NAVIGATING CHANGE IN CHINA

THE TRANSFORMATION OF CHINA'S ECONOMY AND THE OPENING UP OF ITS CAPITAL MARKETS PRESENTS AN ATTRACTIVE OPPORTUNITY FOR EQUITY INVESTORS WILLING TO TAKE A MEDIUM TO LONG-TERM VIEW. THIS PAPER LOOKS AT THE DRIVERS BEHIND THIS TRANSFORMATION, AND EXPLAINS WHY INVESTORS SHOULD BE ENCOURAGED BY THE COUNTRY'S DECISIVE POLICY ACTIONS IN THE FACE OF CHALLENGES.

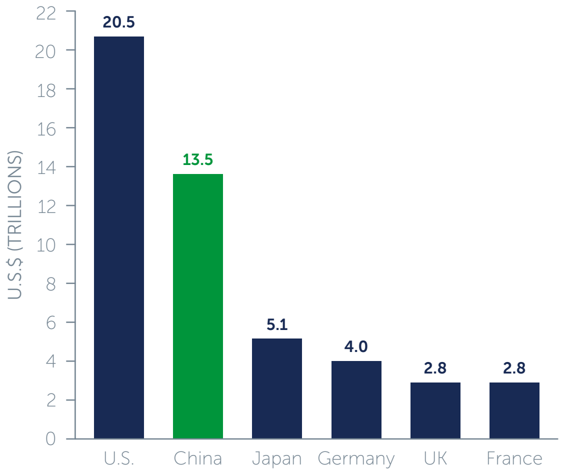
Introduction

China's equity market may still be in the relatively nascent stages of opening up to the international community, but the monumental transformation of the country over the last four decades demonstrates that when change is implemented, it's extensive, enduring and rapid. The changes are also extremely strategic; China has shown that when the nation faces challenges, the ensuing policies are implemented with strategic focus and agility. From an investor's perspective, it's therefore of paramount importance to be fully aware of the implications of these policies in order to take advantage of opportunities when they arise, while also navigating risks.

Where China is Today

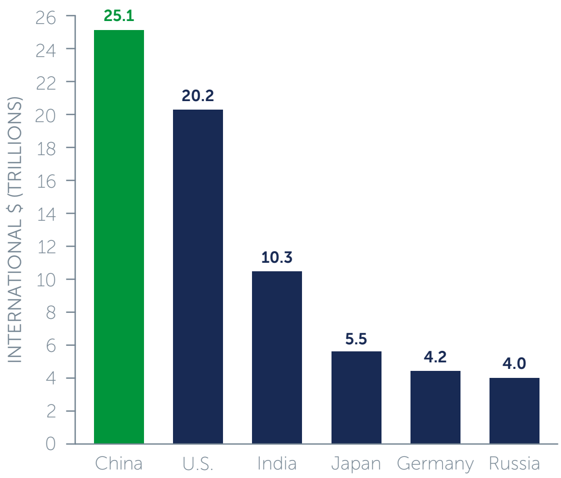
Today, China's 'socialist' market economy, where the public sector accounts for the largest share of GDP, is now the world's second-largest in nominal GDP terms (FIGURE 1). More pertinently, it is the largest in purchasing power parity (PPP) terms (FIGURE 2), which accounts for the relative standard of living. China remains the world's largest manufacturing economy and exporter of goods, in addition to being the largest trading nation on the planet. This was greatly assisted by the country's admission to the World Trade Organization in 2001, which enabled free trade agreements with many countries, including the Association of Southeast Asian Nations (ASEAN) and Australia. That said, exports as a percentage of GDP peaked at 36% in 2006, falling to about 20% today, according to the World Bank. This is not the whole picture however, the country is now a major importer too, with its $1.7 trillion of imports in 2017 making it the second-biggest importer behind the U.S. and crucial to the world's economy.

FIGURE 1: LARGEST ECONOMIES BY NOMINAL GDP



SOURCES: *IMF. AS OF OCTOBER 2018.*

FIGURE 2: LARGEST ECONOMIES BY PPP GDP



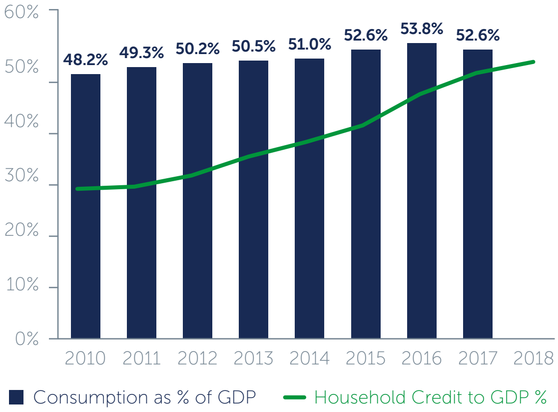
SOURCES: *IMF. AS OF OCTOBER 2018.*

China is a command economy which is loosely centralized. This, in our opinion, is one of the major reasons that it managed to transform itself successfully through a series of five-year plans guiding the country's economic and social development, the most recent being adopted in March 2016. This latest Five-Year-Plan set out specific aims of achieving a more prosperous society by 2020, with value-added manufacturing, innovation-driven development and environmental stewardship increasingly integral components of China's future.

There is still much to happen for China to become a 'market' economy, and despite many doubts regarding the reliability of the country's economic data, it is hard to refute the claim that China has undergone an impressive transformation. Putting this into context, and using IMF figures, between 1990 and 2016, China's GDP grew 25-fold, while the world's second most populous country India grew 4.2-fold. The U.S. economy, by comparison, grew by just 2.5-fold over the same period.

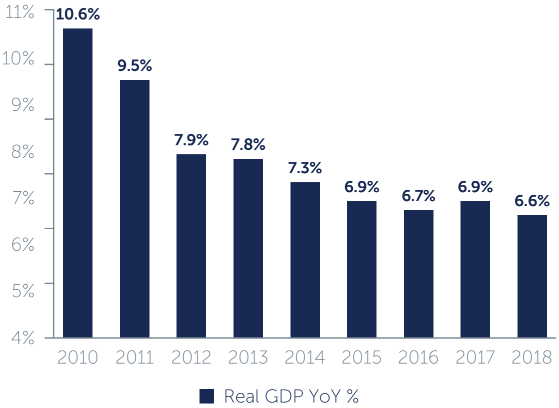
A further metric highlighting the successful transformation is China's near one-billion workforce adapting and embracing change. While the agriculture and industrial sectors remain significant employers, the service sector is now the largest, accounting for over 40% of the labor force, according to the IMF. The change has been marked in terms of improvements witnessed in infrastructure, wealth and increases in private consumption. One can point to a series of improving indicators such as increasing life expectancy, literacy rates, meat consumption and car ownership to further demonstrate the standard of living transformation. China also boasts the world's fastest growing consumer market, with consumption becoming the dominant driver of the country's economy (FIGURE 3).

FIGURE 3: CONSUMPTION HAS BECOME THE DOMINANT DRIVER OF CHINA'S ECONOMY



SOURCE: *BARINGS, WIND ECONOMIC DATABASE. AS OF JUNE 2018.*

FIGURE 4: CHINESE ECONOMIC GROWTH HAS BEEN STEADILY DECELERATING



SOURCE: *BARINGS, WIND ECONOMIC DATABASE. AS OF JUNE 2018.*

Overcoming Challenges

China in the 1980s was a predominantly rural society, with 80% of the population living in the rural areas, mostly living a hand-to-mouth existence. The first economic transformation on the path to prosperity was the overhauling of the agriculture sector, which now boasts one of the highest crop yields in the world, and then the upgrading of the manufacturing base in the 1990s and 2000s which led to China becoming the manufacturing hub for the world. This lifted large parts of the population out of poverty. Today, the emphasis is on value-add manufacturing and technology (including artificial intelligence), while also improving quality. This is a crucial step in China's next phase as it has become richer and the population older, and was formalized with the 'Made in China 2025' policy in the latest five-year plan, setting out a blueprint to upgrade the manufacturing capabilities of Chinese industries.

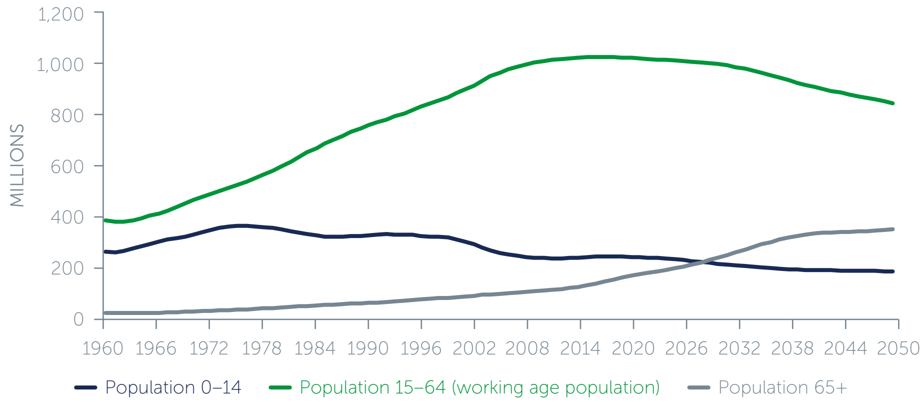
A combination of improved GDP per capita, greater urbanization, a more sizeable population and vastly improved education, allowed China to move to a different cycle in its economic growth. Under the current Chinese administration, the policy is to deliberately target slower, but higher quality sustainable growth, in order to optimize the country's resources, whether labor, natural resources or financial capital. It is notable that China's GDP growth has declined from above 10% at the start of the decade to stand at about 6.5% today (FIGURE 4).

Upskilling the Work Force

China's population of 1.4 billion has experienced one of the largest internal migrations in history, with the urbanization rate now standing at 59%, more than triple the 1980s, and on an upward trajectory. The United Nations expects that two-thirds of the world's population will live in cities by 2050, with China no exception. While urbanization is clearly a challenge, there are other demographic headwinds facing China, prompting a need to evolve to delivering sustainable higher quality growth not dependant on an army of workers. The working age population, defined by the OECD as those aged 15 to 64, currently stands at about one billion in China, and this is forecast to drop to about 800 million by 2050 (FIGURE 5). One of the consequences of the rapid growth in GDP per capita in the last few decades is that workers are becoming more expensive. As the number of workers declines and hourly wages increase, a deliberate, targeted policy is needed to tackle these two challenges. The Chinese administration already recognizes that supply is not infinite, and upgrading the economy and labor force are key to sustaining growth.

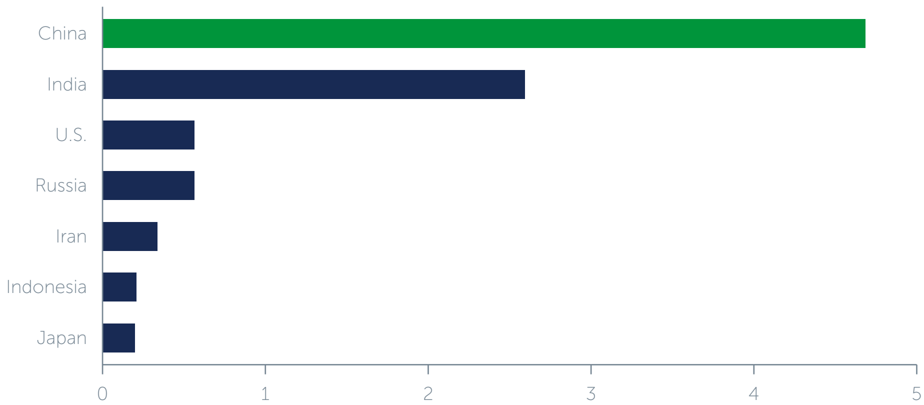
To combat this dual challenge of having fewer, but more expensive workers, China has invested heavily in its work force, encouraging students to obtain a Western education. By 2016, there were more than 500,000 Chinese students in education in the U.S., U.K. and Australia. Furthermore, China has more science, technology, engineering and mathematics (STEM) graduates each year than any other nation. Nearly 5 million students graduated in 2016, compared to nearly 3 million from India. The U.S. and Russia had closer to 500,000 STEM graduates, by contrast (FIGURE 6). This aligns closely with the pattern of China's research and development spend. The country has increased its investment in R&D to about 2% of GDP from less than 1% at the turn of the century, matching the European Union (FIGURE 7).

FIGURE 5: CHINA'S WORKFORCE IS FORECAST TO DECLINE AS THE POPULATION AGES



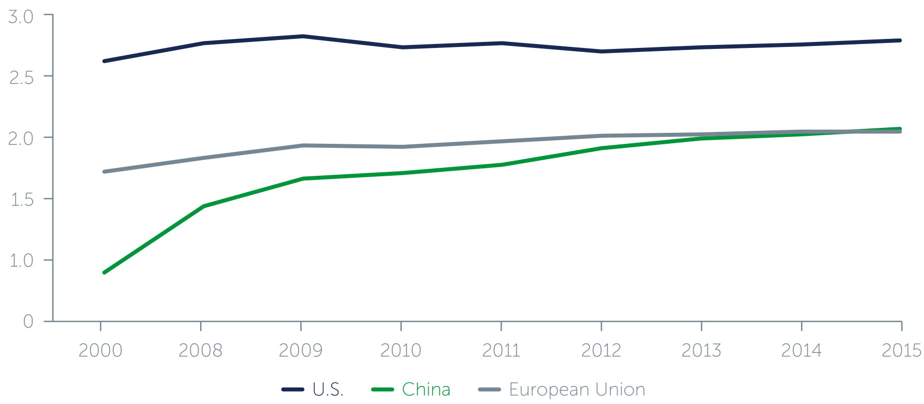
SOURCE: *WORLD BANK. AS OF DECEMBER 2018.*

FIGURE 6: COUNTRIES WITH THE HIGHEST NUMBER OF STEM GRADUATES 2016 (MILLIONS)



SOURCE: *STEM GRADUATES BASED ON WORLD ECONOMIC FORUM DATA. AS OF 2018.*

FIGURE 7: CHINA HAS INCREASED R&D SPEND AS A PERCENTAGE OF GDP

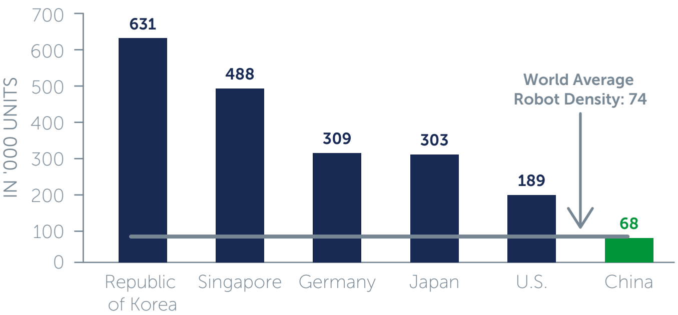


SOURCE: *UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO) INSTITUTE FOR STATISTICS. AS OF DECEMBER 2017.*

The Rise of the Robot

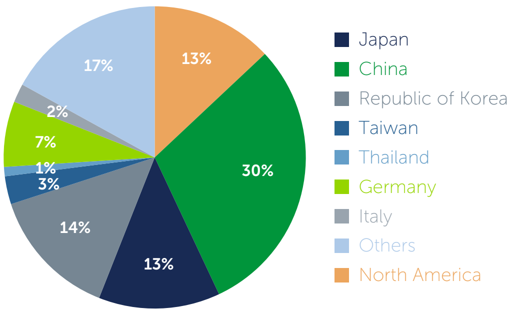
With fewer workers to support an aging society, which could bring negative social and economic consequences, China has a stated policy of automation to improve productivity. The increasing use of robots is a well-trodden path for manufacturing economies that are facing similar challenges. Despite rapid growth in the robotics space—China installed 87,000 industrial robots in 2017, according to the International Federation of Robotics (IFR), a similar number to both Europe and the U.S. combined—penetration remains low.

FIGURE 8: ROBOT DENSITY WITHIN THE MANUFACTURING INDUSTRY



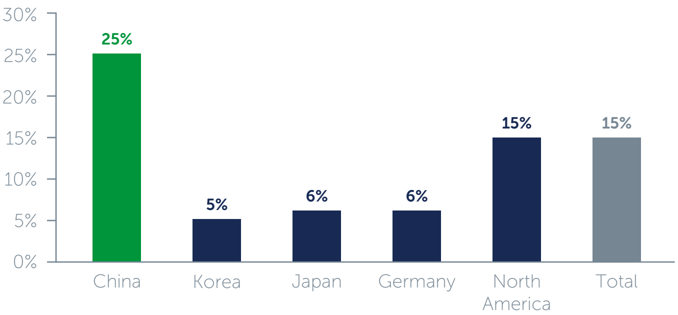
SOURCE: *JP MORGAN. IFR, CHINA'S ROBOTICS INDUSTRY DEVELOPMENT PLAN. AS OF OCTOBER 2017.*

FIGURE 9: CHINA DOMINATES THE MARKET SHARE OF INDUSTRIAL ROBOT SUPPLY



SOURCE: *JP MORGAN. IFR, CHINA'S ROBOTICS INDUSTRY DEVELOPMENT PLAN. AS OF OCTOBER 2017.*

FIGURE 10: CHINA IS FORECAST TO LEAD INDUSTRIAL ROBOTICS SUPPLY GROWTH



NOTE: CHART SHOWS ESTIMATED COMPOUND ANNUAL GROWTH RATE FOR INDUSTRIAL ROBOT SUPPLY 2016–2020.
SOURCE: *JP MORGAN. IFR, CHINA'S ROBOTICS INDUSTRY DEVELOPMENT PLAN. AS OF OCTOBER 2017.*

To put this in a global context, South Korea has an installed base of 631 robots per 10,000 employees, the U.S. has 189, while China has just 68 (FIGURE 8).

The social impact of this remains untested, however, what is clear is that automation is not just a threat but also an opportunity, in our view. China already dominates the market share of industrial robot supply (FIGURE 9), even if the per capita data appears low. Furthermore, the growth rate of robotics supply in the country is expected to average 25% per year through 2020 (FIGURE 10). By the same year, 23.5 million students are to be enrolled in vocational programs to support the new economy, according to the state's plan. Areas such as coding, regulating and maintaining the robots will be key focal points, demonstrating China's clear commitment to upgrading its economy.

Capital Preservation

According to the IMF, the Chinese savings ratio is high, peaking at 52% of GDP in 2010, and remains almost double the global average. However, China's debt-to-GDP, both on and off-balance sheet, including state-owned enterprises, is approaching 300%. This, coupled with the fact that the country's capital account remains significantly restricted, implies that capital efficiency is paramount and focus is needed in order to fund future growth. It also points to one of the vulnerabilities of the China story and the reluctance of the Chinese government to liberalize its capital account quickly. However, opening up is the path chosen, and it will be both cautious and gradual, helped by the fact that the majority of the outstanding debt was issued in local currency. Part of the solution to preserving capital is attracting it from outside China, and we have observed such moves in both debt and equity markets.

Environmental Stewardship

As China has become richer, it has continued to improve its infrastructure to combat a further challenge of being the world's leading manufacturing base: the environmental impact. China faces about 1.6 million premature deaths per year as a result of air pollution, the U.S.-based Health Effects Institute said in a report last year. The Chinese administration is fully aware of the problem and is clearly seeking to address it, given that a cleaner environment is a stated policy objective in the latest five-year plan. An aggressive clampdown on coal use has been coupled with heavily polluting vehicles, factories and construction sites also being targeted, with clear success. Overall PM2.5 levels, which refers to particle matter in the air with a diameter of less than 2.5 micrometers, or alternatively about 30 times thinner than a human hair, have fallen by 40% in Beijing from their peak in 2012–2013, according to Greenpeace. Because these particles are so small, they tend to linger in the air for longer than larger, heavier particles, making them particularly dangerous for humans. It's no coincidence that in tackling this challenge, China has also become the leading nation in adopting electric vehicles, in addition to establishing itself as a leader in fuel cell technology, solar and wind power.

The Opportunity

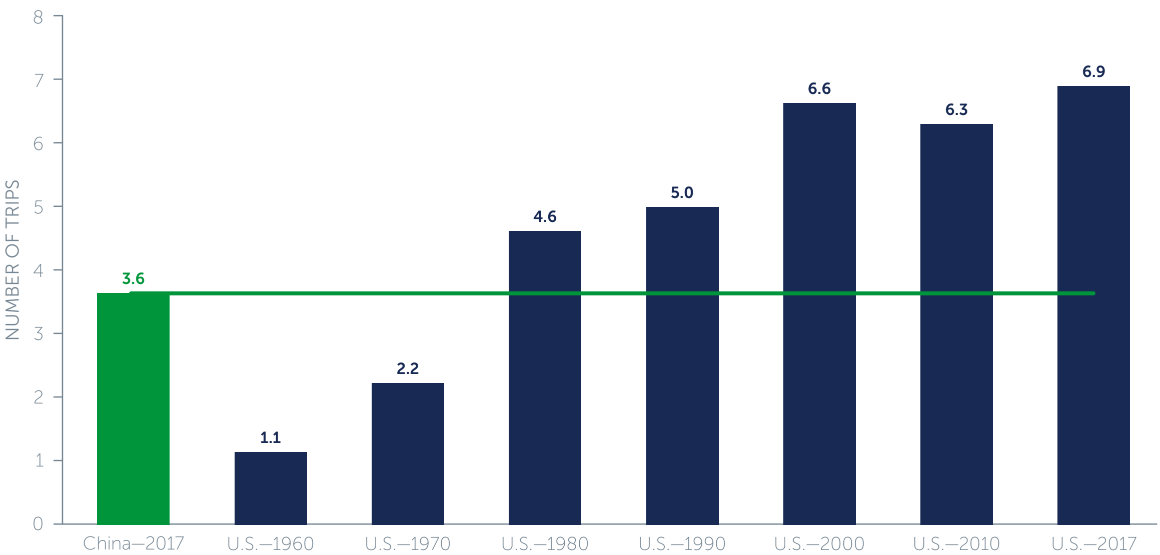
At Barings, we believe that one of the most attractive ways to capitalize on this considerable transformation is through equity market investments, as they allow investors to participate in the growth across a broad range of sectors and companies. As bottom-up investors, we observe all these trends as we perform in-depth company analysis, but how does this remarkable change in China actually provide an opportunity for an investor?

Take the Chinese consumer: There are about 400 million millennials aged between 19 and 35, which is about 20% of the world's 1.8 billion, and five times the number in the U.S. Their preferences are crucial. These are well educated, digitally savvy individuals that are happy to fully engage in the shared economy. They are confident, brand aware and outward looking: this army of middle class consumers likes to travel (FIGURE 11). Chinese tourists made a total 145 million trips abroad in 2017, compared to 10.5 million in 2000, according to China Outbound Tourism Institute data*. This is forecast to grow to 400 million trips by 2030. With these excursions comes greater spending, totaling about $261 billion in 2016, more than double U.S. tourist spend abroad, and up from $10 billion in 2000.

With rising living standards in China come changing consumer patterns and differing company fortunes, all of which have direct implications for our investment focus. There are also less obvious implications; With rising education standards comes a realization that it's wise to protect oneself against future events, and we're subsequently seeing that translate into accelerating growth and earnings across the insurance sector. Another positive outcome is the increase in financial savings products now open to the Chinese consumer, which should help future generations with managing old age. Private health care, education and the technology space are among other sectors offering growth opportunities linked to this burgeoning middle class.

In our view, a disciplined fundamental analysis is critical to identifying companies geared to benefit from such growth opportunities. However, this by itself is not enough. A much more dynamic process needs to take place to ensure the most compelling growth opportunities are identified. Managers with a local, on-the-ground presence combined with global sector expertise (which gives them perspective) are particularly well placed to identify unrecognized growth opportunities. While emerging markets such as China encompass a vast array of companies, they attract significantly less sell-side analyst research coverage than developed markets. Mainland Chinese stock markets are dominated by retail investors who are often sentiment-driven. As a result, market performance does not always correlate with company fundamentals. This inevitably leads to less accurate earnings forecasting and consequently mispriced assets.

FIGURE 11: NO. OF TRIPS TAKEN BY CHINESE AND U.S. TOURIST PER CAPITA PER YEAR



SOURCE: *BARINGS, CICC—WONDERFUL L.I.F.E.: INVESTMENT OPPORTUNITIES IN THE CONSUMER SECTOR. AS OF JUNE 2018.*

*February 2018 report.

The Barings Approach

It's important at this juncture to introduce our philosophy, our approach, and why we believe our resources make us extremely well placed to build on the multitude of opportunities in Chinese equities, while navigating the risks. Our investment professionals look for growth companies where the current share price does not fully reflect future earnings potential. We prefer companies that have a strong franchise, a sustainable business model and are not afraid of disruption or are actually a disruptor themselves. Typically, the companies we invest in on behalf of our clients have strong or improving balance sheets that can fund growth plans and committed and competent management teams with the ability to execute plans without jeopardizing shareholder interest.

We analyze businesses on a five-year horizon, as we believe this longer-term outlook is where the market inefficiency is most pronounced. In our opinion, market participants concentrate on the short-term, but most value creation for companies lies in the longer-term. Given our focus on a longer horizon, we aim to concentrate on all factors that increase our confidence. This means focusing not only on our earnings forecasts, but also on minimizing the risk for our investors.

Assessing this risk is done in a variety of ways, both quantitatively, but also qualitatively. Our well-resourced global emerging markets (EM) team includes more than 30 investment professionals, one-third of whom focus on Chinese equities, with a decade of experience on average. Our investment professionals meet regularly with management teams, visit operational facilities and analyze industry competitors to gain an insight into the business and its sustainable competitive advantage. For context, our EM team conducted approximately 2,000 company interactions in 2018.

Furthermore, another aspect of our qualitative research is a fully embedded proprietary Environmental, Social and Governance (ESG) analysis, conducted to produce a dynamic assessment of a company and its associated risks, further strengthening our confidence in our five-year earnings projection. Our approach to ESG is focused on the analysis of three core categories that constitute the framework for our assessment:

- Sustainability of the Business Model (Franchise)
- Corporate Governance Credibility (Management)
- Hidden Risks on the Balance Sheet (Balance Sheet)

It is our view that ESG considerations should impact two elements of our analysis: the value of the shares and our investment view of the company. Industry-leading ESG practices can support a positive assessment, while poor management attitude towards ESG, or worrying environmental or social issues, is sufficient to downgrade an assessment to such an extent that investing in the company becomes unattractive. We rely heavily on our own fundamental analysis, informed by management engagement, to conduct our ESG research. In addition, there is close interaction and knowledge sharing between our China team, the broader EM team, and our developed markets team, which is particularly constructive in forming differentiated opinions on companies we research.

FIGURE 12: OUR APPROACH TO ESG

Factors Considered	9 Key Topics
Franchise: Sustainability of the Business Model	• Employee satisfaction • Resource intensity • Traceability/security in supply chain
Management: Corporate Governance Credibility	• Effectiveness of supervisory/ management board • Credibility of auditing arrangements • Transparency and accountability of management
Hidden Risk: On Balance Sheet	• Environment footprint • Societal impact of products/services • Business ethics

SOURCE: *BARINGS. AS OF DECEMBER 31, 2018.*

Furthermore, in line with our analysis horizon of five years, we utilize a hurdle rate, or cost of equity, to value the future earnings potential. This is the minimum required rate of return that we believe compensates our clients for holding the company in their portfolios. Our cost of equity compensates for macro risks, such as inflation, and an equity risk premium to account for macro and political risks. Additionally, our cost of equity incorporates an idiosyncratic, or company specific, component, reflecting the specific factors determined by the analysis of our investment professionals. These would include sector risk, changes to the regulatory environment, business model cyclicality, visibility of earnings, strength of the balance sheet and our dynamic ESG assessment. This ensures our analysts and fund managers can make comparisons between different investment ideas and build high conviction, highly active, portfolios that incorporate our identified investment candidates. In our portfolios, our aim continues to be delivering superior risk-adjusted returns for our clients, driven by company selection over the cycle.

SOURCE: *BARINGS. AS OF DECEMBER 31, 2018.*

Conclusion

This exciting opportunity highlights the continued shift of economic growth from the developed world to emerging markets, where it is not just China that is benefiting. We recognize that there is always the potential for challenges which are not all economic; some will inevitably be political in nature as these economies continue to mature and rebalance, vying for their positon on the world stage. China's continued economic transformation is showing no signs of slowing, however this does not mean that there won't be the potential for risk. We currently find ourselves amidst a trade dispute between the U.S. and China, yet there remains significant opportunity for equity investors to unearth attractive companies with unrecognized growth potential, especially by concentrating on both the opportunity and effectively quantifying and incorporating the risks through active management. At Barings, we do just this, where through our differentiated approach we look to consistently deliver superior risk-adjusted returns for our clients.

DR. GHADIR COOPER
GLOBAL HEAD OF EQUITIES TEAM

Ghadir was appointed Global Head of Equities in 2016 and is a member of the European management team. Prior to this, Ghadir was Head of the EMEA & Global Frontiers Team and lead manager on the Barings Eastern European Fund. Having joined Barings as part of the Global Emerging Equity Team in 1997, Ghadir was appointed a Director in 2001. Prior to joining our Emerging Equity Team, Ghadir worked at BZW Asset Management, where she was an investment analyst focusing on the Middle East, North Africa and Latin America regions. Ghadir has a BSc and a Ph.D in Theoretical Physics from Durham University and is fluent in Arabic.

Barings is a $303+ billion global financial services firm dedicated to meeting the evolving investment and capital needs of our clients and customers. Through active asset management and direct origination, we provide innovative solutions and access to differentiated opportunities across public and private capital markets. A subsidiary of MassMutual, Barings maintains a strong global presence with business and investment professionals located across North America, Europe and Asia Pacific.*

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