FEATURE ARTICLE: DEVELOPED ASIA INFRASTRUCTURE

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In private markets across the global infrastructure sector, the vast majority of attention and resources is weighted towards Europe and North America. For large, core infrastructure assets, this has created an unprecedented demand / supply imbalance that has compressed projected investment returns. With increasing demand and limited large, core infrastructure investment opportunities, asset valuations in these markets have significantly increased over the last decade.

Infrastructure investors have enjoyed favourable tailwinds over the last decade led by central banks flooding the markets with liquidity and thus pushing discount rates down and returns higher.

However, this discount rate compression leaves the implied forward-looking return for large, core infrastructure assets in many developed markets to be relatively subdued.

While early private market infrastructure investors into Europe and, to a lesser extent, North America, benefitted from very strong and sustained growth in the sector, investors today face the challenge of how to find strong investment returns and good value in infrastructure equity.

Better relative value from assets with true infrastructure risk profiles continues to be available in public markets, where assets can be acquired at profit multiples well below what private market investors need to pay for large, core infrastructure assets.

Private market equity investors can also find better relative value in small and mid-cap assets in developed markets. In this part of the market, investment returns of 8-10% continue to be achievable from assets with true infrastructure characteristics.

For investors seeking 12-15% returns, however, the avenues available for successful private market infrastructure investing are more limited.

One option is to move further out the risk spectrum, by investing in infrastructure-like or infrastructure-adjacent sectors. However, moving away from true infrastructure characteristics involves risk akin to private equity. Infrastructure-like projected returns from a private equity-like risk profile may not represent good relative value.

Another option is to move outside the OECD, into emerging markets. However, emerging markets entail real risks of unpredictable government policy changes, heightened risk of corruption and environmental, social and governance (ESG) risks spanning a range of issues including carbon emissions and pollution considerations, labour and human rights policies and corporate governance. The majority of projects available in emerging markets also tend to be greenfield in nature, further compounding the regulatory risks due to navigating opaque government approval processes. The risk / return paradigm in emerging markets infrastructure is therefore also more akin to private equity – a higher risk profile as compared to the traditional defensive definition of institutional-grade infrastructure.

An alternative to accepting private equity-like risk is to invest in true infrastructure assets in countries that have risk profiles more like those of Europe and North America.

Developed Asia – specifically Australia, Hong Kong, Japan, Korea, Singapore and Taiwan – is that opportunity. With the notable exception of Australia, Developed Asia has only recently started welcoming private financing, as a widening infrastructure deficit has forced governments to seek alternatives to traditional government-funded financing mechanisms.

This article explores investment opportunities available in Developed Asia and how this market exhibits the classic attractive characteristics of infrastructure at potentially more attractive returns compared to other developed markets.

1.1 Macro-economic Backdrop

1.1.1 Asia Versus the Rest of the World

Growth

After several years of low economic growth across much of the world, there are finally starting to be signs of a global upswing. The IMF estimates that global economic growth was just 3.2% in 2016, the lowest annual rate since the global financial crisis (GFC). However, global growth is projected at 3.6% in 2017, with a further improvement to 3.7% expected in 2018. This economic growth is not homogenous, with most of the developed world growing well below these levels. The United States is expected to grow by 2.3% in 2018, which is higher than the levels it has been in recent years, supported by strong consumer and business confidence and supportive financial conditions. Continued policy uncertainty, in terms of President Trump's ability to implement growth-inducing fiscal reforms, caps the projection from being at a higher rate. That said, the recent initial approval of proposed tax reforms has provided the Trump administration with a boost of confidence. The impact that his tax plan is expected to have on economic growth has been hotly contested however. Longer-term economic growth

in the US is expected to be lower than current levels given lower productivity growth and an ageing population (the retirement of the baby boomers).

Europe is also starting to see signs of improving economic growth, although it still lags the projections for the US economy. Economic growth in 2018 is expected to be 1.9%, which while relatively low, is higher than the IMF's projections earlier in 2017. The continued accommodative monetary policy has helped prop up domestic demand, and the acceleration in global trade has allowed the Euro area to benefit by way of a stronger global appetite for its exports. On the whole, political uncertainty is more subdued than it was at the start of 2017 given the failed runs of populist candidates in several key elections, most notably those in the Netherlands, France and Germany.

Asia as a whole continues to record above average growth, with 2017 and 2018 forecast growth expected to be more than double that of the United States and Europe. Growth is projected to reach 5.5% in 2017 and 5.4% in 2018. The uptick in economic strength in developed countries around the world has helped support economic growth across Asia, in part because of improving global trade and the continent's position in global supply chains.

Australia's projected growth rate for 2018 was lowered from 3% at the start of the year to 2.2%, per the IMF's October 2017 World Economic Outlook report. Despite the reduction in the expected growth rate, Australia grew at 2.8% to the end of the year ending in September 2017, propped up by private business investment and public infrastructure expenditure. However, household consumer spending growth continues to be low.

Demographics

Much of the developed world is in the midst of a significant demographic shift, with the retirement or pending retirement of the baby boomer population causing a significant rise in the portion of the population that is no longer in the labour force. This trend is particularly prominent in Europe, and to a lesser extent in the United States. Ageing populations across Europe are expected to cause a fall in labour force productivity, which is typically a side effect of an ageing labour force. The impact is expected to be particularly notable for a selection of European countries, including Italy, Greece, Spain and Portugal. This is of concern given that these countries are in desperate need of improved productivity given their high debt levels, limited fiscal space and high unemployment rates.

Economic growth in Asia over the past several decades is largely attributable to a favourable shift in the continent's demographics. Between 1965 and 1990, real income per capita nearly trebled in East Asia, with the improvement coined the 'East Asian Miracle'. The improvement over the 25-year period was in large part because fertility rates had started declining several decades earlier, predominantly because of a fall in infant mortality rates. In East Asia, this meant that between 1965 and 1990, the working age population was growing nearly 10 times faster than the dependent population.

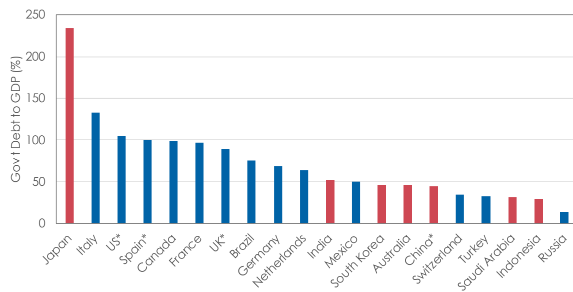
The acceleration of economic growth that coincided with an increasing ratio between the size of the labour force and the size of the total population, has shown that Asia has been able to productively use its additional physical capital to expand its productivity and capacity. However, in some parts of Asia, the marginal benefit of Asia's favourable demographics on economic growth is starting to show signs of waning. That said, while Asia may not be reaping as many benefits from the demographic shift as it has in the past, its positioning relative to much of the Western world is still favourable. While Europe grapples with the social, political and economic implications of an ageing population, Asia continues to reap the benefits of its relatively young workforce.

Government Debt

Government debt continues to be relatively high in much of the developed world, with the average government debt-to-GDP ratio across the European Union just north of 90% and the level in the United States at approximately 104%. Following the GFC, governments in many developed nations financed bailouts and stimulus programs, which pushed up their respective debt-to-GDP ratios. Governments burdened with high levels of debt have significantly less fiscal breathing room.

While there are certainly countries in Asia that have high government debt-to-GDP ratios (Japan being one of these), in general, the governments are less indebted. The figure below shows the top 20 most indebted countries in the world. Aside from Japan, Asian countries are relatively less indebted than many Western developed nations. Such governments have more fiscal flexibility to implement financial and structural reforms that will promote economic growth more effectively and efficiently.

Figure 1: Government Debt-to-GDP Levels, as of 31 December 2016



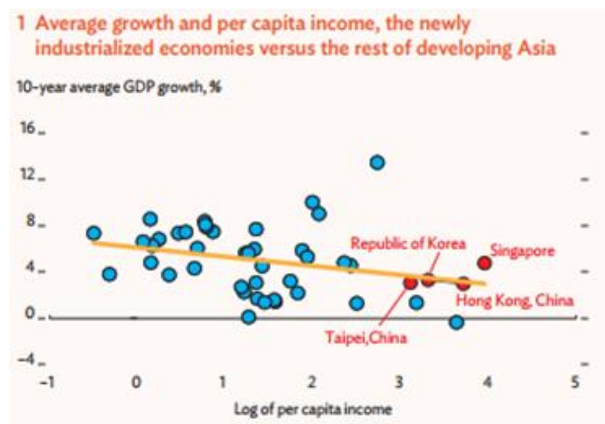
Source: Bloomberg, Whitehelm Advisers
Note: The debt-to-GDP level for countries denoted with an asterisk is as of 31 December 2015, rather than 31 December 2016.

1.1.2 Developed Asia versus Developing Asia

It goes without saying that Asia is not homogenous across its 48 underlying countries. The continent is home to countries across the spectrum when it comes to levels of development. For simplicity sake, consider the differentiation between Developed Asia and Developing Asia. In this feature article, we include Japan, Singapore, Hong Kong, Taiwan and South Korea as Developed Asia (but also include Australia as part of this subset due to its increased integration and interdependency with Asia). Developing Asia consists of a much longer list, however the two largest countries are China and India.

In the previous section, we discussed the robust growth outlook for Asia as a whole. Underlying the strong growth outlook at the continent level is a very strong expected growth rate for Developing Asian countries (6.5% for 2018), which offsets the lower expected growth rate for Developed Asia (1.7% for 2018). This pattern is consistent with the disparity in growth rates experienced in Asia over the past ten years. Growth in Singapore, Taiwan, South Korea and Hong Kong averaged 3.4% per annum over the past ten years, which is a higher rate than that experienced in much of the Western world, but lower in comparison to the 7.8% per annum average across Developing Asia. That said, the lower projected growth figures are balanced with higher per capita income, as shown from the World Bank below. For example, the average 2015 population weighted per capita income was US$28,824 for Singapore, Hong Kong, South Korea and Taiwan, which is almost seven times greater than the US$4,329 average for Developing Asia.

Figure 2: Average Growth and Per Capita Income



Source: World Bank, Haver Analytics, Asian Development Outlook database

Despite the different contributions to global economic growth, from a macroeconomic perspective, Developed Asia possesses many desirable characteristics. We consider low levels of corruption and the proximity to the high growth engine of Developing Asia as some of the region's most attractive qualities. We also touch on other appealing characteristics in the sections that follow.

Corruption is much less of an issue in Developed Asia as compared to Developing Asia. According to the most recent annual report from Transparency International[1], four of the six countries classified as Developed Asia in this feature article are among the top 20 countries for having low levels of corruption. Specifically, Singapore ranks 7th, Australia 13th, Hong Kong 15th and Japan 20th. Taiwan sits at 31st and South Korea at 52nd. If we compare these rankings to those of the largest Developing Asian countries, India and China are tied for 79th spot. Other Developing Asian nations are worse off, for example, the Philippines and Thailand are tied for 101st spot and Vietnam sits at 113th.

Proximity to Developing Asia

Developed Asia's proximity to the high growth engine of Developing Asia is seen to be beneficial for Developed Asia. Many of the Developed Asian countries, which we discuss in this feature article, are highly dependent on exports. For example, South Korea is a major exporter of automobiles and mobile phone technologies, goods that are increasingly sought after in the Developing Asia countries that are undergoing rapid development and urbanisation. Similarly, Australia has benefited from its close ties with Developing Asia given the volume of its exports of iron ore and steel to countries such as China,

[1] Refer to Corruption Perceptions Index 2016

which has a high demand for Australia's commodities to fuel its development.

As an example, an investment in a patronage asset (for example, a port or airport) in Developed Asia where volume growth is dependent on Developing Asia growth may provide an investor with higher investment returns – but without many of the downside risks of an asset located in an emerging market. The tighter integration of countries within Asia in the years following the GFC has resulted in increased opportunities for investors to gain exposure to the positive drivers of Developing Asia by investing in Developed Asia.

Economic growth in Developing Asia can be volatile, so Developed Asia can feel the effects of such volatility. For example, China experienced a relative downturn at the start of 2016, which had knock-on implications for countries that rely on exporting goods and services to China. That said, Developed Asia was well equipped to weather these shocks given their relatively strong fiscal positions and well-regulated financial systems. In the case of infrastructure, the long-term duration of revenue means the impact of short-term volatility is often muted.

1.2 The Merits of Infrastructure Investment in Developed Asia

To support economic and population growth over the past two decades, the Asian region's major economies have emerged as infrastructure investment leaders. Australia stands out in the region as an infrastructure pioneer with the longest history of infrastructure privatisations globally and currently offers a strong pipeline of opportunities as both governments and corporates seek to deleverage balance sheet positions.

Private financing of infrastructure in Asia remains a highly fragmented market with few established financial competitors, making bilateral transactions possible through: (i) governments who are looking to deleverage via privatisation programs, and (ii) private companies with significant balance sheet debt looking to deleverage or divest non-core operations.

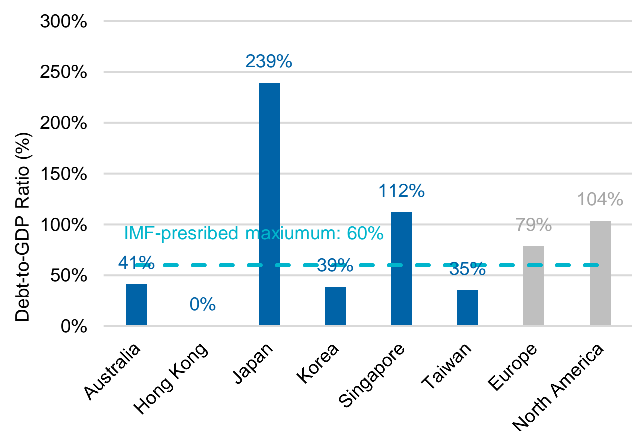
Developed Asia offers a unique combination of developed economy risk profiles, while capturing emerging economy growth. The region is diverse and includes a range of strong economies with unique characteristics at different stages of the investment cycle. In close proximity to high growth yet higher risk large Developing Asian nations like China and India, investment in these relatively stable and safe democracies supports superior risk / return dynamics, supported by growing demand for infrastructure services and a decline in traditional funding sources.

Economic and demographic growth in this region has resulted in growing demand for new or upgraded infrastructure that has exceeded infrastructure investment. Furthermore, traditional funding sources such as government investment vehicles and strategic developers have declined as institutions seek to deleverage balance sheets.

1.2.1 Decline in Traditional Funding Sources – Government Support of Private Financing

Traditional government funding in Australia and Developed Asia is declining as governments are looking to deleverage, especially in jurisdictions with high debt-to-GDP ratios such as Japan. While public debt levels in Australia and some parts of developed Asia compare favourably with other world economies, there is still room for improvement as a debt-to-GDP ratio of 60% or less is prescribed by the IMF.

Figure 1: Developed Asia Nations Debt-to-GDP Ratio (2016)



Source: IMF World Economic Outlook (April 2017)

With relatively high public debt levels and an inherent reluctance to raise taxes from developed country governments, the private sector is poised to play a significantly larger role in bridging funding gaps presented in these jurisdictions. Further, supportive government policy is allowing private investment in a range of greenfield programs, the most significant being renewable energy.

1.2.2 Geographic Nexus to China, India and Asian Tiger Nations

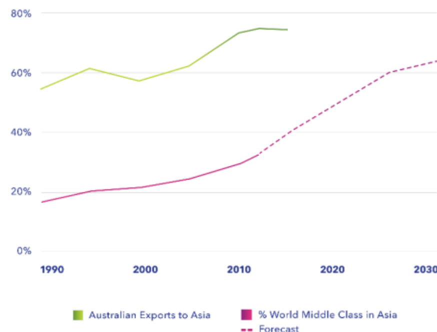
Developed Asia has also benefited from its geographical nexus to the rapid economic growth being experienced by China / India and the Asian

Tiger nations. Rapid economic growth and industrialisation across Asia has resulted in increased integration across the region, with Developed Asia well-positioned both economically and geographically to enable and support unprecedented growth rates being experienced in Developing Asia.

Growth in Asian demand for commodities such as iron ore and coal to fuel both the construction boom and ever-growing consumption of energy has been a catalyst for growth in Australia, a resource-rich nation on Asia's doorstep. This demand has fuelled a mining boom in Australia, helping drive 26 years of uninterrupted economic growth – the longest stretch of growth for any nation in modern history.

Australia and developed Asia are expected to continue to benefit from the continued growth in Asia's middle class as increasingly affluent consumers (as highlighted in the figure below) will have higher expectations and the capability to pay for higher quality basic infrastructure, including access to high quality tap water, modern transport links and uninterrupted access to power in a form that minimises the impact on the environment.

Figure 2: Meeting the Demands of Asia's Middle Class

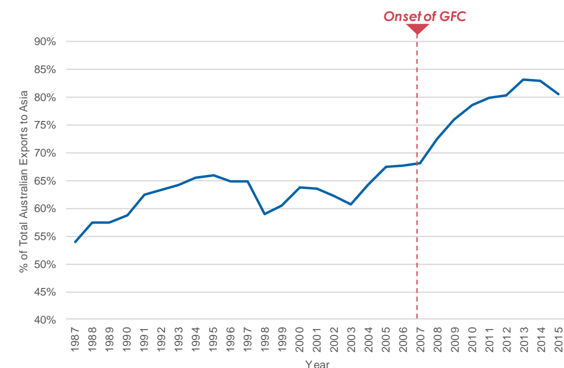


Source: Australian Department of Foreign Affairs and Trade; Brookings Institute

1.2.3 Growing Regional Interdependence

The onset of the GFC in 2007 triggered Asian economies to actively promote regional policy cooperation and regional interdependence in order to counterbalance the extended downturn in key advanced economies, driving greater integration and intraregional trade. This growing regional interdependence has also brought Australia closer to the Asian market. The figure below details the rise of Asia as a key export market for Australian goods, rising from 65% pre-GFC to a high of 83% in 2014, whereas historically the United States and Europe were the dominant export markets.

Figure 3: Exports to Asia as a Percentage of Total Australian Exports



Source: Australian Department of Foreign Affairs and Trade

Australia also plays a unique role in the context of Asia's development with respect to the privatisation of infrastructure. As developed Asian countries begin to liberalise their markets and privatise infrastructure, Australia's reputation as a pioneer market for facilitating private investment into infrastructure will enable Australian governance frameworks, documentation, financing principles and methodologies to be adopted, recognising its pre-eminent role in setting 'best practice' standards in infrastructure in the region.

1.2.4 Technology Substitution

Rapid technological advancement and digital disruption is a key theme in Developed Asia leading to a wide range of opportunities, particularly demand for clean technology and 'Smart' technology. Further, with increased urbanisation and technological advancement, the introduction of Smart technologies that support urban infrastructure and make more efficient use of existing infrastructure while also protecting the environment have increased demand for these technologies. Environmental protection and responsible investment is a major investment theme that is expected to continue to drive deal flow throughout the region, especially in those regions with strong regulatory support.

For example, Singapore has embraced a new growth model for rapidly advancing digital technologies and automation. The strategy is intended to turn Singapore into a labour-lean economy with less reliance on foreign workers and growth based on innovation, digitalisation and continuous investment in skills. In 2014, the government announced plans to become the world's first Smart Nation, involving Smart Lighting and various Smart sensors to be coordinated by Singapore's GovTech agency. The Singapore government also announced its

commitment to 350 MWp of solar energy by 2020 – approximately 5% of projected 2020 peak demand.

The Hong Kong government is targeting a US$18 billion Smart City digital transformation to raise productivity growth and to address social issues. Four trials are being tested in 2017 by the Hong Kong government, the success of which may lead to significant foreign investment opportunities.

1.3 Country-Specific Considerations

1.3.1 Infrastructure Sectors Open to Foreign Investment

The table below shows the various sectors of infrastructure and highlights where infrastructure transaction activity has taken place in Developed Asia and where future opportunities are available for foreign investors.

Table 1: Infrastructure Sectors Open to Investment in the Developed Asian Nations

SECTOR	AUSTRALIA	JAPAN	TAIWAN	KOREA	SINGAPORE	HONG KONG
Renewable Energy	✓✓✓	✓✓	✓✓✓	✓	✓	×
Utilities	✓✓	×[1]	×	×	×[3]	✓✓
Water	✓✓	✓	×	×	✓	×
Transport	✓✓✓	✓✓	×	✓✓	✓✓	×
Ports / Logistics	✓✓✓	✓	×[2]	✓	✓	×
Commentary	Both State and Federal governments active in privatisations across all sectors	Planned privatisations in airports and other transport, water utilities and renewable energy	Renewable energy is key focus – no government privatisation program	Privatisation started in the late 1990s and has been focused only on transport assets	Various water asset PPPs, social and transport privatisations, and focus on solar PV development	Majority government-funded, some energy privatisations, currently no renewables focus

Notes: 1. Nine of the 10 Japanese utility companies are already listed on the Tokyo Stock Exchange; 2. The Japanese government uses a PPP delivery framework for certain social infrastructure projects, but this has historically been dominated by local players; 3. Largest utility, Singapore Power, is owned by Singapore's sovereign wealth fund, Temasek.

1.3.2 Australia

Australia was a pioneer in infrastructure privatisations with State and Federal governments privatising a range of assets over the 1990s. Australia is also a leader in the successful use of the PPP model to deliver infrastructure projects. However, there has still been an underinvestment in infrastructure projects, with an estimated funding gap of US$600 billion (approximately 50% of 2016 GDP).[2]

In June 2015, the Australian government implemented the renewable energy target (RET) scheme with a target for large-scale renewable generation of 33,000 GWh by 2020. This target requires doubling the amount of large-scale renewable energy currently installed so that circa 23.5% of Australia's electricity generation in 2020 will be from renewable sources, requiring an investment of approximately US$8 billion.[3]

The Australian Federal and State governments have embarked on major asset privatisation programs boosted by Federal government incentives to State governments. Proceeds are recycled into further infrastructure development. As a result, there continues to be significant transaction activity, driven by government deleveraging / privatisation and corporate capital recycling that is particularly evident in the transport sector.

1.3.3 Japan

Apart from the renewables sector, infrastructure investment opportunities in Japan are driven by planned government privatisations particularly in airports and water infrastructure. Japan has the highest debt-to-GDP ratio of any developed country in the world and the government has been revising policies to accommodate more private sector investments in the infrastructure sector. Further, regional governments are encouraged to recycle

[2] Infrastructure Partnerships Australia, 2014
[3] Australian Clean Energy Council, 2016

existing assets to free up capital for new projects and release their respective debt burdens.

Since the generation disruption caused by the Fukushima Nuclear Plant disaster following the earthquake in 2011, rapid steps have been taken to diversify Japan's energy sources away from nuclear energy, including the introduction of a feed-in-tariff scheme in 2012 and a government-set renewable energy target 22-24% of generation by 2030.[4] This presents a significant opportunity for private investment in renewable energy assets across Japan.

1.3.4 Taiwan

While the Taiwanese government is not active in infrastructure privatisations, the setting of a significant renewable energy target in 2009 (that was revised upwards in 2013 and 2015 then further supported by the election of a renewable energy-focused government in 2016) has opened the country to significant foreign investment opportunities in renewable energy. This is supported by a feed-in-tariff regime that has been in operation since 2009, with feed-in-tariff rates that are locked in at commissioning of a facility, underpinned by long-term power purchase agreements with the State-owned utility Taiwan Power Corporation.

Taiwan is recognised for its robust and stable governance and regulatory structure attracting a strong sovereign rating of AA-. It has a well-established framework for encouraging private investment and provides investors with transparency, a stable investment environment and clear regulatory objectives. Given the government's focus on renewable energy, reducing fuel-import dependency, exiting nuclear over time and building a sustainable low-carbon energy portfolio, new development projects present a significant infrastructure investment opportunity.

1.4 Conclusion

In a highly competitive and fully-priced global infrastructure market, it is increasingly difficult for infrastructure investors to find high-yielding opportunities. Large, core infrastructure assets in the traditional OECD markets of Europe and North America are offering lowered return projections due to extremely high levels of competition.

Developed Asia benefits from well-established regulatory regimes, strong macro-economic fundamentals, a supportive investment environment and relatively strong growth projections in a less competitive investment environment. With comparatively less focus on mid-market opportunities in Asia compared to large assets in other traditional markets, there is significantly less dry powder, suggesting less competition in the near term.

However, this is likely to change in coming years as investor demand grows and the search for high-yielding developed market opportunities pushes investors into new markets and the mid-market space. While investors look for yield in a highly competitive low interest rate environment, Developed Asian nations offer the potential to earn higher returns without taking on the same level of political risk of emerging economies.

Infrastructure investments in Developed Asia allow investors to benefit from the positive characteristics of the rapid growth being experienced in Developing Asia but with the downside protection of operating in a stable regulatory regime with transparent governance frameworks.

Further, Developed Asia offers a higher proportion of mid-market opportunities than other developed nations. With increasing deal flow and supportive regulatory initiatives, there is a real opportunity for investors to capitalise on the Developed Asia investment environment.

This feature article is a condensed version of a more in-depth article. If you are interested in accessing the longer-form version, contact Nicole McMillan at Nicole.McMillan@WhitehelmCapital.com

[4] Japan Energy Plan – Ministry of Economy, Trade and Industry, 2015