (0.226)	0.233 (0.191)	-0.00267 (0.269)	0.382 (0.297)	-0.0513 (0.622)	0.538* (0.286)	0.552 (0.382)
Liquid Assets/ Total Assets = L	0.0791 (0.0564)	-0.227*** (0.0720)	0.145** (0.0618)	-0.258*** (0.0782)	0.0689 (0.0549)	-0.233*** (0.0723)	0.132** (0.0607)	-0.258*** (0.0788)	0.382*** (0.117)	-0.335* (0.187)	-0.00268 (0.0977)	-0.335*** (0.104)
Return on Average Assets = L	0.483 (0.368)	1.435*** (0.487)	0.580 (0.372)	1.607*** (0.516)	0.401 (0.364)	1.414*** (0.493)	0.549 (0.371)	1.434*** (0.526)	0.847 (0.883)	0.665 (0.629)	-0.279 (0.362)	1.876** (0.759)
Deposits/ Total Liabilities = L	-0.0152 (0.0325)	0.108** (0.0512)	-0.0518 (0.0373)	0.130** (0.0531)	-0.0565* (0.0338)	0.111** (0.0517)	-0.0811** (0.0386)	0.129** (0.0530)	-0.301*** (0.100)	0.205 (0.161)	-0.0304 (0.0612)	0.0279 (0.0711)
Net Loans/ Total Assets = L	-0.421*** (0.0522)	-0.722*** (0.0836)	-0.346*** (0.0548)	-0.720*** (0.0868)	-0.438*** (0.0507)	-0.736*** (0.0842)	-0.363*** (0.0537)	-0.727*** (0.0873)	-0.323*** (0.0972)	-0.961*** (0.261)	-0.683*** (0.0987)	-1.000*** (0.128)
Nonperforming/ Gross Loans = L	-0.666*** (0.0898)	-0.523*** (0.122)	-0.697*** (0.0933)	-0.445*** (0.147)	-0.672*** (0.0912)	-0.510*** (0.123)	-0.689*** (0.0951)	-0.445*** (0.148)	-1.076*** (0.227)	-0.270 (0.272)	-0.348** (0.137)	-0.283 (0.220)
Constant	0.833*** (0.0928)	0.737*** (0.0938)	0.902*** (0.108)	0.587*** (0.100)	0.837*** (0.0926)	0.757*** (0.0943)	0.859*** (0.108)	0.598*** (0.101)	1.996*** (0.206)	0.763*** (0.254)	0.947*** (0.177)	0.945*** (0.177)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,908	3,401	12,294	2,965	13,908	3,401	12,294	2,965	5,228	813	7,066	2,152
R-squared	0.179	0.284	0.172	0.302	0.186	0.285	0.177	0.306	0.190	0.235	0.202	0.298
Number of Banks	1,930	623	1,889	610	1,930	623	1,889	610	1,102	234	1,484	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

Table 9. Cyclical Behavior of Bank Lending
(in current US dollars)
(differentiating between public development and commercial banks)

Sample Period Country Group	1999-2018		1999-2018 excl. GFC		1999-2018		1999-2018 excl. GFC		1999-2007		2010-2018	
	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs	AEs	EMDEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES												
GDP pc Growth Gap (Cycle)	-0.163 (0.202)	1.111*** (0.198)	0.233 (0.205)	1.718*** (0.286)	-0.292 (0.196)	1.109*** (0.196)	0.0712 (0.197)	1.725*** (0.284)	-0.126 (0.436)	1.027** (0.464)	-0.419** (0.213)	1.976*** (0.384)
Public Development Bank * Cycle	-0.875 (0.544)	-1.987*** (0.427)	-1.866** (0.847)	-0.896 (0.613)	-1.414*** (0.452)	-1.650*** (0.336)	-2.375*** (0.789)	-1.791** (0.720)	-2.398 (1.875)	-3.350* (1.815)	-4.279** (2.059)	-1.626* (0.947)
Public Commercial Bank * Cycle	-0.0631 (0.973)	-0.729** (0.340)	-0.168 (1.428)	-0.637 (0.472)	0.314 (1.099)	-0.697 (0.442)	0.0450 (2.047)	-1.660** (0.754)	-3.870* (2.026)	-4.140*** (1.518)	-2.653 (3.421)	-1.445 (1.025)
High Public Debt (HD)					0.0748*** (0.00955)	-0.0538* (0.0315)	0.0610*** (0.0105)	-0.0462 (0.0351)	-0.180*** (0.0381)	-0.125 (0.0995)	0.122*** (0.0127)	-0.0611* (0.0345)
Public Development Bank * Cycle * HD					4.300*** (0.655)	-1.192 (1.311)	5.495 (5.050)	2.513*** (0.838)	15.55*** (2.023)	2.369 (2.053)	1.526 (2.051)	2.546** (1.123)
Public Commercial Bank * Cycle * HD					-2.335 (1.733)	-0.0523 (0.592)	-0.649 (2.319)	1.752* (0.907)	1.589 (2.219)	6.039*** (1.742)	2.269 (3.683)	2.512* (1.283)
Financial Development = L	-0.0348 (0.0859)	0.412*** (0.117)	-0.180* (0.0986)	0.682*** (0.132)	0.0220 (0.0863)	0.415*** (0.119)	-0.0785 (0.101)	0.685*** (0.132)	-0.856*** (0.157)	1.319*** (0.359)	0.319** (0.156)	0.924*** (0.197)
Loan Growth = L	0.0215 (0.0134)	0.0250 (0.0189)	0.0211 (0.0143)	0.0361* (0.0206)	0.0211 (0.0134)	0.0260 (0.0189)	0.0218 (0.0142)	0.0361* (0.0206)	0.0375* (0.0209)	0.0479 (0.0423)	-0.0359* (0.0188)	-0.00204 (0.0309)
Log of Total Assets = L	-0.200*** (0.0116)	-0.188*** (0.0206)	-0.188*** (0.0126)	-0.174*** (0.0214)	-0.209*** (0.0116)	-0.190*** (0.0207)	-0.195*** (0.0126)	-0.176*** (0.0212)	-0.360*** (0.0272)	-0.244*** (0.0670)	-0.262*** (0.0209)	-0.250*** (0.0422)
Equity/ Total Assets = L	0.382** (0.165)	-0.202 (0.224)	0.245 (0.191)	-0.00745 (0.266)	0.319* (0.167)	-0.196 (0.226)	0.204 (0.192)	0.0269 (0.267)	0.342 (0.295)	0.0508 (0.610)	0.523* (0.288)	0.553 (0.377)
Liquid Assets/ Total Assets = L	0.0653 (0.0563)	-0.228*** (0.0714)	0.137** (0.0616)	-0.258*** (0.0776)	0.0560 (0.0548)	-0.236*** (0.0716)	0.123** (0.0605)	-0.257*** (0.0781)	0.380*** (0.118)	-0.386* (0.197)	-0.00130 (0.0973)	-0.330*** (0.104)
Return on Average Assets = L	0.470 (0.372)	1.428*** (0.480)	0.553 (0.372)	1.569*** (0.501)	0.386 (0.368)	1.420*** (0.481)	0.524 (0.372)	1.423*** (0.520)	0.787 (0.871)	0.623 (0.637)	-0.278 (0.367)	1.734** (0.761)
Deposits/ Total Liabilities = L	-0.0193 (0.0325)	0.108** (0.0515)	-0.0595 (0.0373)	0.130** (0.0532)	-0.0610* (0.0339)	0.113** (0.0522)	-0.0878** (0.0385)	0.127** (0.0528)	-0.334*** (0.100)	0.225 (0.167)	-0.0352 (0.0609)	0.0282 (0.0700)
Net Loans/ Total Assets = L	-0.428*** (0.0522)	-0.725*** (0.0830)	-0.349*** (0.0546)	-0.720*** (0.0872)	-0.443*** (0.0508)	-0.738*** (0.0841)	-0.365*** (0.0536)	-0.722*** (0.0879)	-0.328*** (0.0974)	-0.951*** (0.265)	-0.666*** (0.0981)	-1.000*** (0.128)
Nonperforming/ Gross Loans = L	-0.660*** (0.0872)	-0.524*** (0.122)	-0.696*** (0.0909)	-0.445*** (0.147)	-0.664*** (0.0882)	-0.512*** (0.123)	-0.687*** (0.0925)	-0.444*** (0.149)	-1.170*** (0.238)	-0.314 (0.270)	-0.374*** (0.135)	-0.281 (0.220)
Constant	0.892*** (0.0927)	0.745*** (0.0930)	0.950*** (0.107)	0.576*** (0.0991)	0.900*** (0.0927)	0.767*** (0.0937)	0.912*** (0.107)	0.591*** (0.0998)	2.195*** (0.196)	0.705*** (0.250)	0.954*** (0.178)	0.896*** (0.171)
Bank and Year Fixed Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,908	3,401	12,294	2,965	13,908	3,401	12,294	2,965	5,228	813	7,066	2,152
R-squared	0.176	0.285	0.170	0.302	0.183	0.287	0.175	0.304	0.186	0.214	0.200	0.295
Number of Banks	1,930	623	1,889	610	1,930	623	1,889	610	1,102	234	1,484	562

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Fitch Connect, IMF World Economic Outlook database, IMF Financial Development database, and author's estimates.

Note: Public banks are defined as those with over 25 percent of equity owned by the government. Countries with high public debt are those above the 75th percentile of the distribution across the whole sample, roughly corresponding to 100 percent of GDP for AEs and 60 percent of GDP for EMDEs. AEs = advanced economies, EMDEs = emerging market and developing economies.

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