

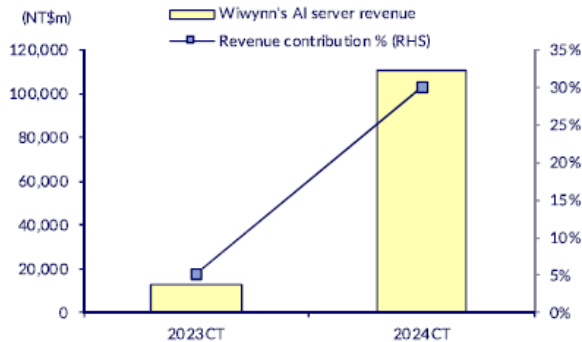
Driehaus Emerging Markets Small Cap Equity Strategy Summary

JULY 2023

This month's commentary presents our favorite charts across emerging markets (EM), showing the themes represented in the portfolio.

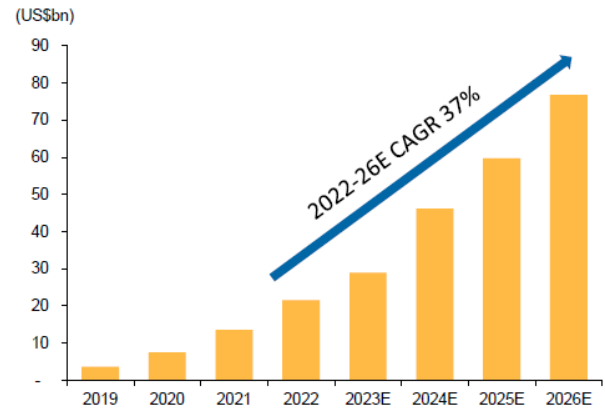
Without a doubt, the biggest theme impacting global markets year-to-date has been the inflection point for artificial intelligence (AI), leading to pronounced outperformance by perceived beneficiaries. In an EM context, small cap Taiwanese technology companies have carved out a meaningful position in the AI supply chain, with leading companies deriving anywhere from 5-10% of revenue on the low end, up to 60% on the high end from AI today. Of course, as AI proliferates in the coming years, this contribution is likely to move substantially higher (Exhibits 1 and 2).

Exhibit 1. AI Server Revenue Contribution Forecast From Leading Taiwanese Server Vendor



Source: CLST

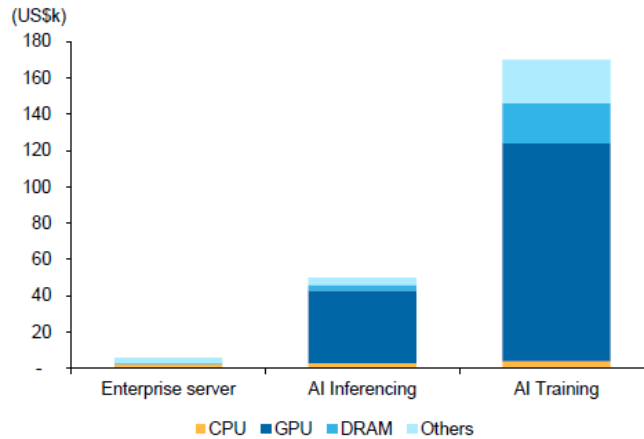
Exhibit 2. AI Server Revenue Growth Forecast



Source: Macquarie Research, June 2023

Importantly, not only will volume growth be an important source of the rising revenue contribution for AI servers, but the price point is substantially higher relative to an enterprise server (Exhibit 3).

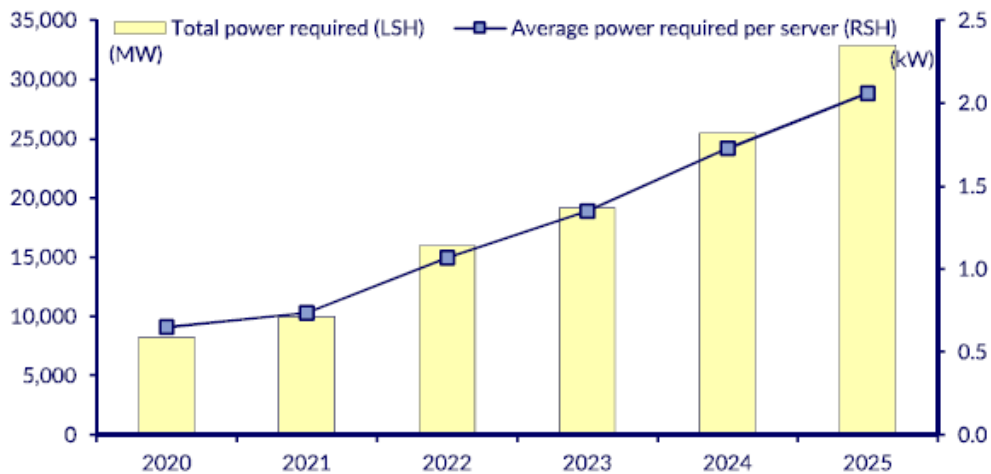
Exhibit 3. Server Average Selling Price Across Categories



Source: IDC, Macquarie Research, June 2023

Middle East countries are moving ahead aggressively with AI development, with both Saudi Arabia and the UAE targeting to become global leaders in AI in the coming years. One of the strategy's strongest year-to-date contributors is a Taiwanese server vendor, which recently won a major supply agreement for AI servers. Due to limited water availability and the significant energy consumption of AI servers (Exhibit 4), the design of Middle East datacenters will be based on a two-phase immersion cooling system, which this company has pioneered, serving as a differentiating characteristic.

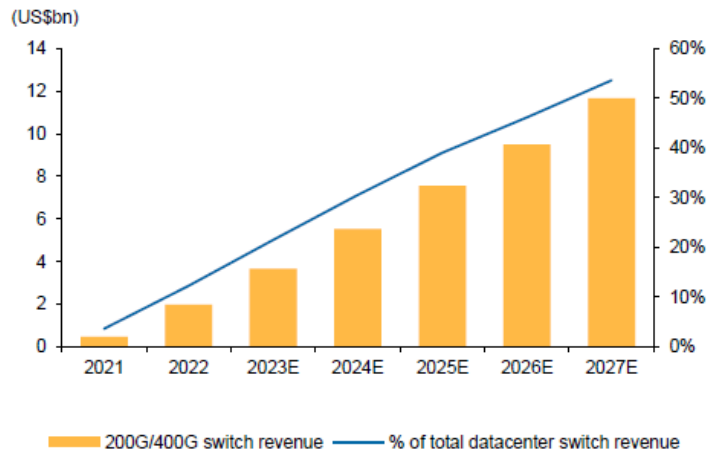
Exhibit 4. Cloud Server Power Requirements



Source: CLST, company data

Beyond servers, switches are poised to benefit from increasing AI demand. The role played by a switch is conducting data transfer. One of the strategy's holdings is a switch producer, which has been actively developing its software/firmware business, positioning the company for growth in high-end switch markets. The structural growth characteristics and potential for a significant upgrade cycle will drive a strong ramp up period for high-end switches (Exhibit 5).

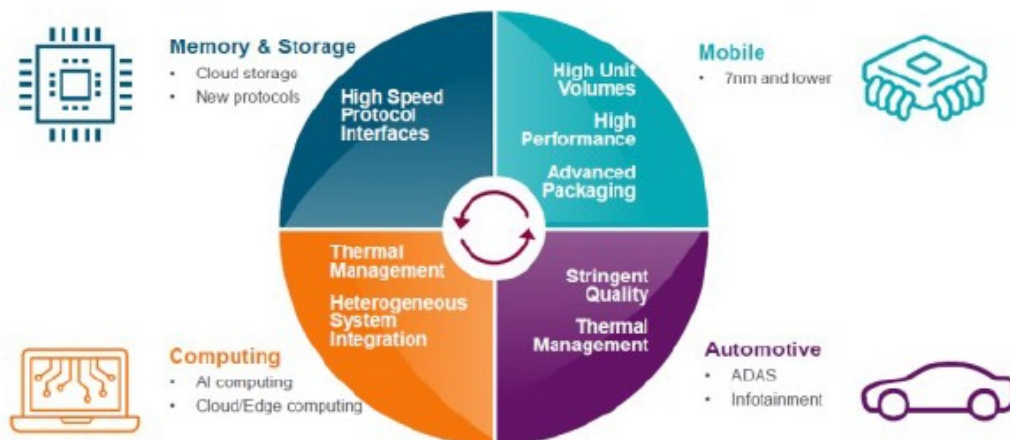
Exhibit 5. 200G/400G Switch Revenue Forecast



Source: IDC, Macquarie Research, June 2023

Alongside the growth of AI, increased testing capacity will be required. One of the strategy's holdings has exposure to AI servers through system-level testing (SLT) equipment and power supply testers. The key driver of SLT is the increasing complexity of semiconductor products at the chip, package and system levels across a number of different end markets (Exhibit 6). This greater complexity increases the difficulty for suppliers to ensure that their chips function as they are designed. Instead of testing a device at the chip or package level like traditional testing, SLT tests the device in a simulated system that resembles the one that the device is designed to operate in. This company has benefited from strong SLT demand from Nvidia for its GPU products in various applications and is poised to benefit from rising AI adoption.

Exhibit 6. System-Level Testing Applications

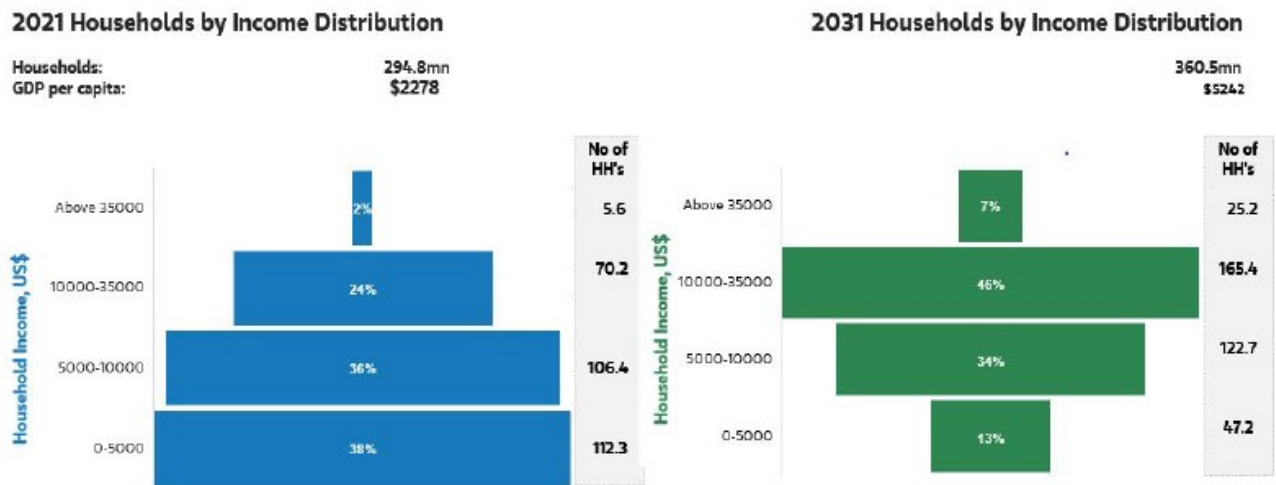


Source: Advantest

With the excitement surrounding AI driving technology companies to new heights, the outperformance of Indian equities has been overshadowed, but powerful nonetheless. Through the first seven months of the year, the MSCI India Small Cap Index has returned 20.7%, handily beating the broad MSCI EM Index return by 900 basis points.

The nascent advances in India’s manufacturing sector point to rising incomes in the years ahead (Exhibit 7). India’s economy is nearly 50% driven by agriculture, with just under 30% of employment focused on the sector. As these workers move to urban areas to pursue newly created jobs in construction and manufacturing, they could see a 3-fold increase in their wages. Further, established industries such as IT services continue to move up the value addition spectrum, pursuing higher margin growth opportunities, leading to robust hiring in recent years.

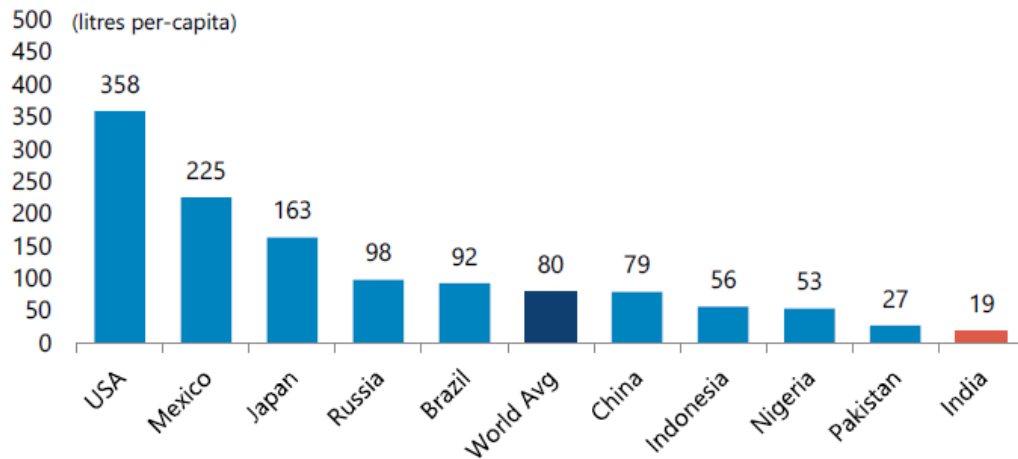
Exhibit 7. Forecasted Shift in India’s Income Pyramid



Source: Morgan Stanley Research estimates

Indian consumer companies are poised to be prime beneficiaries of the expanding middle class. One category which should see strong growth is beverages. There is already a large market for soft drinks in the country, but with low per capita consumption relative to both developed and developing markets, we expect significant growth in the future (Exhibit 8). The strategy holds a position in India’s leading soft drink distributor, which has been a strong performer over the past few years and continues to exceed expectations in its earnings growth.

Exhibit 8. Soft Drink Per Capita Consumption



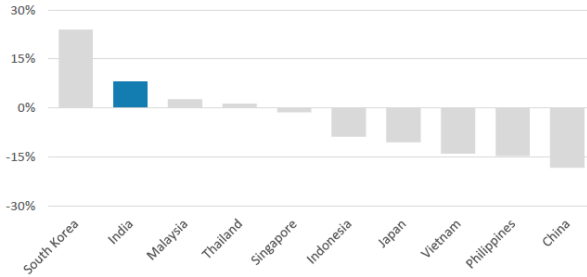
Source: Company data, Jefferies

On the aspirational side of the consumer market, India has seen an inflection point in travel demand. Domestic airlines, Air India and IndiGo, generated a buzz at the recent Paris Air Show, the biggest event for the global aviation industry, with the two carriers accounting for 80% of the orders placed during the event.

The strategy holds a position in one of India's leading hotel operators, which has benefited from a unique market backdrop. Despite a sharp rise in room rates, the company's competitors are being stifled by a high cost of debt and high inflation, which has led to a declining internal rate of return (IRR) for developers of new hotels. Consequently, new hotel supply growth in the country has been subdued, while demand has been robust, fueling strong growth of room rates, which have exceeded pre-pandemic levels (Exhibit 9). Major upcoming events in the country, such as the G20 Summit and the Cricket World Cup, should add incremental tailwinds to an already strong demand profile.

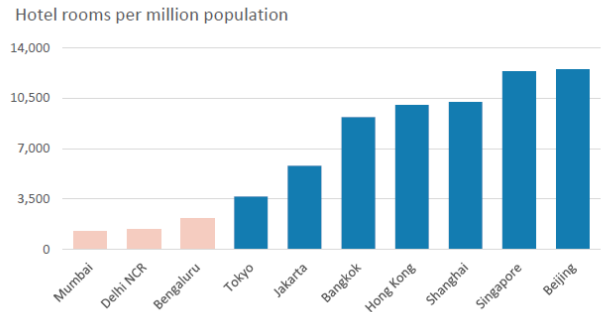
Similar to the story in soft drinks, India's hotel market is underpenetrated, with only 160,000 branded hotel rooms, implying a branded hotel room share of only 5%. This compares to 4.7 million branded hotel rooms in China, with a branded room share of 35% (Exhibit 10).

Exhibit 9. Hotel Average Room Rates, 2022 vs. 2019



Source: STR, Morgan Stanley Research

Exhibit 10. Branded Hotel Rooms Per Capita



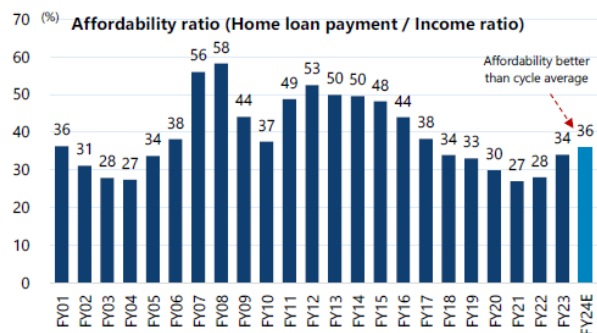
Source: HVS report. 'Room for growth'

I recently had the pleasure of meeting the CEO of one of India's leading property developers, who painted an extremely bullish picture of the industry. After a lengthy period where prices stagnated between 2013-2020, a positive inflection point occurred following the initial wave of the pandemic in 2020. Since then, prices have grown at a decent 6% per year, however, wages are growing even faster at 10% per year, leading to affordability levels that have not been seen in nearly 20 years (Exhibit 11).

According to the CEO, there are currently 77 million home ownership capable households in India, a figure which he expects to rise to 175 million by 2030, on the back of the country's transition from low income to middle income.

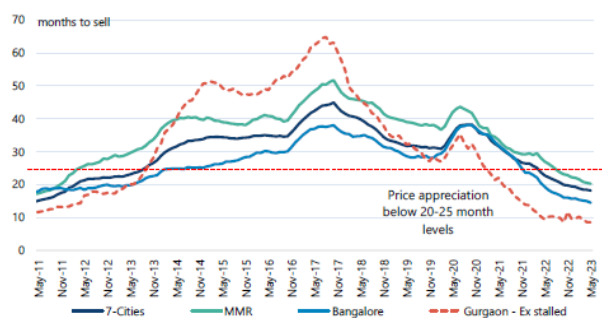
Further, the supply side of the market is constrained (Exhibit 12). 400,000 units were produced in the most recent fiscal year, and if we compound through the whole decade at an ambitious 15%, this gets to 8-9 million homes against a potential 100 million of incremental demand. Thus, he argues that the upcoming boom will not just be a short-term cycle, but rather a once in a lifetime development for a nation, comparable to the 20-year housing boom that happened in the US after WWII. By his estimation, we are in year 3 of a 15-year cycle.

Exhibit 11. India Housing Affordability Ratio (Home Payment/Income)



Source: SBI, HDFC, Jefferies

Exhibit 12. India Residential Property Inventory

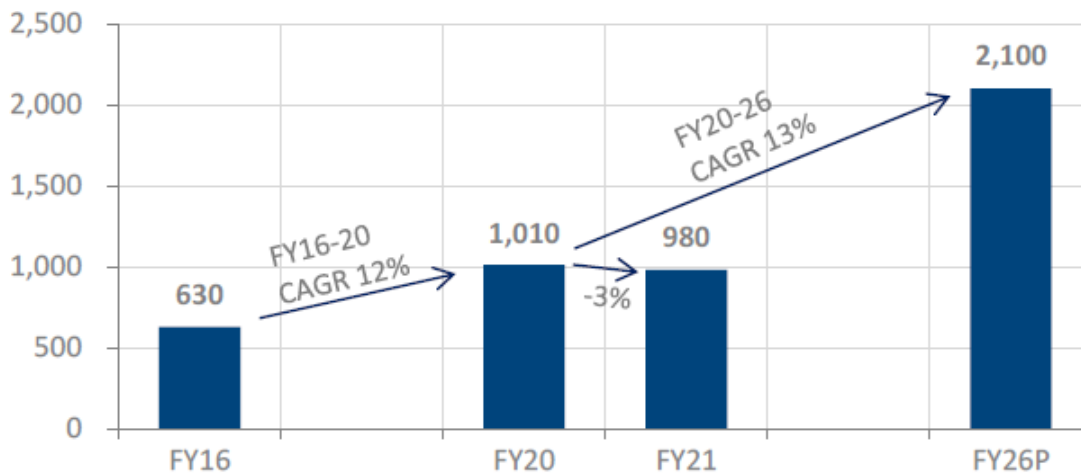


Source: Propequity, Jefferies

Healthcare is another sector witnessing strong trends in India. The strategy holds a position in India's leading multi-specialty pediatric hospital chain. With 1/3 of its bed capacity allocated to critical care ICU beds and a full-time 24/7 doctor engagement model, the company has carved out a strong position in the industry, reinforced by its ability to manage complex cases, which comprise nearly half of the company's revenue.

The pediatric healthcare market in India has grown at a 12-14% CAGR over the five years leading up to the pandemic, and increasing awareness around early diagnosis is expected to drive a continuation of similar growth rates going forward (Exhibit 13). The familiar refrain of rising per capita income and demographic changes, alongside growing demand for high quality pediatric care and increasing health insurance penetration serve as key drivers for the company's earnings.

Exhibit 13. Pediatric Healthcare Market Size



Source: CRISIL Research, Note: P=Project

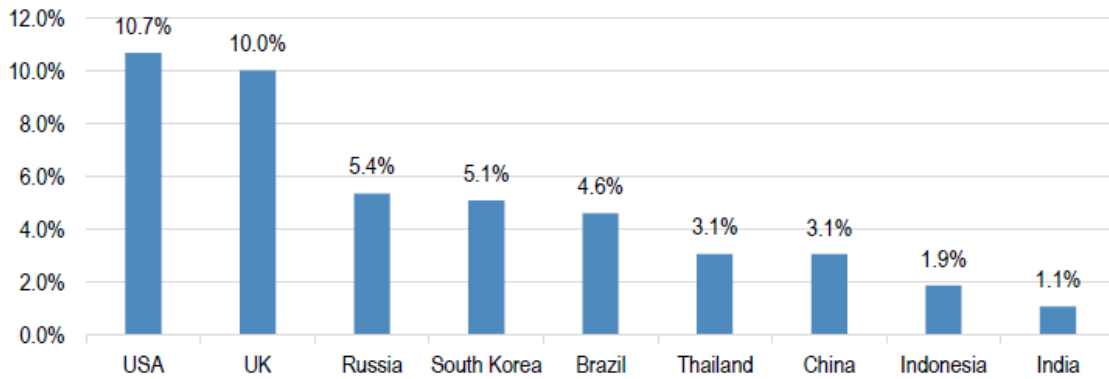
Outside of the niche pediatric market, at 15 beds per 10,000 people, India's hospital penetration ranks among the lowest in the world, despite carrying 20% of the global disease burden. According to CRISIL, India's hospital industry is expected to grow at a 15-17% CAGR through 2025, with the market share of private hospitals increasing from 58% to 73% over the same period.

Government spending under the country's National Health Mission to upgrade healthcare facilities and increase insurance coverage has supported the growth of the industry. However, government spending on healthcare is starting at a low base, at only 1.6% of GDP, which the government seeks to grow to 2.5% by 2025, still well below the global average (Exhibit 14).

While investors highlight the youthful demographic profile of the country, India's elderly population is expected to reach 200 million by 2030, and increases in life expectancy also support the case for rising healthcare demand.

Exhibit 14. Government Spending on Healthcare

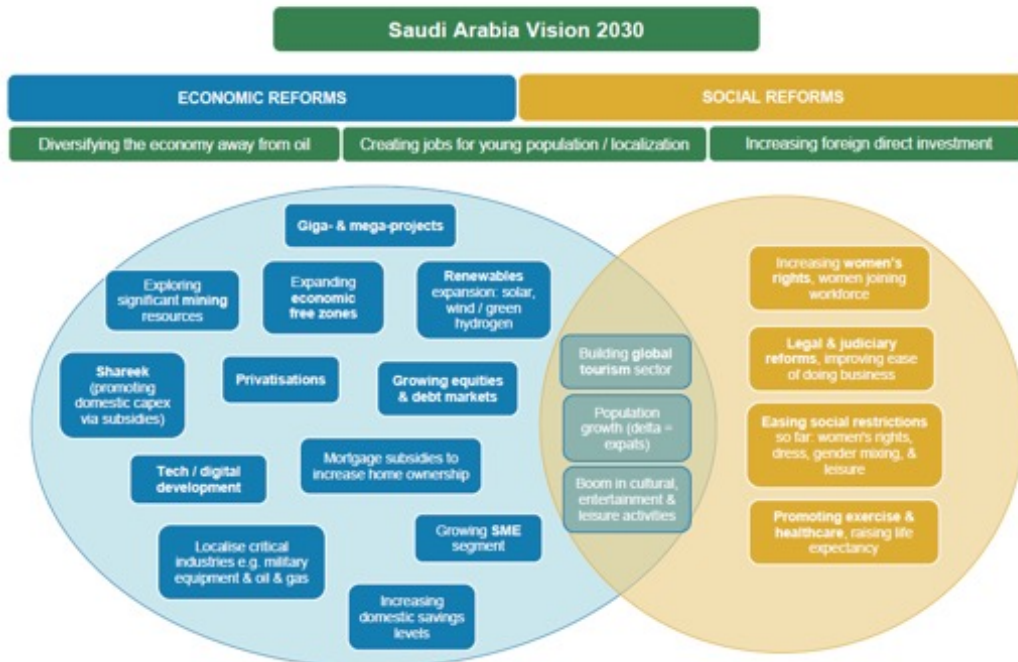
as of 2020



Source: Global Expenditure Database, WHO

Another region in EM that is undergoing tremendous social and economic change is the Middle East. Saudi Arabia is at the forefront of this change, behind its ambitious multi-faceted reform package, known as Vision 2030 (Exhibit 15).

Exhibit 15. Saudi Arabia's Vision 2030 Reforms

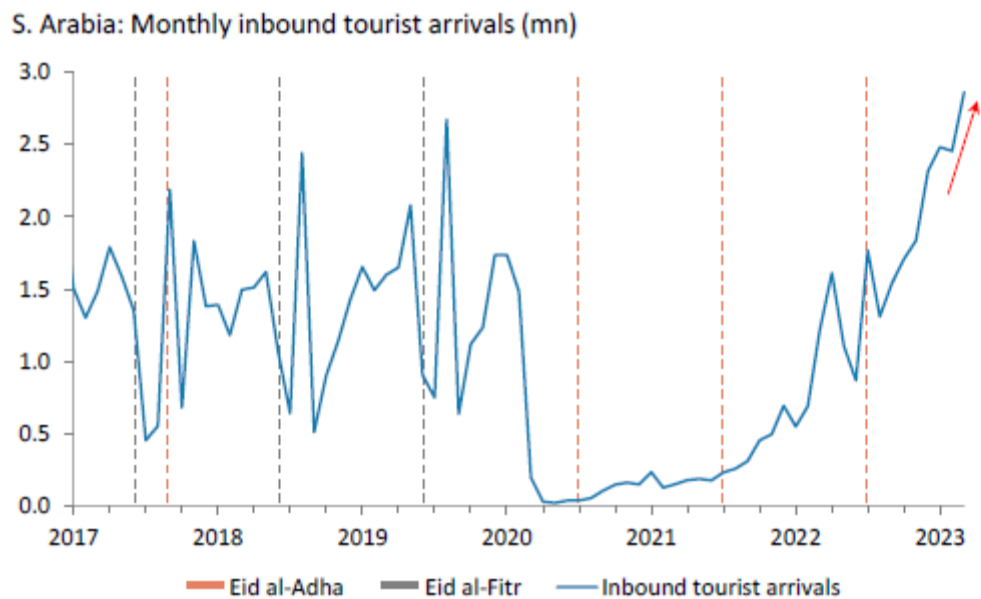


Source: Morgan Stanley

Along with Vision 2030, the Saudi capital market is going through a meaningful transformation, as local authorities are promoting capital market activity, along with economic diversification through Sovereign Wealth Fund investments. The Middle East has seen a record number of new listings in the last 18 months, with 40 IPOs completed in 2022, and the region is increasingly on the radar of foreign investors. The rise in energy prices has led Sovereign Wealth Fund assets to exceed \$3 trillion across the region. Vision 2030 targets 100 new listings over the next five years, and aspires to attain a market cap to GDP of 81% by 2025 for the country, excluding the contribution of Saudi Aramco.

Tourism is another important pillar of Vision 2030, and local authorities target a contribution of 10% of GDP by 2030, up from 3-4% currently. Saudi tourist arrivals recently hit a record in the first quarter of 2023, and with multiple new airports and airlines increasing capacity in the country, the growth phase looks to be in the initial stages (Exhibit 16). The strategy owns a locally listed provider of in-flight catering services, which by virtue of its dominant market share, is primed to participate in the growth of the tourism industry.

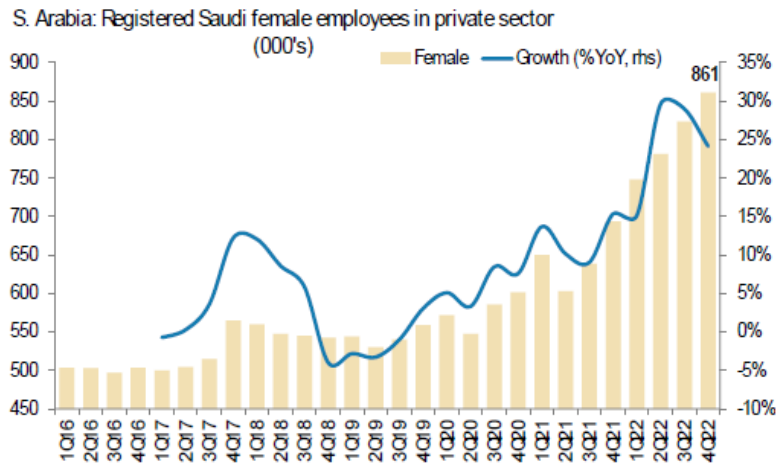
Exhibit 16. Saudi Arabia Monthly Inbound Tourist Arrivals (millions)



Source: UN WTO and Morgan Stanley Research

In tandem with Vision 2030, easing social restrictions and increasing rights for women have been notable developments. The growth of women in the workforce has been remarkable since 2020, and the country's female labor force participation rate of 36% has significant room to continue to increase (Exhibit 17).

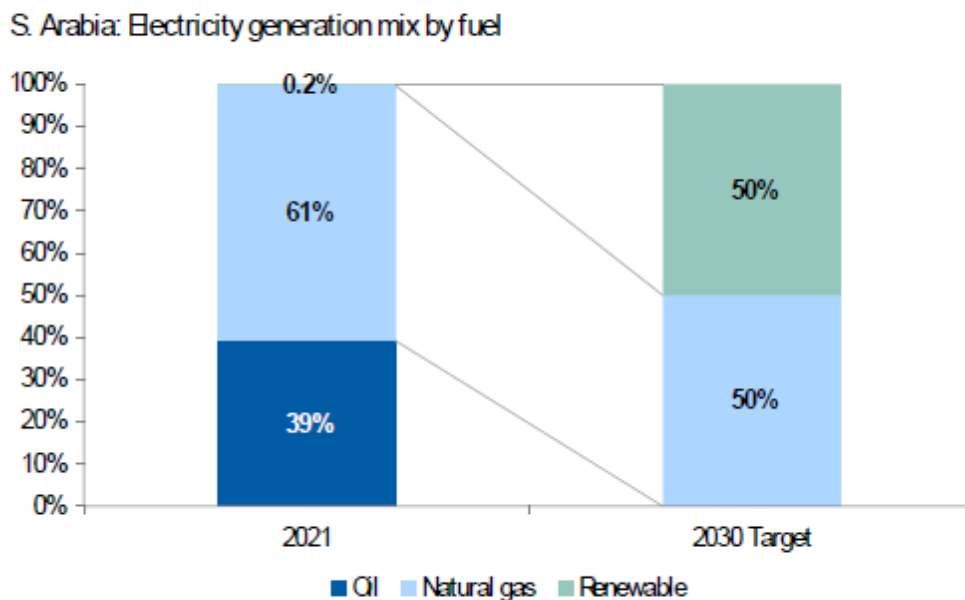
Exhibit 17. Saudi Female Private Sector Employment



Source: LFPR - Labour Force Participation rate; Souce: Tadawul, General Authority for Statistics, Morgan Stanley Research

In an effort to promote tourism, as well as diversify away from fossil fuels, Saudi Arabia is in the process of building a futuristic new city called NEOM. On the energy side, NEOM would harness the potential solar resources of the country, driving the growth of renewable energy in Saudi Arabia's electricity mix, while also serving as a hub for the production of green hydrogen. Given Saudi's endowment of oil resources, it is among the few countries that still heavily relies on fuel oil as a meaningful part of its power mix, but that is set to change materially by the end of the decade (Exhibit 18).

Exhibit 18. Saudi Arabia Electricity Generation Mix by Fuel

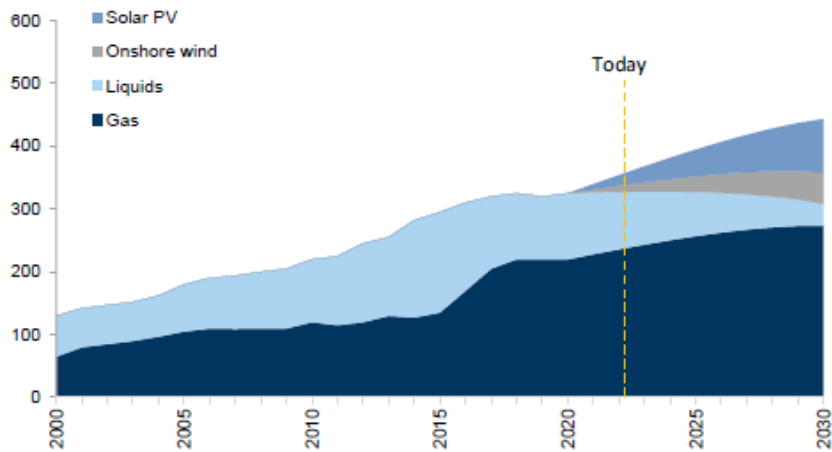


Source: BP Statistical Review of World Energy (2022), Vision 2030 and Morgran Stanley Research

Along with the growth of renewables, Saudi Arabia seeks to increase the use of natural gas in its energy matrix (Exhibit 19). This will be facilitated by the development of the large Jafurah gas field in the eastern part of the country. Most of Saudi's current gas production is associated gas, which is produced alongside an oil development. Jafurah will be the first standalone gas field of significant scale in the country, and will require a large number of new drilling rigs. The strategy owns a leading Saudi rig operator, which is a local subsidiary of a prominent global oilfield service company. Recent share price performance was boosted by the signing of a 10-rig tender, while the company estimates that 60 to 70 more rigs may be required in the years ahead to develop Jafurah.

Exhibit 19. Saudi Arabia Energy Mix (TWh)

Saudi's energy mix, in TWh

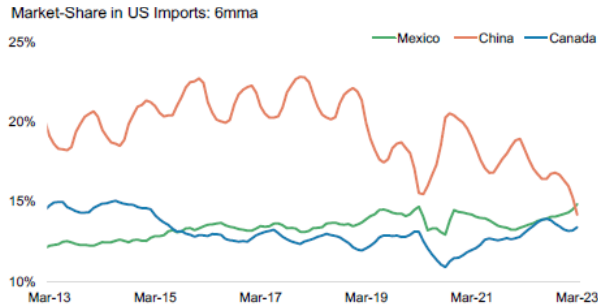


Source: Arabian Drilling, Rystad, Reuters, Saudi Aramco

Turning to Latin America, the notion of shifting global supply chains has been a hot topic among investors, as rising tariffs and growing geopolitical tensions revealed the need to diversify supply chains, while COVID exposed the fragility of a global system geared around the concept of just-in-time inventories.

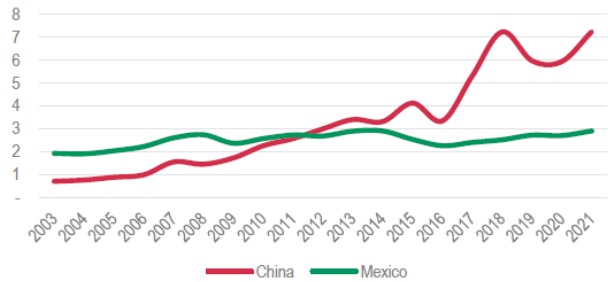
Mexico has been a prime beneficiary of nearshoring activity, recently surpassing China in terms of export market share to the US (Exhibit 20). The growth of nearshoring has been supported by Mexico's location on the border of the world's largest economy, the USMCA free trade agreement, relatively stable macro and geopolitical environments, and its attractive combination of a qualified workforce with relatively low wages (Exhibit 21).

Exhibit 20. Export Market Share to the US



Source: US Trade Census, Morgan Stanley Research

Exhibit 21. Manufacturing Labor Cost Per Hour



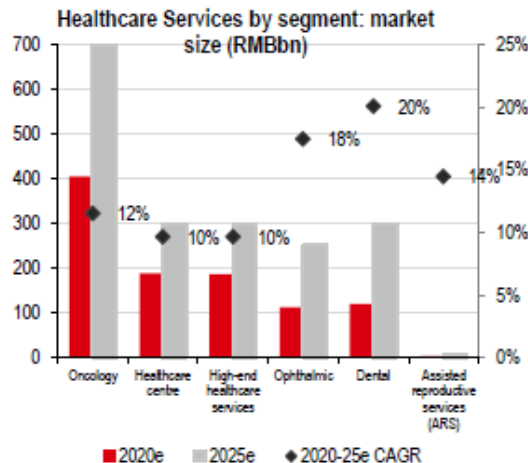
Source: National Bureau of Statistics of China, World Bank, BTG Pactual

China has been notably absent from the global equity market recovery year-to-date. A 58% rally from the lows of November 2022 gave way to a more mixed economic picture, while investors remained concerned about geopolitical risk as the US-China relationship continued to fray. Consequently, Chinese equities gave up all of their relative gains and then some, with the MSCI China Small Cap Index returning -10.7% year-to-date through July.

That said, the strategy has maintained an overweight to China, with the view that numerous attractive micro stories have been indiscriminantly sold off due to macro and geopolitical concerns, creating an attractive asymmetry.

One such company is a leading oncology care provider, which is growing through acquisition, while benefiting from an expanding market opportunity (Exhibit 22). China has the highest incidence and deaths of cancer in the world, and there is unmet demand, especially in lower tier cities, where the company operates. Per Frost & Sullivan, private hospitals such as this one only comprise a small share of the market today, but are projected to grow at a 20% CAGR through 2025. Importantly, this treatment is fully covered by China's National Healthcare Insurance and benefits from insurance cost controls.

Exhibit 22. China Healthcare Market Size by Segment



Source: Frost & Sullivan estimates, NHC, Company data, Huajing Industrial Research Institute, Zhiyan Consulting, HSBC Qianhai Securities estimates

Following a strong post-pandemic recovery, the commodity complex gave way to a pullback in the second half of 2022, which morphed into a pronounced period of underperformance as China’s fixed asset growth languished, while opportunities in other sectors led investor flows to move away from commodities and into sectors like information technology.

That said, numerous opportunities have presented themselves in the commodity-linked sectors throughout 2023, both at the macro and bottom-up levels. Global commodity stockpiles remain critically low, and China has amassed a large portion of the visible stockpiles across numerous commodities, including copper (96%), corn (69%), and oil (23%), among others. Copper is particularly critical, given its role in the electric vehicle and renewable energy supply chains, along with the fact that the world’s leading producer of the metal has cut its production guidance twice this year, while aggregate exchange inventories are at levels that have not been seen since 2008 (Exhibit 23). The strategy owns positions in two early-stage copper miners with attractive geological characteristics in the DRC and Argentina.

Exhibit 23. Global Copper Stockpiles

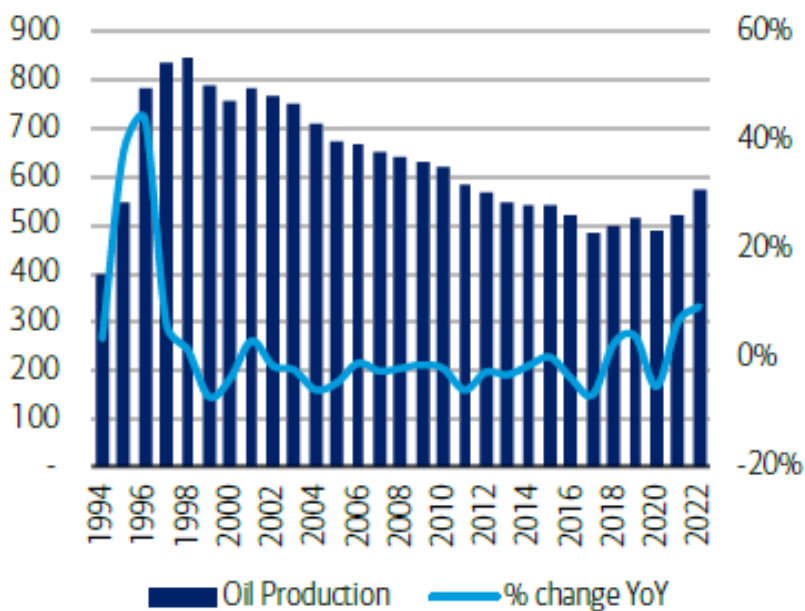


Source: Bloomberg

On the energy front, Argentina has been a standout, as the attractive resource base of the Vaca Muerta shale region appear to be finally on the cusp of being developed in scale, as desperately needed infrastructure improvements have taken shape (Exhibit 24). Only 1% of the region’s total resources have been produced at this point, while the Energy Information Agency estimates that Argentina has the world’s fourth-largest oil shale resources and second-largest shale gas resources. The Vaca Muerta shale resources also compare favorably relative to other major producing regions, including the US Permian Basin. The development of the Vaca Muerta would provide a much needed improvement in the energy trade balance and provide a source of hard currency to Argentina. The strategy owns a position in a leading private sector shale oil exploration and production company in Argentina, which is in an outstanding position to benefit from the growth in the Vaca Muerta, owing to its attractive resource base in the region.

Exhibit 24. Argentina Oil Production Inflecting Positively After Many Years of Decline

Oil output has been declining since a peak in 1998 at 878kbpd, with a persistent decline from 2002-2020



Source: BofA Global Research, Argentina MME

Lastly, we leave you with a series of datapoints that may be thought provoking, as we receive many questions from investors about demographics and supply chains.

As a whole, the G20 faces such a significant deterioration in its demographic prospects that India is expected to represent 99% of G20 labor force expansion through 2050.

Outside of India, population declines in China, Russia, Japan, Germany, Italy and Korea could lead the total G-20 labor force to remain flattish.

Over the past several years, we have highlighted the improvements in India’s ease of doing business, which has facilitated an expansion of the country’s manufacturing sector at a time when many multinational companies are pursuing a “China +1” approach to diversifying their supply chains.

The following tables provide a snapshot of India’s manufacturing sector and labor market relative to Vietnam, the other rising manufacturing destination in Asia, as well as China (Exhibits 25-26). While India has made notable gains in recent years, the manufacturing sector remains at a nascent stage and should present opportunities for many years to come.

Exhibit 25. Economic Comparison on Manufacturing Parameters

Parameters	India	China	Vietnam
Population (mn)	1,390.0	1,410.0	98.3
Annual GDP (\$ tn)	3.2	17.5	0.4
GDP Growth CY21	8.9	8.1	2.6
GDP Growth CY26	6.5	4.9	6.8
Inflation (%)	5.5	0.9	1.9
Mfg Value Added (% of GDP)	14.4	26.2	25.0
Export (\$ tn)	0.4	3.4	0.3
Import (\$ tn)	0.6	2.7	0.3
Mfg Risk Index (Rank)	2	1	4
FDI Investments (\$ bn)	45	334	20

Source: Company Data, HTI

Exhibit 26. Labor Market Comparison

Parameters	India	China	Vietnam
Total Labour force (mn)	471.3	793.8	56.2
Total Labour force Female (% of population)	20.3	44.5	47.6
Labour force participation rate (% of population)	67.0	70.0	69.0
Employment in Industry (% of total employment)	26.2	28.2	28.4
Wage & Salaried workers (% of total employment)	23.9	53.5	44.4
Avg Daily Wages - Mfg (\$)	6.0	36.0	10.5

Source: Company Data, HTI

Driehaus Emerging Markets Small Cap Equity Strategy

While less heralded due to its smaller population size, Saudi Arabia’s labor force is also likely to expand in the years ahead, driven by significant social reform, which could lead to growth of over 30% in the country’s labor force. Such a transformation would usher in meaningful social and economic change to the country, as many of the new entrants into the labor force will be women.

This year’s summer chart pack reflects the dynamic opportunity set across small caps within emerging markets. We are encouraged by the strong performance trend of the asset class and continue to find many interesting growth stocks across a number of countries and sectors (Exhibit 27).

Exhibit 27. MSCI EM Small Cap Index Relative to MSCI EM Large Cap Index



Source: Bloomberg

Until next month,

Chad Cleaver, Lead Portfolio Manager
Driehaus Emerging Markets Small Cap Equity Strategy

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