Bank Capital Structure Dynamics and Covid-19: Evidence from South Asia

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ARTICLE INFO	ABSTRACT
	The severity in terms of economic activity of the Covid-19 crisis was higher than the global financial crisis. Covid-19 has not only challenged the economic activity across the world but has put to test how the bank operates under the global crises. The objective of this paper is to identify the impact of the Covid-19 crisis on the South Asian banking sector. We investigate if South Asian banks have target leverage and how the Covid-19 crisis impacted their capital structure dynamics. To fulfill the objective, past data on all banks of South Asian countries listed in the Thomson Reuter Refinitiv were considered. The sample ended up including quarterly data of banks from India, Pakistan, Bangladesh, Sri Lanka, Bhutan Nepal and Afghanistan. Engle-Granger's two-step procedure for error correction and two-step GMM estimation was employed to measure the speed of adjustment and the impact of Covid-19 on bank capital. The study found that the capital structure determinants favor the static trade-off theory for South Asian banks. It is also observed that South Asian banks' capital was negatively impacted by Covid-19. The analysis supports the view of leverage convergence for the capital structure. This study improves our understanding of the capital structure dynamics of banks in response to exogenous shocks in South Asia.

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1.   Introduction

Research shows that the Covid-19 has triggered the economic contractions and the global GDP is expected to decline by 5.6% (Chen & Yeh, 2021). This would be the single most and biggest global recession so far despite the government's fiscal and monetary measures. The main question now is the long-run recovery and the productivity of the economies. i.e. whether the Covid-19 effects will be long-run? Secondly, how will the economies and firms respond? During the pandemic different national and international organizations stood up against the global crises. However, the central banks and finance ministries of countries began to remove policy support as sharing the burden has already disturbed the economies as there exists a gap between the output and input levels of activity.

Bonam & Smădu (2021) declared in their recent study that Covid-19 is not a financial crisis, and we cannot compare this pandemic with the past pandemics since the times have been changed, which bought changes in the Size and structure of the economies concerning differences and sizes in the scope of pandemics. Although our broad experience is relative, a bit

different, and laymen see the pandemic more financially distorted. Fuentes & Moder (2021) showed with the empirical justification that Covid- 19 is the primary source of the economic crisis due to decreased productivity, disturbing the supply, which further created demand during the financial crisis hence the economic disruption.

In light of the above-mentioned literature, there is a conflicting opinion about what the Covid-19 crisis is. The majority says this is different from the global financial crisis & therefore it requires attention that needs to be paid in this regard. In this study, the focus would be on how the Covid-19 crisis has affected the adjustment tendency of leverage levels in the banking sector of Asia, which would conclude the impact of Covid-19 and we will be able to say whether this is different from the global financial crisis or not.

Speed of Adjustment has been extensively covered in the literature. Firms target a specific capital structure and the rate at which the target is achieved depicts the financial decision-making of firms. This has significant implications for firm value. The deviation from target leverages may be caused by systematic or idiosyncratic shocks and non-financial firms make decisions about debt and equity. In their case, there are multiple competing theories about how firms choose their capital structures like a trade-off, pecking order, and marketing theory. All of these theories have received some support in the literature. This raises the question of whether firms have target leverages and is adjustment intentional or just mean reversion (Chauhan & Banerjee, 2019). Evidence suggests that firms do have target leverages and the speed of adjustment is heterogenous across cross-sections (Abbas et al., 2020).

Although a plethora of studies have discussed the speed of adjustment for companies a gap exists to see how the bank responds to the target leverage. Bank dynamics are focused on adjusting optimal capital positions to maximize firm value. Banks adjusting to an optimal capital structure entails that capital requirements would be of second-order importance. In this regard capital requirements being non-binding have been extensively proposed in the literature (Bevilacqua et al., 2019). Empirical evidence also suggests that individual-specific factors impact capital structure decision-making (Gropp & Heider, 2010; Mohammad, 2021; Mohammad et al., 2021; Mohammad & Nishiyama, 2021).

The market discipline-based view and the buffer view are two theories on how the capital structure is decided. The market discipline view suggests that shareholders, depositors, and debt holders determine bank capital structures (Aldeehani, 2019). An alternative view is the buffer view which attributes the capital structure of information asymmetry based on the pecking order theory. The cost of equity is associated negatively with profitability, dividend payout, and market-to-book ratios (Luong & Qiu, 2021). The effect of bank size on how much capital is kept as a buffer is dependent on the complexity and information asymmetry (de Silva et al., 2019; Mohammad & Nishiyama, 2021).

Post the global financial crisis of 2008 there is extensive evidence of capital adjustment (Mohammad et al., 2021). After a decade, Covid-19 was an exogenous demand and supply shock that dramatically increased business uncertainty. Covid-19 was a very different shock compared to the global financial crisis (GFC) and therefore there is a need to relook at the response of banks with a new lens. The severity in terms of economic activity of the Covid-19 crisis was higher than the global financial crisis (Barroy et al., 2020). Response to quantitative easing was higher during the Covid-19 period (Chen & Yeh, 2021). Studies have suggested that banks that have learned from the 2008 crisis had more robust capital positions and were not affected by liquidity shocks (Giese & Haldane, 2020; Li et al., 2020). With such dissimilarities, a look into the capital structure dynamics during the Covid-19 period is an area that has not been fully explored especially in the case of emerging markets.

According to Hanna (2020), there are very few studies that consider the effect of the crisis on the dynamic process of capital structure. In the case of the global financial crisis (GFC),

country-specific studies suggest that bank size, capital adequacy, and high liquidity are positively related to higher speeds of adjustments. There is also evidence that speeds of adjustment were higher during the global financial crisis for US banks (Abbas et al., 2020). Similarly, Mohammad (2021), in analyzing the response of Pakistani banks, found that capital buffers were not affected negatively in the case of Covid-19. Additionally, monetary policy become a significant factor in determining the capital structure and the magnitude of bank-specific factors decreased in determining capital structure. Was this response a one-off case or a generalizable phenomenon for South Asia? Empirical evidence of adjustment in the case of emerging markets is limited and the effect of Covid-19 on the speed of adjustments of banks is a gap in the literature that is still unexplored. This study focuses on identifying the impact Covid-19 crisis on South Asian financial sector. Do South Asian banks have a target capital structure? If so, how did the Covid-19 crisis impact the adjustment speeds?

This study adds to Covid-19 literature by providing evidence of capital shock faced by banks. It documents adjustment speeds in South Asian banks as they converge to the target leverage ratios in the context of the Covid-19. Evidence from emerging countries, which provide a different context compared to developed countries, is presented in this study. This study shows that during recessions banks adjust toward leverage targets more quickly than normal circumstances. Finally, this study shows that Two-step Engel Granger error correction can be used to investigate long-run convergence as an alternate method to the Generalized Method of Moments (GMM).

Some of the important contributions as well as implications for this study are; it will provide knowledge of convergence behavior and give an insight into bank self-correction and or of regulatory control by regulatory authorities. The financial stability of banks can also be reviewed in the context of emergencies especially COVID-19 and banks respond to them by adjusting their cost of financing. Finally, speeds of adjustments increasing during recessions are evidence that would be important for central banks when developing regulatory requirements to ensure financial stability in heterogeneous banking systems across south Asia.

2.   Literature Review

Leverage plays a central role in the banking sector. As (Modigliani & Miller, 1958) states in their study that for the banks the leverage is at an optimal position when there is a market premium and there exist no agency problems, deposit insurance, taxes, or any other distortions. The capital structure of the banks shows the bank choice of how to finance the balance sheet – deposits, loans, equity, and cash. These balance sheet items are extremely receptive to the economic shocks as they link the bank's capital structure to the economy. The composition of the bank's capital structure defines its response to the economic shock. The higher the ratio of equity to debt the greater the bank's ability to absorb the economic shocks and vice versa.

In a frictionless world, banks would always maintain their target capital ratio. However., if adjustment costs are high, the bank's decision to adjust its capital structure depends on the trade-off between the adjustment costs and the costs of operating with suboptimal leverage (De Haas & Peeters, 2006; Hoque & Pour, 2018). It is not a hidden fact that banks are amongst the most leveraged institutions since their primary business model runs on that. Recently, many studies have been done on banks' excessive use of leverage. and many economists believe that different regulations should control it If a general conclusion is to be taken, economists believe that banks could perform even better regarding all the socially valuable functions and support financial growth without endangering the financial system with much equity.

Capital structure theory dates back to the MM Propositions and tax advantages leading to the preference of debt to optimize firm value (Modigliani & Miller, 1958). Agency, bankruptcy, and debt costs were added later included as part of the static trade-off theory (Agyei et al., 2020). Alfaro et al. (2020) proposed that higher debts were associated with higher market value.

However, the Pecking order theory proposed that optimal capital structures did not exist due to the presence of information asymmetry (Danso et al., 2019). The market timing theory also supported this theory (Aflatooni & Khazaei, 2020). Similarly, the inertia theory suggests that firms move towards target leverage based on stock price movements (Mikalef et al., 2021). These theories try to explain how firms manage the decision to source their financing all with some empirical support in the literature.

Empirical studies on capital structure attribute the determinants to firm size, asset tangibility, non-debt tax, dividend policy, management behavior, and ownership structure (Ezeani et al., 2021). Dynamic models have been in literature to explain how firm leverage ratios evolve towards target leverage as a partial adjustment model. Adjustment/transaction costs hinder the firms from changing leverage directly. Studies have found an insignificant impact of size on the speed of adjustment; however, growth and distance are found to positively impact the speed of adjustment. The previous researches also find that non-debt tax shield ownership structure and real GDP positively impact the speed of adjustment (Haron et al., 2013; Thoa & Thaoa, 2020).

Especially for banks, the market discipline view suggests that shareholders, depositors, and debt holders determine bank capital structures (Aldeehani, 2019). An alternative view is the buffer view which attributes the capital structure of information asymmetry based on the pecking order theory. The cost of equity is associated negatively with profitability, dividend payout, and market-to-book ratios (Luong & Qiu, 2021). The effect of bank size on how much capital is kept as a buffer is dependent on the complexity and information asymmetry (Mohammad & Nishiyama, 2021; Myers & Majluf, 1984). There is growing evidence of the role of bank-specific factors taking up the major share of determinants of capital structure (Frank & Goyal, 2004; Gropp & Heider, 2010; Mohammad et al., 2021; Mohammad & Nishiyama, 2021).

There is limited evidence on the speed of adjustment of banks. In China, adjustment speed is higher where there is higher bank competition (Jiang et al., 2017). In the USA, banking deregulation positively impacts leverage adjustment speeds of nonfinancial firms (Rahman, 2020). Abbas et al. (2020) find that firm size and asset structure have positively impacted the speed of adjustment in nonfinancial firms. Both financial and nonfinancial firms exhibit convergence to target leverages in Nigeria (Ukaegbu, 2014). Evidence suggests that bank size, capital adequacy, and high liquidity are positively related to higher speeds of adjustments.

There is also evidence that speeds of adjustment are higher during the crisis as is suggested by (Abbas et al., 2020) for US banks. Hoque & Pour (2018) analyze banks from the world and find that growth opportunity, size, and bank risk impact bank leverage positively. They suggest that macroeconomic factors and market characteristics also play a role in capital structure determination. Islamic banks are also found to be exhibiting long-run convergence and co-integration. Evidence of the role of regulatory capital, global and eurozone crises on bank leverages was explored by (De Castro & Lopes, 2021; Guizani, 2021). There is a dearth of empirical evidence on the capital structure dynamics of banks, especially in emerging economies. This study aims to fill this gap.

3.   Methodology
3.1. Sample

All Listed banks (total 54 banks) of South Asian countries listed in the Thomson Reuter Refinitiv data stream were considered for the analysis. The sample ended up including quarterly data of banks from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, Nepal, and Afghanistan. Following Mohammad (2021), this study used 6 years of quarterly data to study the impact of Covid-19 on bank leverage to allow for the capture of ample pre and during Covid observations.

The study employs the Engle-Granger Error Correction model on panel data to check for long-run convergence and the GMM estimation is used for robustness purposes. GMM has been extensively used in literature because of its usefulness in resolving problems of endogeneity in a dynamic panel.

To test for the presence of long-run convergence of South Asian banks an error correction model using the Engle-Granger Two-Step Procedure is estimated (Hu et al., 2013; Nampewo, 2012). The model is tested for stationery using fishers dickey fuller unit root test for panel data and all variables are stationary at the first difference I(1). The following model is tested and is an extension of (Frank & Goyal, 2004; Mohammad, 2021).

$$Leverage_{i,j,t} = \alpha_{i,j,t} + \beta_1 Size_{i,j,t} + \beta_2 Profit_{i,j,t} + \beta_3 MtoB_{i,j,t} + \beta_4 Dividend_{i,j,t} + \beta_5 Tier1CapRatio_{i,j,t} + \beta_6 NonDepositLiabilities_{i,j,t} + \beta_7 Covid_{i,j,t} + \varepsilon_{i,j,t} \quad (1)$$

Leverage is defined as (1-Total Capital/ Total Assets) for bank *i* at time *t*, country j and is used by (Gropp & Heider, 2010; Mohammad et al., 2021; Mohammad & Nishiyama, 2019). Size is the log of total assets. Profit is measured as pre-tax profit + interest expenses, divided by the book value of assets. Market-to-book is the market value of assets divided by the book value of assets and proxies growth opportunities. The dividend is a dummy that takes a value of 1 if the dividend is paid during a quarter. Tier1CapRatio is Tier 1 capital divided by risk-weighted assets that are used as a measure of risk. Non-Deposit Liabilities are defined as leverage ratio minus deposits as a ratio of total assets and are a measure of liquidity. Covid is a dummy value that takes values of 1 from q1 of 2020 to q1 of 2021 and measures the impact of Covid-19. This method has been used by other researchers to measure the impact of Covid-19 (Hauser et al., 2021; Mohammad, 2021).

The error term is tested for stationarity and is found to be I(0). This is suggestive of long-run cointegration. In step 2 the lagged term of the error term (ECT) is regressed in a difference equation (equation 2) to come up with the short-run and long-run dynamics.

$$D(Leverage_{i,j,t}) = +\beta_1 D(Size_{i,j,t}) + \beta_2 D(Profit_{i,j,t}) + \beta_3 D(MtoB_{i,j,t}) + \beta_5 D(Tier1CapRatio_{i,j,t}) + \beta_6 D(NonDepositLiabilities_{i,j,t}) + \gamma_1 ECT_{i,j,t-1} + \epsilon_{i,j,t} \quad (2)$$

The coefficient of the lag error correction terms γ_1 reflects the speed of adjustment towards equilibrium. Negative significant values between 0 and -1 suggest that leverage adjusts towards a long-run value monotonically. Values between -1 and -2 suggest an adjustment in a dampening manner. To test for how the speed of adjustment is due to bank-specific factors and during Covid equation (2) is extended by the inclusion of an interaction term of ECT and the bank-specific term of Covid-19 dummy.

$$D(Leverage_{i,j,t}) = +\beta_1 D(Size_{i,j,t}) + \beta_2 D(Profit_{i,j,t}) + \beta_3 D(MtoB_{i,j,t}) + \beta_5 D(Tier1CapRatio_{i,j,t}) + \beta_6 D(NonDepositLiabilities_{i,j,t}) + \gamma_1 ECT_{i,j,t-1} + \gamma_2\{Covid, BankspecificVariables\} \times ECT_{i,j,t-1} + \epsilon_{i,j,t} \quad (3)$$

To test for the robustness of the result a two-step difference GMM model is estimated using the following equation

$$Leverage_{i,j,t} = \alpha_{i,c,t} + \delta_1 Leverage_{i,j,t-1} + \beta_1 Size_{i,j,t} + \beta_2 Profit_{i,j,t} + \beta_3 MtoB_{i,j,t} + \beta_4 Dividend_{i,j,t} + \beta_5 Tier1CapRatio_{i,j,t} + \beta_6 NonDepositLiabilities_{i,j,t} + \beta_7 Covid_{i,j,t} + \varepsilon_{i,j,t} \quad (4)$$

To find out how the speed of adjustment is impacted during Covid equation (4) is extended by the inclusion of an interaction term of ECT and the bank-specific term of the Covid-19 dummy.

$$Leverage_{i,j,t} = \alpha_{i,j,t} + \delta_1 Leverage_{i,j,t-1} + \delta_1\{ovid, BankspecificVariables\} \times Leverage_{i,j,t-1} + \beta_1 +$$
$$\beta_1 Size_{i,j,t} + \beta_2 Profit_{i,j,t} + \beta_3 MtoB_{i,j,t} + \beta_4 Dividend_{i,j,t} + \beta_5 Tier1CapRatio_{i,j,t} +$$
$$\beta_6 NonDepositLiabilities_{i,j,t} + \beta_7 Covid_{i,j,t} + \varepsilon_{i,j,t} \tag{5}$$

4. Results

An unbalanced panel of listed banks in South Asia is used and quarterly data from 2016 to 2021 is used as a sample. The descriptive statistics can be seen in Table 1. The correlations matrix (Table 2) suggests the absence of multicollinearity in the data. This gave a rough idea about the variable under study, their characteristics, and the correlation among them.

Table 3 shows the estimated result of equation 1 fixed effect estimation. Gropp & Heider (2010) tested bank leverage of large EU and US banks and their fitness was higher compared to (Mohammad et al., 2021) for Asian countries.

Bank-specific factors like size, profitability, and non-deposit liabilities have a significant impact on bank capital structure. Larger banks are less capitalized and higher profitability is associated with higher deposit ratios consistent with (Mohammad et al., 2021). This is consistent with static trade-off theory, arguing that higher tax shields from higher leverages and lower bankruptcy risks explain the positive relationship. However (Hoque & Pour, 2018), suggest a negative impact of profitability on bank leverage favoring the pecking order theory.

Table 1
Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Tier 1 Capital Ratio	878	12.91597	4.955214	4.1	34.79
Bank Size	1830	19.76416	2.020154	10.79185	24.60243
Profit	1076	0.0433183	0.0232399	0.0009995	0.1536085
MtoB	1704	0.0002232	0.0011408	4.91E-06	0.0391379
Dividend Payout	1830	0.5169399	0.4998495	0	1
NonDeposit Liabilities Ratio	1669	0.1314986	0.1079093	0.0027587	0.945281
Leverage	1830	0.8002256	0.1828591	0.0136912	0.9471188

Table 2
Correlation matrix

		1	2	3	4	5	6	7
1	Tier 1 Capital Ratio	1						
2	Size	-0.2778	1					
3	Profit	0.6758	-0.3167	1				
4	MtoB	0.1771	-0.1316	0.1816	1			
5	Dividend Payout	0.2345	-0.2453	0.4298	0.0585	1		
6	NonDeposit Liabilities	0.1582	-0.1345	0.393	-0.04	0.2381	1	
7	Leverage	-0.3997	-0.0316	-0.3844	-0.1458	-0.0695	0.0799	1

Growth opportunities are predicted to be negatively associated with leverage in the static trade-off theory. Our results are inconclusive however the negative coefficient favors the static trade-off theory. Giese and Haldane (2020) argue that bank capital buffers were more robust compared to the 2008 global financial crisis. This study finds that capital was negatively impacted by the Covid-19 crisis for South Asian banks. Mohammad (2021) find that the capital structure of Pakistani banks increased capital structure at the time of the Covid-19 crisis. In the case of the global financial crisis, post-crisis was reported to be higher in Asian banks (Mohammad et al., 2021). De Castro & Lopes (2021) find similar evidence in the case of the eurozone crisis and global financial crisis, where banks strengthen their capital positions post-crisis.

Table 3
Main Model Estimation (Step 1)

Variables	Model 1 Coef./(Std.Err)
Tier 1 Capital Ratio	-0.0041
	(0.0028)
Siz	-0.0031*
	(0.0016)
Profitability Ratio	0.7090**
	(0.3214)
Market-to-book Value	-1.3276
	(0.8009)
Dividend Payout	-0.0043
	(0.0076)
NonDepositLiabilities Ratio	0.5268***
	(0.1339)
Covid Period	0.0155**
	(0.0064)
Constant	0.8758***
	(0.0568)
R-squared	0.319
Adj. R-squared	.3127108
No. of Obs	721
No. of Groups	60

Note. * p<.1, ** p<.05, *** p<.001

Model 2 is the two-step Engle-Granger estimate where the different terms represent the marginal effect of bank-specific variables on bank leverage and the lag error correction term represents the speed of adjustment (Table 4). Tier 1 capital as a ratio of risk-weighted assets is a proxy for risk and is consistent with both the buffer and market view. Size is also suggestive of both views. Market-to-book value is negatively impacting bank leverage and is significant and favoring the market/corporate finance view. These are consistent with studies on Asia (Hoque & Pour, 2018; Mohammad, 2021; Mohammad et al., 2021) and for the EU and USA (Gropp & Heider, 2010).

Model 2 (Table 4) suggests that adjustment is taking place and leverage is converging to its target leverage. Evidence suggests that in Asia leverage is adjusting to its target of 24.8% per quarter. Including the interaction term and controlling for Covid-19 improves the significance of the results in model 3 (Table 4). The interaction term is negative and significant between 0 and minus 1. The speed of interaction during the Covid-19 period was 43% and is statistically significant.

Bank size has an insignificant impact on leverage in the short run. The coefficient however is positively favoring the static trade-off theory consistent with (Sheikh & Wang, 2010). Tier 1 capital ratio as a measure of risk, has a negative relationship with bank leverage. Gropp & Heider (2010) use gross non-performing loans as a measure of bank risk and show a negative relationship between risk and leverage. The market Book ratio of assets is used as a proxy of growth opportunity (Gropp & Heider, 2010; Mohammad & Nishiyama, 2021; Sheikh & Wang, 2010). A negative significant impact is found for banks in South Asia consistent with the static trade-off theory. The trade-off theory predicts that higher liquid banks will have higher leverages. Higher non-deposit liabilities proxies' higher liquidity. For South Asia, higher liquidity is associated with the tradeoff theory.

Previous studies have employed a two-step GMM to test for speed of adjustment. For robustness purposes, the model is estimated using two-step difference general methods of the moment (GMM) using robust standard errors. Table 5 shows the results of the two-step GMM estimation.

Table 4
Estimation Results of the Error Correction Model

Variables	Model 2 Coef./(Std.Err)	Model 3 Coef./(Std.Err)
D. Tier 1 Capital Ratio	-0.0023	-0.0026*
	(0.0015)	(0.0015)
D.Size	0.0006	0.0006
	(0.0005)	(0.0006)
D.Profitability Ratio	0.1680	0.2446
	(0.2259)	(0.2080)
D.Market-to-book Value	-0.5479*	-0.4831**
	(0.2824)	(0.2318)
D.NonDepositLiabilities Ratio	0.4220***	0.4194***
	(0.0926)	(0.0958)
L.ECT	-0.2483***	-0.1495***
	(0.0378)	(0.0396)
L.ECTxCovid		-0.2846**
		(0.1085)
Constant	0.0009***	0.0009***
	(0.0001)	(0.0001)
R-squared	0.310	0.334
Adj. R-squared	.3032	.3268
No. of Obs	652	652
No. of Groups	59	59
*Note. * p<.1, ** p<.05, *** p<.001*		

The results are robust and similar to the Engle-Granger two-step error correction model. In the case of two-step GMM, the lag dependent variable is used to test for convergence. This study finds that convergence is taking place with the coefficient between 0 and 1 and is statistically significant. Model 2 of (Table 4) interacts the lag dependent variable with the Covid dummy and evidence suggests that the speed of adjustment increases during the Covid period. The proxy of risk Tier 1 Capital Ratio, liquidity proxied by non-deposit liabilities ratio, and Covid-19 are found to be significantly impacting the capital structure of South Asian banks consistent with the earlier results. The measure of growth opportunities, the Market-to-book value of assets, becomes insignificant although the sign is consistent with the static trade-off theory.

Table 5
Two-Step Difference GMM Results

Variables	GMM1 Coef./(Std.Err)	GMM2 Coef./(Std.Err)
Tier 1 Capital Ratio	-0.0017*	-0.0016*
	(0.0009)	(0.0009)
Size	0.0002	0.0002
	(0.0007)	(0.0007)
Profitability Ratio	0.1860	0.1696
	(0.1585)	(0.1518)
Market-to-book Value	-0.5215	-0.4959
	(0.3688)	(0.3542)
Dividend Payout	-0.0006	-0.0007
	(0.0046)	(0.0047)
NonDepositLiabilities Ratio	0.2146***	0.2098***
	(0.0568)	(0.0532)
Covid Period	0.0074**	
	(0.0021)	
L.Leverage	0.7524***	0.7649***
	(0.0617)	(0.0656)
L.LeveragexCovid		0.0082**
		(0.0025)

No. of Obs	619	619
No. of Groups	54	54

5. Discussion and Conclusion

The study was an attempt to identify the presence of capital structure convergence in South Asian banks and how the speed of adjustment to an optimal capital structure varies during recession using Covid-19 as a test case. We find that the determinants of capital structure of banks as per the base model are consistent with the literature and in line with the static trade-off theory. High profitable firms will select a higher debt ratio in their capital structure so they may receive better tax shields. However, numerous studies find evidence of the pecking order theory with a negative sign. A couple of these include (Alipour et al., 2015; Khan & Sharif, 2015). Contrary to the literature, factors like Market book value and dividend payout ratio are found to be insignificant in the case of South Asia. Abbas et al. (2020) did not find a significant impact of growth opportunities on capital structure either, however, multiple studies found a negative and significant impact of the Market-to-book value on capital structure (Flannery & Rangan, 2008; Tran et al., 2020).

The study has found South Asian banks to be converging to a long-run optimal structure similar to nonfinancial firms. Zhang & Mirza (2015) suggest that bank capital structure determinants are significantly different during different economic conditions. This is supported by (Mohammad et al., 2021) which suggests that typical capital structure determinants become less important during the Covid-19 crisis.

During recessions, banks may ration credit and face liquidity constraints which may impact increase financing costs (Hennessy & Zechner, 2011). This should result in slower speeds of adjustments during recessions. Lyubov & Heshmati (2019) in analyzing this impact during the Asian crisis and financial crisis find that the capital structure dynamics were different in both cases. They find that speed of adjustment was lower in the Asian crisis but higher during the global financial crisis.

In our case, we find that banks pre-empting the crisis and speed of adjustments are higher during recessionary times. Naveed et al. (2015) in analysis speed of adjustments during the global financial crisis in Pakistan find similar results.

This study investigated how capital structure dynamics were affected by a combination of exogenous negative supply and demand shocks in emerging markets. Banks improved their capital during the post-global financial crisis. However, in the case of Covid-19 and south Asian banks, this study finds that the exogenous shock has caused capital to fall. This fall in the capital is expected to negatively impact lending in the region. Speed of Adjustment (SOA) is associated with positive market values of firms. This study finds evidence of convergence in bank leverages in the case of South Asian firms. The long-run convergence is found to be approximately 25% per quarter. The speed of adjustment increased to 43% per quarterly consist with previous evidence on the global financial crisis. These findings add to the current literature on capital structure dynamics and Covid-19 and will be useful for investors, managers, and policymakers. The study is limited by its lack of being able to distinguish between actual intentions versus mechanical mean reversion.

There were a few limitations of this study. Firstly, that data for all South Asian countries was available except for Afghanistan. Secondly, this study uses data for six years only. Although the sample size was good enough for the econometric modeling and was the true representative of the population yet in the future the time frame for data could be extended to provide robust results. Lastly for some variables post COVID-19 data for the banks were not easily available.

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