

WHAT IS THE KEY DRIVER OF BANK STOCK RETURNS?

A comparative analysis

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This study analyses stock price performances during the past decade and the key drivers of the stock price movements of 228 global banks, which are classified as either GEM (global emerging market) or DM (developed market) banks based on their countries and regions. Our findings suggest that strong pre-provision operating profit growth is more important than profitability as a stock return driver for banks around the world. We also find that despite their similar ROE levels, GEM banks have outperformed DM banks almost every year.

Banks play crucial roles in allocating assets and providing liquidity transformation in local and global economies. Furthermore, with the growth of financial markets, bank stocks explain a substantial portion of the total market capitalisation of each country. Bank stocks make up about one-tenth of the total market capitalisation in both emerging and developed countries (Yang and Tsatsaronis 2012). Therefore, financial industries and market regulators have great interest in the performance and function of banks worldwide.

While many empirical studies have examined the global performance and efficiency of banks, utilising a variety of measures,¹ we focus on bank stock returns because they are the most direct and appropriate measure of bank performance, and provide additional information about economic conditions that are not easily captured by overall stock market returns.² We are also motivated by practitioner concerns that the volatility of bank stock returns is increasing and that forecasting returns has become more difficult after the recent global financial crisis. We believe that the global financial community has become more uncertain about the major determinants of bank stock returns.

By analysing global market data for a representative sample of banks, we note that GEM (global emerging market) banks have continuously and significantly outperformed the DM (developed market) banks in stock returns over the past decade. This observation motivates us to investigate the systematic factors that underlie such differences in stock return

performances between GEM and DM banks.³ To the best of our knowledge, although some previous studies attempt to illuminate the determinants of bank stock returns (Beccalli et al. 2006; Song 1994; Viale et al. 2009), no existing studies compare GEM banks with DM banks to examine the determinants of recent bank stock returns.

Our findings suggest that the key driver of bank stock returns is not profitability, which is often proxied by ROE (return on equity) or ROA (return on assets), but by growth in PPOP (pre-provision operating profit).⁴ Although many financial accountants and analysts still believe that ROE is the most appropriate measure of financial performance, our results indicate that this does not apply directly to the banking sector, especially since the recent global financial crisis. Specifically, our results suggest that GEM banks have strongly outperformed DM banks almost every year, led by strong earnings growth and, to a lesser extent, that was driven by strong PPOP growth, and to a lesser extent by relative improvement in credit cost. We also observe that the PPOP margins⁵ of GEM banks have continuously expanded, while the PPOP margins of DM banks have contracted since 2007, steadily increasing the gap between the two.

Data

We collected the annual data regarding stock returns and accounting information for a worldwide sample of 228 banks from the Bloomberg database and corporate filings. The sample period of this study covers the decade from 2002 to 2011, which includes the recent global financial crisis period. We classify

the 228 banks as GEM banks (135) from 27 countries and DM banks (93) from 16 countries based on the MSCI (Morgan Stanley Capital International) classification code. There is a wide spread of banks across counties. For example, there are 19 US, 11 Japanese, seven Australian, seven Italian and seven Greek banks in the DM total of 93, and 16 Chinese, 11 Indian, 10 Saudi Arabian and nine Polish banks in the GEM total of 135.⁶

Findings

We first compare the median annual share price returns of GEM and DM banks and observe the key drivers of stock return performance. We then perform panel data regression to corroborate our findings.

PPOP growth as the key share price driver

To identify a more accurate driver of bank share price performance, rather than looking for share price drivers from macroeconomic indicators, we chose P&L (profit and loss) items, given that share price drivers are likely to be direct contributors to profitability, either positively or negatively. We chose net revenue (NR, net interest income + non-interest income) growth, PPOP growth and credit cost improvement as the potential key drivers. We hypothesised that either NR or PPOP would be the key share price driver, rather than just ROE, given that: 1) NR or PPOP is the more sustainable part of the P&L, as it is usually driven by loan growth, which is the result of economic growth and demand for credit; 2) NR or PPOP is generated by the top part of the P&L, indicating that a stronger growth in these items would translate to greater net profit growth as

a result of operating and financial leverage; and 3) NR or PPOP growth is usually driven by loan growth and increases assets, which helps support higher leverage ratios (asset/equity) and, in turn, higher levels of ROE. The question we focus on is whether the market prefers NR growth, which is a measure of the revenue growth of the bank, or PPOP growth, which is a measure of the revenue growth and management ability to control operating costs.

To test our hypothesis we measured the median annual stock returns of all GEM and DM banks, sought to identify strong correlations between stock returns and the share price drivers described above. The median stock return performances of GEM banks were superior to those of DM banks during the past decade, outperforming the DM banks every year except for 2006 (and in 2006, the median stock return performance for GEM banks was 17.0 per cent vs 17.4 per cent for DM banks). The stock return performance was measured as the raw share price returns of each individual bank in a given year plus the reported dividend yield. Our analysis suggests that the superior performance of GEM banks is due to strong PPOP growth and, to a lesser extent, improved credit cost control. PPOP growth for GEM banks has consistently outperformed that of DM banks, and thus, we believe it is the key driver of profitability.

We also observed that GEM banks generally outperformed DM banks with regard to market adjusted returns; GEM banks outperformed DM banks for seven of the last 10 years, and maintained an average 5 per cent underperformance for the remaining three years. We believe this indicates

FIGURE 1: Median stock returns for GEM vs DM banks

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GEM	8%	55%	39%	46%	17%	20%	-52%	79%	21%	-21%
DM	-19%	29%	11%	18%	17%	-11%	-54%	23%	-5%	-30%

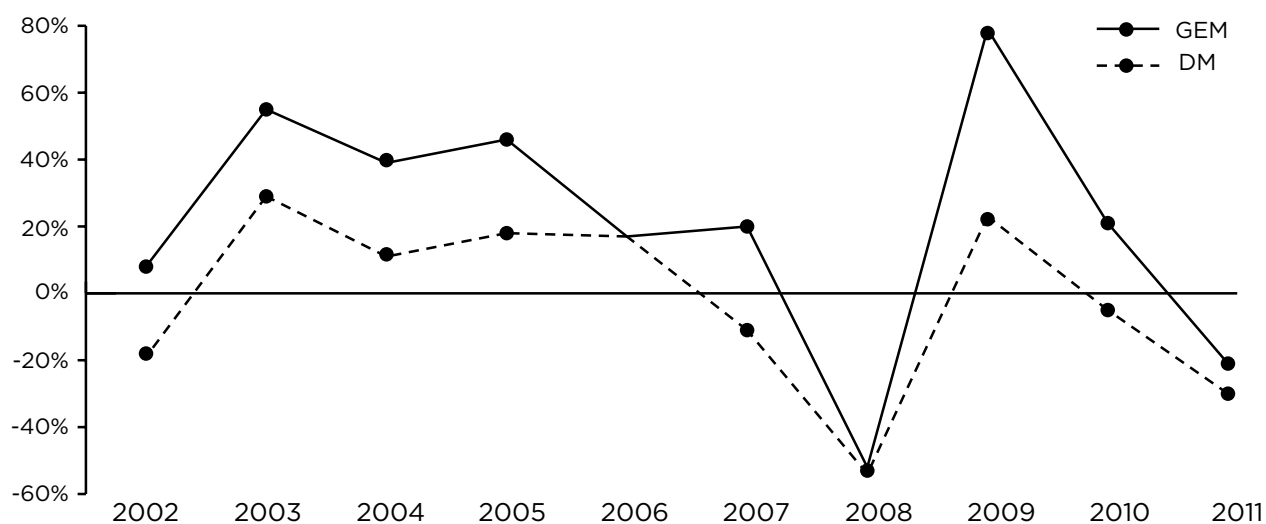


FIGURE 2: ROE comparison for GEM vs DM banks

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GEM	15%	14%	17%	18%	18%	18%	17%	16%	16%	17%
DM	13%	14%	16%	17%	17%	15%	8%	5%	7%	6%

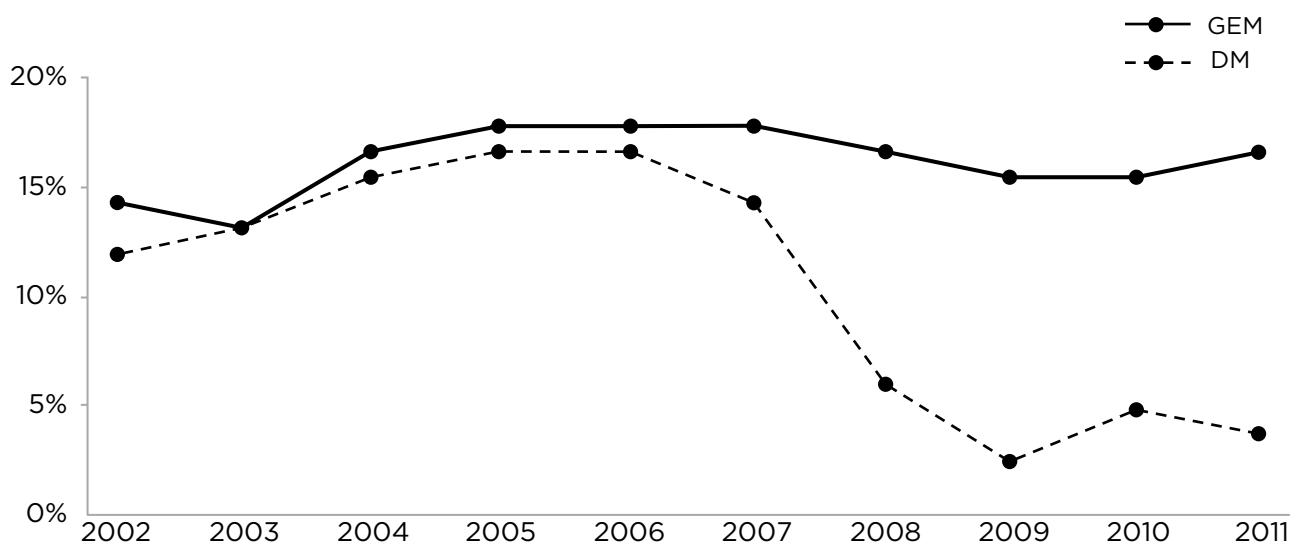
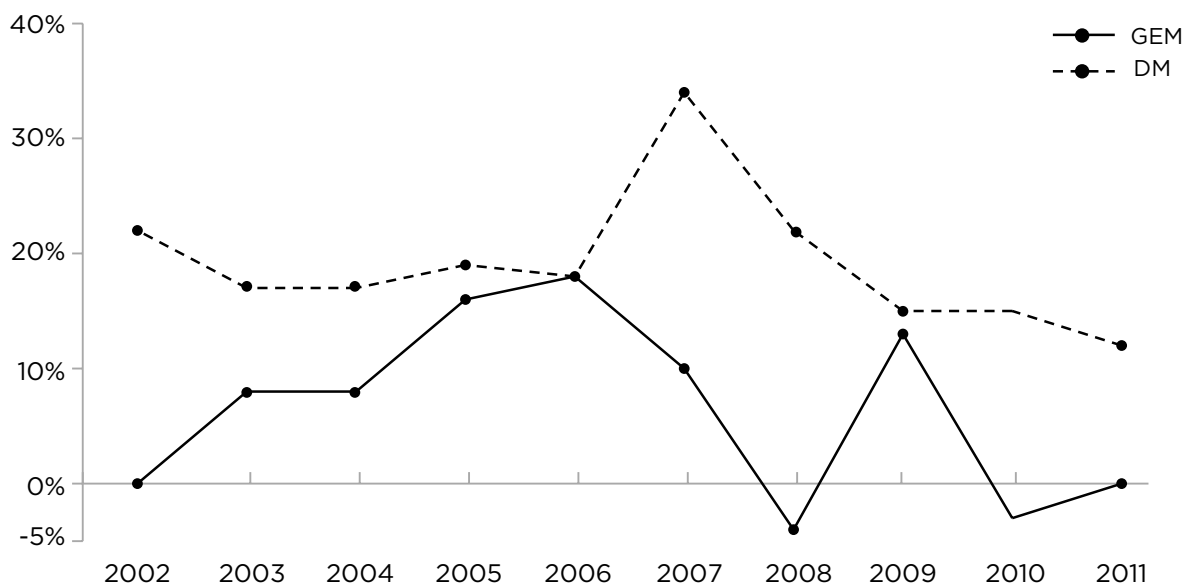


FIGURE 3: Median PPOP growth for GEM vs DM banks

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GEM	22%	17%	17%	19%	18%	34%	22%	15%	15%	12%
DM	0%	8%	8%	16%	18%	10%	-4%	13%	-3%	0%



that the stock returns for banks across GEM and DM countries do not simply reflect the overall stock market returns of those countries.

ROE is not the key driver of share prices

Our findings suggest that strong PPOP growth is more significant than profitability in explaining share price performance and that GEM banks largely outperformed DM banks despite similar ROE levels from 2002 to 2006. Such performance differences are attributed mostly to PPOP growth and, to a lesser extent, to relative credit cost improvement.

We believe that the order of importance among key drivers of bank share prices is determined by the contribution the driver makes to the quality of earnings. PPOP growth in GEM banks is usually driven by strong loan demand as a result of underpenetrated financial services in fast growing countries; hence, this growth is a very strong driver of sustainable earnings growth. However, other drivers of earnings such as cost control and credit cost management are not sustainable drivers of long-term earnings. In addition, improvement or

maintenance of ROE is difficult to achieve without PPOP growth if not accompanied by capital management.

Regression analysis also supports our claim

Using panel data for our worldwide sample of 228 banks for the period 2002-11, we formulate a simple model that regresses share price returns (*SPR*) on ROE (*ROE*) and PPOP growth (*PPOP_GR*). The following panel estimation equation includes bank ($\hat{\alpha}$) and year dummies ($\hat{\alpha}_t$), which control the influences of bank-specific and year-specific characteristics, respectively. That is, the effects of time invariant factors are reflected by bank dummies. Accordingly, bank dummies control the effects of country-specific legal and institutional factors, as well as bank specific factors. Similarly, year dummies control yearly effects that are common to all banks. Common effects due to global economic shocks or global institutional changes could be regarded as such. The model does not include lagged variables because the regression analysis is based on annual observations. We assume that investors have reasonable information on the variables without any time lags.

$$SPR_{it} = \hat{\alpha}_i + \hat{\alpha}_t + \hat{\alpha}_1 PPOP_GR_{it} + \hat{\alpha}_2 ROE_{it} + \hat{\alpha}_{it},$$

where $i=1, \dots, 228, t=2002, \dots, 2011$ (1)

In addition to equation (1), we estimate alternative equations, for comparison, in which PPOP growth is replaced by NR growth (*NR_GR*) or provision growth (*PROV_GR*). To assess the robustness of the results, we also run regressions in which real total assets (*RTA*) are included as an additional explanatory variable to control for the effect of bank size. The *RTA* of each bank is obtained by dividing the total assets of the bank in its national currency by the consumer price index of the country.

Note that the dependent variable *SPR* indicates total returns, which include stock price changes and dividends paid. We use stock price returns that are not adjusted for market returns in regressions to avoid subtle problems arising from inflation rate differentials across countries.⁷

Table 1 provides basic descriptive statistics, including correlations of variables. Correlations among variables indicate that the multi-collinearity problem does not exist in our regression. *F* tests are also performed for the mean differences between DM and *GEM* bank groups, and show that the means of *SPR* and *PPOP_GR* are significantly different between groups, while the means of *ROE*, *NR_GR* and *PROV_GR* are not.⁸

Table 2 shows the estimation results. They demonstrate that PPOP growth is a statistically significant determinant of share price returns, but that NR growth or provision growth is not. This result is robust regardless of the inclusion of real total assets as an additional control variable. ROE also explains bank share returns, but its effect is not robust. At the 5 per cent significance level, the effect of ROE on share price returns is statistically significant with real total assets included, but it is rejected when real total assets are excluded. This finding corroborates our hypothesis that PPOP growth is a key driver of bank share returns. However, the alternative measures of PPOP growth, namely NR growth and provision growth, do not explain bank share returns. *RTA*, which is a proxy of bank size, seems to have negative effects on share price returns, but the effects are not consistent.

Market has preferred PPOP over NR

Our regression analyses showing that PPOP growth explains bank share price performance better than NR growth indicate that investors prefer revenue growth and operating leverage. They view these as key determinants for selecting bank shares to invest in, rather than merely focusing on revenue growth.

As Figure 4 shows, these conclusions are strengthened by the steady improvement in PPOP margins of *GEM* banks, both on an absolute basis and relative to *DM* banks. The PPOP margins of *DM* banks have contracted since 2008, when they began to deleverage, since the reduced loan growth resulted in lower interest income. However, *GEM* banks' PPOP margins have continued to expand, and the gap between the *GEM* and *DM* banks' PPOP margins as

TABLE 1: Descriptive statistics

	Descriptive Statistics						F-test for Mean Difference		Pairwise Correlation				
	Total		DM		GEM		F stat.	P-value	SPR	PPOR_GR	NR_GR	PROV_GR	ROE
	Mean	S.dev.	Mean	S.dev.	Mean	S.dev.							
<i>SPR</i>	0.148	0.634	0.257	0.762	0.009	0.375	74.76	0.000**					
<i>PPOP_GR</i>	0.322	2.825	0.450	3.639	0.140	0.680	6.13	0.013*	0.169				
<i>NR_GR</i>	0.199	3.102	0.293	4.102	0.075	0.280	2.22	0.136	0.054	0.512			
<i>PROV_GR</i>	0.976	9.202	1.012	7.689	0.927	10.925	0.04	0.849	-0.060	-0.002	0.002		
<i>ROE</i>	12.499	70.907	14.019	91.552	10.288	12.016	1.48	0.223	0.140	0.012	0.031	-0.019	
<i>RTA</i>									0.029	-0.012	0.184	-0.016	0.015

Note: ** (*) indicates the difference in the mean of each variable between DM and GEM bank groups, and is statistically significant at the 1% (5%) significance level.

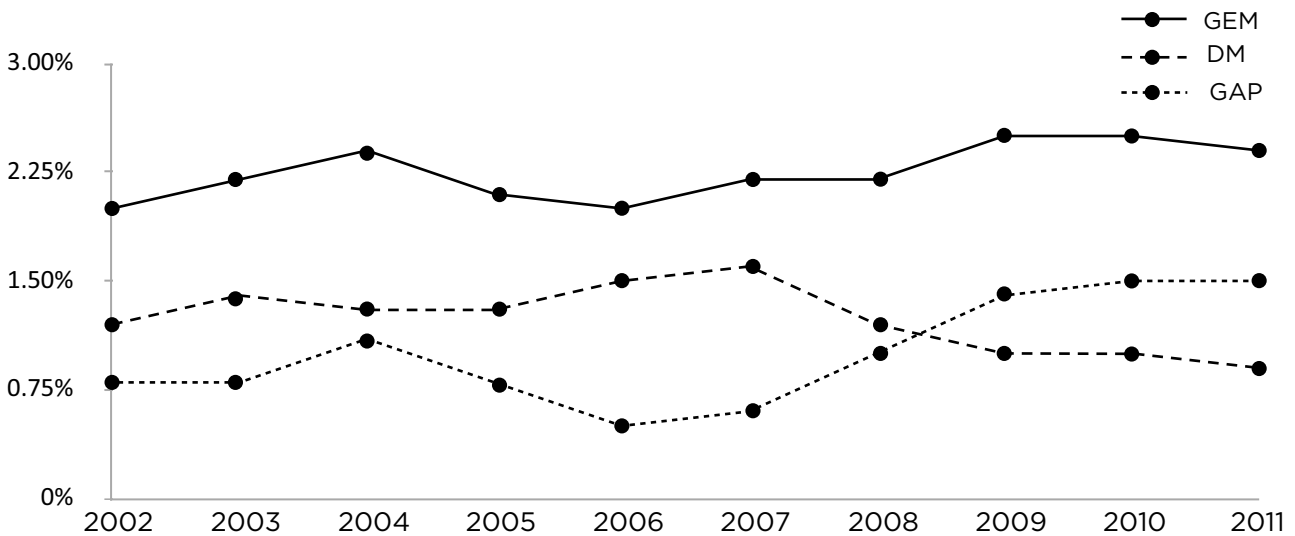
TABLE 2: Panel data regression of PPOP growth and ROE on stock price returns

	(1)	(2)	(3)	(4)	(5)	(6)
PPOP_GR	0.047 (0.000)**			0.047 (0.000)**		
NR_GR		0.003 (0.517)			0.001 (0.830)	
PROV_GR			-0.001 (0.351)			-0.001 (0.367)
ROE	0.002 (0.118)	0.007 (0.000)**	0.007 (0.000)**	0.009 (0.000)**	0.008 (0.000)**	0.007 (0.000)**
RTA				-123.0 (0.349)	-290.0 (0.015)*	-301.0 (0.012)*
No. of banks included	218	218	211	208	209	203
No. of Obs	1630	1456	1351	1376	1341	1257
No. of missing values	650	824	929	904	939	1023
Adj. R squared	0.332	0.361	0.353	0.379	0.360	0.354

Note: Share price returns (SPR) is a dependent variable. The number of total observations is 1,679. Estimated bank dummy and year dummy variables are not reported. ** (*) indicates the variable is statistically significant at the 1% (5%) significance level.

FIGURE 4: Median PPOP margins for GEM vs DM banks

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GEM	2.0%	2.2%	2.4%	2.1%	2.0%	2.2%	2.2%	2.5%	2.5%	2.4%
DM	1.2%	1.4%	1.3%	1.3%	1.5%	1.6%	1.2%	1.0%	1.0%	0.9%
GAP	0.8%	0.8%	1.1%	0.8%	0.5%	0.6%	1.0%	1.4%	1.5%	1.5%



of 2010 is at its highest level during the past decade. In our view, this is most likely due to operating leverage, as the cost-income ratio of GEM banks has fallen on strong PPOP growth (see Figure 5); weaker PPOP growth has become more common among DM banks. Our data also suggest that operating leverage, despite the controversy, exists quite visibly in banks and has been influential for at least as long as our analysis period, especially among GEM banks.

Possible interpretations

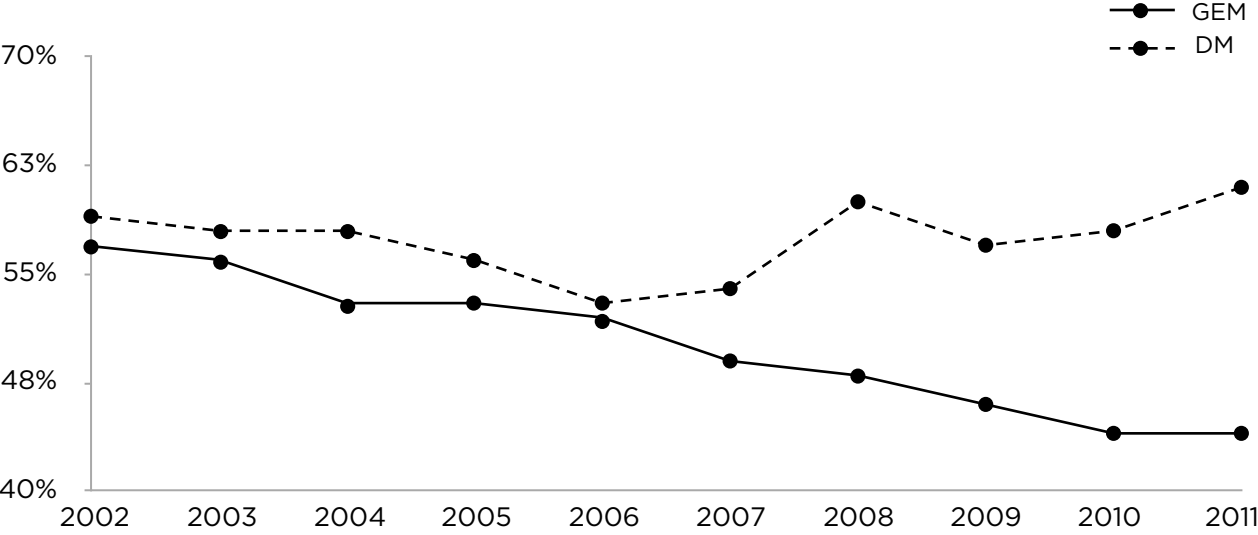
We conclude that PPOP growth, and not just current profitability, accounts for the high performance of GEM bank stocks over the past decade. Our findings indicate that a perspective on growth, not the ROE,

has a critical role in explaining the superior stock performance of GEM banks. This also leads to the conclusion that stock market investors, who invest in the banking sectors, put more emphasis on PPOP growth than on profitability.

Further possible interpretations for our results are as follows. If banks make abnormal returns (i.e. if their ROEs are greater than their costs of equity), then higher projected growth may indicate increased economic value added such that if current PPOP growth is used as a forecast of future growth there could be a positive link to bank stock returns. This could also mean that investors may benefit from monitoring the components of PPOP growth, such

FIGURE 5: Median cost-income ratio for GEM vs DM banks

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GEM	57%	56%	53%	53%	52%	49%	48%	46%	44%	44%
DM	59%	58%	58%	56%	53%	54%	60%	57%	58%	61%



as loan growth, net interest margins, non-interest income growth and operating cost, and also the changes in the macroeconomic environment that would influence the PPOP components.

We might attribute our findings to the unique characteristics of the banking industry. In the manufacturing industry, for example, net profits and manufacturing costs are expected to be highly relevant for estimating firm values. However, operating costs are not as significant in the banking industry. The possibility of growth and, as a result, increased domination of the market, might therefore be more important than increasing current profitability and reducing costs, especially for banks in emerging countries. These characteristics of the banking industry might explain why investors should care more about PPOP growth than the ROE value, which is traditionally used to measure profitability.

Conclusion

By analysing data from a worldwide sample of 228 banks, we find that strong PPOP growth is the key driver of bank stock performance and that PPOP growth explains the performance gap between the GEM and DM banks over the past decade. This finding is striking considering that market practitioners believe that traditional profitability measures, such as ROE and ROA, describe the stock performances of firms.

The findings of our study provide the following implications for bankers, investors, and regulators. For bankers, our results suggests that, while risk management has always been stressed as the foremost goal in bank management, well thought-out

strategic planning for growth is at least as crucial for the sustainable performance of the bank. For investors, our results suggest that banks with solid and sustainable PPOP growth tend to perform well and, hence, that utilising PPOP growth as a common denominator is beneficial when creating a screen for selecting banks to invest in. Finally, for regulators, we find that while stressing risk management and strong capital is significant, it is also critical for regulators to consider policies to help cultivate healthy growth in bank balance sheets. ■

Notes

1. Pasiouras et al. (2008) provide excellent reviews of the efficiency of the banks.
2. Cole et al. (2008) claim that bank stock returns indicate future economic growth, and that the share returns of banking industries broadly reflect the performances of the banking sectors of each country.
3. Another motivation for this study is that the stock performances of Korea's leading banks were terrible in 2011, despite good business profits and ROEs. This phenomenon implies that investors do not perceive (short-run) profitability as (long-run) performance and, as a result, do not want to hold bank stocks despite high ROE values. Since the Korean economy has recently shifted from an emerging to a developed economy, we believe that a comparative investigation of performance differences between GEM and DM banks will provide additional economic implications for the Korean and global markets that cannot be detected from a single market study on the Korean market.
4. $PPOP = (\text{net interest income}) + (\text{non-interest income}) - (\text{selling general and administrative expenses})$
5. $PPOP \text{ margin} = PPOP / \text{average asset}$
6. Full details are available from the authors.
7. In this case, cross-country differences in inflation are reflected in both dependent and explanatory variables. These regressions do not allow for cross-country differences in market returns, but using market-adjusted returns as the dependent variable yields basically similar results.
8. The mean difference and basic statistics for RTA between DM and GEM bank groups are omitted, because they are meaningless as RTAs are valued in different national currencies.

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