

Public Banks in South Asia

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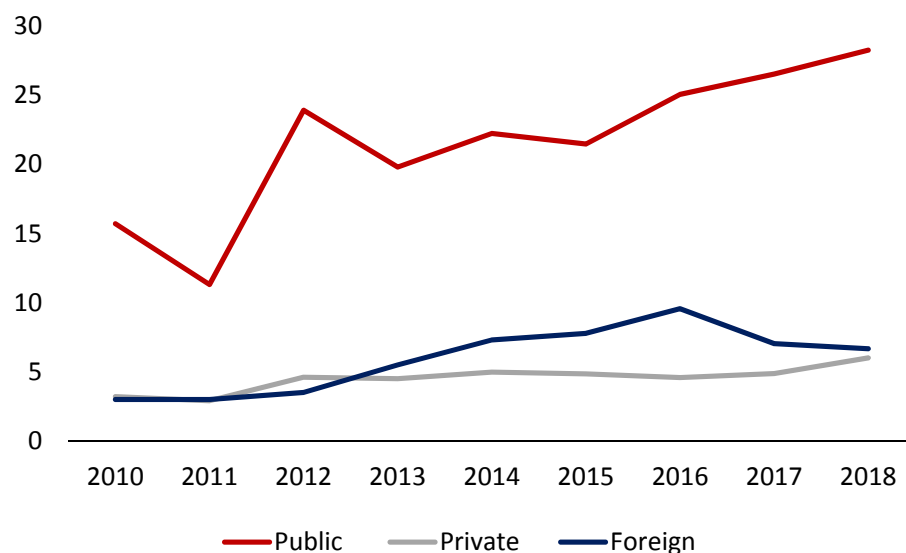
South Asia Chief Economist Office, World Bank

Why focusing now on financial sectors and role of public banks?

Non-performing loans of public banks have sharply increased in recent years in Bangladesh and India.

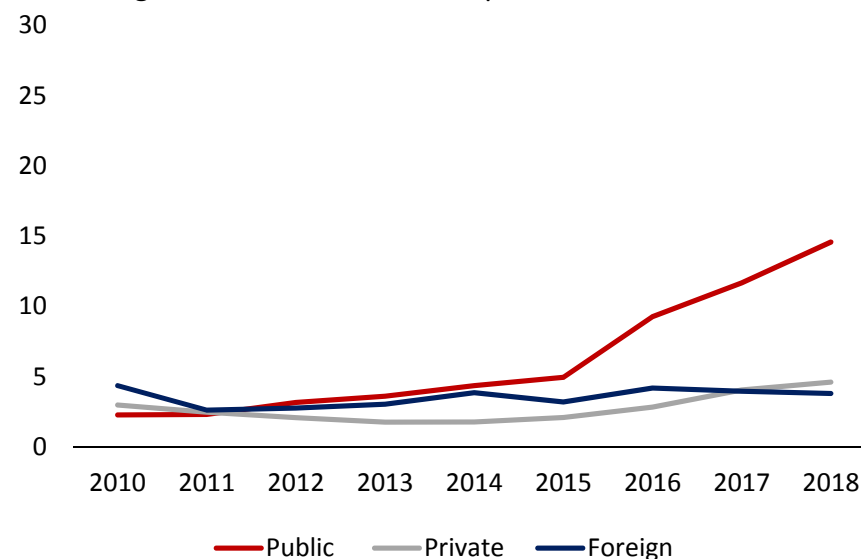
Non-performing loans in Bangladesh

Ratio of gross NPL to total loans in percent



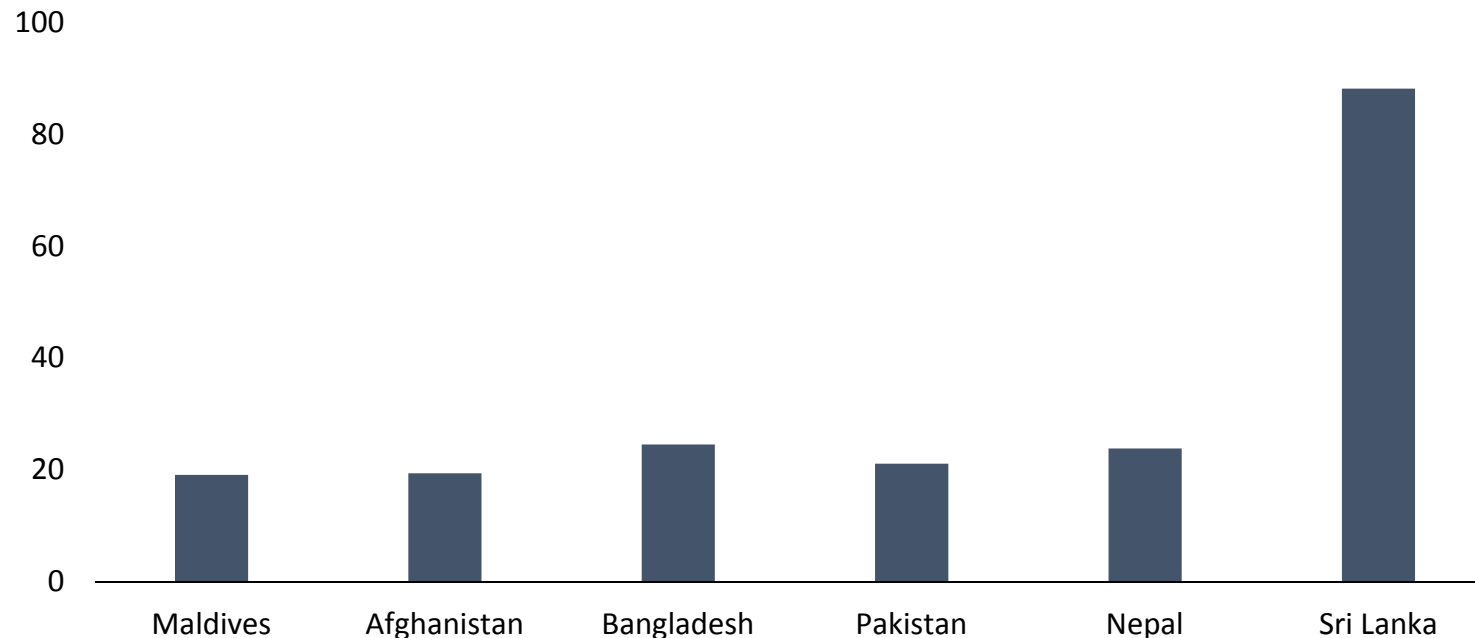
Non-performing loans in India

Ratio of gross NPL to total loans in percent



And also in all other countries in the region non-performing loans are rising.

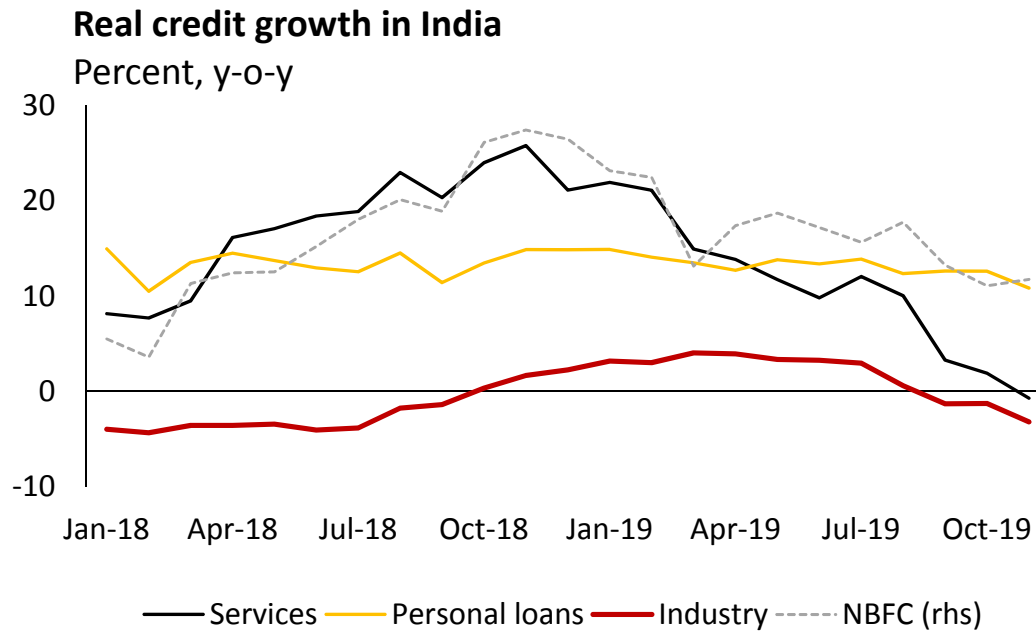
Real growth in non-performing loans in South Asia
Percent (from 2018Q1 to latest observation)



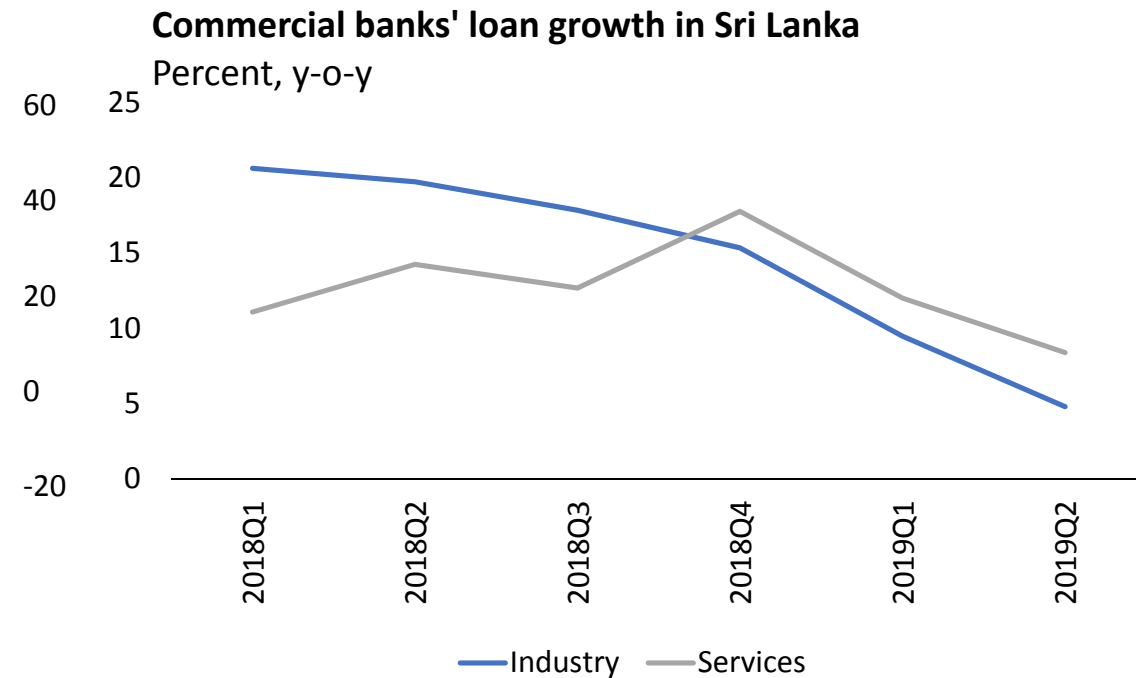
Source: International Monetary Fund, World Bank, and staff calculations.

- The recent growth slowdown in many countries may further exacerbate the situation.

In some countries credit growth is decelerating strongly.



Source: Reserve Bank of India and staff calculations.



Source: Central Bank of Sri Lanka.

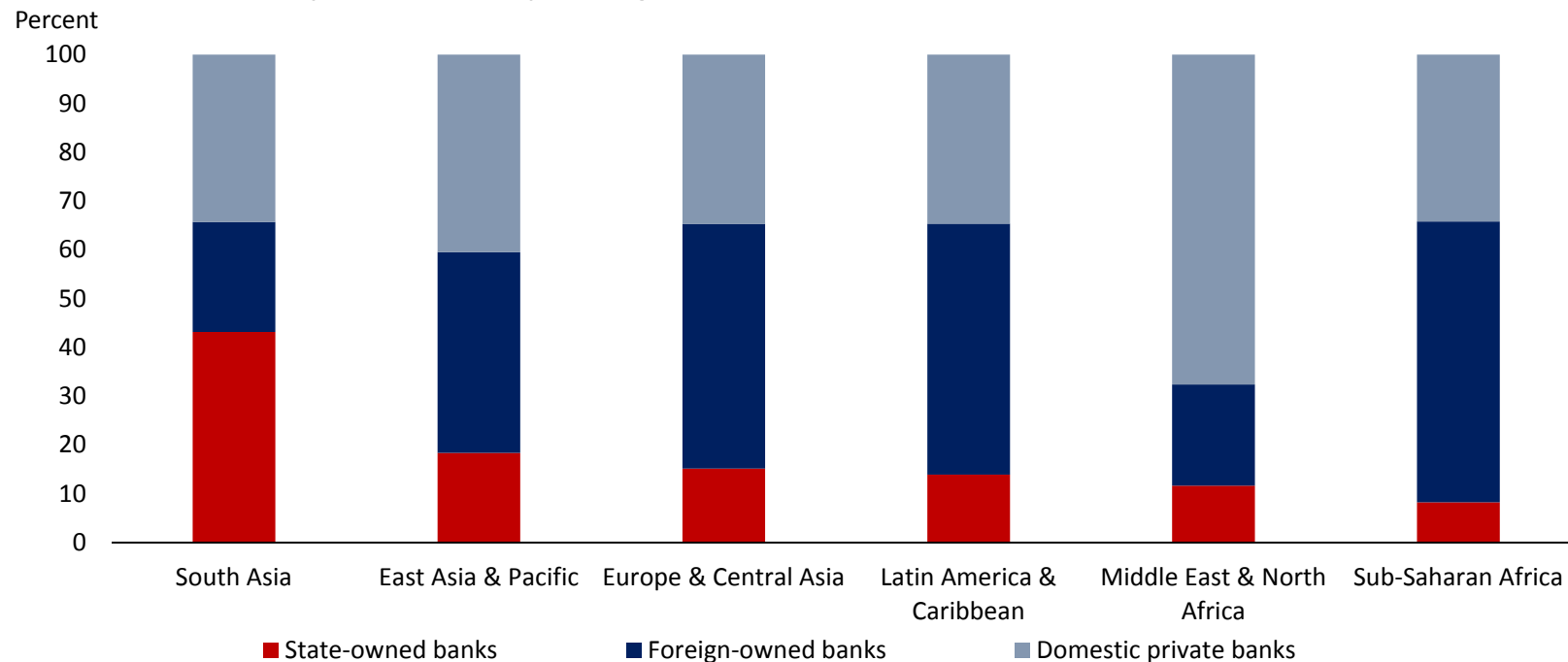
Financial markets provide public goods and are highly regulated – countries can shape them.

- Financial markets provide public goods:
 - Information (selection, monitoring,...): The more information banks gather, the more domestic savings can be channeled into investment opportunities.
 - Backup liquidity for others: if banks stop lending, it effects the rest of the economy.
 - Transmission of monetary policy: the responsiveness of banks' lending rates is crucial for macroeconomic policy
 - Financial markets are different than other markets since market failures are more pervasive: asymmetric information, economic spillovers, social externalities, *etc.*
 - State intervention has many forms:
 - Demand side: borrowing from governments and state-owned enterprises, guarantees, ...
 - Supply side: prudential regulation, directed lending, public ownership of banks, ...
- **It is necessary to understand the need and strength of government intervention, as well as the limitations.**

State-owned banks are more common in South Asia than elsewhere

In South Asia, state-owned banks are much more common than elsewhere, ...

Share of bank assets by state-ownership and regions



=> A high share of public banks seems to go hand in hand with a low share of foreign banks.

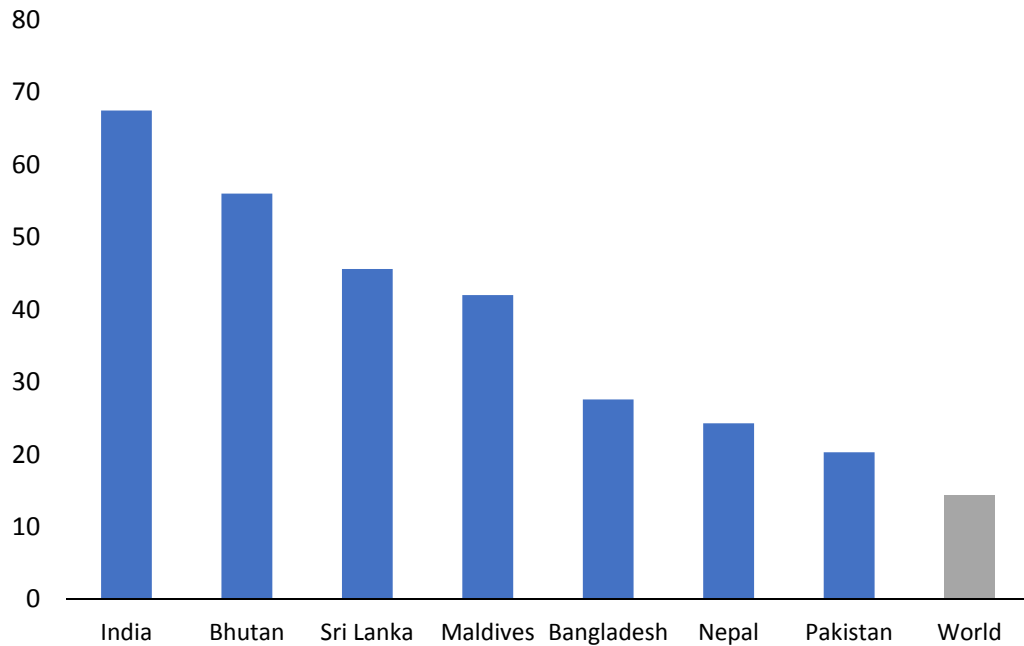
Note: Data is for 2016.

Source: Bank Regulation and Supervision Survey, World Bank.

... but there is considerably variation across countries.

Share of assets owned by state-owned banks

Percent

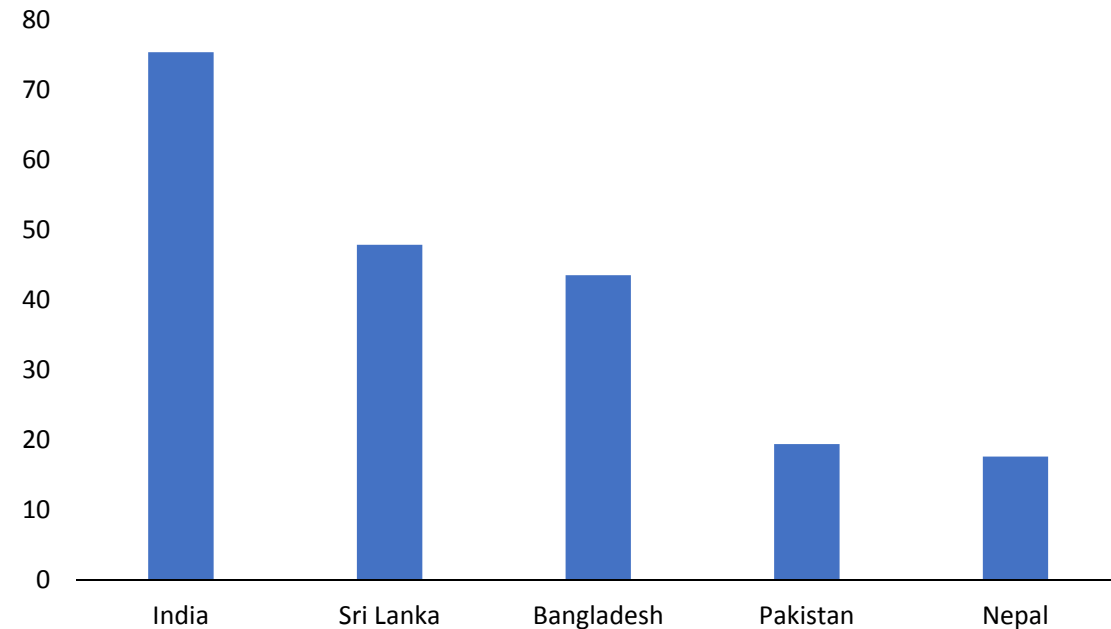


Note: Data is for 2016 data, but Nepal is for 2010.

Source: Bank Regulation and Supervision Survey, World Bank.

Public bank branches

Share of total branches in percent

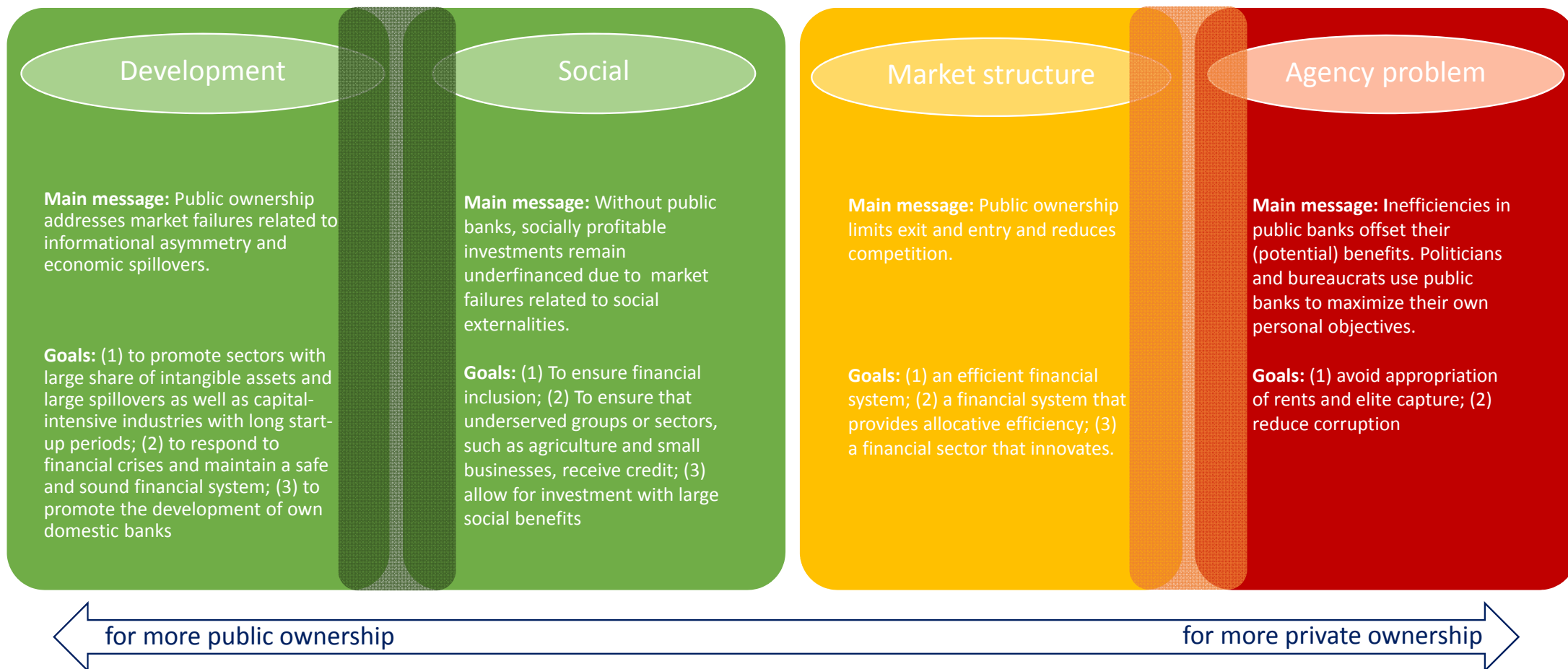


Note: Data is for 2018 and Nepal for 2019.

Sources: Central bank and public bank websites.

Advantages and disadvantages of state-owned banks

There are good reasons for and against public ownership of banks.



Public banks contribute to growth and can play a stabilizing role.

In India, bank presence supports long-run growth and the effect is largest for public banks.

Growth rate of nightlight intensity from 2007 to 2017

	(1)	(2)	(3)	(4)
Nightlight intensity in 2006	-0.61*** (0.038)	-0.58*** (0.049)	-0.69*** (0.068)	-0.71*** (-0.070)
Number of commercial bank branches (per population, 2006)	-0.04 (0.082)	0.25*** (0.084)	0.21*** (0.070)	
Number of public bank branches (per population, 2006)				0.16** (0.068)
Number of private bank branches (per population, 2006)				0.08** (0.039)
State fixed effects	No	Yes	Yes	Yes
District-level controls	No	No	Yes	Yes
Observations	619	619	619	619
R-squared	0.82	0.90	0.92	0.92

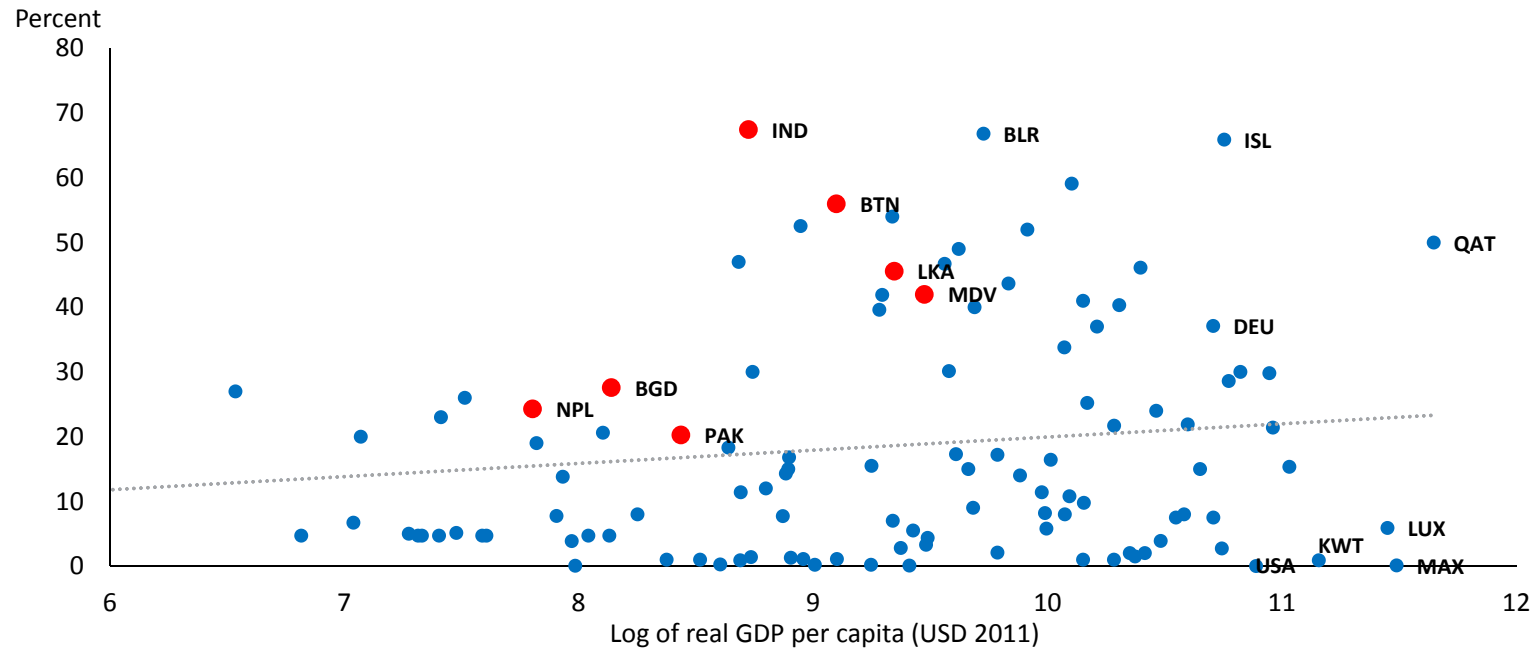
- Strong absolute and conditional convergence.
- A stronger bank presence contributed to long-run growth.
- A public bank branch increased growth twice as much as a private bank branch.

Note: Robust standard errors in parentheses. * p < .1, ** p < .05, *** p < .01. Standard errors are clustered at state level. The growth in nightlight intensity is computed from the initial year 2007 to 2017. Main explanatory variables are log transformed. For the equation 4, we added a small constant term, 0.001, to the number of private bank branches in order not to lose observations before the log transformation. The control variables include the population density, the share of scheduled caste and tribe population share, the working-age population share, the literacy rate, the share of households with access to electricity, the employment share in agriculture, and the shares of households with access to improved water and sanitation. All of them from 2001 census. In addition, we control for noncommercial banks, i.e. local area banks, payment banks, regional rural banks, and small finance, in (4). Public banks include nationalized banks, SBI and its associates, and other public sector banks.

Source: DMSP, VIIRS, Reserve Bank of India, and South Asia Spatial Database.

State-owned banks can play a developmental role even in high-income countries.

Share of assets owned by state-owned banks



=> The share of public banks seems much more a political decision than a development outcome.

Note: Data is last available observations, which is 2016 in most cases. Real GDP per capita is in PPP.
Sources: Bank Regulation and Supervision Survey, World Bank and World Development Indicators.

A district-level analysis of public bank performance around global and local shocks in India.

$$y_{it} = \alpha \text{shock}_{(i)t} \times \text{SOB_share}_i + \delta_i + \gamma_t + X_i \times \gamma_t + \varepsilon_{it}$$

- y_{it} : log of credit, deposits, or night light intensity, of district i at time t
- δ_i : district-fixed effects
- γ_t : year-fixed effects
- X_i : district-specific variables interacted with year dummies: log of population, share of urban population, share of population with secondary education, share of population below poverty line, share of people employed in agriculture in 2011, and log of number of bank branches in 2006
- SOB_share_i : share of SOB branches in 2006;
- $\text{shock}_{(i)t}$: **For global shocks:** crisis (2008-2009), post crisis (2010-2012), normal times (2003-2007 and 2013-2018)
For local shocks: departure of rainfalls

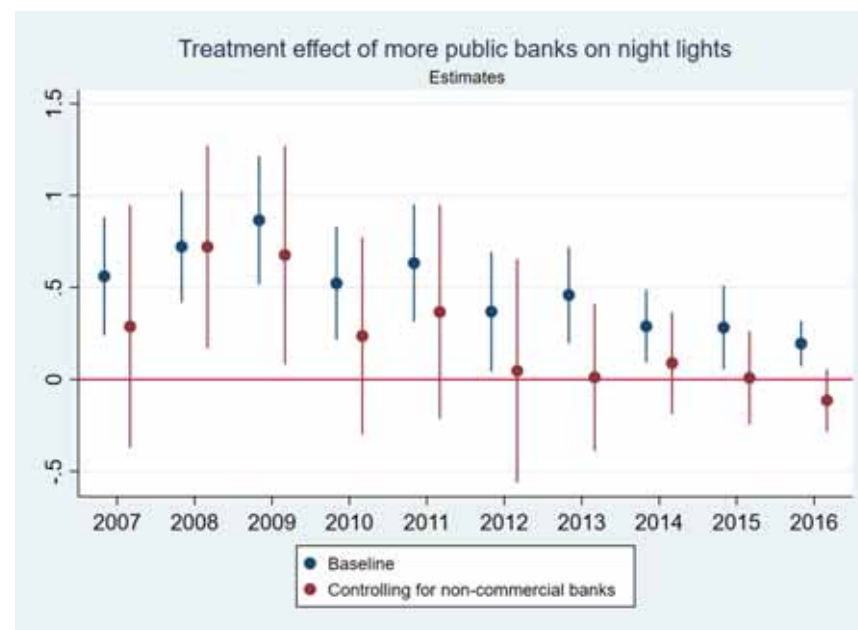
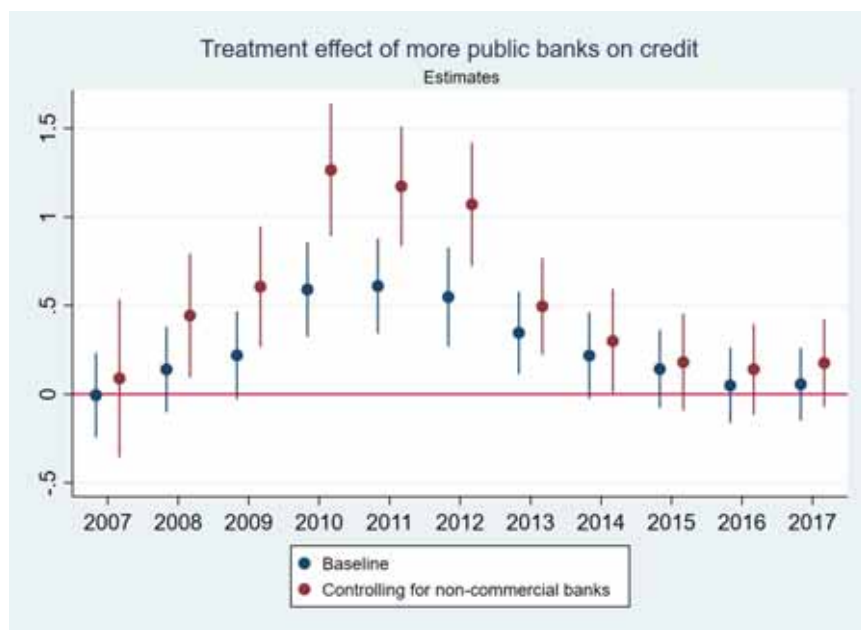
During and after the GFC, districts with more public banks had higher credit growth – with a positive impact on growth.

	Credit		Nightlight intensity	
Public Banks x Crisis	0.049 (0.065)	0.281*** (0.104)	0.425*** (0.094)	0.551*** (0.153)
Public Banks x Post-Crisis	0.453*** (0.085)	0.926*** (0.115)	0.139* (0.083)	0.069 (0.148)
Non-commercial Banks x Crisis		0.288*** (0.102)		0.159 (0.168)
Non-commercial Banks x Post-Crisis		0.593*** (0.098)		-0.089 (0.157)
Control variables	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
District fixed effects	Yes	Yes	Yes	Yes
R-squared	0.596	0.599	0.779	0.780
Observations	8034	8034	7481	7481

* p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at a district level. Control variables include district-specific variables interacted with year dummies: log of population, share of urban population, share of population with secondary education, share of population below poverty line, share of people employed in agriculture in 2011, and log of number of bank branches in 2006.

- Coleman and Feler (2015) find similar results for Brazil, where public banks during and after the GFC also stabilized the economy.
- Chakraborty (2020) finds a consistent result from a firm-bank dataset that shows that firms with connections to public banks suffered less from a credit crunch and that other firms moved to public banks.
- One reason could be related to deposits moving from private to public banks due to an implicit guarantee (Gupta and Eichengreen 2012).

During and after the GFC, districts with more public banks had higher credit growth – with a positive impact on growth.



Note: Error bars represent 95% confidence intervals. Example, in 2009, a ten percent larger share of public banks in a district translated into 2.18 percentage points more credit in that district.

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Public banks also play a stabilizing role during adverse rainfall patterns.

	Credit		Nightlight intensity	
Rain event	-0.129** (0.066)	-0.068 (0.132)	-0.250*** (0.062)	-0.318** (0.150)
Public bank x rain event	0.182* (0.102)	0.119 (0.158)	0.204** (0.085)	0.275 (0.169)
Non-commercial banks x rain event		-0.071 (0.137)		0.082 (0.155)
Control variables	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
District fixed effects	Yes	Yes	Yes	Yes
R-squared	0.54	0.54	0.78	0.78
Observations	7452	7452	7481	7481

* p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at a district level. Control variables include district-specific variables interacted with year dummies: log of population, share of urban population, share of population with secondary education, share of population below poverty line, share of people employed in agriculture in 2011, and log of number of bank branches in 2006.

Note: A rain event is defined by monthly rains being one-standard deviation above or below the monthly mean.

Public banks can help growth in manufacturing industries that rely more on external finance.

$$growth_{ij,t} = \beta_1 share_{ij,t-1} + \beta_2 public\ credit_{i,t} \times ext.\ funding\ needs_j + \beta_3 private\ credit_{i,t} \times ext.\ funding\ needs_j + \gamma_i + \gamma_j + \gamma_t + \varepsilon_{ijt}$$

	(1)	(2)	(3)	(4)
	VA growth	VA growth	VA growth	VA growth
Industry share in t-1	-0.95*** (-2.69)	-1.65* (-1.83)	-1.51** (-2.28)	-2.26 (-1.19)
Credit from private banks × external finance dependence	0.21** (2.04)	-0.35 (-0.65)	0.60** (2.03)	0.68 (0.50)
Credit from SOB × external finance dependence	1.51** (2.39)	2.82* (1.85)	1.81 (1.36)	-0.06 (-0.01)
Region	World	Asia	World	Asia
Sample relative to the median growth	All	All	Above	Above
Country FEs	YES	YES	YES	YES
Industry FEs	YES	YES	YES	YES
Observations	1122	473	555	213
R^2	0.085	0.105	0.090	0.162

t statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

$i \equiv$ country
 $j \equiv$ industry
 $t \equiv$ year

Source: WDI and UNIDO statistics. It includes 21 industries and 56 countries for the period 2008-2016.
Note: Estimation follows Galindo and Micco (2004).

- Rajan and Zingales (1998) show that more developed financial systems, are able to provide cheaper funds to firms.
- If the provision of credit by each type of banks is efficient, bigger amounts of credit supplied by it should have positive impacts on the relative growth rate of those industries that require external finance more (Galindo and Micco, 2004). => public banks seem more efficient in these industries, especially in Asia.

Public banks are where there are few private ones

Public banks in India are more prevalent in more rural and agricultural districts and where financial inclusion is low.

Public banks are in districts where they are needed...

... but there are less and less districts without private banks.

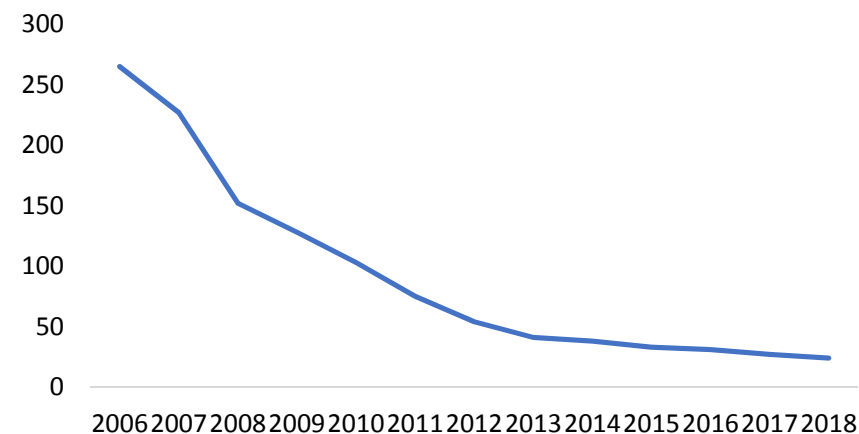
	Fraction rural population	Agriculture % of total empl.	Industry % of total empl.	Services % of total empl.	Literacy rate	Second. education compl. rate	Number of branches per 1 mln. people	Number of accounts per person
share of public bank branches	0.670*** (0.222)	0.566** (0.251)	-0.133 (0.124)	-0.434** (0.162)	-0.058 (0.133)	-0.075 (0.087)	-0.797 (0.584)	-0.009* (0.005)
share of non-commercial bank branches	1.193*** (0.185)	1.000*** (0.218)	-0.317** (0.127)	-0.684*** (0.123)	-0.272** (0.104)	-0.194*** (0.068)	-1.990*** (0.454)	-0.017*** (0.004)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.452	0.397	0.356	0.383	0.496	0.454	0.579	0.499
Observations	626	626	626	626	626	626	626	626

Note: Data is for 2011. * p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at a state level.

Source: Census 2011, Reserve Bank of India, and staff calculations.

Indian districts without private commercial banks

Number



Source: Reserve Bank of India.

But private banks are more efficient and more innovative.

Public banks are less cost-effective than private ones and non-listed private less than listed.

Effects on bank cost inefficiency in South Asia

	Coefficient	Standard error	t-statistic
<i>Constant</i>	0.4201	0.2104	1.9967*
<i>CRISIS</i>	0.0541	0.0311	1.7396
<i>SIZE</i>	-0.0961	0.0345	-2.7855*
<i>STATE</i>	0.5872	0.0597	9.8360*
<i>LIST</i>	-0.1348	0.0377	-3.5759*
<i>ETA</i>	-0.1595	0.0410	-3.8902*
<i>ROA</i>	-0.3872	0.0554	-6.9892*
<i>NEA</i>	0.0921	0.0414	2.2246*

Note: Data is for 111 banks from India, Pakistan, Bangladesh, and Sri Lanka from 1997 to 2004. The cost inefficiency is estimated in a first step as residuals of a pooled translog stochastic frontier equation.

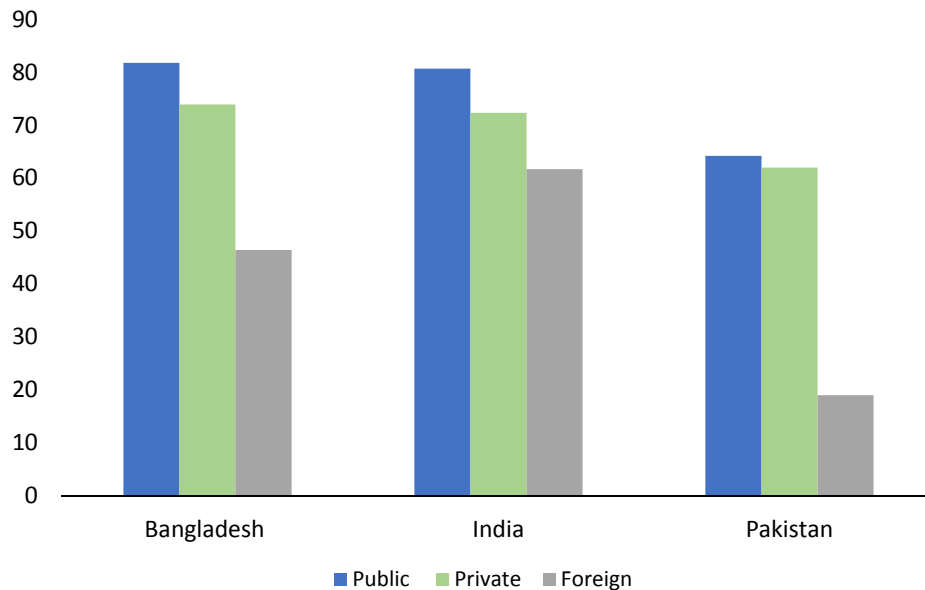
Source: Perera, Skully, and Wickramanayake (2007).

- Robin, Salim and Bloch (2018) show that bank cost has fallen due to financial deregulation in Bangladesh.
- Robin, Salim and Bloch (2019) show that banks have experienced positive TFP change after the financial deregulation in Bangladesh, where TFP growth is higher in private banks than their public sector counterparts in the post-reform period. Technological progress is the main driver of productivity change.

Public banks have a higher expenditure-income ratios and lower net interest rate margins.

Expenditure-Income Ratio by Types of Banks

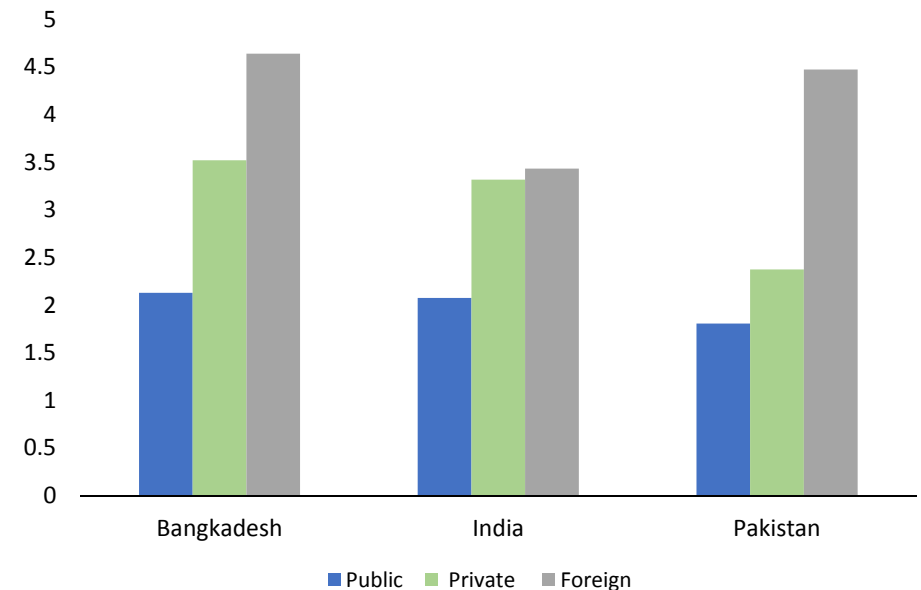
Percent



Note: Data is for 2019 data for India and Pakistan and 2017 for Bangladesh.
Source: : Central bank websites.

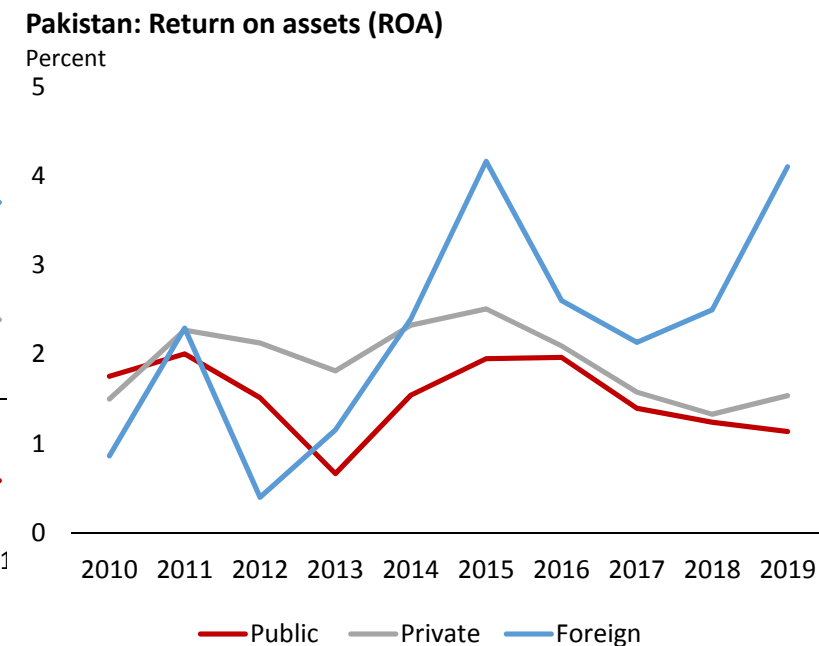
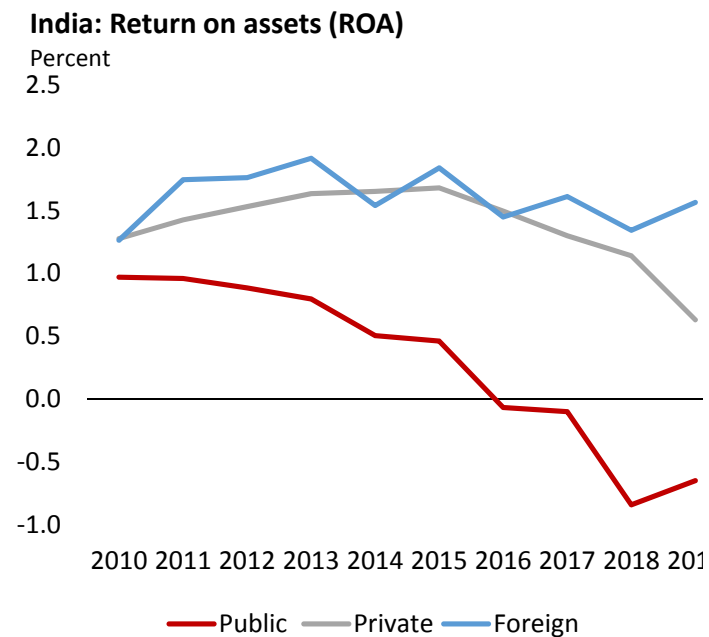
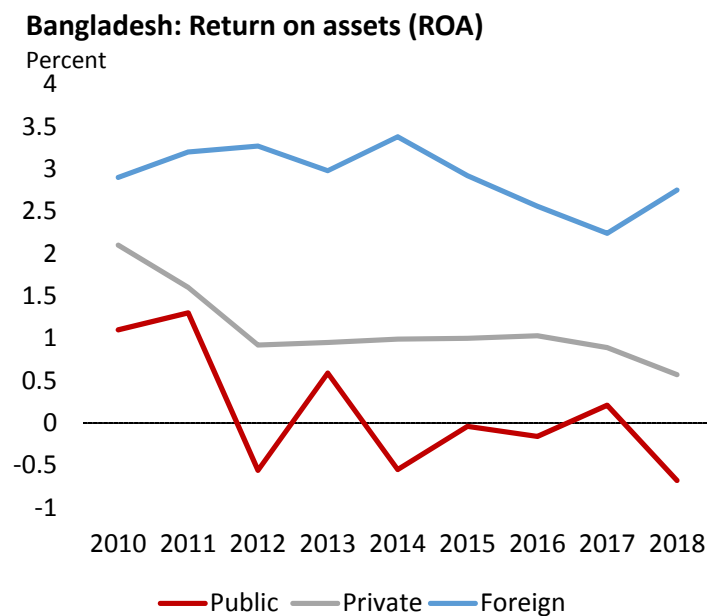
Ratio of net interest income to total assets

Percent



Note: Data is for 2019 for India and Pakistan and 2018 for Bangladesh.
Source: Central bank websites.

Public banks are less profitable than private ones ...

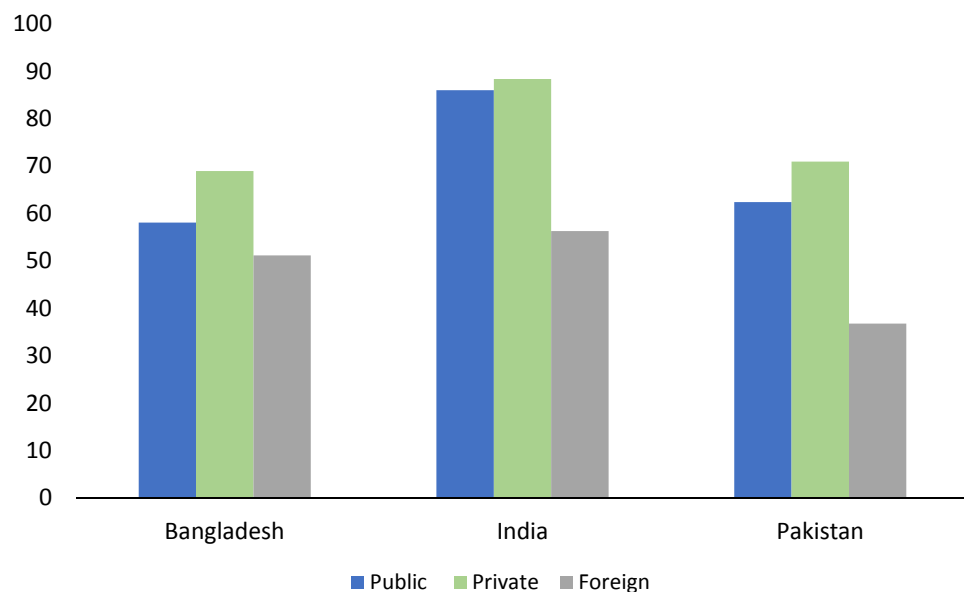


=> A lower profitability is consistent with the developmental and social view, but could also be due to inefficiency.

... even though public banks rely more on deposits and have lower operating costs.

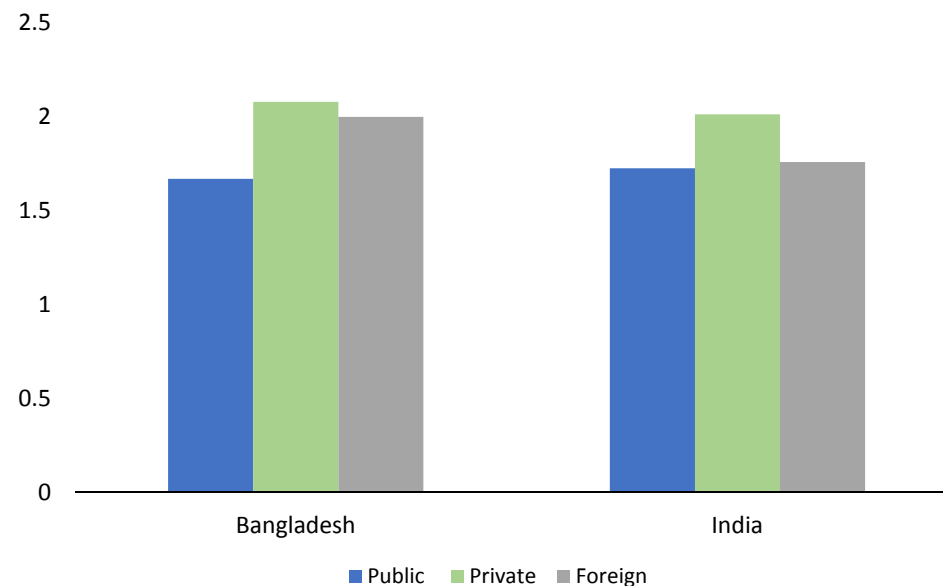
Banks' advance to deposit ratio

Percent



Ratio of operating costs to total assets

Percent



The state-owned commercial banks were able to maintain lower level of overheads, mainly due to their low-level staff expenses (staff salary is linked with government pay scale) and very large amount of total assets.

Note: Data is for 2018.
Source: Central bank websites.

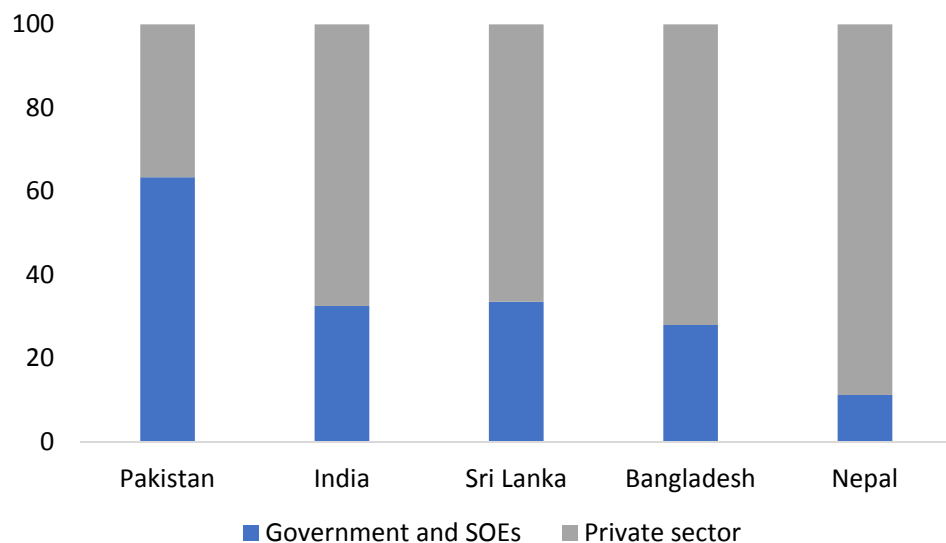
Note: Data is for 2019.
Source: Bank Regulation and Supervision Survey, World Bank.

Political considerations and personal objectives are a concern.

Private and especially public banks prefer government securities, which deprives the private sector of loans.

Domestic money banks' credit distribution

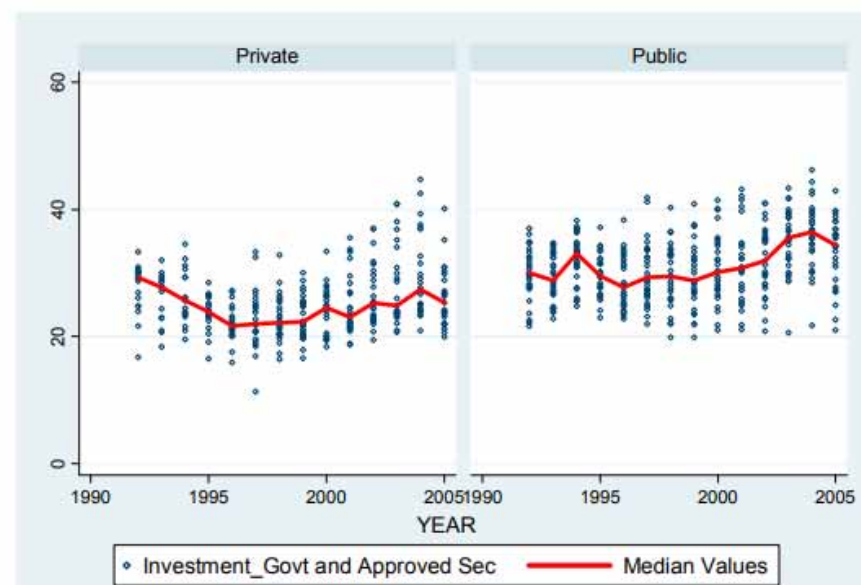
Percent



Note: Data is for 2016.

Source: Global Financial Development Database, World Bank

Investment in government (and other approved) securities in India
Percent of assets



Source: Gupta, Kochhar, and Panth (2012)

- Gupta, Kochhar, and Panth (2012) find that even after liberalization, public banks in India allocated a larger share of their assets to government securities than did private banks.
- This could be due to political pressure or economic considerations.

Public banks are used for political lending across the region.

We find mixed results for State elections in India

	Credit		Agricultural credit	
Public bank share x Election	-0.055*** (0.018)	-0.058*** (0.018)	-0.050*** (0.019)	-0.054*** (0.021)
Non-commercial bank share x Election	0.089*** (0.035)	0.095** (0.038)	0.120** (0.047)	0.116** (0.051)
Public bank share x L.Election		-0.011 (0.020)		-0.014 (0.022)
Non-commercial bank share x L.Election		0.023 (0.036)		-0.019 (0.040)
Control variables	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
District fixed effects	Yes	Yes	Yes	Yes
R-squared	0.386	0.386	0.482	0.482
Observation	5641	5641	5640	5640

Note: * p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at a district level.

There is strong evidence for political lending in Pakistan and Bangladesh

- Al Khwaja and Mian (2005) show that in Pakistan firms with political connections borrowed 45 percent more and had 50 percent higher default rates between 1996 and 2002. Such preferential treatment occurred exclusively in government banks.
- Robin, Salim and Bloch (2018) show that the presence of politically linked directors on the bank board has had an adverse effect on efficiency in Bangladesh.

- Carvalho (2014) shows that political lending has real implications on employment generation in Brazil: firms get lower interest rates from public banks in return for more job creation in politically competitive locations.
- In weak states public banks may increase the opportunities for corruption and rent appropriation. On the other hand, weak states also make contracting and regulation more difficult and they may hence benefit more from state ownership (Yeyati et al. 2007).

Policy discussion

Some evidence for all four views on public banks

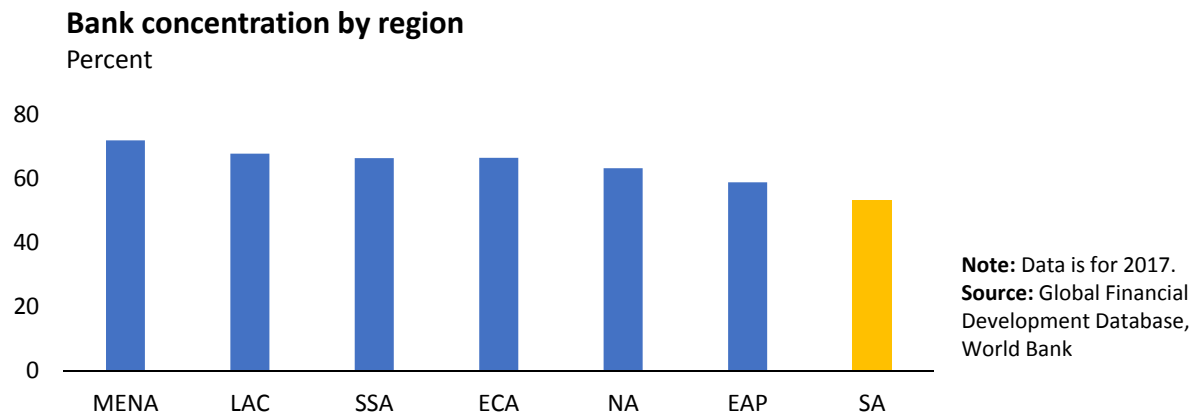
- We found indications that state banks perform a developmental role: Indian districts with many public banks had higher long-run growth and performed better in crises; crucial manufacturing sectors in Asia benefitted from public banks.
- We found indications that state banks perform a social role: they are more prevalent in more rural areas with more agriculture
- We found indications that state banks lack competitive pressures: in India and Bangladesh, they are less profitable and innovation is coming from outside the banks.
- We found indications an agency problem: political influence on lending before state elections, high NPLs could be result of connected lending.

Increasing the efficiency of public banks

- Public banks could be reformed to become more efficient
 - They could be clearer about the nature of their objective and mission and clearly account for the subsidy component.
 - They could be more transparent in their financial results, including in the amounts of explicit (and implicit) government subsidies, and on contingent liabilities.
 - They could improve their governance by strengthening operational independence, including a non-political board of directors.
- But public banks are not profit maximizers
 - Assigning a larger weight to performance may make them less responsive to the development mandate.
 - A profitable public bank may not be a success but signal the failure of the incentive scheme. If public banks start mimicking private banks, they become redundant and privatization would probably be the better solution.

More competition and financial innovation.

- FinTech companies may offer new solutions and may play a crucial development role in the future.
- More competition promotes efficiency through lower costs and incentives to innovate, which may result in more availability of credit. Nguyen, Skully, and Perera (2002) find that South Asian banks with higher market power generate less income from non-traditional activities. They argue that in South Asia activity restrictions hinder banks' ability to earn non-interest income through revenue diversification strategies.
- Removal of restrictions on foreign banks would expose domestic banks to more competition.
- But with less competition profits are higher and hence increase the strength of the financial system (and reduce the risk of insolvency). With lower profits and net-worth, banks may give less loans.
- The bank concentration in South Asia is lower than in other regions:

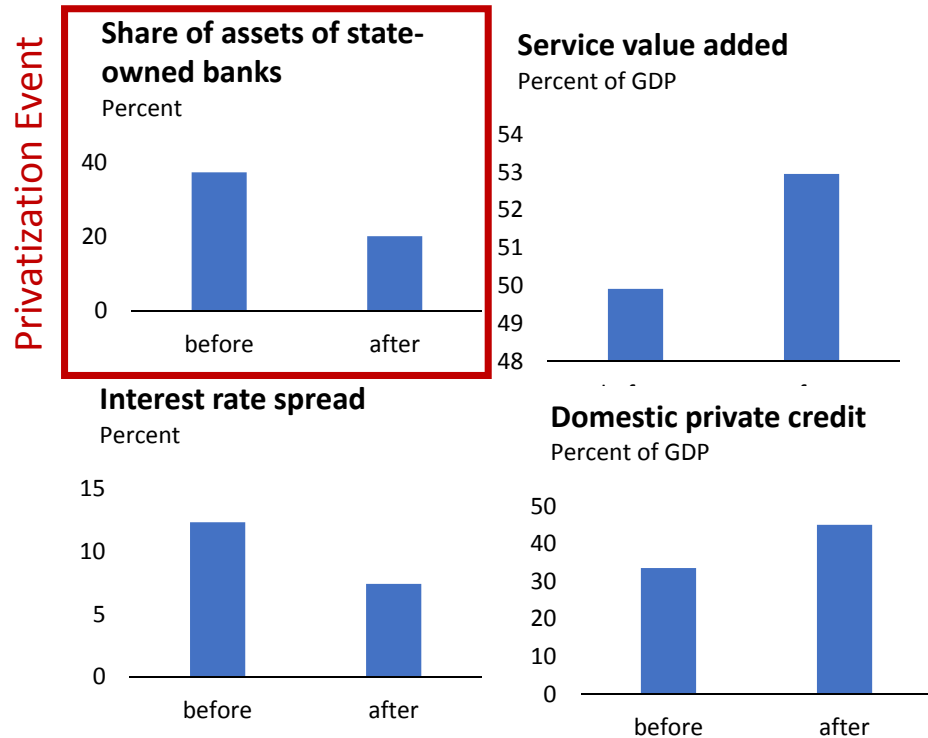


Privatizing public banks

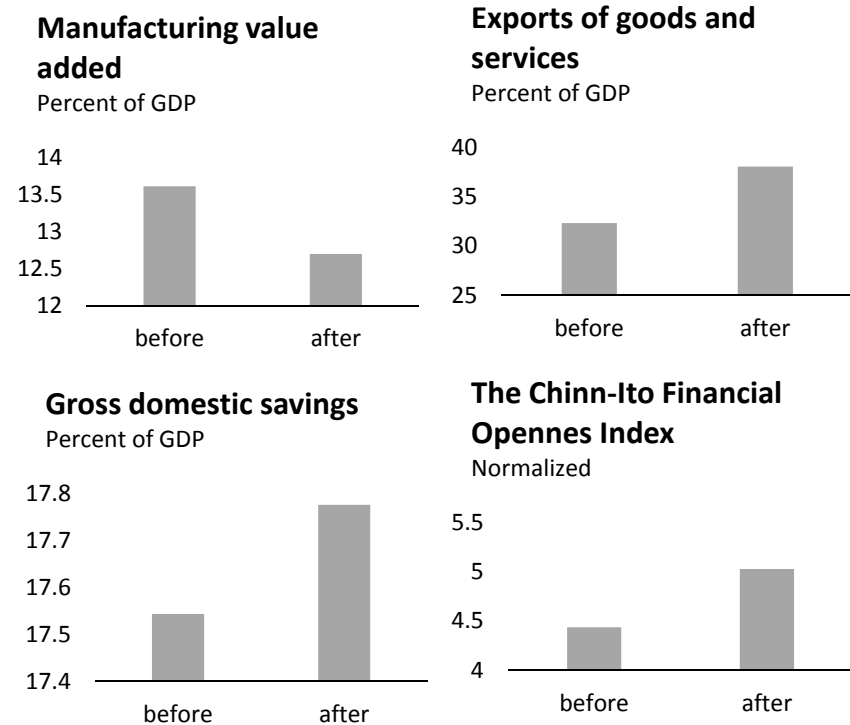
- Commercial banks without a development and social mandate would likely be more efficiently run under private ownership.
- Even some developmental and social roles could be delivered through private actors if “the government knows exactly what it wants to produce and if the characteristics of the goods or services to be produced can be written in a contract or specified by regulation” (Shleifer 1998).
- If public banks are privatized, it needs to be done right. Foreign investors should be allowed in and privatized banks tend to do better when sold to a single strategic investor.
- But not all goals can be achieved through contracts and regulation, especially because private providers have an incentive to cut costs on hard-to-measure development and social outcomes (Hart, Shleifer and Vishny 1997) and hence a rationale for some public ownership remains.

There is some evidence that privatizations reduce the interest rate spread, increase private credit, and help exports.

Statistically significant changes (at ten percent level)



Non-statistically significant changes (at ten percent level)



Note: A privatization event is defined as the biggest reduction of the SOB share in a country if it was at least five percentage points. We identify 46 such events from 1999-2016. Blue bars are statistically significantly different before and after at the ten percent level. Missing country observations are linearly interpolated. The value for before/after is computed as the average of the three years before/after the year of the event.

Source: Bank Regulation and Supervision Survey, World Bank, World Development Indicators, and staff calculations.

Appendix

The share state-owned banks in South Asia has declined in the 2000s, but is stable since then.

Comparison of share of assets owned by state-owned banks between World and South Asia



Note: To maximize the number of observations for the world, missing country observations are linearly interpolated.

Sources: Bank Regulation and Supervision Survey, World Bank, World Development Indicators, and staff calculations.

And public and development banks continue to focus on these areas.

	Fraction rural population	Agriculture, % of total empl.	Industry, % of total empl.	Services, % of total empl.	Literacy rate	Second. education compl. rate	Number of branches per 1 mln. people	Number of accounts per person
Δ share of public bank branches (2006-2018)	0.471*** (0.138)	0.501*** (0.182)	-0.037 (0.123)	-0.465*** (0.096)	-0.011 (0.091)	-0.071 (0.070)	-0.145 (0.318)	-0.002 (0.002)
Δ share of development branches (2006-2018)	0.055 (0.172)	0.123 (0.195)	0.124 (0.111)	-0.248* (0.123)	0.144 (0.116)	0.001 (0.096)	0.621 (0.444)	0.003 (0.004)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.305	0.298	0.326	0.295	0.477	0.433	0.511	0.409
Observations	625	625	625	625	625	625	625	625

Note: * p<0.1, ** p<0.05, *** p<0.01. Standard errors are clustered at a state level.

Note: Explanatory variables are for 2011; the change in the share of banks is computed from 2006 to 2018.

Source: Census 2011, Reserve Bank of India, and staff calculations.

Box: The effect of banking liberalization on state-owned banks in India is still debated.

Convergence and structural break in data

	1995-1996 to 1998-1999		1999-2000 & 2000-2001	
	(1)	(2)	(3)	(4)
Constant	0.0721* (0.0172)	0.0721* (0.0204)	-0.0411 (0.0347)	-0.0411 (0.0396)
Log of assets	-0.0198* (0.0025)	-0.0198* (0.0044)	0.0005 (0.0064)	0.0005 (0.0092)
Log of assets square	0.0011* (0.0002)	0.0011* (0.0002)	0.0001 (0.0003)	0.0001 (0.0004)
Priority sector advances as % of total advances	0.0001* (0.00009)	0.0001* (0.00008)	0.0001 (0.0001)	0.0001 (0.0001)
Government securities as % of total investment	-0.00003 (0.00006)	-0.00003 (0.00007)	0.00008 (0.0001)	0.00008 (0.0002)
Non-interest income as % of total income	0.0006* (0.0001)	0.0006* (0.00009)	0.0005* (0.0002)	0.0005** (0.00022)
Non-urban branches as % of total branches	-0.00003 (0.00006)	-0.00003 (0.00007)	7.97e-06 (0.00001)	7.97e-06 (0.00001)
Old private-sector bank (dummy)	0.0165* (0.0051)	0.0165* (0.0052)	0.0099 (0.0066)	0.0099 (0.0064)
New private-sector bank (dummy)	0.0181* (0.0082)	0.0181** (0.0088)	0.0092 (0.0064)	0.0092 (0.0070)
Foreign bank (dummy)	0.0182** (0.0077)	0.0182** (0.0081)	0.0086 (0.0093)	0.0086 (0.0076)
Time (trend)	0.0020 (0.0013)	0.0020** (0.0008)	0.0021 (0.0018)	0.0021** (0.0011)
Time * Old private bank	-0.0045* (0.0016)	-0.0045* (0.0014)	-0.00003 (0.0034)	-0.00003 (0.0027)
Time * New private bank	-0.0021 (0.0020)	-0.0021*** (0.0018)	0.0004 (0.0028)	0.0004 (0.0022)
Time * Foreign bank	-0.0057* (0.0018)	-0.0057* (0.0014)	-0.0028 (0.0065)	-0.0028 (0.0042)
Number of observations	330	330	167	167
F	13.37	10.66	2.65	3.00
(p-value)			(0.00)	(0.00)
R ²	0.44	0.44	0.14	0.14

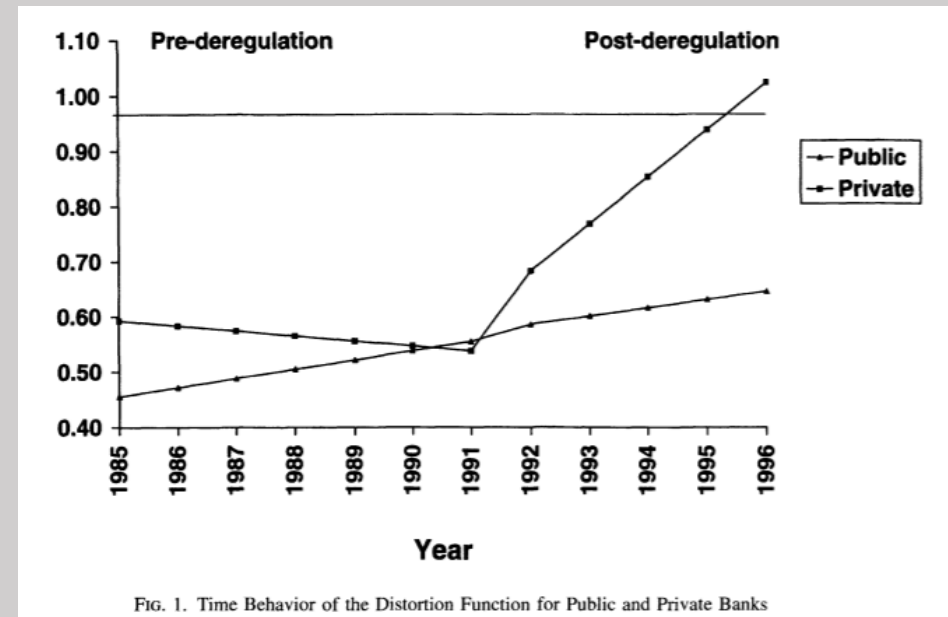
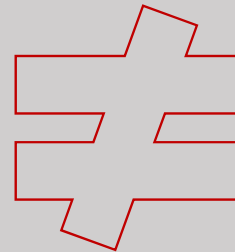


FIG. 1. Time Behavior of the Distortion Function for Public and Private Banks

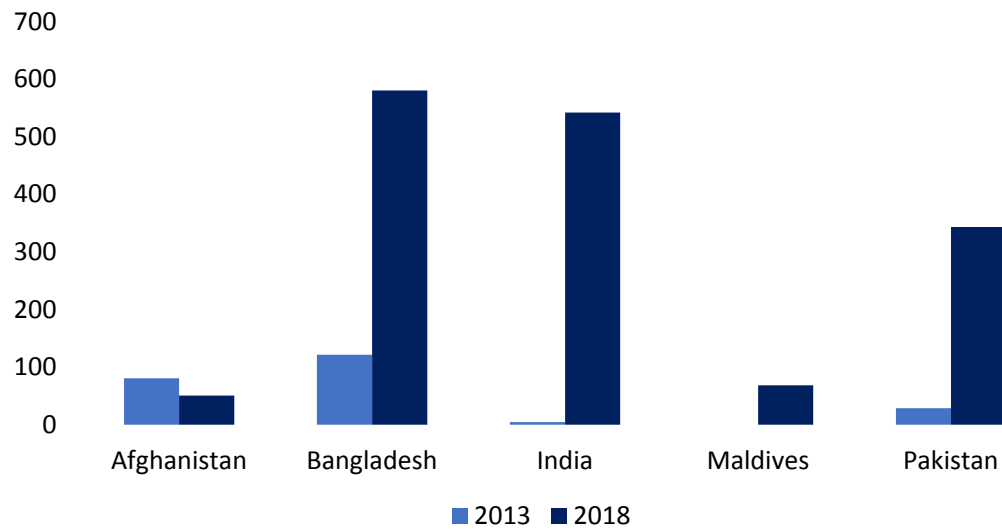
Bhaumik and Dimova (2004) find that higher competition after bank deregulation in India in 1991 has narrowed the performance gap between private and public banks and that since 2000 there is no more statistically significant gap.

Kumbhakar and Sarkar (2003) find that allocative distortions after deregulation only decreased for private banks and that productivity growth diverged as public banks could not adjust employment (a quasi-fixed input).

Innovations happen outside the public banks.

Registered mobile money accounts in South Asia

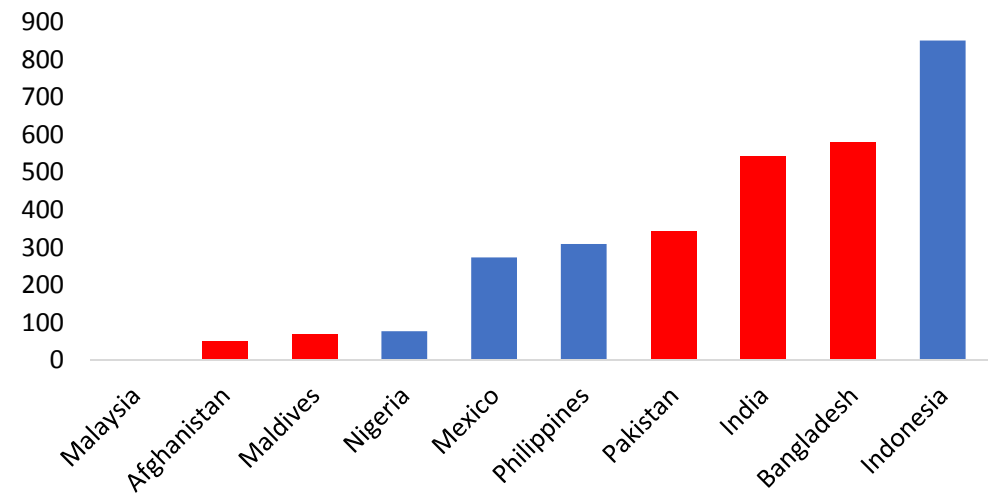
Number per 1,000 adults



Source: IMF and World Bank Fintech Survey.

Registered mobile money accounts

Number per 1,000 adults



Note: Red bars show South Asian countries. The data is for 2018.

Source: IMF and World Bank Fintech Survey.