J.P.Morgan

Asia Pacific Corporate Research
18 March 2022

Data-Driven

Asia Banks

Factor-driven investing: Vol 3

We present Vol. 3 of our factor-based framework for picking bank stocks in Asia. We have maintained our methodology from the first volume (link), where we back tested 57 factors over last 14 years to determine the most relevant factors that delivered outperformance for banks, based on four style regimes. Our most recent portfolio held from Dec-21 to Feb-22 (link) would have underperformed AxJ banks by 5%. This was due to weak performance of the short portfolio (-7%) as stocks rallied, while our long portfolio would have gained 9% vs AxJ banks at 8%. On the other hand, the MTD performance of our new portfolio would have been slightly better vs AxJ. Please see recent portfolios on pages 3-4 and our latest factor-based picks below.

- **For Mar '22**, eight stocks that screen as top longs as per the style model are China Merchants (OW), Bank of China (OW), TCB (OW), VPB (OW), BBL (N), Axis (N), BBCA (N), and ICBC (N). Further, stocks that screen top shorts are Huaxia (UW), DGB (N), Citic-H (N), RBL (N), Tisco (N), ACB (OW), Sawad (OW), and BBNI (OW). The determinant of these picks is the 'slowdown' economic stage. In this stage, back-tests suggest outperformance by banks with higher asset growth and market cap vs country peers; and vice versa for shorts.

- **Longs:** We hold OW China Merchants due to the sustained growth of its leading retail and wealth franchise, while Bank of China (OW) is seeing improvements across deposits and fees. TCB (OW) and VPB (OW) are among the digital leaders in a structural growth market in Vietnam. BBL (N) offers deep value, but accelerated digital spend risks higher costs. Axis' (N) PPoP has lagged peers, but improving liability franchise and broadening growth are potential drivers for a re-rating. BBCA (N) has one of the best underwriting and deposit franchises in the region, but we worry about the impact of digital challengers to profitability. We see potential risks at ICBC (N) following its Jinzhou acquisition.

- **Shorts:** We hold UW on Huaxia due to asset quality risks and weak capital generation. We hold N on DGB due to earnings risk from the bank's cyclical exposures, while Citic (N) could see weaker fees, offsetting its retail business improvement. We expect slow growth at Tisco (N), despite best-in-class profitability. RBL (N) faces uncertainties on growth and risks from its high share of non-investment grade book. We hold OW on three stocks in our short portfolio: ACB (OW) offers steady growth on consumer and SME exposure in Vietnam. Sawad (OW) has positioned its balance sheet for stronger growth, while BBNI (OW) offers beta to Indonesia's macro, in addition to turnaround progress.

Asia-ex Banks

Harsh Wardhan Modi AC
(65) 6882-2450
harsh.w.modi@jpmorgan.com
Bloomberg JPMA MODI <GO>
J.P. Morgan Securities Singapore Private Limited/ J.P. Morgan Securities (Asia Pacific) Limited/ J.P. Morgan Broking (Hong Kong) Limited

Katherine Lei
(852) 2800-8552
katherine.lei@jpmorgan.com
J.P. Morgan Securities (Asia Pacific) Limited/ J.P. Morgan Broking (Hong Kong) Limited

Daniel Andrew Tan, CFA
(63-2) 8554-2413
danielandrew.o.tan@jpmorgan.com
J.P. Morgan Securities Philippines, Inc.

Saurabh Kumar
(91-22) 6157-3590
saurabh.s.kumar@jpmorgan.com
J.P. Morgan India Private Limited

Jemmy S Huang
(886-2) 2725-9870
jemmy.s.huang@jpmorgan.com
J.P. Morgan Securities (Taiwan) Limited/ J.P. Morgan Securities (Asia Pacific) Limited/ J.P. Morgan Broking (Hong Kong) Limited

Jihyun Cho
(82-2) 758-5480
jihyun.cho@jpmorgan.com
J.P. Morgan Securities (Far East) Limited, Seoul Branch

Zheming E Yan
(86-21) 6106 6350
zheming.e.yan@jpmchase.com
SAC Registration Number: S1730520090002
J.P. Morgan Securities (China) Company Limited

Asia Equity and Quant Strategy

Mixo Das
(852) 2800-0511
mixo.das@jpmorgan.com
J.P. Morgan Securities (Asia Pacific) Limited/ J.P. Morgan Broking (Hong Kong) Limited

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

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Table 1: J.P. Morgan factor based model picks (Mar '22 – May '22)

Bank	Ticker	Position	Rating	Bank	Ticker	Position	Rating
China Merchants Bank-H	3968 HK Equity	L	OW	Huaxia Bank Co Ltd-A	600015 CH Equity	S	UW
Bank Of China Ltd-H	3988 HK Equity	L	OW	China Citic Bank Corp Ltd-H	998 HK Equity	S	N
Vietnam Technological & Comm	TCB VN Equity	L	OW	Dgb Financial Group Inc	139130 KS Equity	S	N
Vietnam Prosperity Jsc Bank	VPB VN Equity	L	OW	Tisco Financial Group Pcl	TISCO TB Equity	S	N
Bangkok Bank Public Co Ltd	BBL TB Equity	L	N	Rbl Bank Ltd	RBK IN Equity	S	N
Axis Bank Ltd	AXSB IN Equity	L	N	Asia Commercial Bank	ACB VN Equity	S	OW
Bank Central Asia Tbk Pt	BBCA IJ Equity	L	N	Srisawad Corp Pcl	SAWAD TB Equity	S	OW
Ind & Comm Bk Of China-H	1398 HK Equity	L	N	Bank Negara Indonesia Perser	BBNI IJ Equity	S	OW

Source: J.P. Morgan.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

Recent portfolio performance

Portfolio performance (Dec '21-Feb'22)

The latest portfolio based on our factor-driven model would have underperformed AxJ banks. For the Dec-21 to Feb-22 period, our portfolio would have had a return of 3%, compared with -8% for AxJ banks, resulting in 5% underperformance.

The underperformance was largely due to the short portfolio (-7% return), which offset relatively strong performance of the long portfolio (9% return). Long portfolio performance was led by BBL TB, KTB TB and MBT PM; while Ping An Bank was the key drag. On the other hand, most stocks in the short portfolio had negative returns as stocks rallied; stocks with weakest performance were Bank of Communications (3328 HK), TISCO TB and BMRI IJ.

Table 2: Previous portfolio returns (Dec '21-Feb'22)

Bank	Ticker	Position	3M Performance of position
Bangkok Bank Public Co Ltd	BBL TB Equity	L	25%
State Bank Of India	SBIN IN Equity	L	1%
China Merchants Bank-H	3968 HK Equity	L	7%
Metropolitan Bank & Trust	MBT PM Equity	L	13%
Krung Thai Bank Pub Co Ltd	KTB TB Equity	L	24%
Bdo Unibank Inc	BDO PM Equity	L	8%
Axis Bank Ltd	AXSB IN Equity	L	8%
Ping An Bank Co Ltd-A	000001 CH Equity	L	-10%
Bank Of Communications Co-H	3328 HK Equity	S	-13%
Tisco Financial Group Pcl	TISCO TB Equity	S	-12%
China Everbright Bank Co L-H	6818 HK Equity	S	-7%
Huaxia Bank Co Ltd-A	600015 CH Equity	S	0%
Dah Sing Financial Holdings	440 HK Equity	S	-7%
Bank Mandiri Persero Tbk Pt	BMRI IJ Equity	S	-9%
Dah Sing Banking Group Ltd	2356 HK Equity	S	-4%
Bank Of Beijing Co Ltd -A	601169 CH Equity	S	-3%
Long return			**9%**
Short return			**-7%**
Portfolio return			**3%**
AxJ Banks			**8%**

Source: Bloomberg Finance L.P., J.P. Morgan. Note: 3M returns in USD.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

Current portfolio

We show the latest invested portfolio in Mar-22 in Table 3. This is based on the slowdown QMI state as of end-February. In this state, the relevant factors are asset growth and market cap, which leads to the bank picks. Table 4 shows the details of the factors. The portfolio so far would have returned -1%, slightly better than AxJ banks.

Note that our current portfolio is based on 4Q21 metrics, which may not yet be available for some companies. These are not included in the 4Q21 screen.

Table 3: Current portfolio (Mar '22 to May '22)

Bank	Ticker	Rank	Position	MTD Performance of position
Bangkok Bank Public Co Ltd	BBL TB Equity	54	L	-2%
China Merchants Bank-H	3968 HK Equity	54	L	-8%
Bank Of China Ltd-H	3988 HK Equity	53	L	-1%
Axis Bank Ltd	AXSB IN Equity	51	L	-1%
Vietnam Technological & Comm	TCB VN Equity	50	L	-3%
Bank Central Asia Tbk Pt	BBCA IJ Equity	50	L	0%
Ind & Comm Bk Of China-H	1398 HK Equity	50	L	-2%
Vietnam Prosperity Jsc Bank	VPB VN Equity	49	L	-4%
Asia Commercial Bank	ACB VN Equity	23	S	3%
China Citic Bank Corp Ltd-H	998 HK Equity	19	S	1%
Srisawad Corp Pcl	SAWAD TB Equity	18	S	2%
Dgb Financial Group Inc	139130 KS Equity	17	S	4%
Tisco Financial Group Pcl	TISCO TB Equity	15	S	0%
Huaxia Bank Co Ltd-A	600015 CH Equity	13	S	8%
Bank Negara Indonesia Perser	BBNI IJ Equity	12	S	-4%
Rbl Bank Ltd	RBK IN Equity	10	S	-2%
Long return				**-3%**
Short return				**1%**
Portfolio return				**-1%**
AxJ Banks return				**-2%**

Source: Bloomberg Finance L.P., J.P. Morgan. Priced as of 17 Mar 2022. Note: Latest performance in USD.

Table 4: JPM Bank factor weights

States	ROA	Cost/assets change (4Q)	ROE	EPS growth FY2-FY1	EPS revision last 6M	Loan gr (y/y)	Revenue gr (4Q)	Asset gr (y/y)	Market cap (USD)
Slowdown	-	-	-	-	-	-	-	0.601	0.399
Recovery	-	-	-	-	0.396	0.312	0.292	-	-
Contraction	0.53	0.47	-	-	-	-	-	-	-
Expansion	-	-	0.512	0.488	-	-	-	-	-

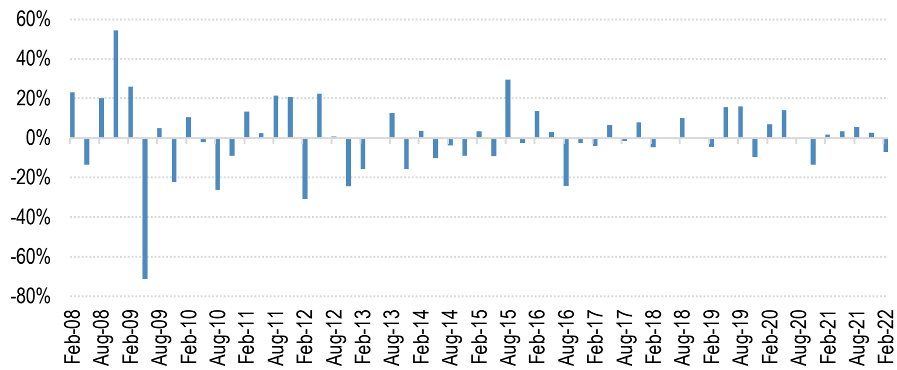
Source: J.P. Morgan.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

L/S factor model would have outperformed

Our long/short picks, based on the factor model would have underperformed Asia Banks index in last 3M, but would have outperformed by 5/72/40% in last 12M/5Y/10Y, respectively. The return per unit risk of 1.2/1.3/0.5 over last 3Y/5Y/10Y suggests that the outputs do tend to add value to the investment process over longer periods. These are significantly higher than -0.07/0.1/0.15 respectively for the Asia ex Japan banks universe. Our long only picks would have outperformed AxJ by 13/67/67% over last 12M/5Y/10Y.

Figure 1: JPM factor model (L-S) quarterly performance vs. AxJ banks



Source: J.P. Morgan, Bloomberg Finance L.P. AxJ banks are JP Morgan coverage in USD, weighted by market cap.

Table 5: JP Morgan factor model vs AxJ banks absolute performance

	JPM Factor Model	Bank Factor (LO)	AxJ Banks	L-S o/p vs AxJ	LO o/p vs AxJ
3M	3%	9%	8%	-6%	1%
12M	7%	15%	2%	5%	13%
5Y	79%	74%	8%	72%	67%
10Y	71%	99%	32%	40%	67%

Source: J.P. Morgan, Bloomberg Finance L.P.

Table 6: Long-Short factor model vs AxJ banks performance

	3M	12M	3Y	5Y	10Y
JPM Factor Model (L-S)					
Returns (annualized)	10.5%	7.4%	11.9%	12.4%	5.5%
SD of returns		11.3%	9.7%	9.7%	11.2%
Risk adjusted return		0.66	1.23	1.28	0.50
Bank factor (LO)					
Returns (annualized)	43.6%	14.7%	14.0%	11.7%	7.1%
SD of returns		16.4%	18.6%	16.7%	17.4%
Risk adjusted return		0.90	0.75	0.70	0.41
AxJ Banks					
Returns (annualized)	44.4%	2.2%	-1.2%	1.5%	2.8%
SD of returns		17.3%	17.1%	14.9%	18.7%
Risk adjusted return		0.13	(0.07)	0.10	0.15

Source: J.P. Morgan, Bloomberg Finance L.P. AxJ banks are JP Morgan coverage in USD, weighted by market cap.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

Data driven investing for banks

Our methodology remains unchanged from the first volume (link). To come up with an alternate approach to portfolio allocation, we **focus on the performance of banks using specific operating metrics** along with traditional factors (value, quality, momentum, volatility and growth) to see if operating metrics enhance the performance. To adjust for different regulatory regimes, macroeconomic conditions and monetary policy across countries, we **normalize all the metrics by country averages**.

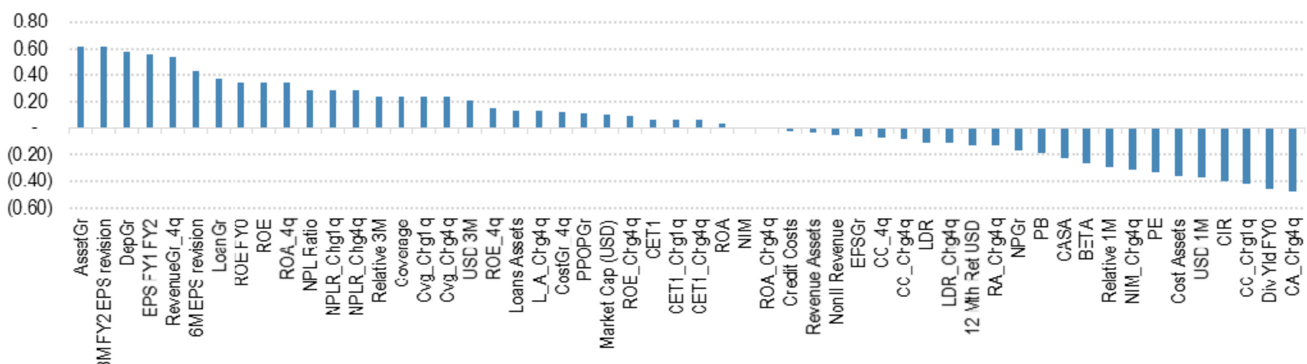
Our analysis detailed below suggests that combining normalized operating data with JPM's QMI framework delivers outperformance relative to AxJ banks and reduces portfolio risk over the last 10 years. **Our portfolio based on shifting factors using QMI has delivered annualized average returns of 8% relative to 4% for AxJ banks, while taking lower risk (12% SD vs 20%) over the last 10 years.**

Historical test of individual factors

Our historical testing results show that bank-specific factors normalized by country are able to generate higher risk-adjusted returns than the AxJ banks. Some factors like asset growth, 3M EPS revision (FY2), deposit growth, EPS growth (FY2-FY1), and revenue growth generate higher risk-adjusted returns relative to AxJ banks. This is shown by higher return per unit risk of factors as high as 0.5-0.6 vs 0.1 for AxJ Banks.

To back test operating metrics, we use methodology similar to the one described earlier for Style Investing analysis. We form **equal weighted long/short portfolios and buy stocks that rank in 85-95 percentile and short 5-15 percentile**. Lastly, in order **to avoid any forward looking bias, we form the portfolio two months after the quarter end date, by when the entire region would have reported**. We hold the portfolio for 3 months.

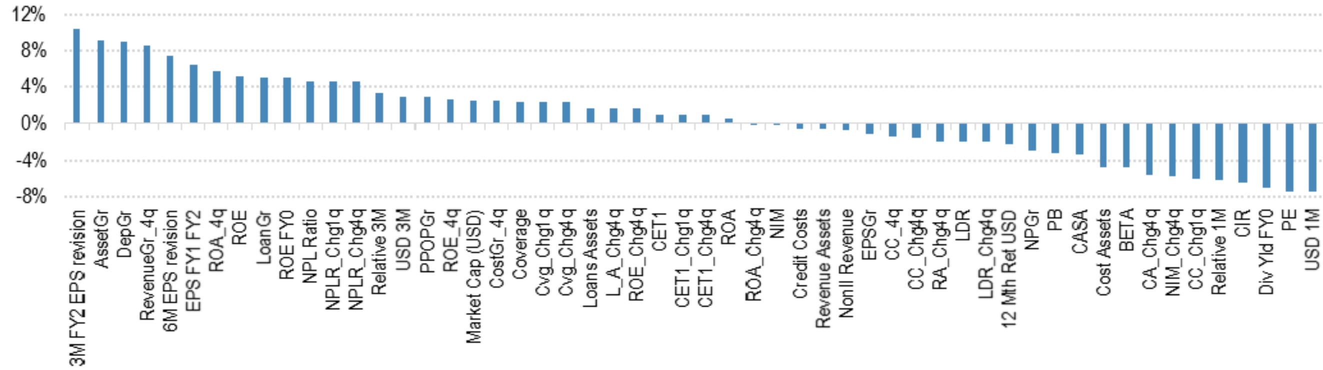
Figure 2: Return per unit risk of bank specific factor



Source: J.P. Morgan.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

Figure 3: Average return (annualized) of bank specific factor



Source: J.P. Morgan.

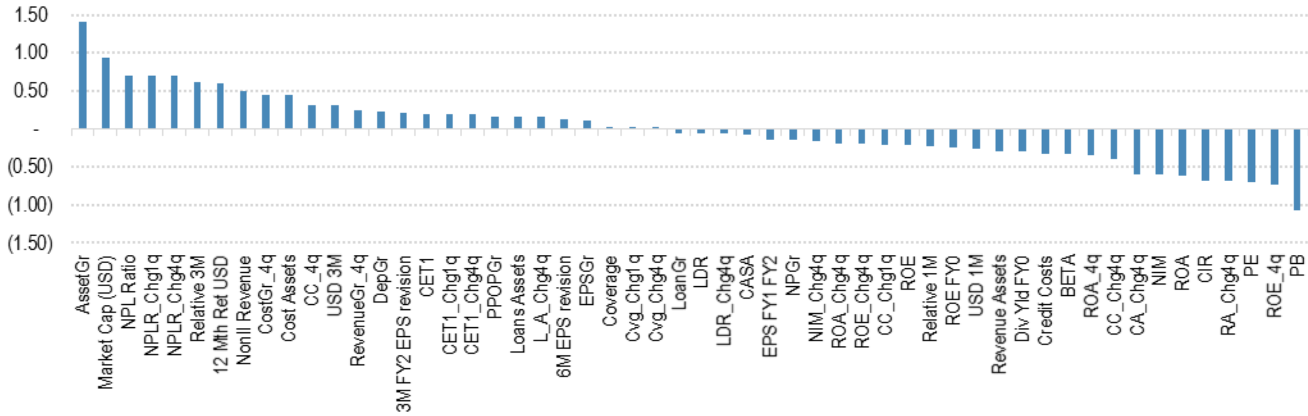
Combining factors with regime changes

Although bank specific factors outperform AxJ, we extend this further by borrowing the concept of regime switching from the J.P. Morgan's Style Investing Framework. We leverage forward looking power of JPM's QMI to examine if switching between factors across states further enhances returns and lowers risk. Intuitively, this should work, as market preference for stocks shifts depending on the business conditions and macroeconomic outlook.

Confirming our intuitions, results below show that best performing factors vary based on where we are in the cycle.

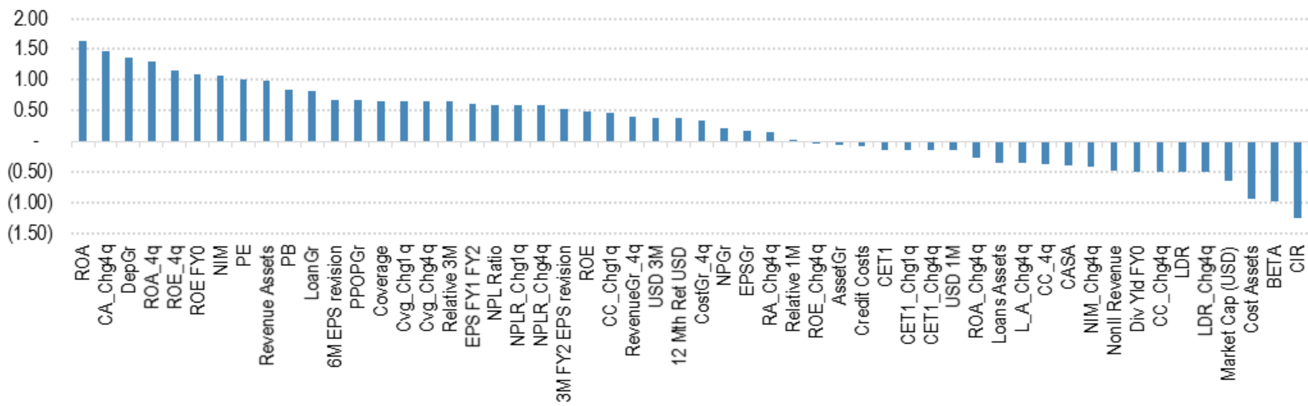
- **Slowdown: Asset growth, market cap and NPL ratio are the best performing factors.** This suggests that investors take defensive positions in quality franchises, typically with scale, ability to grow and resilient asset quality.
- **Contraction: ROA, change in cost to assets (4Q) and deposit growth are the best performing factors**. This suggests that market prefers banks which have strong underlying RoA profile to do better in challenging times. Investors also prefer banks with strong deposit franchise and the ability to manage costs (C/A).
- **Recovery: EPS revisions, loan growth and revenue growth are the best performing factors.** This suggests shifts in focus to bottom-line growth delivery in-addition to top-line growth. These are reflected in improvements across volumes and revenues, which drive positive shifts on EPS growth expectations.
- **Expansion: RoE, changes in RoE and EPS growth outlook are the best performing indicators.** Investors focus on banks which are beating expectations and delivering better than average RoE, as well as banks that are able to improve RoE. Further, EPS growth outlook has also been a driver of outperformance.

Figure 4: Slowdown State: Return per unit risk of bank specific factor



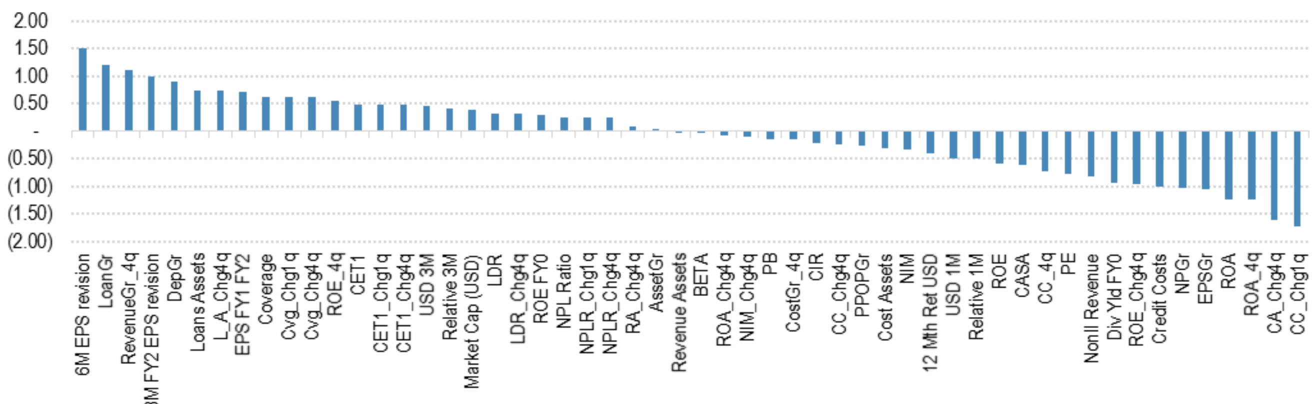
Source: J.P. Morgan.

Figure 5: Contraction State: Return per unit risk of bank specific factor



Source: J.P. Morgan.

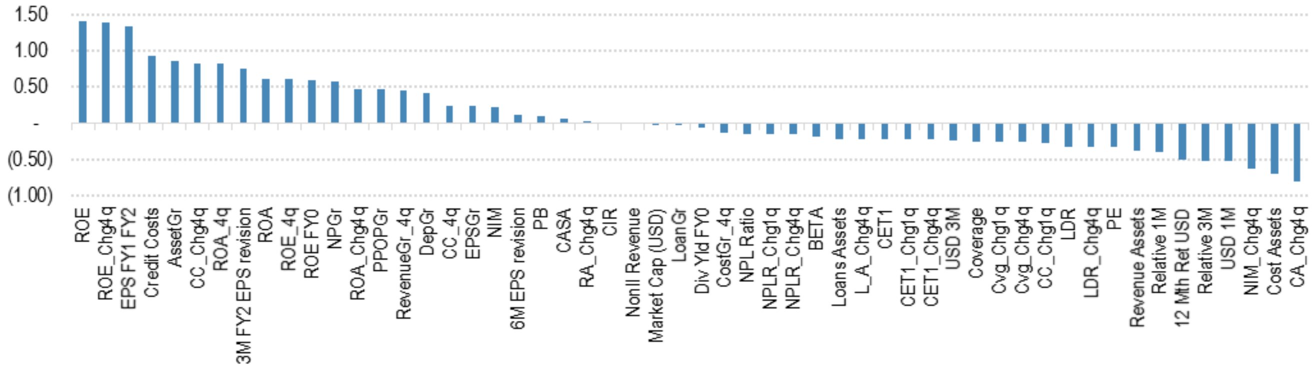
Figure 6: Recovery State: Return per unit risk of bank specific factor



Source: J.P. Morgan.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

Figure 7: Expansion State: Return per unit risk of bank specific factor



Source: J.P. Morgan.

Portfolio strategy

Building on the insight that regime based factor selection adds to performance, we use factors shown in Table 4 to create long-short portfolios. We use top 3 factors which have risk adjusted returns of ~1.

Table 7: JPM Bank factor weights

States	ROA	Cost/assets change (4Q)	ROE	EPS growth FY2-FY1	EPS revision last 6M	Loan gr (y/y)	Revenue gr (4Q)	Asset gr (y/y)	Market cap (USD)
Slowdown	-	-	-	-	-	-	-	0.601	0.399
Recovery	-	-	-	-	0.396	0.312	0.292	-	-
Contraction	0.53	0.47	-	-	-	-	-	-	-
Expansion	-	-	0.512	0.488	-	-	-	-	-

Source: J.P. Morgan.

The back testing performance shows that this method would have delivered risk-adjusted return of 0.43 which is materially superior to 0.12 for AxJ banks. The portfolio delivers materially higher average return 6.5% ann (vs. 3.2% for AxJ banks) while keeping the overall volatility materially lower (15% vs. 27% ann).

As Figure 8 shows, our portfolio delivers much more stable performance since 2007. Our portfolio loses 21% in the worst quarter (vs. 37% AxJ Banks) and gains 20% in the best quarter (vs. 51% for AxJ Banks).

Table 8: Portfolio Statistics

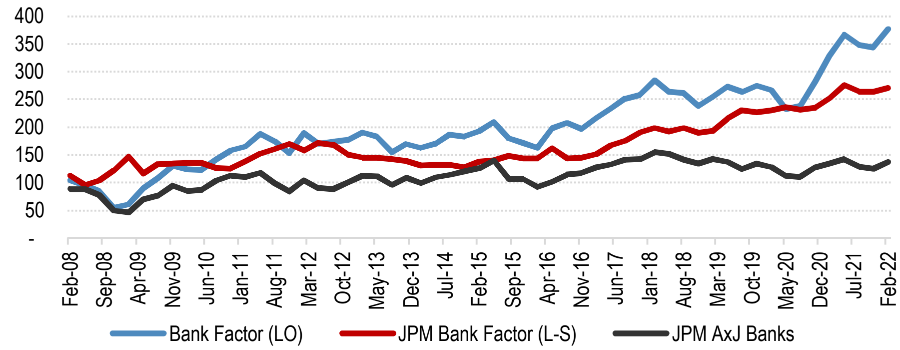
	JPM Bank Factor (L-S)	Bank factor (LO)	JPM AxJ Banks
Ann Average Return	6.5%	9.6%	3.2%
Ann SD	15.2%	24.8%	26.5%
Return per unit risk	0.43	0.39	0.12
Worst Qtr	-20.8%	-35.5%	-36.5%
Best Qtr	19.9%	47.7%	50.5%

Source: Bloomberg Finance L.P., J.P. Morgan.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

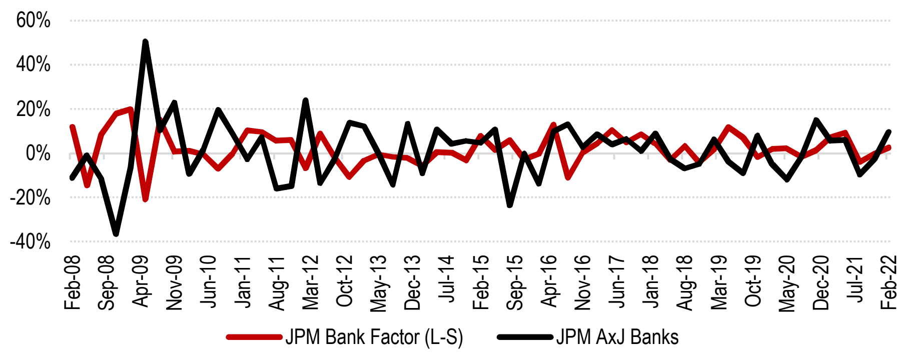
Our back testing of long only portfolios likewise shows evidence of outperformance. Since 2007, the long only portfolio returned 9.6% annually on average, higher than both the long-short portfolio (7%) and Asia ex Japan banks (3.2%). However, the long only portfolio exhibited higher risk (25% SD, comparable to AxJ banks), which leads to lower return per unit of risk at 0.39 vs. 0.43 for the long-short portfolio.

Figure 8: JPM Bank Factor vs. AxJ Banks: Cumulative Performance (Nov'07=100)



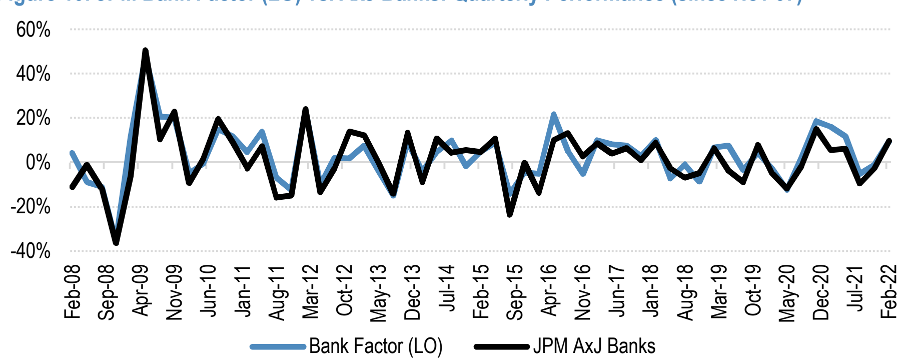
Source: Bloomberg Finance L.P., Company reports, J.P. Morgan.

Figure 9: JPM Bank Factor (L-S) vs. AxJ Banks: Quarterly Performance (since Nov'07)



Source: Bloomberg Finance L.P., Company reports, J.P. Morgan

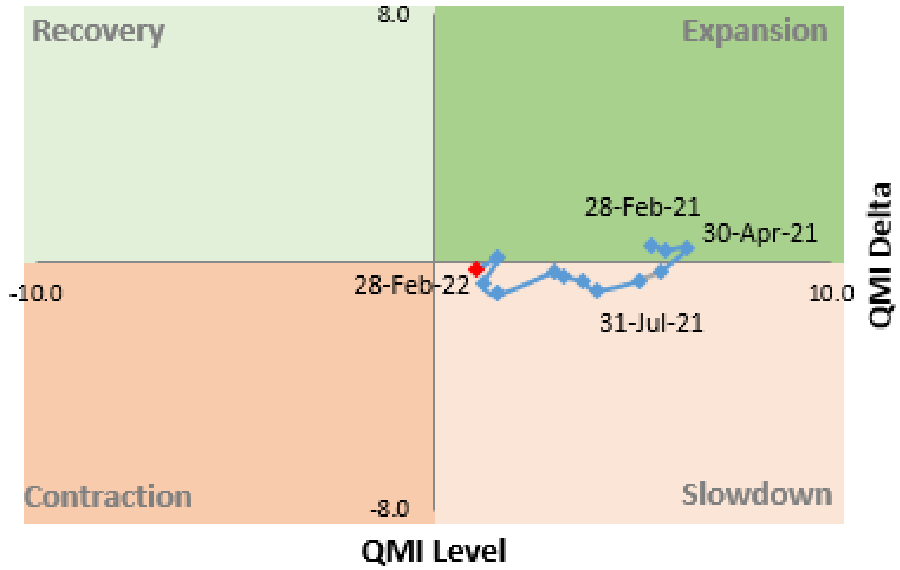
Figure 10: JPM Bank Factor (LO) vs. AxJ Banks: Quarterly Performance (since Nov'07)



Source: Bloomberg Finance L.P., Company reports, J.P. Morgan.

Harsh Wardhan Modi
(65) 6882-2450
harsh.w.modi@jpmorgan.com

Figure 11: Asia Quantitative Macro Index



Source: J.P. Morgan.

Companies Discussed in This Report (all prices in this report as of market close on 18 March 2022, unless otherwise indicated)
Asia Commercial Bank(ACB.HM/D32800.00/OW), Axis Bank Ltd(AXBK.NS/Rs739.25[17 March 2022]/N), Bangkok Bank(BBL.BK/Bt138.00/N), Bank Central Asia (BCA)(BBCA.JK/Rp7900/N), Bank Negara Indonesia Persero(BBNI.JK/Rp8300/OW), Bank of China - H(3988.HK/HK$2.97/OW), China Citic Bank - H(0998.HK/HK$3.69/N), China Merchants Bank - H(3968.HK/HK$61.40/OW), DGB Financial Group(139130.KS/W9250/N), Huaxia Bank - A(600015.SS/Rmb5.34/UW), Industrial and Commercial Bank of China - H(1398.HK/HK$4.63/N), RBL Bank(RATB.NS/Rs136.45[17 March 2022]/N), Srisawad Corporation PCL(SAWAD.BK/Bt58.25/OW), Techcombank(TCB.HM/D49200.00/OW), Tisco Financial Group PCL(TISCO.BK/Bt99.50/N), VPBank(VPB.HM/D36250.00/OW)

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J.P. Morgan Global Equity Research Coverage*	52%	37%	11%
IB clients**	53%	46%	34%
JPMS Equity Research Coverage*	51%	37%	12%
IB clients**	74%	68%	50%

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