

Banking

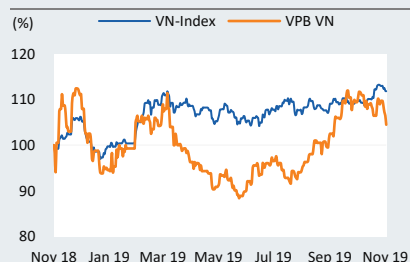
Update

November 14, 2019

(Update)	BUY
Target Price (12M, VND)	25,200
Share Price (11/14/19, VND)	21,000
Expected Return	20.0%

NP (19F, VNDbn)	7,869
Consensus NP (19F, VNDbn)	7,599
EPS Growth (19F, %)	9.2
Market EPS Growth (19F, %)	8.0
P/E (19F, x)	8.8
Market P/E (19F, x)	15.8
VN INDEX	1012.3
Market Cap (VNDbn)	50.782
Shares Outstanding (mn)	2,407
Free Float (%)	68.6
Foreign Ownership (%)	23.2
Beta (12M)	1.2
52-Week Low	17,500
52-Week High	23,000

(%)	1M	6M	12M
Absolute	-6.43	11.94	6.30
Relative	-8.3	8.3	-6.0



Mirae Asset Securities (Vietnam) LLC

[Banking]

Nguyen Nguyen

+84-028-3910-2222 (#322)

nguyen.ndc@miraeasset.com.vn

Vietnam Prosperity Joint Stock Commercial Bank (VPB VN)

Revival of momentum

Profile

Vietnam Prosperity Bank (VPB) was founded in 1993, initially based on a wholesale banking model. However, similar to the majority of private joint-stock commercial banks, it experienced no momentum during the first two decades of establishment, due to high competition from the sovereign group. As a result, in order to ensure future growth, its loan book has been drastically restructured from a wholesale to a retail banking orientation. Specifically, in late-2010, it established a Consumer Finance Division, namely Fast & Easy Credit (FE Credit), currently regarded as a market leader in the arena. The new orientation can be observed through the significant amount of retail and consumer lending in VPB's loan book.

3Q19 review

Net interest margin (NIMs) of VPB widened slightly in 3Q19, thanks to the improvement in yield of IEAs. Yield on customer loans and balance expanded by almost 100bps QoQ apiece to 18.8% and 2.5%, respectively; however, yield on securities portfolio narrowed slightly, down 90bps QoQ to 5.7%. The overall yield of IEAs rose by 0.8%p QoQ, thanks to yield expansion of assets and a higher composition of high-yield assets. Meanwhile, the interest expenses of interest-bearing liabilities (IBLs) had lower growth of 0.3% QoQ. In detail, cost of deposits rose by 0.5% QoQ, cost of borrowing dropped by 0.6%p QoQ, and cost of valuable papers saw a modest gain of 0.1% QoQ. In all, the bank's NIM expanded by 0.5%p to 9.6%, differentiating itself from the rest of our coverage universe, thanks to its finance arm.

In 9M19, net earnings before OPEX and provisioning VPB was VND26.3tr (US\$1.14bn), increased by 19.2%. Besides the strong growth of lending activities' earnings, net service income (NSI) growth of 61.6% helped VPB offset the 32.7% YoY plunge in net other income caused by the absence of extraordinary income from bad debt sell-off and recovery. Meanwhile, OPEX and provisioning expenses grew steadily, at 17.7% YoY and 21.9% YoY, respectively. Finally, profit before tax reached VND7.2tr (US\$311mn, +17.5% YoY), equivalent to 75.8% of annual plan.

Key catalyst

We believe that the key catalyst for VPB stock at the moment is the outlook of consumer lending, the bank's "cash cow", which is highly dependent on the government regulations related to the consumer finance sector. As we mentioned in previous reports, the State Bank of Vietnam (SBV) intends to strengthen the credit system. The regulations are currently in the draft stage, but we expect the outcome to be the key driver of VPB stock.

Valuation

The bank's outperformance in terms of net earnings has been reflected in the stock price. As a result, we raised our target price to VND25,200 (from VND23,600), which is derived using the RSI and target P/B approach. Reiterate Buy with an expected return of 20.0%.

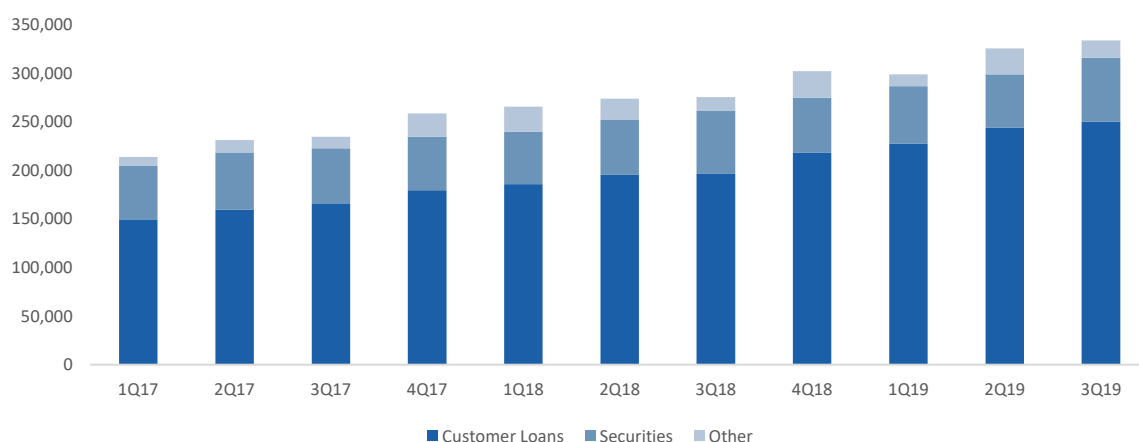
FY (Dec.)	12/16	12/17	12/18	12/19F	12/20F
Net interest inc. (VNDbn)	15,168	20,614	24,702	30,135	33,226
Net non-interest inc. (VNDbn)	1,696	4,412	6,384	5,958	5,114
Operating profit (VNDbn)	4,929	8,130	9,199	9,841	11,691
Net profit (VNDbn)	3,935	6,441	7,356	7,869	9,349
EPS (VND)	4,255	4,101	2,994	3,270	3,884
P/E (x)	N/A	8.8	8.6	7.7	6.5
BVPS (VND)	18,710	18,907	14,145	17,667	21,503
P/B (x)	N/A	2.1	1.4	1.4	1.2
ROE (%)	25.6	27.5	22.8	20.4	19.8

Source: Company data, Bloomberg, MAS VN Research estimates

Analysts who prepared this report are registered as research analysts in Korea but not in any other jurisdiction, including the U.S.

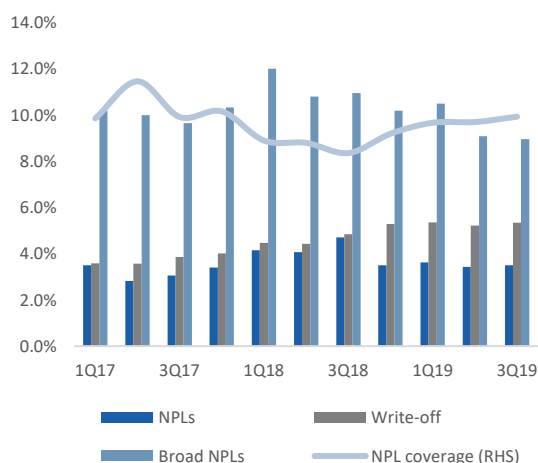
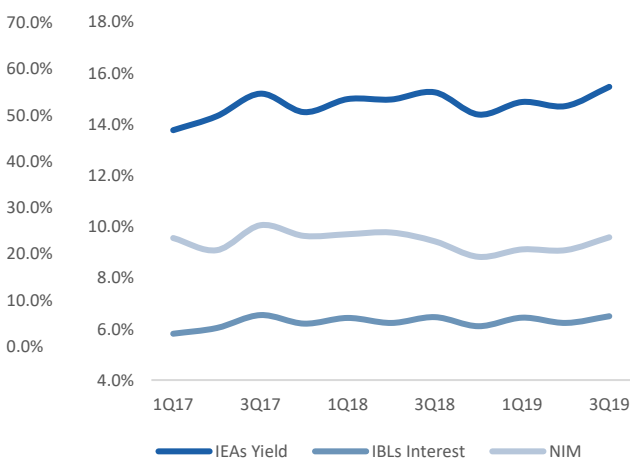
PLEASE SEE ANALYST CERTIFICATIONS AND IMPORTANT DISCLOSURES & DISCLAIMERS IN APPENDIX I AT THE END OF REPORT.

VPB consolidation (VPB)

Figure 1: Interest-earning assets (VNDbn)

Source: Company data, MAS VN Research

VPB's interest earning assets (IEAs) increased by 10.5% YTD in the first nine months of 2019 to VND333.5tr (US\$14.4bn), with a pick-up in the composition of high yield assets. The proportion of loans to customer and securities increased to 75% and 20%, respectively, higher than their respective figures of 72% and 19%, as of 2018FY. VPB's customer loans reached nearly VND250bn (US\$10.8bn, +14.4% YTD), while holding securities - including trading and investment - increased by 17.3% YTD to VND65.9tn (US\$2.8bn).

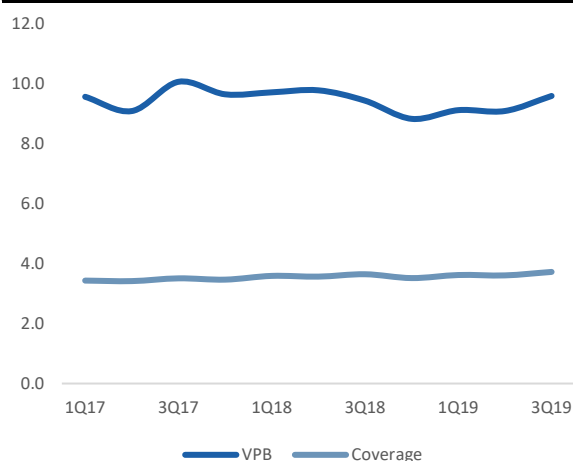
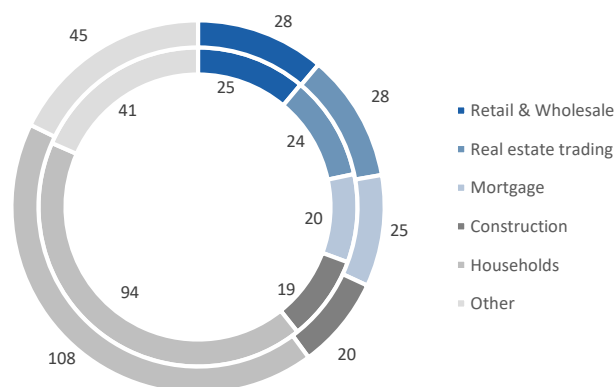
Figure 2: Asset quality**Figure 3: Asset yield vs. liabilities interest**

Source: Company data, MAS VN Research

Note: Write-off ratios were calculated on TTM basis

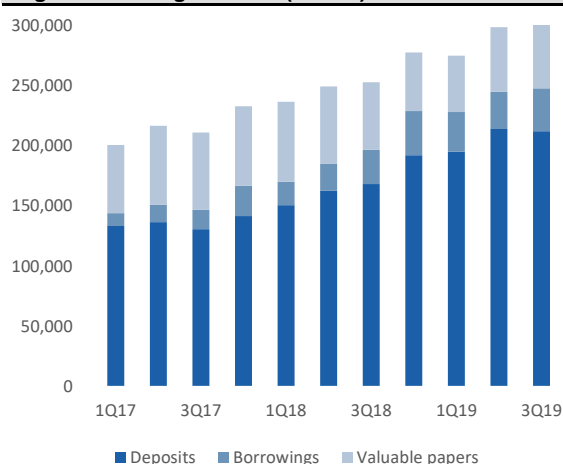
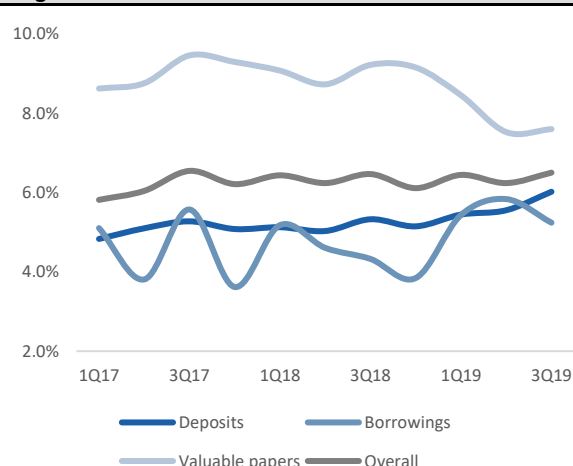
The asset quality of VPB has been improving over the last four quarters, accompanied by a condensing provision buffer. In general, the asset quality of VPB remained stable. The non-performing loan ratio (NPLs) has been almost flat, at around 3.4%-3.6% over the past twelve months, thanks partly to an increase in write-off ratio, but also good control over the lending portfolio. Broad NPL (including Group 2 loans) dropped from the peak of 12% in 1Q18 to a three-year low of 8.9% in 3Q19. The reduction in broad NPLs could be a good short-term indicator that NPL is unlikely to suddenly jump. That said, VPB would accelerate the Vietnam Asset Management Company (VAMC) bond clearance process, planning to buy back all of the outstanding balance by the end of 2019. By the end of 3Q19, the net balance of VAMC bond sharply dropped to VND506bn (US\$22mn, - 78.6% YTD). Net interest margin (NIMs) of VPB widened slightly, thanks to the improvement in yield of IEAs. Yield on customer loans and balance expanded by

almost 100bps QoQ to 18.8% and 2.5%, respectively; however, yield on securities portfolio narrowed slightly, down 90bps QoQ to 5.7%. The overall yield of IEAs rose by 0.8%p QoQ, thanks to yield expansion of assets and higher composition of high-yield assets. Meanwhile, interest expenses of interest-bearing liabilities (IBLs) had lower growth of 0.3% QoQ. In detail, cost of deposits rose by 0.5% QoQ, while cost of borrowing dropped by 0.6%p QoQ, while cost of valuable papers saw a modest gain of 0.1% QoQ. In all, NIM of the bank expanded by 0.5%p to 9.6%, differentiating itself from the rest of our coverage universe, thanks to its finance arm.

Figure 4: NIM of VPB and our coverage (%)**Figure 5: VPB's customer loans by type (VNDtr)**

Source: Company data, MAS VN Research

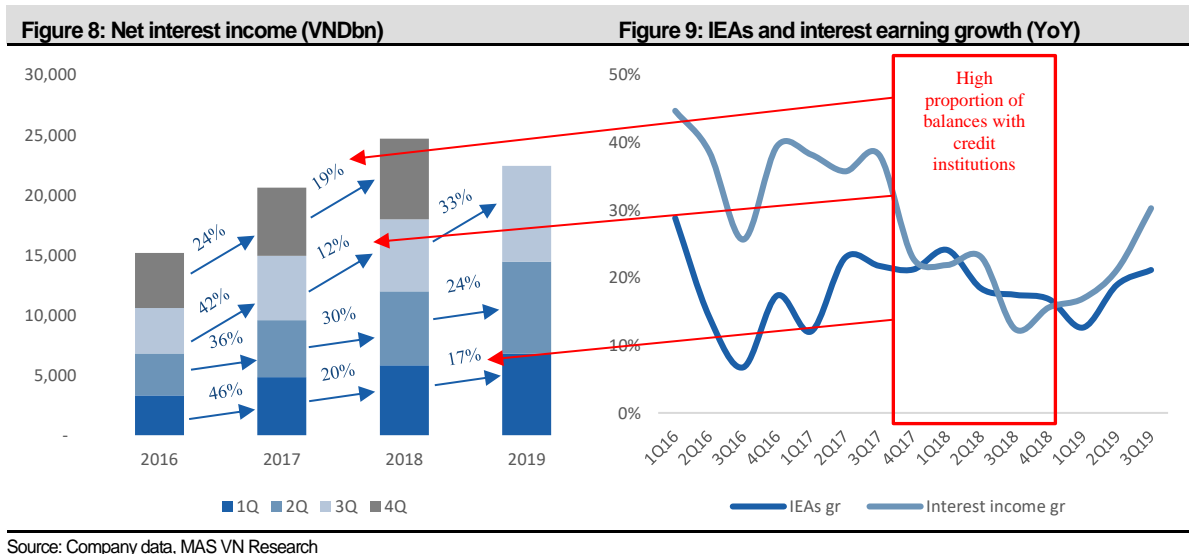
Loan structure has not changed significantly since the beginning of the year, focusing on real estate (21%), construction (8%), wholesale and retail activities (11%), and household lending (42%). High disbursement on the aforementioned sectors brings high NPLs, but also high yield.

Figure 6: Funding Structure (VNDbn)**Figure 7: Cost of IBLs**

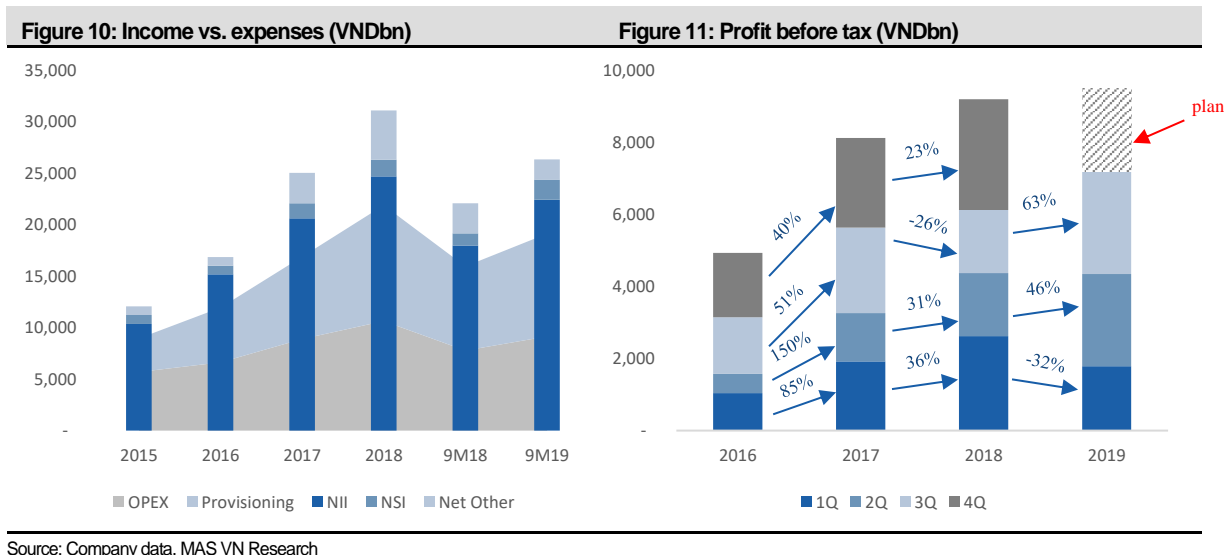
Source: Company data, MAS VN Research

In the first nine months of 2019, total liabilities increased by 10% YTD to VND317.7tr (US\$13.7bn). Customer deposit increased by 20% YTD to VND205.6tr (US\$8.9bn); current and savings accounts to total deposit ratio (CASA) dropped to 10.3% (-0.1% QoQ or -3.7%p YTD), contributing to the increase in the cost of deposits. In addition, interbank deposits also dropped sharply, falling by 70% YTD; this may also be one of the factors in pushing up deposit costs. There is a significant change in valuable papers mix in 9M19, certificate of deposits (CDs) for individual customers dropped by 82% YTD, CDs issued to institutions and issued bonds increased by 21% and 80% YTD. Hitherto, we see that

the restructuring of valuable papers' composition has a positive impact on VPB's funding costs. In addition, we also see that less reliance on interbank lending could result in higher cost of funding.



Interest income - a key driver of VPB's earnings – rebounded in 9M19, with growth of 20% YoY, thanks to restructuring of its interest-earning portfolio. Net interest income reached VND22.4bn (US\$0.97bn) as of 9M19, up by 25% YoY (vs. +20% YoY in 9M18). Generally, we expect that improvements in the yield and structure of credit book will help VPB to sustain core earnings growth.

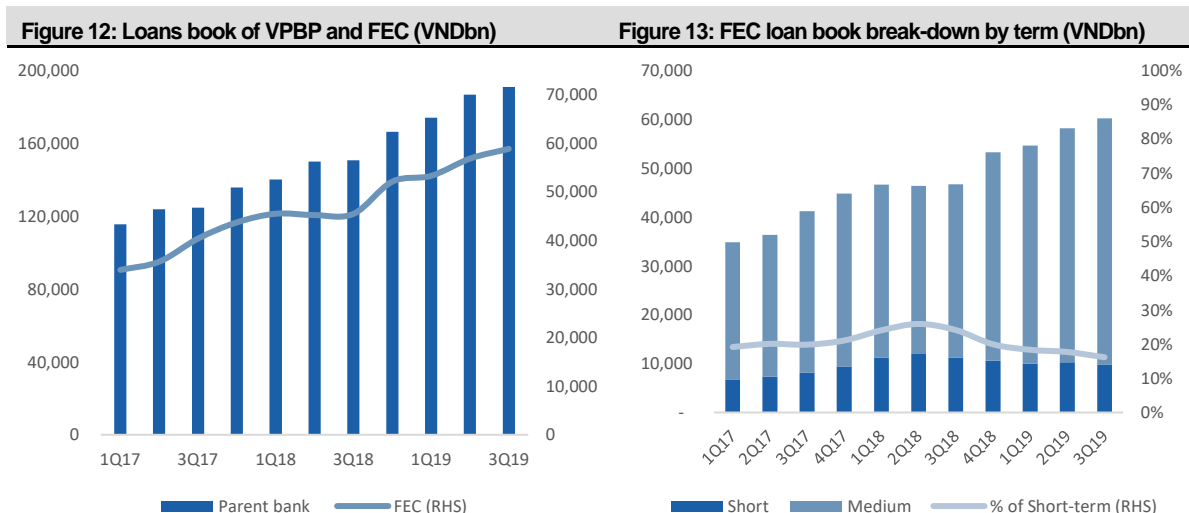


In 9M19, VPB's net earnings before OPEX and provisioning was VND26.3bn (US\$1.14bn), up by 19.2%. Besides the strong growth of lending activities' earnings, net service income (NSI) growth of 61.6% helped VPB offset the plunge in net other income of 32.7% YoY, which was caused by the absence of extraordinary income from bad debt sell-off and recovery. Meanwhile, OPEX and provisioning expenses grew steadily, at 17.7% and 21.9% YoY. In all, profit before tax reached VND7.2tr (US\$311mn, +17.5% YoY), equivalent to 75.8% of annual plan.

Strong bottom-line growth pushes profitability ratios back to 2018's level. Trailing ROA and ROE returned to 2.5% and 22.6%, respectively, remaining among the top tier group in our coverage universe. Meanwhile, equity multiplier of VPB also dropped from 9.3x in 2018 to 9x in 3Q19.

VPB Parent (VPBP) and FE Credit (FEC)

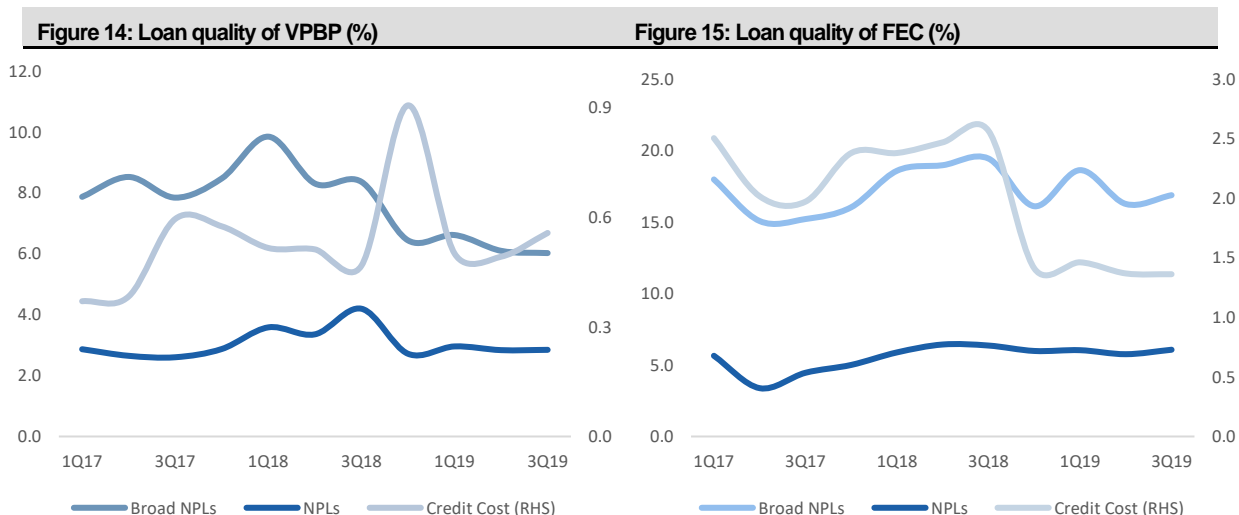
Please note that FEC's business performance data and parameters are based on our estimates, unless stated otherwise. All references are based on publicly-available data, which might cause discrepancies between our projections and VPB's own calculations.



Source: Company data, MAS VN Research

Note: We added loan purchasing account back to loan to customer and adjusted accordingly
We also assumed that interchanged loans were short-term

The loan book of FEC and VPBP has seen continuous growth over the past three quarters, reaching VND60.2tr (US\$2.6bn, +13% YTD) and VND194tr (US\$8.4bn, +15% YTD), respectively. Notably, the proportion and balance of short-term loans in FEC's loan book dropped materially over the past three quarters. The drop in short-term loans of FEC appears to coincide with the new draft regulations, which were intended to curb cash-loans (normally short-term loans with tenors less than a year).



Source: Company data, MAS VN Research

Note: We added loan purchasing account back to loan to customer and adjusted accordingly
Credit cost ratio are calculated on the quarterly basis

We see that loan quality of both VPBP and FEC held steady in the first three quarters of 2019FY. The NPLs of the two remained stable, while broad NPLs (including Group 2 loans) headed toward lower level at 6% for VPBP and 16.9% for FEC. Noticeably, credit cost of FEC gradually fell from 3.5% in 2018 to 3.3% in 3Q19, which could be a good indicator of improved loan quality of consumer lending, VPB's "cash-cow".

Figure 16: Yield and cost of VPBP (%)

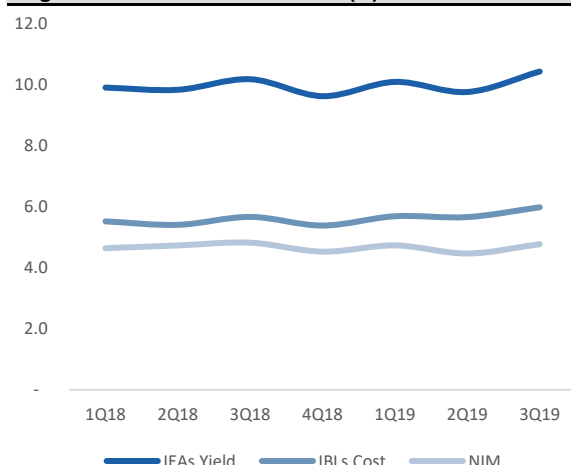
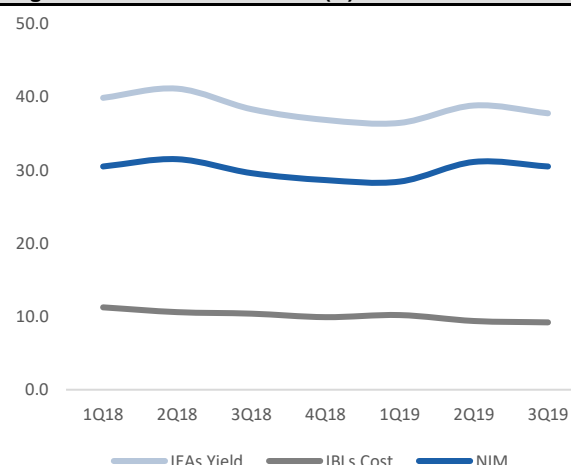


Figure 17: Yield and cost of FEC (%)



Source: Company data, MAS VN Research

The NIM of both VPBP and FEC was fairly stable, in general. The profitability of VPBP's credit portfolio saw expansion, whereas that of FEC declined slightly, compared with the previous quarter. The NIM of the standalone bank reached 4.8% in 3Q19 (+0.3%p QoQ), thanks to the wider expansion of IEAs' yield, compared with IBLs' cost. In comparison with other banks, VPBP's NIM stood out in our coverage universe. Meanwhile, FEC's NIM fell slightly, down by 0.6%p QoQ, which could be the effect of the government's expressed intention to curb cash loans.

Figure 18: Income statement of VPBP

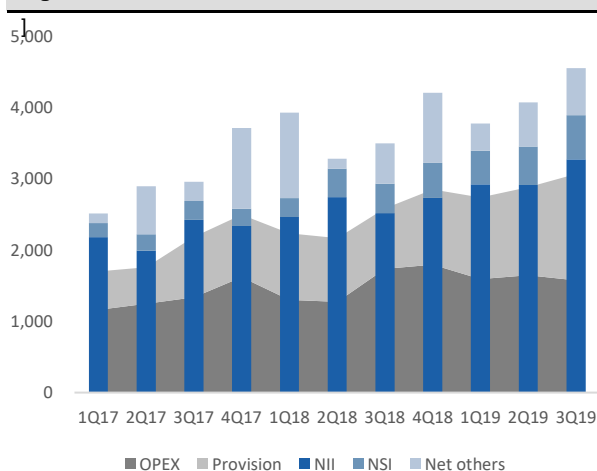
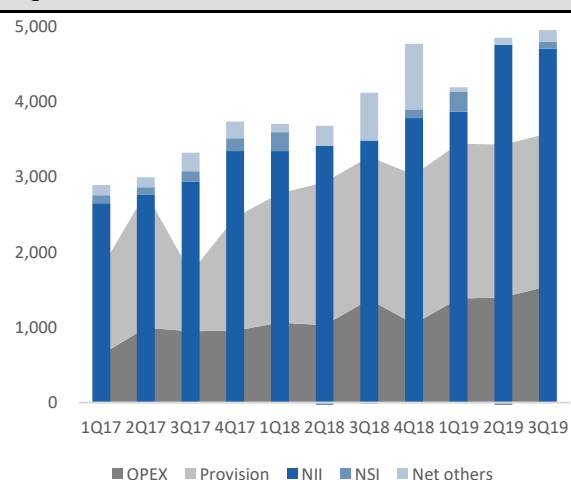


Figure 19: Income statement of FEC



Source: Company data, MAS VN Research

The topline of both FEC and VPBP continued to enjoy double-digit growth rates, but bottom line saw a divergence. In 9M19, NII of FEC and VPBP grew by 30% YoY and 18% YoY, respectively, reaching VND13.3tr (US\$576mn) and VND9.1tr (US\$394mn), respectively. Net services income also rose sharply, up by 52% YoY and 147% YoY, respectively, thanks to the continuous outperformance of transaction fees and bancassurance. Conversely, there was a reduction in net other income of VPBP (-13% YoY) and FEC (-70% YoY). In addition, the provisioning of VPBP surged by 45% YoY. In 9M19, the PBT of VPB remained flat, while that of FEC jumped by 43% YoY.

In conclusion, we view VPB's business strategy (high risks versus high return) as quite volatile, with high dependence on one variable, i.e., credit cost. As both financial entities owned differentiated NIM, provisioning and operating cost almost eroded the majority of net earnings, especially in the case of VPBP. While operating cost is controllable, provisioning expenses remain unknown factors, and could pressure the profit of the bank.

Investment thesis

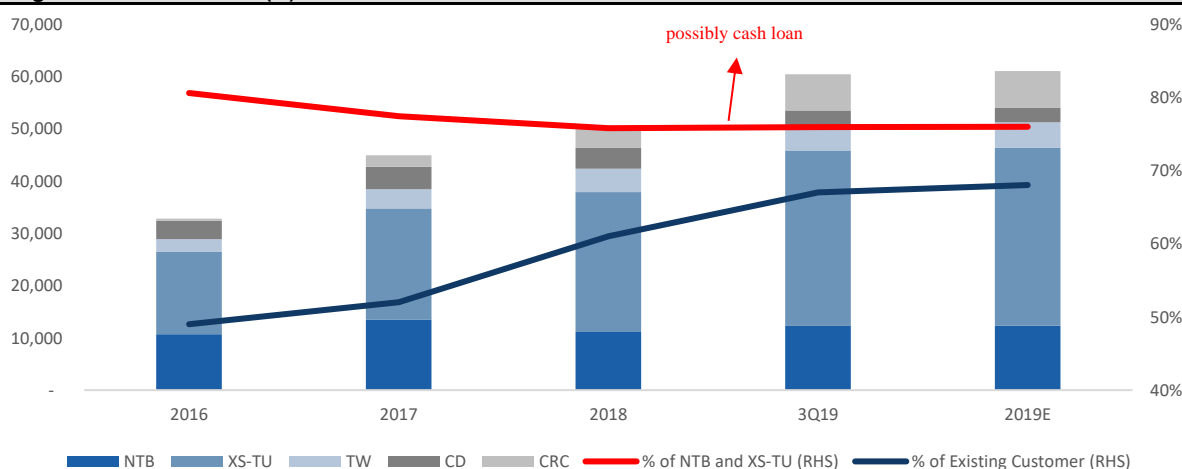
We believe that the key catalyst for VPB's stock at the moment is the outlook of consumer lending, the bank's "cash cow", which is highly dependent on government regulations related to the consumer finance sector. As we mentioned in previous reports, the State Bank of Vietnam (SBV) intends to strengthen the credit system. The regulations are currently in the draft stage, but we expect the outcome to be the key driver of VPB stock.

Until now, we have seen that the proportion of potential cash loans has remained high following the announcement of new draft regulations. We thus expect the final regulations to be more favorable for consumer finance companies than the initial draft, particularly in terms of a cash-loan cap and the definition of "cash-loan."

Additionally, we see that the size of credit card loan book of FEC quickly accelerated in 2019. At the end of 3Q19, credit-card loan balance closed at VND6.9tr (US\$300mn), increased by more 87% YTD. Therefore, it is highly likely that the new loan type would partly become cash-loan's substitution.

Apart from the regulatory factors, there are a number of investment points regarding VPB. Firstly, thanks to early Basel II adoption, VPB was also given an outlier credit-growth quota. In addition, the capital adequacy ratio (CAR) of VPB was high, at around 11% in the context of low Tier 2 capital utilization. Therefore, fund for the future growth of VPB in short-medium term is adequate, lessening dilution risk. Finally, VPB's operations are improving, with lower operational expenses through the use of technology to reduce labor costs, as well as exploiting good customer portfolios to squeeze credit cost.

Figure 20: FEC's loan mix (%)



Source: Company data, MAS VN Research

Note: NTB: new to bank; XS-TU: cross sell - top up; TW: two wheels; CD: consumer durable; CRC: credit card

Key changes in our projection

For 2019, we expect credit growth of VPB to grow by 17%. For 2020, we project credit growth of 14%, below that of 2019, given that there is uncertainty in FEC's credit growth cap.

We raise our 2019 NIM projection to 9.3%, mainly driven by the increasing yield of VPBP's credit portfolio. However, we believe that 2019 results were skewed by VPB's NIM. We project NIM of 9% in 2020, based on higher competition, and the assumption of shorter yield of portfolios with lower composition of cash loan. The upside risk for the bank is that it could enjoy cheaper-than-expected funding cost from international bond issuance, if the Vietnamese Dong can hold strong.

New net non-NII income is VND5.9tr (US\$257mn, -7% YoY). Due to the absence of one-off income, net other non-NII (excluding fee incomes) is expected to reduce by 31%.

Fortunately, we see that services stream showed stronger-than-expected flow, partially offsetting the negative effects of the decline in extraordinary income.

We also lowered our credit cost projection for VPB, as YoY provisioning expenses saw deceleration. In addition, the bank is now more focused on utilizing its existing customers, rather than acquiring new ones, strengthening the outlook of its loan book's quality.

On the downside, we increase our cost-to-income ratio projection, as the bank has spent more on IT development and operational digitalization.

Valuation

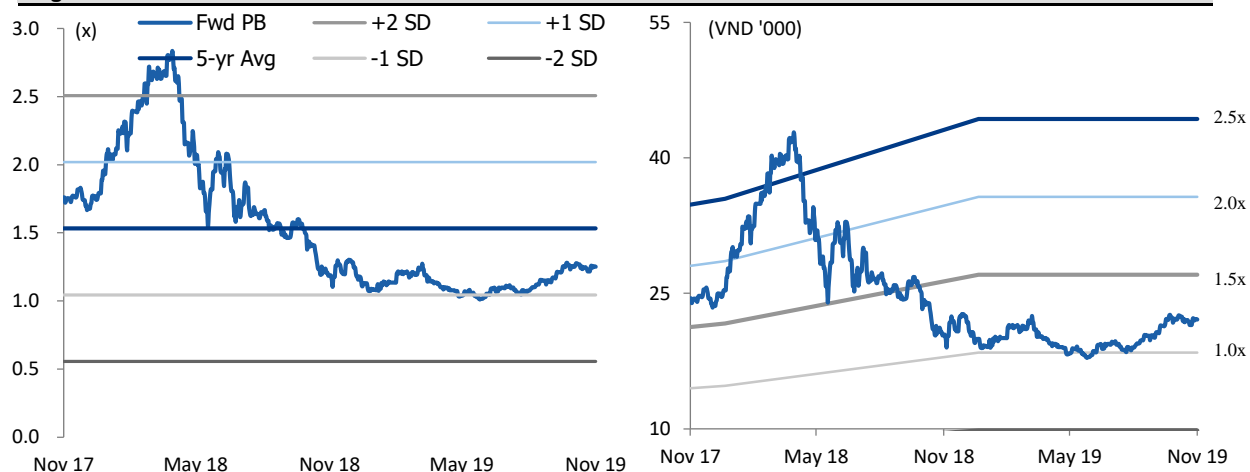
The bank's outperformance in terms of net earnings has been reflected in the stock price. As a result, we raised our target price to VND25,200 (from VND23,600), which is derived using the RSI and target P/B approach. Reiterate Buy with an expected return of 20.0%.

Figure 21: VPB stock vs. VN-Index



Source: Bloomberg, MAS VN Research

Figure 22: Forward P/B



Source: Bloomberg, MAS VN Research

Figure 23: VPB stock price and event

Source: Bloomberg, MAS VN Research

The key factors that have affected the stock price are as follows:

1. Related parties registered to buy 21mn shares
2. 2018 earnings report
3. Underperformance of VPB in 1Q19; annual meeting document with ESOP plan, conservative business targets due to VAMC tackle acceleration, FEC IPO plan
4. Draft regulation related to consumer finance
5. International bond issuance plan of more than US\$1bn
6. Interim financial report with flat earnings growth
7. Treasury shares buyback plan
8. Repurchasing shares; 3Q19 earnings strongly recovered

Table 1: 9M19 results

	Consolidation			Parent (**)			FEC (**)		
(%)	9M18	9M19	YoY (%)	9M18	9M19	YoY (%)	9M18	9M19	YoY (%)
IEA growth (YTD)	6.5	10.5		5.7	8.8		32.4	18.1	
Loans growth (YTD)	9.3	14.4		11.0	14.8		28.8	13.0	
IEA yield	15.2	15.5		10.2	10.4		37.1	37.7	
IBL growth (YTD)	8.5	10.0		6.5	8.0		34.6	21.1	
Deposit growth (YTD)	18.9	10.4		18.8	9.6				
CASA	12.3	10.3							
IBL cost	6.5	6.5		5.7	6.0		9.2	9.2	
Yield spread	8.8	9.0		4.5	4.4		27.9	28.5	
NIM	9.4	9.6		4.8	4.8		29.0	30.5	
NPL	4.7	3.5		4.2	2.8		5.0	6.1	
NPL coverage	41.7	49.6		42.4	55.5		47.5	40.1	
Broad NPL (*)	12.6	8.9		10.6	6.5		19.4	16.9	
(VND bn)									
NII	17,970	22,428	24.8	7,727	9,108	17.9	10,243	13,320	30.0
Net services	1,202	1,942	61.6	1,077	1,632	51.6	126	310	146.7
Net other	2,916	1,963	-32.7	1,907	1,662	-12.8	1,009	301	-70.2
TOI	22,088	26,334	19.2	10,710	12,402	15.8	11,378	13,931	22.4
OPEX	7,769	9,142	17.7	4,311	4,813	11.6	3,458	4,329	25.2
PPOP	14,319	17,192	20.1	6,399	7,590	18.6	7,920	9,602	21.2
Provisioning	8,194	9,993	21.9	2,679	3,879	44.8	5,516	6,114	10.8
NPAT	4,903	5,754	17.3	2,955	2,969	0.5	1,948	2,784	42.9

Source: Company data, MAS VN Research

Note: (*) VAMC balance added

(**) VPBP credit growth figures are adjusted;

(***) FEC figures are estimated from consolidate and separate financial report

Vietnam Prosperity Joint Stock Commercial Bank (VPB VN/Buy/TP: VND25,200)

Comprehensive Income Statement (Summarized)

(VNDbn)	12/17	12/18	12/19E	12/20F
Interest income	34,133	40,280	50,597	57,340
Interest expenses	13,519	15,579	20,462	24,115
Net interest income	20,614	24,702	30,135	33,226
Net fees and commissions	1,462	1,612	2,646	3,075
Net other non-interest income	2,950	4,772	3,312	2,039
Total net operating income	25,026	31,086	36,093	38,340
Total operating expense	8,895	10,634	12,272	13,036
PPOP	16,131	20,452	23,821	25,304
Total provision expenses	8,001	11,253	13,981	13,613
Profit before tax	8,130	9,199	9,841	11,691
Tax expense	1,689	1,843	1,972	2,342
Net profit	6,441	7,356	7,869	9,349
Net profit (ex. minority interest)	6,441	7,356	7,869	9,349

Statement of Financial Condition (Summarized)

(VNDbn)	12/17	12/18	12/19E	12/20F
Cash & dues	2,574	1,855	2,078	2,328
Securities	54,983	56,129	65,045	72,531
Net loans and receivables	197,039	234,967	276,430	315,023
Tangible assets	458	1,386	1,242	1,220
Other assets	22,699	28,955	26,644	27,835
Total assets	277,752	323,291	371,439	418,936
Deposits	133,551	170,851	195,568	216,232
Borrowings	37,126	58,342	64,221	69,079
Debentures	66,105	48,658	57,339	69,492
Other liabilities	11,275	10,690	11,790	12,381
Total liabilities	248,057	288,541	328,918	367,184
Capital stock	15,706	25,300	25,300	25,300
Capital surplus	5,866	1,289	1,289	1,289
Retained earnings	4,565	5,187	13,015	19,910
Reserve funds	3,558	2,974	2,917	5,254
Non-controlling interests	0	0	0	0
Total shareholders' equity	29,696	34,750	42,521	51,753

Dupont Analysis (%)

	12/17	12/18	12/19E	12/20F
Interest income	13.48	13.40	14.57	14.51
Interest expense	5.34	5.18	5.89	6.10
Net interest income	8.14	8.22	8.68	8.41
Net commissions income	0.58	0.54	0.76	0.78
Net other non-interest income	1.16	1.59	0.95	0.52
Total net operating profit	9.88	10.34	10.39	9.70
Total operating expense	3.51	3.54	3.53	3.30
PPOP	6.37	6.81	6.86	6.40
Total provision expenses	3.16	3.74	4.02	3.44
Profit before tax	3.21	3.06	2.83	2.96
Tax expense	0.67	0.61	0.57	0.59
Net profit(non-controlling)	0.00	0.00	0.00	0.00
ROA	2.54	2.45	2.27	2.37
Leverage (x)	10.81	9.33	8.99	8.38
ROE	27.48	22.83	20.37	19.83
Asset quality (%)				
NPL ratio	3.4	3.5	3.5	3.4
Broad NPL ratio	10.3	8.8	8.3	8.1
NPL coverage ratio	50.8	45.9	47.7	51.1
Reserves to Total credits	1.1	0.8	0.9	1.0
Credit cost (% of total loans)	4.4	5.1	5.3	4.5
Credit cost (% of total credit)	3.4	4.0	4.3	3.7
Per share items (VND)				
EPS (reported)	2,820	3,025	N/A	N/A
EPS (normalized)	4,101	2,994	3,270	3,884
BVPS	18,907	14,145	17,667	21,503
PPOP/ share	10,271	8,325	9,898	10,514

Ratio analysis (Summarized)

	12/17	12/18	12/19E	12/20F
Growth (YoY)				
Loan growth	25.9	21.7	19.2	14.6
Net loans & receivables growth	29.7	19.2	17.6	14.0
Deposit growth	7.9	27.9	14.5	10.6
Shareholders' equity growth	72.9	17.0	22.4	21.7
Total assets growth	21.4	16.4	14.9	12.8
Net interest income growth	35.9	19.8	22.0	10.3
Net fee income growth	71.4	10.3	64.1	16.2
PPOP growth	57.5	26.8	16.5	6.2
Operating profit growth	64.9	13.1	7.0	18.8
Net profit growth	64.9	14.2	7.0	18.8
Profitability				
Net Interest Spread	8.1	8.1	8.7	8.33
Net Interest Margin	8.6	8.7	9.3	9.0
PPOP margin	47.3	50.8	47.1	44.1
ROA	2.5	2.4	2.3	2.37
ROE	27.5	22.8	20.4	19.8
Liquidity				
LDR (exclude CDs)	134.4	127.8	133.1	138.0
Loans to assets	64.6	67.6	70.1	71.2
Capital adequacy (Reported)				
Total CAR	14.6	11.9	N/A	N/A
Tier 1 CAR	N/A	N/A	N/A	N/A
Tier 2 CAR	N/A	N/A	N/A	N/A
Operating efficiency				
Cost to income	35.5	34.2	34.0	34.0
Cost to assets	3.2	3.3	3.3	3.1

Source: Company data, MAS VN Research estimates

APPENDIX 1

Important Disclosures & Disclaimers

Stock Ratings

Buy	: Relative performance of 20% or greater
Trading Buy	: Relative performance of 10% or greater, but with volatility
Hold	: Relative performance of -10% and 10%
Sell	: Relative performance of -10%

Industry Ratings

Overweight	: Fundamentals are favorable or improving
Neutral	: Fundamentals are steady without any material changes
Underweight	: Fundamentals are unfavorable or worsening

Disclosures

As of the publication date, Mirae Asset Daewoo and/or its affiliates do not have any special interest with the subject company and do not own 1% or more of the subject company's shares outstanding.

Analyst Certification

The research analysts who prepared this report (the "Analysts") are registered with the Korea Financial Investment Association and are subject to Korean securities regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws and regulations thereof. Opinions expressed in this publication about the subject securities and companies accurately reflect the personal views of the Analysts primarily responsible for this report. Mirae Asset Daewoo Co., Ltd. ("Mirae Asset Daewoo") policy prohibits its Analysts and members of their households from owning securities of any company in the Analyst's area of coverage, and the Analysts do not serve as an officer, director or advisory board member of the subject companies. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. No part of the compensation of the Analysts was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report but, like all employees of Mirae Asset Daewoo, the Analysts receive compensation that is determined by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading and private client division. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or Mirae Asset Daewoo except as otherwise stated herein.

Disclaimers

This report is published by Mirae Asset Daewoo, a broker-dealer registered in the Republic of Korea and a member of the Korea Exchange. Information and opinions contained herein have been compiled in good faith and from sources believed to be reliable, but such information has not been independently verified and Mirae Asset Daewoo makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein or of any translation into English from the Korean language. In case of an English translation of a report prepared in the Korean language, the original Korean language report may have been made available to investors in advance of this report.

The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws and accounting principles and no person whose receipt or use of this report would violate any laws and regulations or subject Mirae Asset Daewoo and its affiliates to registration or licensing requirements in any jurisdiction shall receive or make any use hereof.

This report is for general information purposes only and it is not and shall not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The report does not constitute investment advice to any person and such person shall not be treated as a client of Mirae Asset Daewoo by virtue of receiving this report. This report does not take into account the particular investment objectives, financial situations, or needs of individual clients. The report is not to be relied upon in substitution for the exercise of independent judgment. Information and opinions contained herein are as of the date hereof and are subject to change without notice. The price and value of the investments referred to in this report and the income from them may depreciate or appreciate, and investors may incur losses on investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. Mirae Asset Daewoo, its affiliates and their directors, officers, employees and agents do not accept any liability for any loss arising out of the use hereof.

Mirae Asset Daewoo may have issued other reports that are inconsistent with, and reach different conclusions from, the opinions presented in this report. The reports may reflect different assumptions, views and analytical methods of the analysts who prepared them. Mirae Asset Daewoo may make investment decisions that are inconsistent with the opinions and views expressed in this research report. Mirae Asset Daewoo, its affiliates and their directors, officers, employees and agents may have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. Mirae Asset Daewoo and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making or other financial services as are permitted under applicable laws and regulations.

No part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of Mirae Asset Daewoo.

Distribution

United Kingdom: This report is being distributed by Mirae Asset Securities (UK) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as "Relevant Persons"). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.

United States: This report is distributed in the U.S. by Mirae Asset Securities (USA) Inc., a member of FINRA/SIPC, and is only intended for major institutional investors as defined in Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934. All U.S. persons that receive this document by their acceptance thereof represent and warrant that they are a major institutional investor and have not received this report under any express or implied understanding that they will direct commission income to Mirae Asset Daewoo or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Mirae Asset Securities (USA) Inc., which accepts responsibility for the contents of this report in the U.S. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.

Hong Kong: This document has been approved for distribution in Hong Kong by Mirae Asset Securities (HK) Ltd., which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong (Cap. 571, Laws of Hong Kong) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong to any person.

All Other Jurisdictions: Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact Mirae Asset Daewoo or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject Mirae Asset Daewoo and its affiliates to any registration or licensing requirement within such jurisdiction.

Mirae Asset Daewoo International Network**Mirae Asset Daewoo Co., Ltd. (Seoul)**

Global Equity Sales Team
Mirae Asset Center 1 Building
26 Eulji-ro 5-gil, Jung-gu, Seoul 04539
Korea

Tel: 82-2-3774-2124

Mirae Asset Securities (USA) Inc.

810 Seventh Avenue, 37th Floor
New York, NY 10019
USA

Tel: 1-212-407-1000

PT. Mirae Asset Sekuritas Indonesia

Equity Tower Building Lt. 50
Sudirman Central Business District
Jl. Jend. Sudirman, Kav. 52-53 Jakarta Selatan
12190
Indonesia
Tel: 62-21-515-3281

Mirae Asset Securities Mongolia UTsK LLC

#406, Blue Sky Tower, Peace Avenue 17
1 Khoroo, Sukhbaatar District
Ulaanbaatar 14240
Mongolia

Tel: 976-7011-0806

Shanghai Representative Office

38T31, 38F, Shanghai World Financial Center
100 Century Avenue, Pudong New Area Shanghai
200120
China

Tel: 86-21-5013-6392

Mirae Asset Securities (HK) Ltd.

Suites 1109-1114, 11th Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong
China
Tel: 852-2845-6332

Mirae Asset Wealth Management (USA) Inc.

555 S. Flower Street, Suite 4410,
Los Angeles, California 90071
USA

Tel: 1-213-262-3807

Mirae Asset Securities (Singapore) Pte. Ltd.

6 Battery Road, #11-01
Singapore 049909
Republic of Singapore

Tel: 65-6671-9845

Mirae Asset Investment Advisory (Beijing) Co., Ltd

2401B, 24th Floor, East Tower, Twin Towers
B12 Jianguomenwai Avenue, Chaoyang District
Beijing 100022
China

Tel: 86-10-6567-9699

Ho Chi Minh Representative Office

7F, Saigon Royal Building
91 Pasteur St.
District 1, Ben Nghe Ward, Ho Chi Minh City
Vietnam

Tel: 84-8-3910-7715

Mirae Asset Securities (UK) Ltd.

41st Floor, Tower 42
25 Old Broad Street,
London EC2N 1HQ
United Kingdom

Tel: 44-20-7982-8000

Mirae Asset Wealth Management (Brazil) CCTVM

Rua Funchal, 418, 18th Floor, E-Tower Building Vila
Olimpia
Sao Paulo - SP
04551-060
Brasil
Tel: 55-11-2789-2100

Mirae Asset Securities (Vietnam) LLC

7F, Saigon Royal Building
91 Pasteur St.
District 1, Ben Nghe Ward, Ho Chi Minh City
Vietnam

Tel: 84-8-3911-0633 (ext.110)

Beijing Representative Office

2401A, 24th Floor, East Tower, Twin Towers
B12 Jianguomenwai Avenue, Chaoyang District
Beijing 100022
China

Tel: 86-10-6567-9699 (ext. 3300)