



MSCI Emerging Markets Index Analysis

Case 1: Global Equity Portfolio Weighting

KAMA Capital

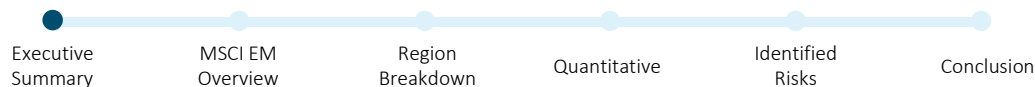
Angela Fitzmaurice, Kate Rebello, Matthew Cranitch, Alexander Zhang

10th September 2023

Executive Summary

The following key areas of discussion formed the basis for the proposed 2.0% overweighting of the MSCI EM Index.

Objective	Details				
<p>1. Overview of Index & Recent Macro Trends</p>	<ul style="list-style-type: none"> Over past 20 years MSCI EM Index composition has moved away from resources and towards finance and IT sectors. China's slowdown, tech industry challenges and strong USD have weighed on recent performance of index. 				
<p>2. Constituent Economies Analysis</p>	<ul style="list-style-type: none"> China, Taiwan, India and Korea are the four largest economies in the index. Chinese economy is expected to perform poorly, while others are expected to outpace over the next 1-3 years. The other countries, while having their respective head and tailwinds are materially unimportant for the portfolio. 				
<p>3. Due Diligence</p>	<ul style="list-style-type: none"> ESG assessment revealed, as expected, EM have performed quite poorly and are struggling to reach emission targets. MSCI EM is cheaper on an earnings basis than MSCI ACWI indicating there could be opportunity for investment. Key risks include a China/Taiwan conflict, Japanification of China, and a Chinese property collapse. 				
<p>4. Final Weight Adjustment Recommendation</p>	China	Taiwan	India	Korea	Overall
	- 4.0%	+ 1.5%	+ 4.0%	+ 0.5%	+ 2.0%



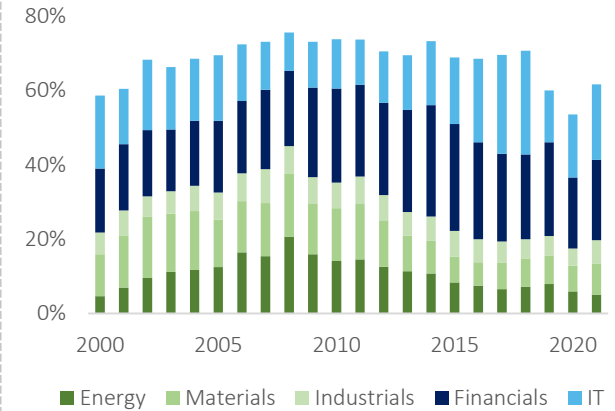
Composition Evolution

The composition of the MSCI Emerging Markets Index has experienced structural changes in terms of sectors and countries.

Global vs Emerging Markets Index



Key Sectors Breakdown



Sector weighting has shifted away from energy and materials towards IT and financials.

Global vs Emerging Markets Index

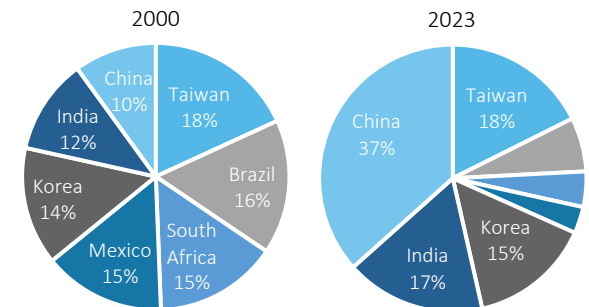
The MSCI EM Index outperforms MSCI ACWI if looking at a long-term horizon (1987-2023).

Initially dominated by commodity sector, which benefited from the commodity boom.

Shift away from resource-heavy sector to Financials and IT sectors, consistent with the rise in Asian market allocations.

Most significant is the increase in China's allocation within the Index.

Country Weightings



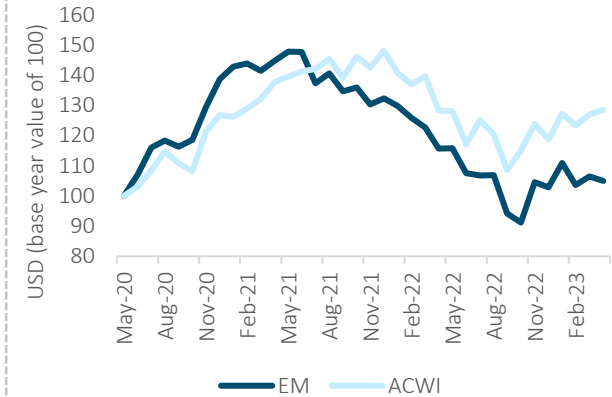
Recent Macro Environment

Key macro events saw underperformance in Chinese equities, slightly offset by gains in India, Taiwan and South Korea.

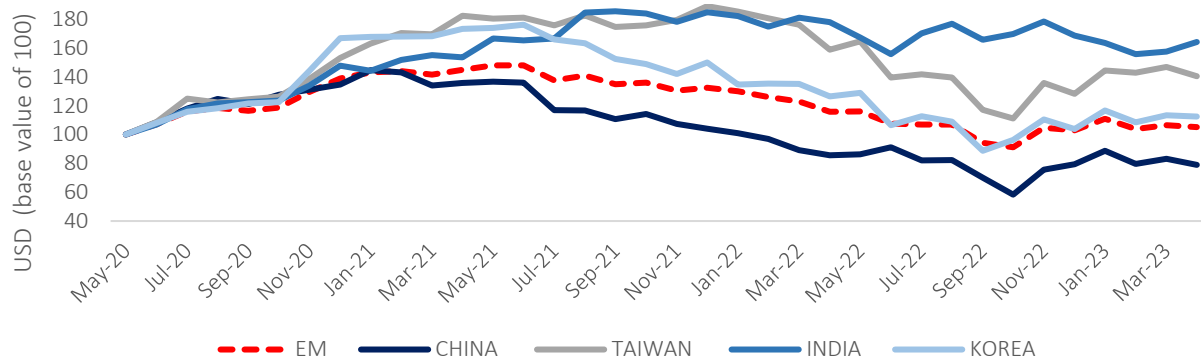
Key Recent Macro-Economic Trends and Events

Key events	Explanation	State
China economic slowdown	<ul style="list-style-type: none"> Prolonged zero-covid lockdowns saw significant drop in consumer spending. Property market crash. 	Cyclical
Tech industry challenges	<ul style="list-style-type: none"> Chinese government tech crack-down, impacted tech company growth. US chip-making sanctions. 	Cyclical
Reduced exposure to natural resource assets	<ul style="list-style-type: none"> Reduced exposure meant unable to capture recent energy and natural resource stock outperformance. 	Structural
Nearshoring	<ul style="list-style-type: none"> Businesses attempting to diversify supply chains into regions including LATAM. Benefit from increasing foreign direct investment. 	Structural

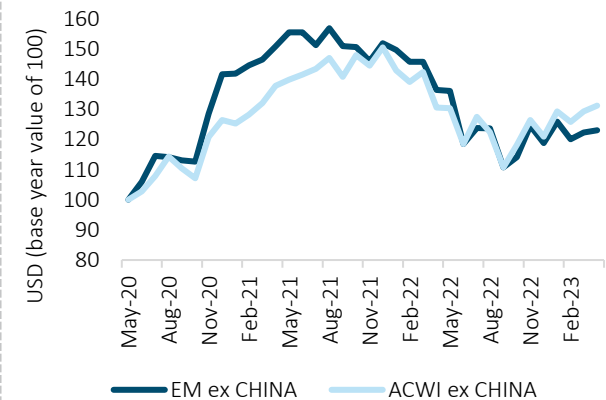
EM VS ACWI



Performance of Four Largest Country Allocations



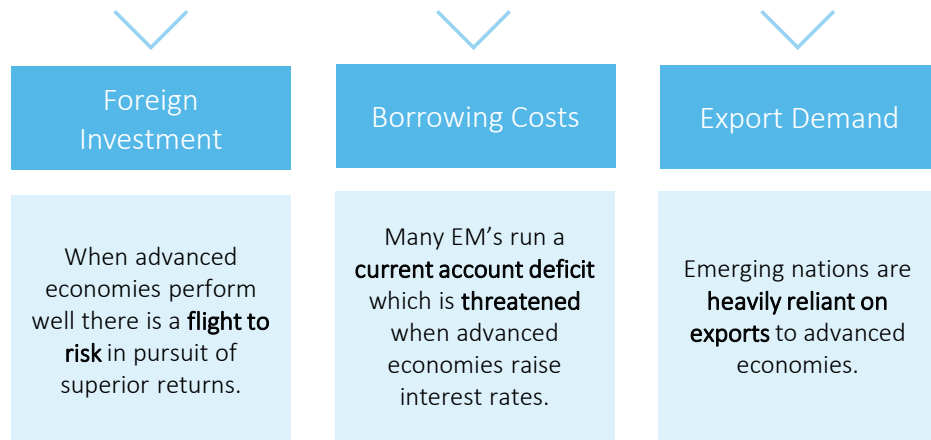
EM EX China VS ACWI EX China



Impact of the US Economy on Emerging Markets

US Dollar is expected to weaken over the next 3 years thereby giving EM's a much-needed boost.

EM are heavily dependent on the performance of the advanced economies.



Emerging markets have historically struggled in times of economic uncertainty and strong USD. **Why?**

- 1 Capital outflows due to investment **"flight to safety"**.
- 2 **Credit availability worsens** and debt repayments increase due to high borrowing costs.
- 3 **Reduced investor sentiment** for riskier assets in emerging markets.

USD as represented by the BBDXY Index has performed well and is sitting above 5-year average¹



As **interest rates fall**, **trade wars continue** and the US continues to struggle with ever increasing **public debt**, we expect foreign corporations to move towards alternative currencies. This will result in **USD depreciation**, making funding more available and increasing investment in EM's.

This presents an attractive opportunity to **overweight EM**.

(1) Bloomberg Terminal

China Outlook

China is expected to continue underperforming in near-term due to low consumer confidence and feeble policy responses.

Key Sectors	Current Sectors Health	Recovery Time-Frame
1. Property	<ul style="list-style-type: none"> Property accounts for 1/3 of Chinese economy. Property developers became over-levered, leading to defaults after CCP debt crackdown. 70% of household's wealth remains tied up in property. 	Long-term
2. Consumer Spending	<ul style="list-style-type: none"> Revival in consumer spending after covid reopening fell short of expectation. Consumers concerned about economy amidst debt, deflation and demographic issues. Further exacerbated as government has concerningly stopped releasing some data. Feeble policy response in the form of rate cuts, does little to resolve crisis of confidence. 	Medium-term
3. Businesses	<ul style="list-style-type: none"> Government intrusive policy making, particularly tech crackdowns has suppressed entrepreneurship. Business owners have reduced CAPEX amidst economic uncertainty. US trade wars impacting tech industry growth. 	Medium-term

1 Year Projected GDP Growth ^{1,2}	Key Points	Recommendation																				
<table border="1"> <caption>1 Year Projected GDP Growth (%)</caption> <thead> <tr> <th>Period</th> <th>GDP Growth (%)</th> </tr> </thead> <tbody> <tr><td>Q1 23</td><td>4.5%</td></tr> <tr><td>Q2 23</td><td>6.5%</td></tr> <tr><td>Q3 23</td><td>5.5%</td></tr> <tr><td>Q4 23</td><td>6.5%</td></tr> <tr><td>Q1 24</td><td>5.5%</td></tr> <tr><td>Q2 24</td><td>5.5%</td></tr> <tr><td>Q3 24</td><td>5.0%</td></tr> <tr><td>Q4 24</td><td>4.5%</td></tr> <tr><td>2025-27</td><td>4.0%</td></tr> </tbody> </table>	Period	GDP Growth (%)	Q1 23	4.5%	Q2 23	6.5%	Q3 23	5.5%	Q4 23	6.5%	Q1 24	5.5%	Q2 24	5.5%	Q3 24	5.0%	Q4 24	4.5%	2025-27	4.0%	<ul style="list-style-type: none"> Growth expected to remain lacklustre in near term. Insufficient government stimulus will prevent a recovery in consumer confidence. Consumer spending will remain low until confidence is renewed. Overall, even after recovery, long-term growth expected to be around 3-4% compared to pre-pandemic 8%. 	<p>Scorecard Underweight -4 %</p>
Period	GDP Growth (%)																					
Q1 23	4.5%																					
Q2 23	6.5%																					
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Q2 24	5.5%																					
Q3 24	5.0%																					
Q4 24	4.5%																					
2025-27	4.0%																					

(1) Fitch Ratings, (2) RBC Global Asset Management

India Outlook

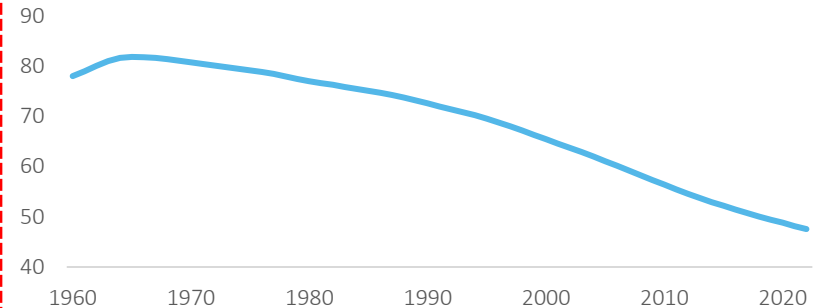
India is expected to fill the void of a slowing Chinese economy with fast-growing service and manufacturing industries

Key Sectors

Sector	Details	Lifecycle Stage
Finance and Professional Services	<ul style="list-style-type: none"> India has had strong growth in its financial and services sectors, driven by high capital investment. Services have greatly benefited from off-shore corporations use of labour for customer service call centres. 	Growth
Transport and Communications	<ul style="list-style-type: none"> Strong infrastructure investment by government has spurred strong growth in communication and transport. 	Growth
Manufacturing and Agriculture	<ul style="list-style-type: none"> Industry has steadily been moving away from agriculture and towards manufacturing, both domestic and offshore. 	Transition

Growth Tailwinds

1. Population growth in favourable demographics²



India is experiencing population growth in **favourable demographics**, as demonstrated by a steadily falling dependency ratio.

2. High domestic consumption

- Domestic consumption makes up 55-60% of GDP.
- Population growth will only help this continue.

3. Attractive destination for foreign investment

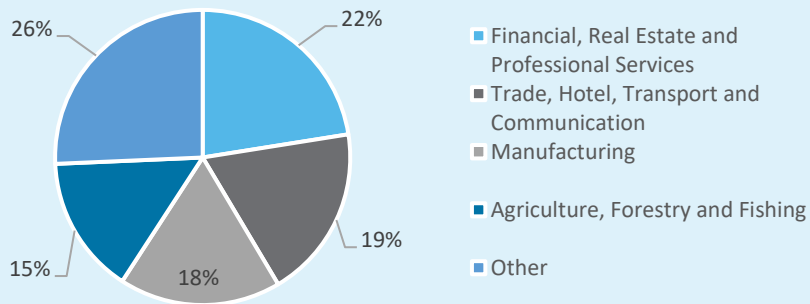
- 10% of population speak English, compared to 6% in China.
- Stable, western-style political system.

Recommendation

Scorecard
Overweight

+4.0%

GDP Breakdown by Sector¹



(1) Bloomberg Terminal,
(2) The World Bank

Taiwan Outlook

Despite negative quarterly growth earlier this year due to falling exports, Taiwan's economy is strengthening.

Semiconductor exports down 20.8% put significant downward pressure on GDP growth

Semiconductor exports drive significant revenue, Q4-22 and Q1-23 saw **negative growth due to falling exports.**

Strong global head wind due to **hawkish environment and geopolitical instability decreasing global consumer spending.**

As supply chains recovered from covid-19 disruptions **semiconductor shortage fell** reducing bottle neck.

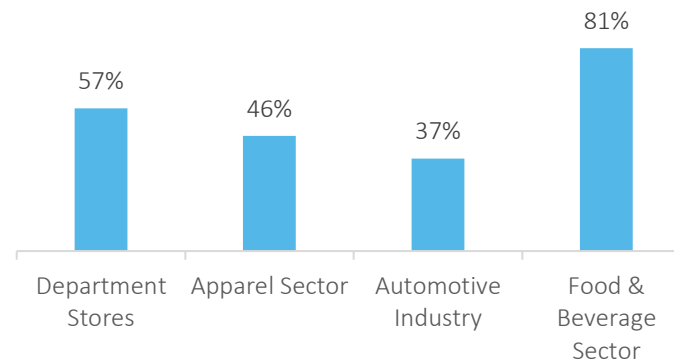
35% of GDP

Short-term falling Global Demand

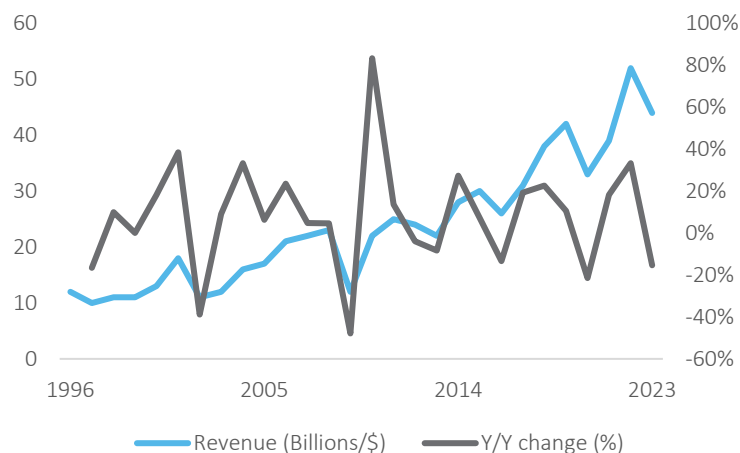
Supply Shortage alleviated

Strengthening Service Industry

- Make up around **half of Taiwan's GDP.**
- Economic rebound was **driven by private consumption**, which grew by 12.1% y/y Q2 2023.
- Strong service sector recovering from Covid-19:



Semiconductor Cyclicalality and Outlook



- Semiconductor **revenue highly cyclical** however has seen overall **steady increase.**
- Expected **growth in the long term**, driven by innovations like AI, IoT, and 5G.
- Manufacturing capacity is projected to **increase 56% by 2030.**
- Long history of investing big during down cycles to be ready for the **inevitable rebound in demand.**

Recommendation

Scorecard
Overweight

+1.5 %

South Korea Outlook

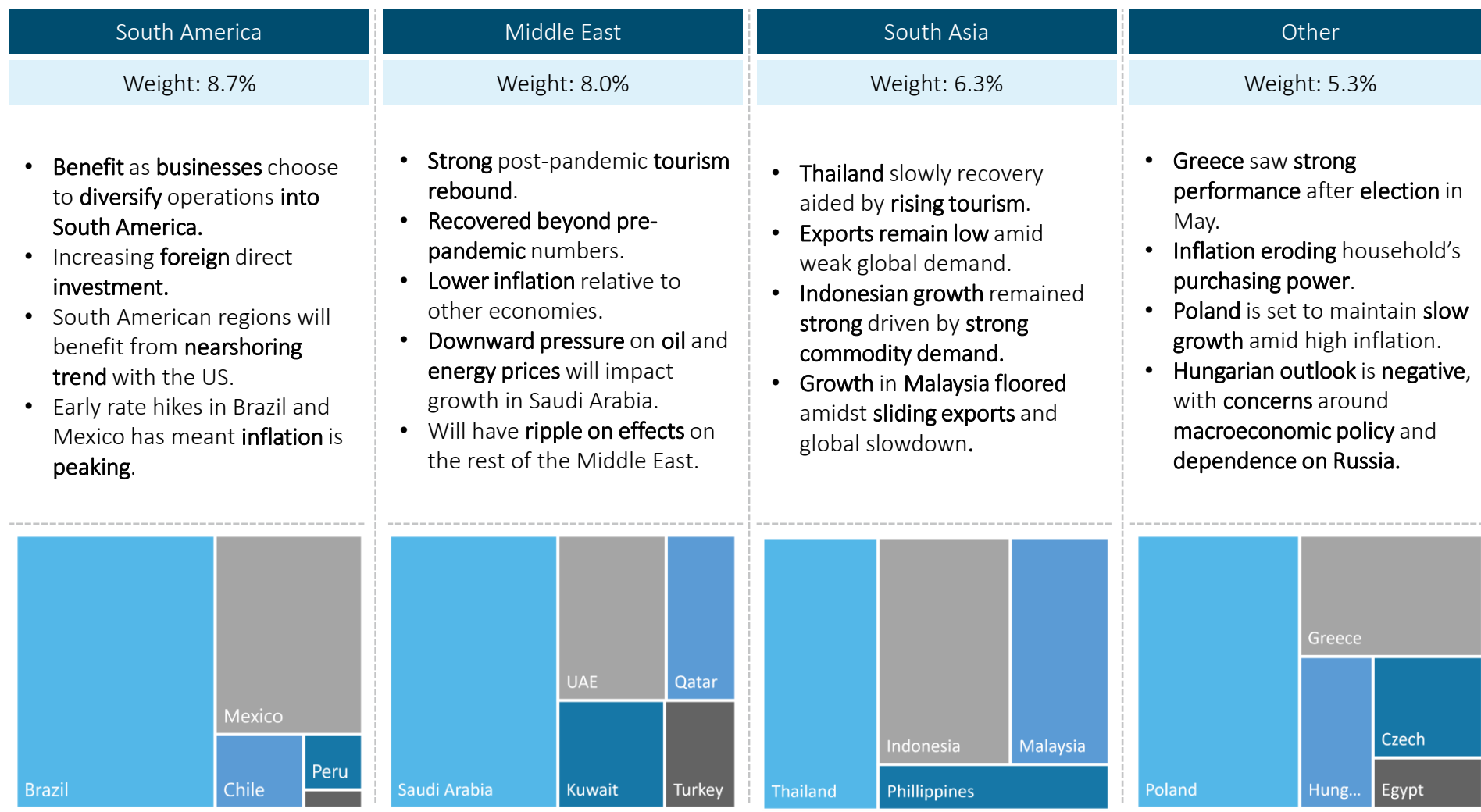
Hawkish environment and decline in exports is putting temporary downward pressure on South Korean Economy.

Key Sectors	Current Sectors Health	Weighting of GDP
Strong Services Industry	<ul style="list-style-type: none"> Private consumption was up 4.5% y/y in the first quarter of 2023. Wholesale and retail trade, lodging, and food services more than doubled their growth rate to 6.8% 	60%
Manufacturing decline	<ul style="list-style-type: none"> Continued weakness in manufacturing output, 10.0% y/y decline Q1 23. Decline electronics sector output due monetary policy tightening. Monetary stance forecasted to maintain going into 2024 as Ukraine-Russia conflict puts upward pressure on inflation. 	30%
Rapid Growth in Tourism	<ul style="list-style-type: none"> There is optimism for South Korea's tourism sector, which is expected to rebound in the second half of 2023. International tourist arrivals up 40% from pre-COVID levels, indicating an initial resurgence in tourism. 	5%

Export decline		Recommendation
<p>S&P Global Electronics PMI</p>	<ul style="list-style-type: none"> Export declined by 15.2% y/y in May 2023 largely due to semiconductors and electronics. China's moderating economic growth led to decrease in demand as exports to mainland China fell by 4.4% y/y. Despite export challenges, automobile exports hit a new historic high of USD 6.2 billion in May, (strong growth in exports of eco-friendly cars). 	<p>Scorecard Overweight +0.5 %</p>

Minor Regions

The regions presented below had less significant weightings within the EM index and were considered less relevant.

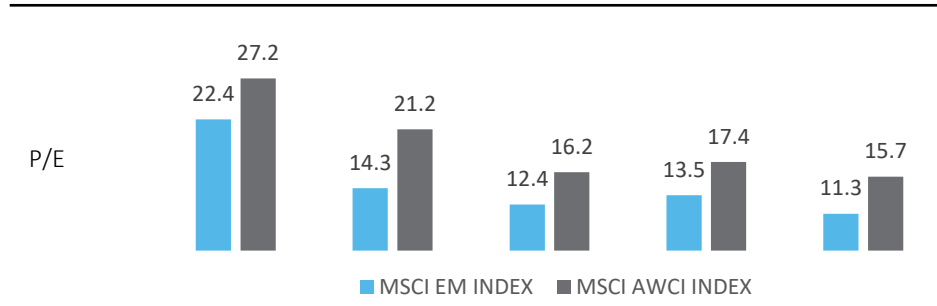


MSCI EM Index Quantitative Breakdown

Returns of the MSCI EM Index are marginally greater under the proposed weighting changes.

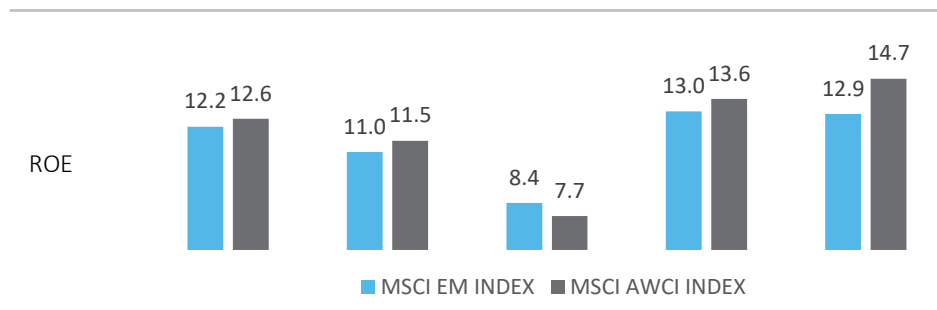
Quantitative Analysis

Period	2020	2021	2022	2023	2024
	Historical				Forecast

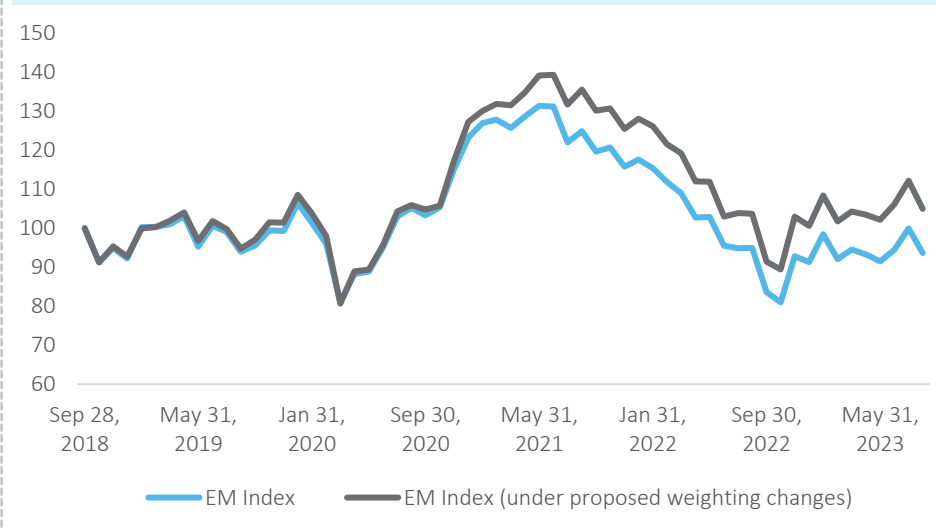


P/B (EM)	2020	2021	2022	2023	2024
	1.96	1.78	1.58	1.54	1.4

P/CF (EM)	2020	2021	2022	2023	2024
	12.91	8.54	9.07	8.24	7.08



MSCI EM Index Returns (from 2018)

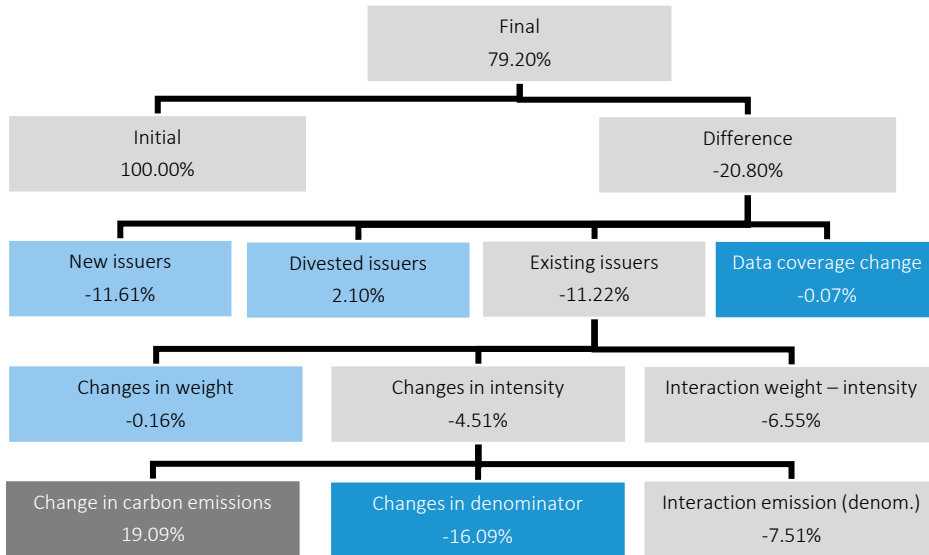


	Over/(Under) Weight	Current Index	Proposed Index	
Individual Regions	China	(4.0)%	31.4%	27.4%
	Taiwan	1.5%	14.8%	16.3%
	India	4.0%	13.7%	17.7%
	South Korea	0.5%	12.0%	12.5%
	Other	-	28.3%	28.3%
Annual	Return	-	0.49%	3.02%
	Standard Dev.	-	19.16%	19.90%
	Sharpe Ratio	-	0.02	0.15

Emerging Markets Decarbonisation

Investing in Emerging Markets furthers global decarbonisation goals but must be approached in a strategic way.

Financed-Emissions Intensity (FEI) (2017-2022)



Key Drivers within Portfolio FEI

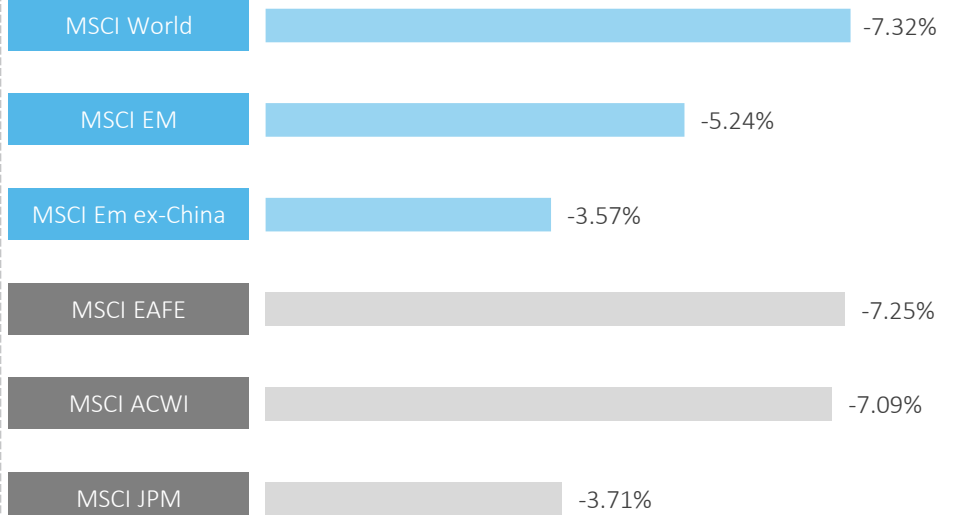
Company Emissions	19.09% increase from existing Companies.
Portfolio Manager	-11.61% emissions from adding new companies. -0.16% emissions from changing pre-existing weights.
Company Data	-0.07% emission from better data coverage. -16.09% emissions purely due to FEI equation (adjusted).

Impactful Investing

- EMs need **\$98.4tn** for net-zero transition.
- Diverse sectors, public and private, **seek funding**.
- EMs play a key role in **reducing fuel reliance and energy efficiency**.
- **MNC** within the index need to meet global decarbonisation benchmarks

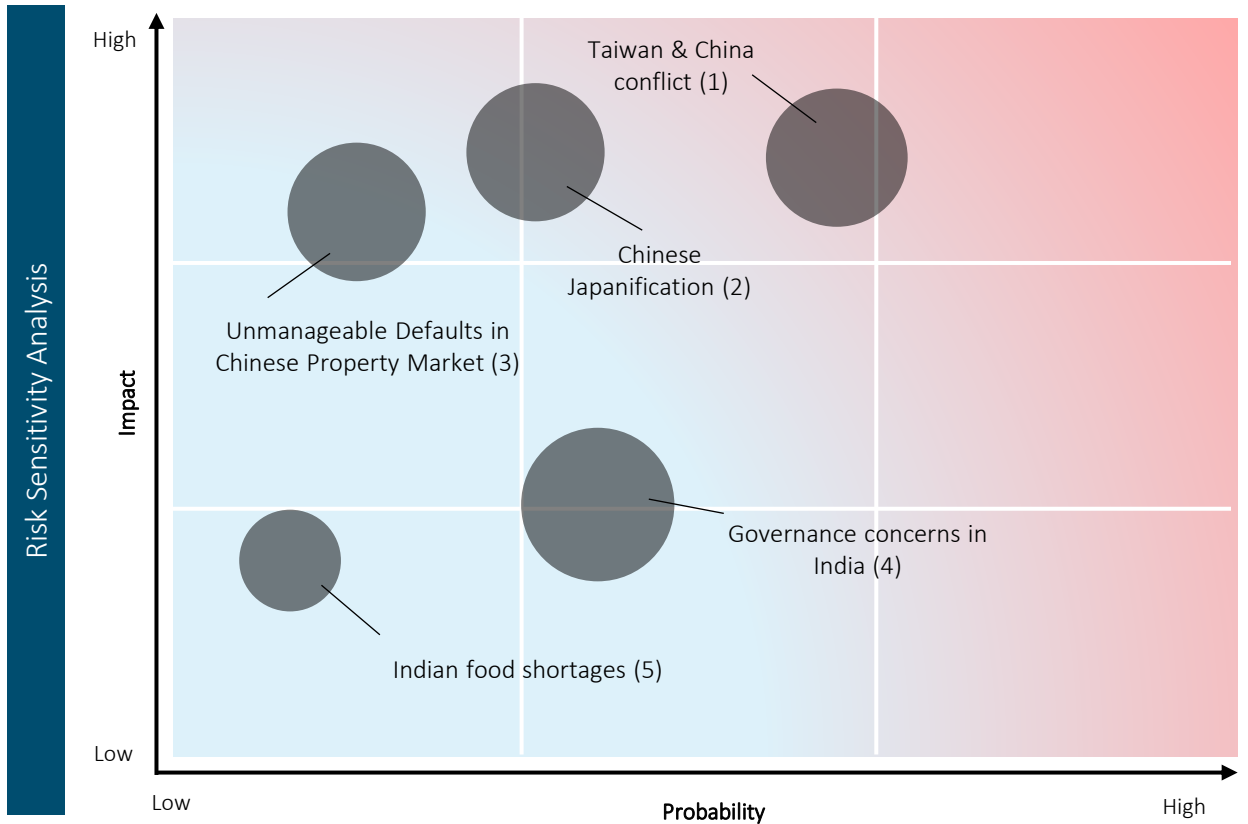
Decarbonisation

NGFS decarbonisation rates of various benchmarks



Risks Analysis

Recognising these risks are key in understanding and mitigating scenarios which could cause a portfolio underperformance.



Key Risks Breakdown

- Taiwan and China conflict:** Impact overall confidence in the region and reduce exports.
- Japanification of China:** Would lead to long-term slow growth. Highly reliant countries on Chinese demand (South Korea and Taiwan) would be severely impacted.
- Unmanageable defaults of Chinese property developers:** Households would lose significant wealth, leading to major declines in consumer spending.
- Governance concerns in India:** Political and corporate corruption harms stability and economic growth.
- Indian food shortages:** Worsening climate events could impact food security.

Next Steps
<ol style="list-style-type: none"> Mitigation of the probability and possible impacts of identified risks Adequate procedures in response to key events to minimise downside Active and rapid response to relevant news on related regions Ensure ESG concerns are taken into consideration with weightings Further due diligence on regions with asymmetric information to the public



Final Recommendation

Advise the overall overweight of the MSCI Emerging Markets Index, proposed with specific changes to various regions.

Problem

Should investors **overweight** or **underweight** their Emerging Markets allocation (i.e. invest more or less than 11%) in a Global Equity portfolio over the next 1-3yrs?

Key Considerations

- Macroeconomic and geopolitical landscape
- Risk/return assessment of emerging market equities vs global equities
- Environmental, social and governance

Solution

We propose a strategic **OVERWEIGHT** to the emerging markets holdings in the VFMC portfolio. This is due to strong tailwinds coming from a weakening US dollar and the resulting capital inflows.

As there is strong differences in the performance of different EM's, we propose modifications to the MSCI EM Index when creating a portfolio.

China	Taiwan	India	Korea	Overall
- 4.0%	+ 1.5%	+ 4.0%	+ 0.5%	+ 2.0%

Weightings

Rank	Region	Recommendation	Current Weight	Advised Weight
1	China	Underweight	31.4%	27.4%
2	Taiwan	Overweight	14.8%	16.3%
3	India	Overweight	13.7%	17.7%
4	South Korea	Overweight	12.0%	12.5%
Significant Players			71.9%	73.9%
5	South America	-	8.7%	8.7%
5	Middle East	-	8.0%	8.0%
6	South Asia (excl. 1-4)	-	6.3%	6.3%
7	Other	-	5.3%	5.3%
Total			100.0%	102.0%
MSCI EM Index Weighting			11.0%	13.0%





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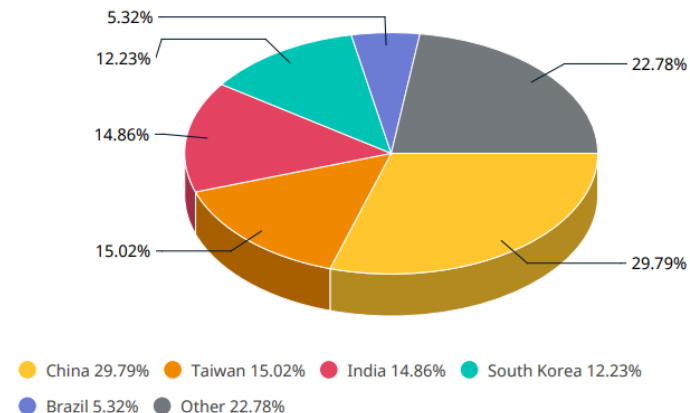
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Appendix A: MSCI Emerging Markets

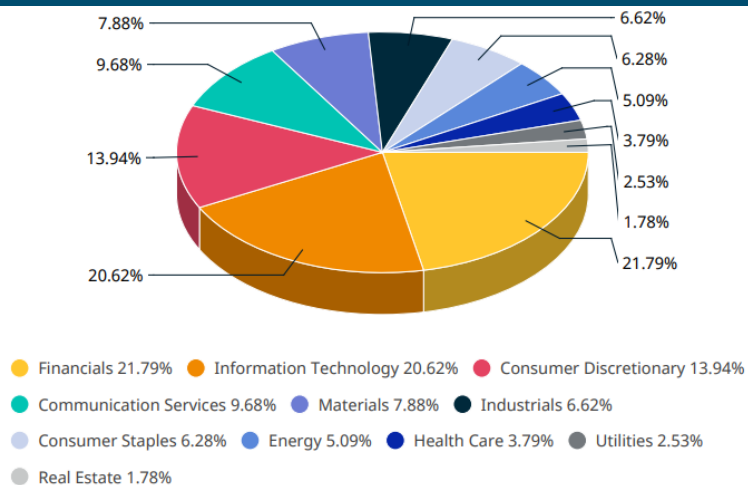
Cumulative Index Performance Net Returns (USD) (2008 – 2023)



Country Weights (%)



MSCI EM Sector Weights (%)

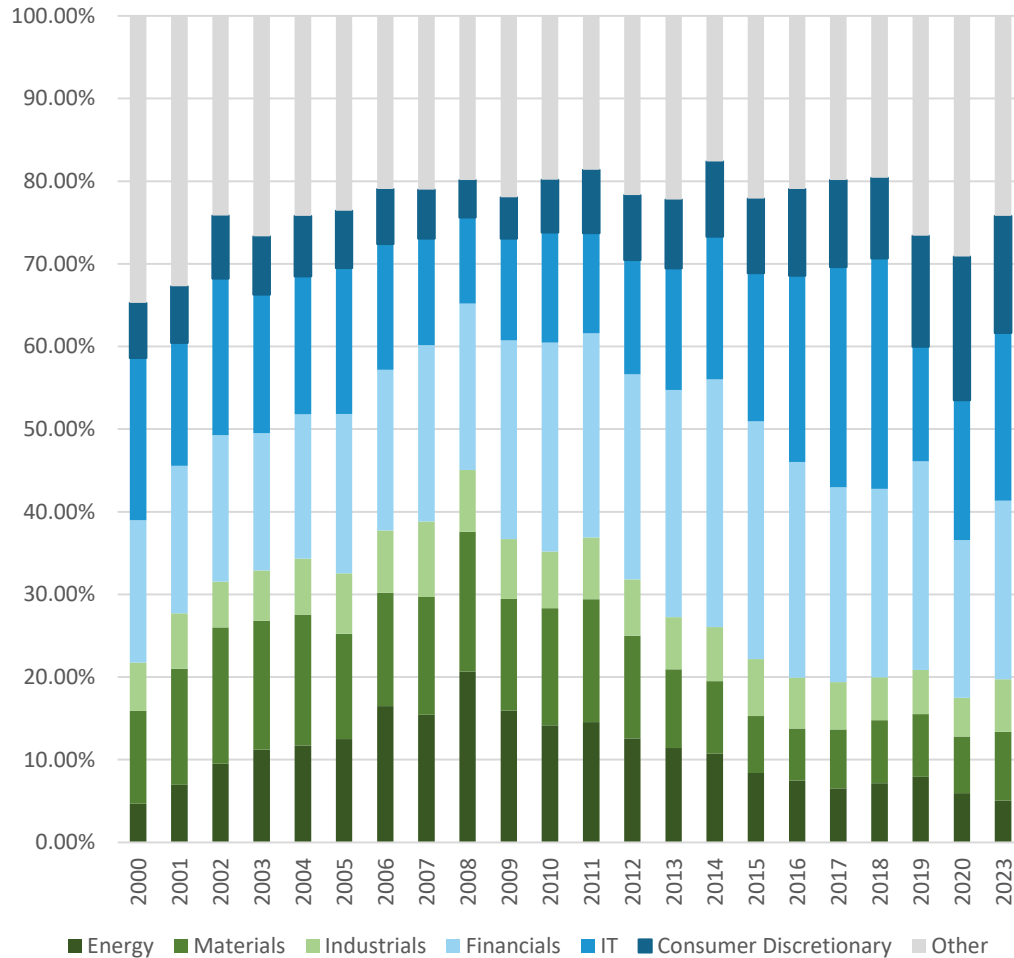


Annual Performance (%)

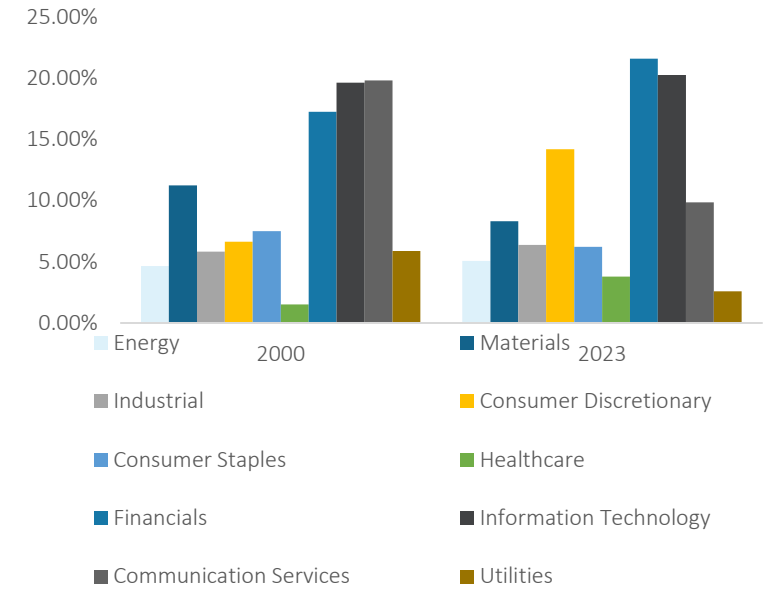
Year	MSCI Emerging Markets	MSCI ACWI	MSCI World
2022	-20.09	-18.36	-18.14
2021	-2.54	18.54	21.82
2020	18.31	16.25	15.90
2019	18.42	26.60	27.67
2018	-14.57	-9.41	-8.71
2017	37.28	23.97	22.40
2016	11.19	7.86	7.51
2015	-14.92	-2.36	-0.87
2014	-2.19	4.16	4.94
2013	-2.60	22.80	26.68
2012	18.22	16.13	15.83
2011	-18.42	-7.35	-5.54
2010	18.88	12.67	11.76
2009	78.51	34.63	29.99

Appendix B: Sector Evolution Over Time

MSCI EM Sector Evolution (2000-2023)



All Sector Weightings (2000 vs 2023)



Key Comments

- Shift from resource sectors to the IT, consumer discretionary and financial sectors.

Appendix C: Key Companies within MSCI EM

Top 10 Company Allocations in MSCI EM

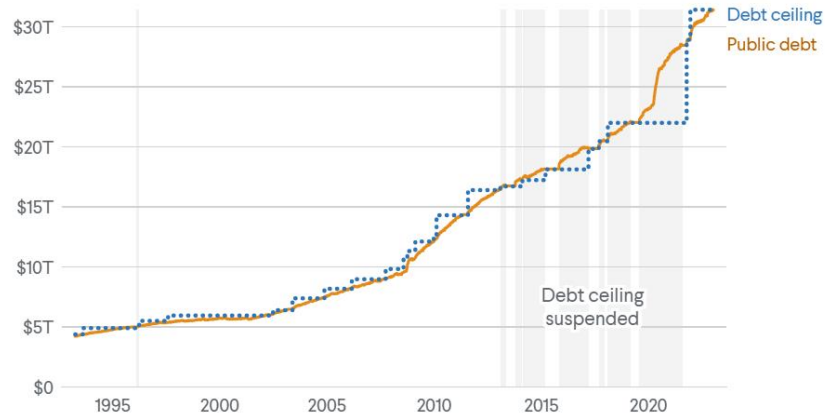
Company	Sector	Region
TAIWAN SEMICONDUCTOR MFG	IT	TW
TENCENT HOLDINGS LI (CN)	Comm Services	CN
SAMSUNG ELECTRONICS CO	IT	KR
ALIBABA GRP HLDG (HK)	Cons Discr	CN
MEITUAN B	Cons Discr	CN
RELIANCE INDUSTRIES	Energy	IN
ICICI BANK	Financials	IN
CHINA CONSTRUCTION BK H	Financials	CN
HDFC BANK	Financials	IN
INFOSYS	IT	IN

Key Observations

- **Reliance Industries** is the only top 10 holding which is in the resource sector.
- **Dominance of Asian markets** in index.
- Heavily **reliant on IT, consumer discretionary and financial sectors**.

Appendix D: US Debt Crisis

U.S. Debt Has Sometimes Risen Faster Than the Debt Ceiling



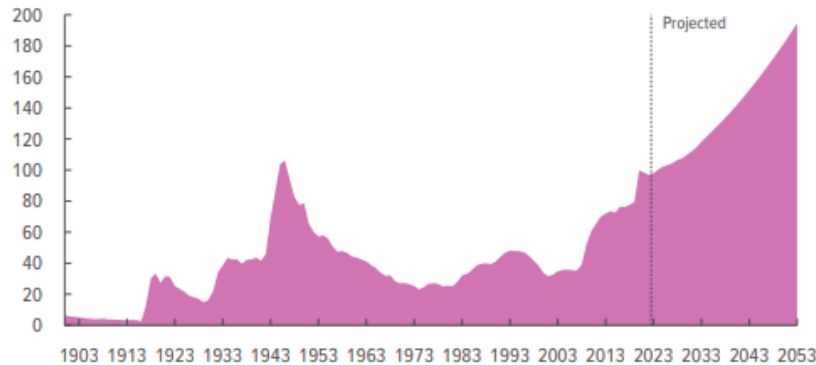
Sources: U.S. Treasury Department; Congressional Research Service.

COUNCIL on
FOREIGN
RELATIONS

- Billionaire investor Ray Dalio's prediction of a US debt crisis may be coming true already.
- US national debt surged by \$1 trillion in just one month since the borrowing ceiling was lifted by Congress.
- Dalio warned last month that the agreement made no difference and would only add to the nation's mounting debt pile.

Federal Debt Held by the Public, 1900 to 2053

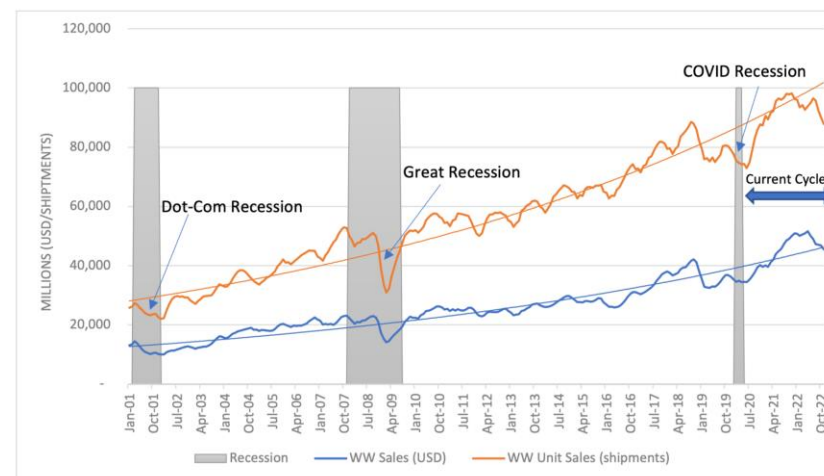
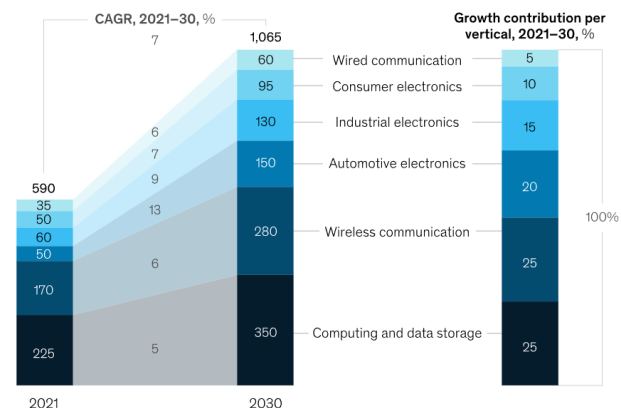
Percentage of Gross Domestic Product



Appendix E: Semiconductor Data

The overall growth in the global semiconductor market is driven by the automotive, data storage, and wireless industries.

Global semiconductor market value by vertical, indicative, \$ billion



South Korea (Samsung)

- South Korea Samsung lags behind TSMC in non-memory semiconductors but is investing \$230 billion in semiconductor manufacturing over the next two decades
- Samsung aims to surpass Taiwan's TSMC in semiconductor production within five years.
- The Samsung Group, the largest conglomerate in South Korea, accounts for 18.3% of the country's economy.
- Samsung began as a trading company in 1938, gradually entering the electronics industry in the 1960s.
- It invested heavily in chip research and manufacturing, becoming a major player and the largest memory chip manufacturer globally..
- It's developing the world's largest semiconductor complex.
- They believe their GAA experience will give them an advantage when competing with TSMC's 2-nanometer processes using GAA.
- Challenges include variations in nanometer specifications, TSMC's larger capacity and revenue, and customer losses to TSMC.

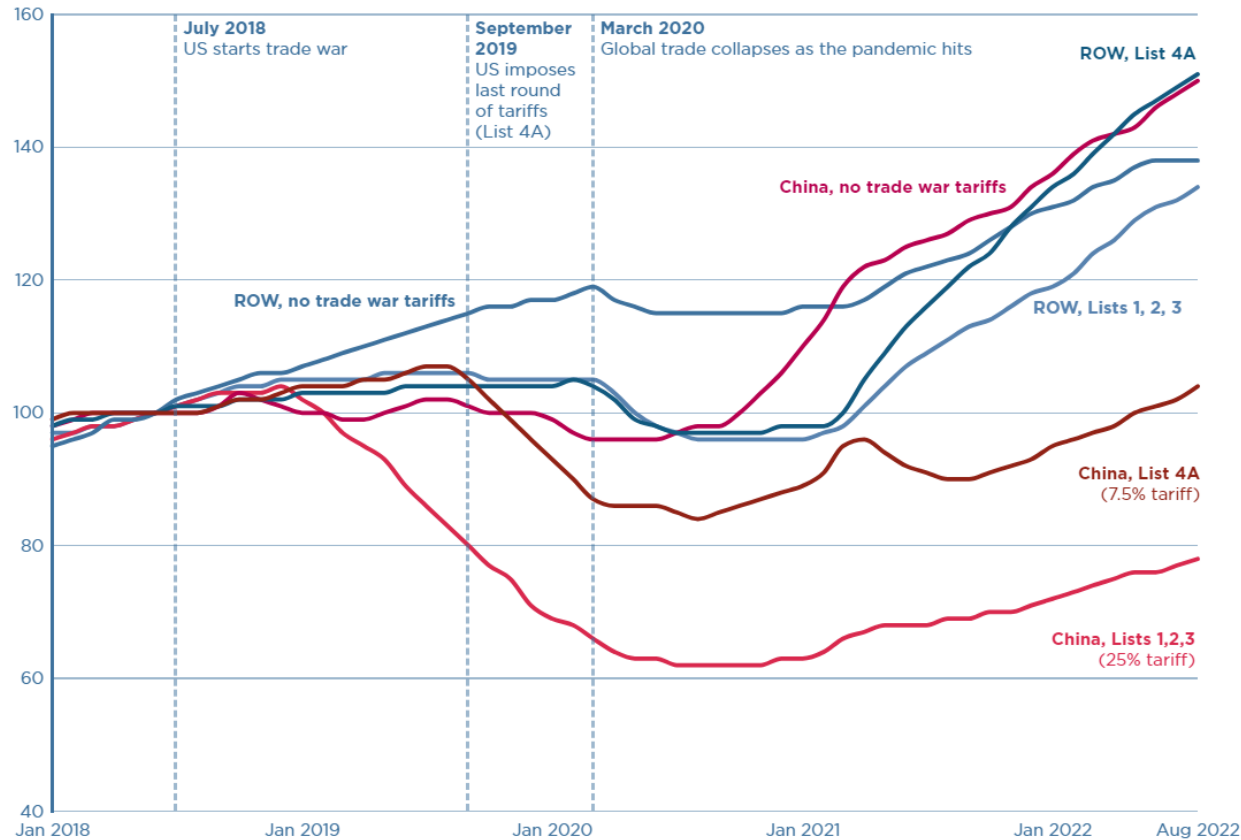
Taiwan (TSMC)

- TSMC currently dominates semiconductor production with a 58.5% foundry market share.
- TSMC boasts a net worth of US\$535.25 billion and an 18.3% 5-year compound annual growth rate (CAGR).
- TSMC has a larger overall capacity than Samsung, producing 6.6 times more revenue.
- The company benefits from the Biden government's Chips and Science Act, with US\$52 billion allocated for chip production.
- TSMC faces challenges in transitioning to GAA technology for its 2-nanometer semiconductors.
- TSMC has been gaining customers, including NVIDIA and Qualcomm, while Samsung has been losing them

Appendix F: China and US Trade War

US imports from China of products hit with tariffs remain low, while imports of products not facing tariffs have surged

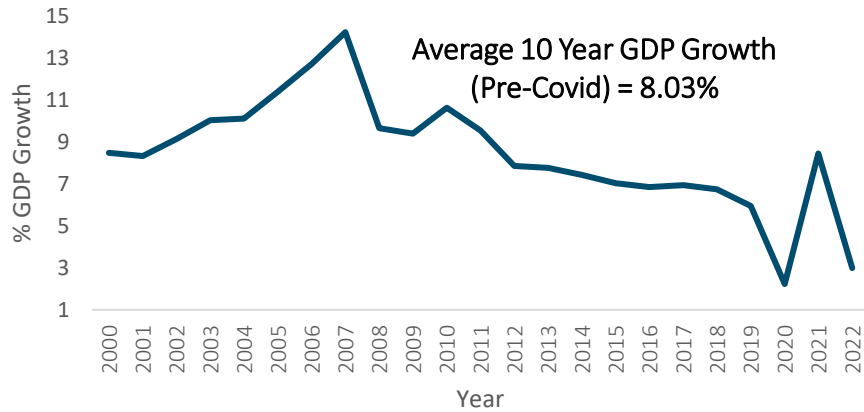
Value of US imports from China and rest of world by trade war tariff list, 2018–2022 (June 2018 = 100)



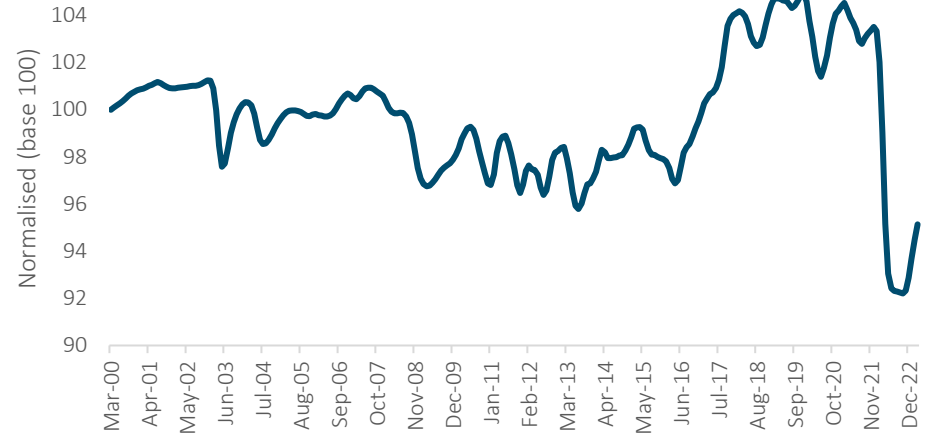
- US imports of goods from China, with 25 percent duty, remain 22 percent below pre-trade war levels.
- US imports from China of products currently subject to 7.5 percent tariffs remain 3 percent below levels in August 2019
- Imports of products never hit with trade war tariffs are now 50 percent higher than immediately prior to the trade war
- Products not facing tariffs made up roughly 33 percent of total US imports from China before the trade war and have grown to 47 percent today.

Appendix G: China Historical Economic Data

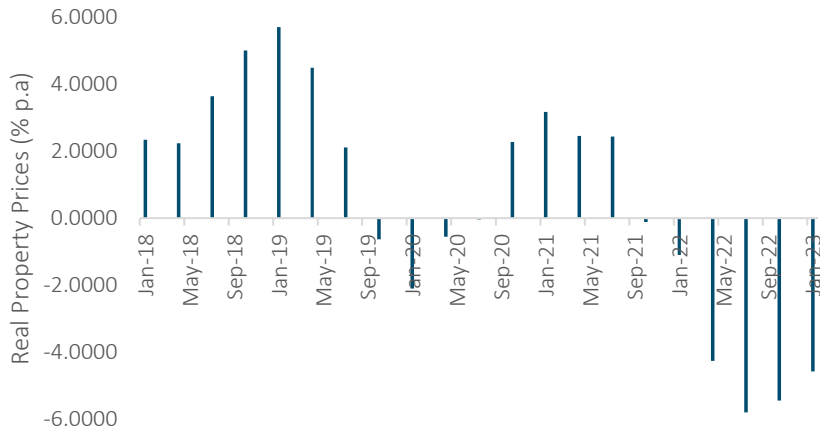
China % GDP Growth (2000-2022) ¹



Chinese Consumer Confidence ²



China Real Property Prices (% p.a) ³



Appendix H: India Headwinds

	Unbalanced Growth	Low Press Freedom	Low Employability	Project Approval Barriers
	Impact: Medium	Impact: High	Impact: Low	Impact: Low
Headwinds	<ul style="list-style-type: none"> Despite impressive growth numbers at the national level, the economic benefits have been highly unequal. The top 10% of Indians hold 77% of the national wealth. Regional imbalances — southern and western India growing 12% faster than northern and eastern India — will magnify over time. 	<ul style="list-style-type: none"> India has declined in its position on the World Press Freedom Index Consequently, potentially, bottled-up sentiments in large sections of the disaffected and minority segments of the population could explode, triggering a downward spiral. Such developments can undermine objectives of shared prosperity. 	<ul style="list-style-type: none"> The India Skills Report 2023 found only half of young Indians are employable. Alarming, India's female labour participation rate has been in a steady decline, having dropped from 32% in 2005 to 19% in 2021. The labour-cost arbitrage model will be disrupted by secular shifts towards cloud computing and AI for coding and routine function. 	<ul style="list-style-type: none"> The Licence Raj is a pejorative for the system of strict government control and regulation of the Indian economy that was in place from the 1950s to the early 1990s. Under this system, businesses in India were required to obtain licenses from the government to operate, and these licenses were often difficult to obtain. The fall of the License Raj and the implementation of economic liberalization policies have contributed to increased regional inequality in India.
Resolutions	<ol style="list-style-type: none"> Political parties moving away from identity politics to inclusive growth and job-creation India sees a constant flow of state-level elections, which distorts public dialogue by skewing it away from longer-term economic growth-oriented perspectives. 	<ol style="list-style-type: none"> Inflow of foreign investment causes Indian government to review information policies. Indian population gains access to global news sources and the effect of media monopoly is neutralised 	<ol style="list-style-type: none"> The current infrastructure thrust, policy reforms, geopolitical drivers and capital influx could help unlock Indian manufacturing, but the barriers discussed here must be removed. 	<ol style="list-style-type: none"> Since the Raj has been removed, growth has boomed, as long as growth persists it is likely government will continue to unwind regulation.

Appendix I: NAB Currency Projections for USD

	Aug-23	Sep-23	Dec-23	Mar-24	Jun-24	Sep-24	Dec-24	Mar-25	Jun-25	Sep-25	Dec-25	Mar-26	Jul-26	% Change
AUD	1.5528	1.56	1.52	1.45	1.41	1.39	1.37	1.33	1.30	1.28	1.28	1.32	1.33	-14.13%
NZD	1.6798	1.69	1.67	1.61	1.56	1.56	1.54	1.49	1.45	1.41	1.41	1.45	1.47	-12.46%
EUR	0.9206	0.92	0.88	0.86	0.85	0.85	0.84	0.83	0.82	0.81	0.81	0.83	0.83	-9.48%
GBP	0.7841	0.78	0.76	0.74	0.75	0.74	0.74	0.73	0.73	0.72	0.72	0.73	0.74	-5.53%
CHF	0.8796	0.89	0.86	0.84	0.83	0.82	0.81	0.8	0.8	0.79	0.8	0.81	0.82	-6.78%
CAD	1.3537	1.38	1.36	1.32	1.31	1.33	1.32	1.31	1.29	1.26	1.26	1.29	1.31	-3.23%
CNY	7.2829	7.35	7.25	7.2	7	6.85	6.65	6.6	6.6	6.6	6.6	6.65	6.7	-8.00%
JPY	145.65	146	138	135	130	125	120	118	116	115	114	112	112	-23.10%

Appendix J: Valuation Metrics

Period	2018	2019	2020	2021	2022	2023	2024	
MSCI EM INDEX	P/E	11.34	15.1	22.38	14.3	12.39	13.5	11.31
	P/B	1.44	1.64	1.96	1.78	1.58	1.54	1.4
	P/CF	8.11	9.95	12.91	8.54	9.07	8.24	7.08
	ROE	12.23	10.95	8.38	13.01	12.88	11.2	12.18
MSCI AWC I INDEX	P/E	14.67	19.12	27.16	21.19	16.17	17.38	15.65
	P/B	1.97	2.36	2.69	2.98	2.52	2.61	2.4
	P/CF	9.7	13.04	13.54	13.98	11.27	10.99	10.3
	ROE	12.63	11.52	7.72	13.64	14.67	14.1	14.5

Appendix K: Proposed Portfolio Metric Summary

	Period	Monthly	Annual
Return	MSCI EM Index	0.25%	3.05%
	Proposed Index	0.04%	0.49%
Standard Deviation	MSCI EM Index	5.64%	19.52%
	Proposed Index	5.53%	19.16%
Sharpe Ratio	MSCI EM Index	0.05	0.15
	Proposed Index	0.01	0.03

Appendix L: MSCI EM Return Data (USD)

Date	MSCI EM 5 YEAR RETURN DATA (USD - BASE 100)						Date	EM EX BIG 4	CHINA	INDIA	KOREA	TAIWAN	EM
	EM EX BIG 4	CHINA	INDIA	KOREA	TAIWAN	EM							
Sep 28, 2018	100.00	100.00	100.00	100.00	100.00	100.00	Nov 30, 2020	88.06	133.70	112.34	116.87	141.28	115.00
Oct 31, 2018	97.61	88.50	92.90	85.66	88.20	91.22	Dec 31, 2020	95.40	137.38	123.77	135.13	155.81	123.22
Nov 30, 2018	98.79	94.98	102.41	88.53	87.55	94.92	Jan 29, 2021	93.46	147.49	120.86	135.90	165.97	126.88
Dec 31, 2018	97.30	89.22	102.22	85.82	86.33	92.16	Feb 26, 2021	93.44	145.96	127.07	136.17	173.61	127.80
Jan 31, 2019	109.55	99.08	100.19	94.63	87.81	100.19	Mar 31, 2021	97.33	136.78	129.89	136.31	172.54	125.62
Feb 28, 2019	105.25	102.50	100.09	92.77	91.99	100.29	Apr 30, 2021	99.71	138.59	128.63	140.35	185.79	128.60
Mar 29, 2019	102.91	104.99	109.21	89.76	94.09	100.98	May 31, 2021	105.87	139.35	139.60	140.93	183.57	131.33
Apr 30, 2019	105.63	107.30	109.83	90.13	97.82	102.99	Jun 30, 2021	106.17	138.86	138.48	142.69	184.32	131.18
May 31, 2019	102.23	92.78	109.96	81.74	90.21	95.24	Jul 30, 2021	104.15	119.21	139.50	134.55	178.97	121.94
Jun 28, 2019	107.91	99.51	109.42	88.66	93.98	100.66	Aug 31, 2021	106.40	119.14	154.70	132.40	185.92	124.88
Jul 31, 2019	107.05	98.59	103.42	83.18	95.45	98.96	Sep 30, 2021	102.15	112.99	155.50	123.53	177.76	119.58
Aug 30, 2019	98.50	94.36	100.16	79.00	92.84	93.93	Oct 29, 2021	101.95	116.53	154.12	120.68	178.90	120.69
Sep 30, 2019	99.93	94.12	103.24	84.47	96.51	95.52	Nov 30, 2021	95.94	109.54	149.36	115.13	182.84	115.70
Oct 31, 2019	103.13	97.91	107.46	88.34	104.34	99.43	Dec 31, 2021	98.64	106.07	154.84	121.56	192.45	117.57
Nov 29, 2019	101.05	99.64	106.83	87.02	105.94	99.25	Jan 31, 2022	102.59	102.94	152.69	109.13	188.64	115.30
Dec 31, 2019	109.19	107.90	108.44	94.74	113.55	106.37	Feb 28, 2022	97.13	98.92	146.42	109.72	183.84	111.78
Jan 31, 2020	103.50	102.70	107.57	89.69	108.22	101.38	Mar 31, 2022	97.30	91.00	151.72	109.45	179.42	108.96
Feb 28, 2020	90.86	103.70	99.66	83.14	106.17	95.96	Apr 29, 2022	89.57	87.25	149.12	102.52	161.78	102.70
Mar 31, 2020	66.16	96.85	74.32	73.32	91.62	80.98	May 31, 2022	89.43	88.02	140.12	104.37	167.64	102.84
Apr 30, 2020	71.82	102.95	86.31	79.32	104.53	88.27	Jun 30, 2022	77.57	93.04	130.56	86.29	142.08	95.49
May 29, 2020	75.12	102.12	83.85	81.10	101.90	88.78	Jul 29, 2022	80.35	83.73	142.53	91.29	144.41	94.84
Jun 30, 2020	78.09	110.65	89.51	87.45	110.70	94.96	Aug 31, 2022	79.82	83.84	148.16	88.25	142.07	94.87
Jul 31, 2020	82.49	120.50	98.55	93.79	127.24	102.96	Sep 30, 2022	74.79	71.50	138.82	71.92	119.27	83.58
Aug 31, 2020	80.99	127.24	101.92	95.74	124.53	105.11	Oct 31, 2022	79.54	59.46	142.27	77.93	113.17	80.94
Sep 30, 2020	77.92	123.60	102.53	98.50	126.75	103.25	Nov 30, 2022	81.40	77.06	149.50	89.59	138.31	92.78
Oct 30, 2020	75.37	130.11	103.50	99.14	128.40	105.30	Dec 30, 2022	78.35	81.04	141.32	84.06	130.51	91.27
							Jan 31, 2023	82.40	90.58	136.97	94.46	147.05	98.43
							Feb 28, 2023	78.11	81.18	130.57	87.82	145.38	91.99
							Mar 31, 2023	78.24	84.84	132.05	91.88	149.42	94.50
							Apr 28, 2023	80.38	80.42	137.49	91.03	143.00	93.24
							May 31, 2023	76.94	73.42	141.28	95.39	153.49	91.47
							Jun 30, 2023	82.58	75.82	147.67	95.69	154.34	94.42
							Jul 31, 2023	87.55	83.28	151.92	101.89	154.59	99.91
							Aug 31, 2023	81.74	75.78	148.76	94.15	147.21	93.55

Appendix M: MSCI EM Return Data (%)

Date	MSCI EM 5 YEAR RETURN DATA (%)						EM EX BIG 4	CHINA	INDIA	KOREA	TAIWAN
	EM EX BIG 4	CHINA	INDIA	KOREA	TAIWAN						
						Nov 30, 2020	16.84%	2.76%	8.54%	17.88%	10.03%
						Dec 31, 2020	8.34%	2.75%	10.18%	15.63%	10.29%
						Jan 29, 2021	-2.04%	7.36%	-2.35%	0.57%	6.52%
						Feb 26, 2021	-0.02%	-1.04%	5.13%	0.20%	4.60%
						Mar 31, 2021	4.16%	-6.29%	2.22%	0.10%	-0.61%
						Apr 30, 2021	2.45%	1.33%	-0.97%	2.97%	7.68%
						May 31, 2021	6.18%	0.55%	8.53%	0.42%	-1.20%
						Jun 30, 2021	0.28%	-0.35%	-0.81%	1.25%	0.41%
						Jul 30, 2021	-1.90%	-14.15%	0.74%	-5.71%	-2.90%
						Aug 31, 2021	2.16%	-0.06%	10.90%	-1.59%	3.89%
						Sep 30, 2021	-3.99%	-5.16%	0.52%	-6.70%	-4.39%
						Oct 29, 2021	-0.20%	3.13%	-0.89%	-2.31%	0.64%
						Nov 30, 2021	-5.89%	-6.00%	-3.09%	-4.60%	2.20%
						Dec 31, 2021	2.81%	-3.17%	3.67%	5.58%	5.26%
						Jan 31, 2022	4.00%	-2.95%	-1.39%	-10.22%	-1.98%
						Feb 28, 2022	-5.32%	-3.90%	-4.11%	0.54%	-2.55%
						Mar 31, 2022	0.17%	-8.01%	3.62%	-0.25%	-2.40%
						Apr 29, 2022	-7.94%	-4.12%	-1.71%	-6.33%	-9.83%
						May 31, 2022	-0.16%	0.88%	-6.04%	1.80%	3.62%
						Jun 30, 2022	-13.27%	5.71%	-6.82%	-17.33%	-15.25%
						Jul 29, 2022	3.58%	-10.01%	9.17%	5.80%	1.64%
						Aug 31, 2022	-0.66%	0.14%	3.95%	-3.34%	-1.62%
						Sep 30, 2022	-6.31%	-14.72%	-6.30%	-18.50%	-16.05%
						Oct 31, 2022	6.35%	-16.84%	2.49%	8.35%	-5.12%
						Nov 30, 2022	2.34%	29.61%	5.08%	14.96%	22.21%
						Dec 30, 2022	-3.75%	5.16%	-5.48%	-6.16%	-5.64%
						Jan 31, 2023	5.17%	11.78%	-3.08%	12.36%	12.67%
						Feb 28, 2023	-5.21%	-10.38%	-4.67%	-7.03%	-1.13%
						Mar 31, 2023	0.17%	4.50%	1.14%	4.63%	2.78%
						Apr 28, 2023	2.74%	-5.21%	4.12%	-0.93%	-4.30%
						May 31, 2023	-4.29%	-8.70%	2.76%	4.79%	7.34%
						Jun 30, 2023	7.34%	3.27%	4.52%	0.31%	0.55%
						Jul 31, 2023	6.01%	9.83%	2.88%	6.49%	0.16%
						Aug 31, 2023	-6.63%	-9.01%	-2.07%	-7.60%	-4.77%

Appendix N: EM Decarbonisation Rates

Emissions Disclosure by Index

Index	Firms (#)	Reporting Scope 1 & 2	Reporting Scope 3
MSCI World	1515	66%	53%
MSCI EM	1386	55%	21%
CEMBI	973	54%	29%

Financial Benchmark Decarbonisation Rates

Benchmark	NGFS Decarbonisation Rate
MSCI World	-7.32%
MSCI EAFE	-7.25%
MSCI ACWI	-7.09%
MSCI EM	-5.24%
JPM CEMBI	-3.71%
MSCI EM ex-China	-3.57%

Fair Share Decarbonisation (2020-30)

Climate Action Tracker	Decarbonisation Rate
EU27 1.5°C	-5.2%
EU27 1.5°C Fair Share	-19.7%
India 1.5°C	+1.7%
India 1.5°C Fair Share	-4.4%

Emerging Markets Approach to Decarbonisation

Identified 2 keys aspects concern linking to our thesis

First area of concern:

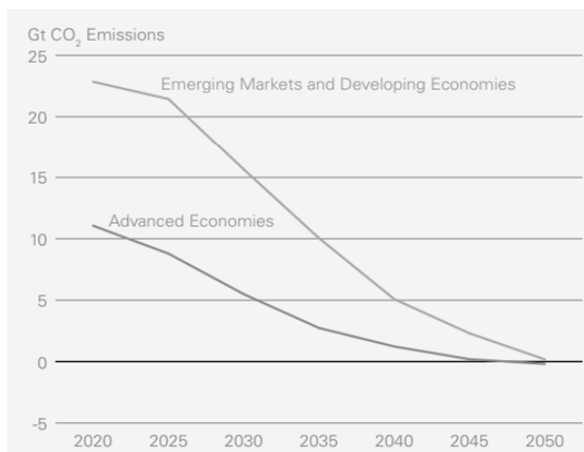
EM lower decarbonisation rate when compared to advanced economies

- EM will need **\$98.4tn to transition** in time to meet net zero goals.
- Myriad of other public and private sectors that need financing .
- Should EMs fund this investment without help from DMs, average household spending is expected to **fall by 5%** each year.

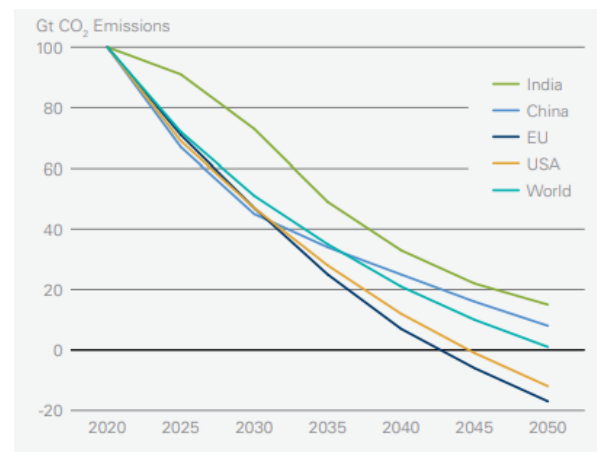
Second area of concern:

EM lack of regulation authorities leading to **lower reporting** on emissions disclosure, lower ability and willingness to meet decarbonisation goals.

Regional Decarbonisation

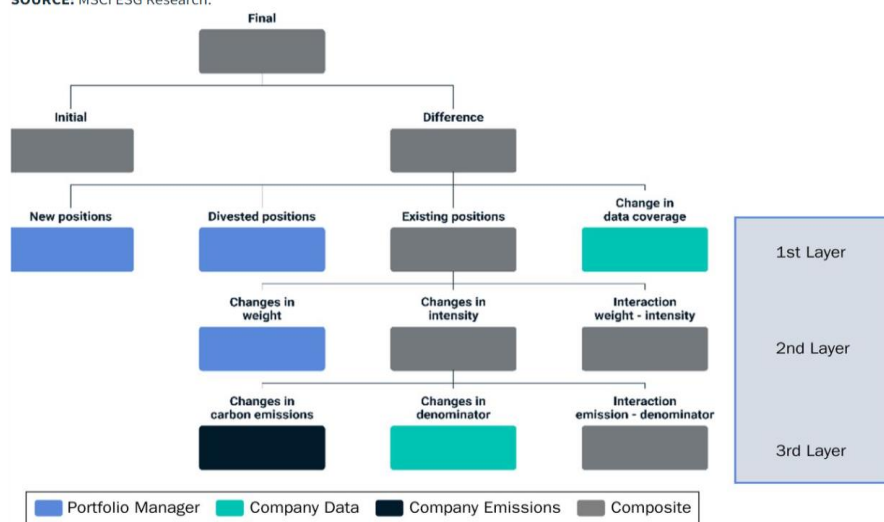


Country Decarbonisation



Appendix O: Portfolio Carbon Footprints

SOURCE: MSCI ESG Research.



Layers	Description
1	<ul style="list-style-type: none"> The impact on emissions intensity of adding or subtracting companies from the portfolio. Change in coverage is again included.
2	<ul style="list-style-type: none"> captures the effect of changes in portfolio composition or company emissions intensities
3	<ul style="list-style-type: none"> Disentangles emissions-intensity effects into changes in the numerator (emissions) and denominator (EVIC)

GLOBAL GHG ACCOUNTING & REPORTING

Financed Emissions

Aggregate GHG emissions “owned” by a portfolio’s holdings and are therefore not size-adjusted

$$\begin{aligned}
 FE &= \text{Company GHG emissions} \times \text{Attribution factor} \\
 &= \text{Company GHG emissions} \times \frac{\text{Position value (Reference date)}}{\text{EVIC (Reference date)}}
 \end{aligned}$$

Financed Emissions Intensity

Emissions owned by the portfolio per dollar invested and is therefore a size-adjusted measure

$$FEI = \frac{FE}{\text{Portfolio value}}$$

Appendix P: Scorecard – Key Countries

To provide an objective comparison between the four key countries macroeconomic factors are used to create a score card.

Metric (n/10)	China	India	Taiwan	South Korea	Global	Weighting
GDP Outlook	6	9	5	5	5	0.25
Age Demographic	4	8	3	3	5	0.1
Unemployment	5	3	7	8	5	0.1
Urbanisation Potential	4	7	3	2	5	0.1
Growth Outlook of Largest Sector	2	7	5	4	5	0.15
Risk Rating (OECD Country Risk Grade)	6	5	8	9	5	0.1
Democratic Freedom	2	4	7	6	5	0.2
Weighted Rating	4.1	6.4	5.5	5.25	5.0	1.0
Score	(1.8)	2.8	1.0	0.5	-	-
Adjusted Allocation Weight	(4.0%)	4.0%	1.5%	0.5%	(2%)	-

Appendix Q: Scorecard – Metric Data

Metric	China	India	Taiwan	South Korea	Global
GDP Growth Forecast ¹	3-4%	6%	2-3%	2-3%	2-3%
Age Demographic (65+) ²	15%	6.83%	17.60%	17%	10
Unemployment ²	5.20%	8%	3.43%	2.40%	5.77%
Urbanisation % Population ²	64%	36%	80.20%	81%	56%
Growth Outlook of Largest Sector	Property	Finance and Professional Services	Semi-conductor	Services	Financial services
	Very Weak	Very Strong	Strong	Steady	Strong
Risk Rating (OECD Country Risk Grade) ³	2	3	1	0	3

(1) Statista, (2) World Bank, (3) OECD

Appendix R: Team Members



Alexander Zhang

University of Queensland

Bachelor of Advanced
Finance and Economics



Kate Rebello

University of Queensland

Bachelor of Advanced
Finance and Economics



Matthew Cranitch

University of Queensland

Bachelor of Advanced
Finance and Economics



Angela Fitzmaurice

University of Queensland

Bachelor of Advanced
Finance and Economics