

Investing in ASEAN

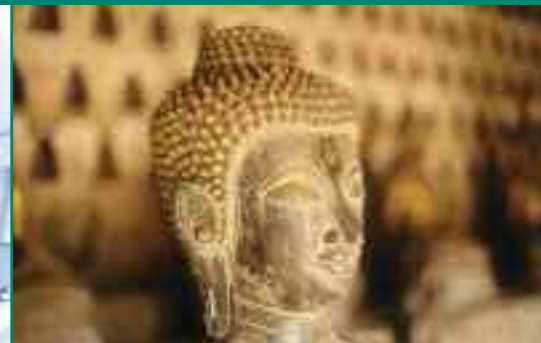
Association of Southeast Asian Nations

2017



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Allurentis is delighted to have been involved in partnership with ASEAN on this, the sixth publication and would like to thank all sponsoring organisations for their kind contributions. We are confident that it will raise awareness with all readers and prove to be an invaluable resource, especially for those wishing to become involved in the extraordinary business opportunities and growth prospects within the region.

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ASEAN striving to be at the forefront of global economic development



Since its formation, ASEAN has seen an underdeveloped region grow into one of the most dynamic drivers of today's global economy. As it marks its fiftieth anniversary in 2017, the Association's ten member countries are a significant focus of international investment as Southeast Asia's success story continues, following the formation of the ASEAN Economic Community (AEC).

The AEC that came into being at the end of 2015, provides a firm foundation for development in the region by providing the means for further integration of the member states' economies over the next decade.

The single market provided by the AEC, maps a route for an uninhibited flow of goods, services, investment, skilled labour and a freer flow of capital between all the member countries. Many benefits are likely to result, including access to a huge and expanding single market and a reduction in trade barriers.

There is a growing development of trade flows within Southeast Asia itself. Intra-regional trade with Indonesia, Singapore and Thailand in particular, is increasing and other markets are fast growing.

Expansion of intra-ASEAN trade has outpaced the growth of world trade in the past four years. This advance illustrates the benefits of a more connected, more harmonised ASEAN, which if it were a single country, would have the world's third largest population and one of the world's largest economies.

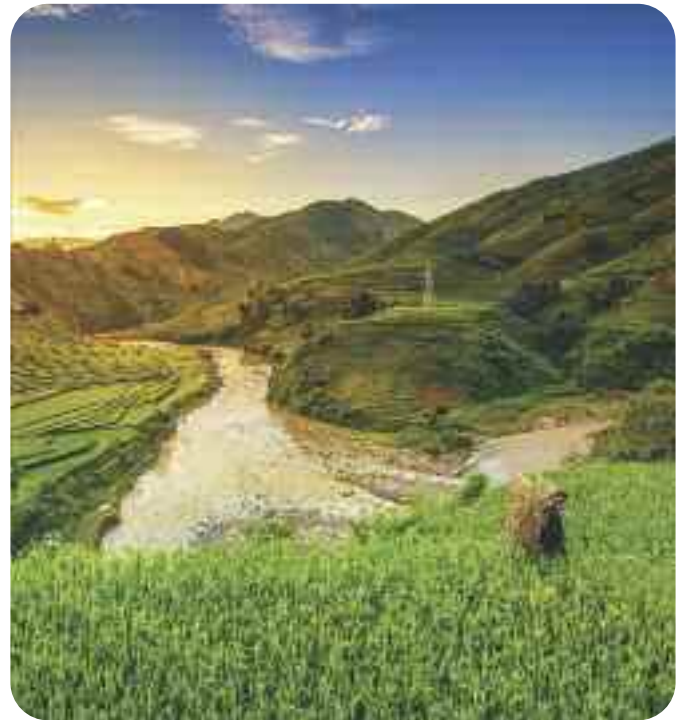
ASEAN's combined GDP stood at US\$2.43 trillion in 2015, firming up the region's position as a global economic powerhouse. Economic performance is poised to improve further within Southeast Asia, as the major economies of Indonesia and the Philippines, Vietnam and Thailand increase investments despite difficult international trading conditions. While global headwinds weigh on short term growth prospects, Southeast

Asia's own economic outlook is projected to remain resilient, with an average GDP growth of 4.8% predicted in the region during 2017.

Prospects for economic growth and private investments are enhanced by a proliferation of trade and investment agreements with other parts of the world. While these will be implemented over several years, they will help to stimulate investment in the near term as businesses prepare for expanded trade opportunities.

ASEAN's economic vision is ambitious and stretches beyond the AEC accord. In addition to establishing a single market in a multitude of areas and sectors, the intention is to proceed with the integration of its many different free trade agreements into one group. The goal is to establish an umbrella trade deal known as the Regional Comprehensive Economic Partnership (RCEP) with Australia, China, India, Japan, South Korea and New Zealand. The round of talks on RCEP, which began in May 2013, aims to reach an accord which will eventually create an integrated market across the Asia-Pacific region of some 3.4 billion people.

Regional expansion in Southeast Asia by multinational enterprises has continued to be robust through 2016. As a result, ASEAN remains a major destination for global FDI with the region receiving US\$120 billion, representing almost 16% of world FDI among developing countries in 2015.



Investors recognise the potential gains from an increasingly integrated and vibrant economic area, where GDP growth has surpassed any other region in the world consistently over the last decade and continues to do so.

Becoming the workshop of the world with incomes rising, ASEAN is a consumer market. Wealth creation is supporting private consumption as the region's countries strive to achieve middle and higher-income status in the years ahead. Vietnam, for example, has become the fastest growing automobile market in Southeast Asia.

The region is firmly set to be at the crossroads of global business, as it invests in the digital age and builds vast new connectivity including modern ports, high speed railways, airports and other transport infrastructure.

Much of the region's investment in infrastructure is being carried out through PPP ventures, a trend that is likely to be enhanced over the next few years.

Infrastructure investment is gaining momentum throughout ASEAN. In Thailand, a US\$51 billion masterplan focuses on a range of projects including motorways, railways, mass transit rail systems, airports and seaports. Malaysia is also committed to push forward with mass transit systems and a high speed railway linking it with Singapore. Huge projects to improve transportation in Indonesia will be a major boost to the country's economy once carried out. The rewards will also be immense elsewhere. In Myanmar, it is estimated that transport costs could be reduced by one-third once upgrades to the country's roads and railways are made and investments are in place for river transport infrastructure.

Improved connectivity will accelerate economic expansion. Southeast Asia already ranks as a global manufacturing hub but this role is also evolving. The region has traditionally had the advantage of a low cost labour market, which has helped draw FDI to Cambodia, Lao PDR, Myanmar and others in the region. However, ASEAN is fast establishing credentials as a base for high-tech industries and value added manufacturing.

Southeast Asia's industries increasingly feature high-technology ventures including aerospace, automotive, pharmaceuticals and bio-scientific. In addition, more than half of ASEAN's population of 630 million is under the age of 30. This youthful demographic profile is reflected in an appetite to embrace new technology and the new industrial revolution that is due to replace old business models and drive fresh approaches to virtually every economic activity.

ASEAN faces challenges and these will require a cooperative effort to overcome them. Within a group of nations of such different ethnicities, cultures, languages, religions and political histories, each step towards integration has involved lengthy discussion and will continue to do so.

Not every detail was addressed by the end of 2015, but the evolving AEC is a powerful declaration of intent and promises to boost investment as well as increase prosperity. Integration of the member states is making the region a more powerful engine in the global economy.

Fifty years on from ASEAN's formation, the Philippines will serve as the Association's Chair in 2017. Looking ahead, a vastly diverse region of ambitious states, has an opportunity to build on its economic and social advances to vastly improve its citizen's lives and consolidate Southeast Asia as an integral part of global prosperity.



H.E. Le Luong Minh: Secretary-General of ASEAN



H.E. Le Luong Minh,
Secretary-General, ASEAN

ASEAN's commitment to the Community building process and greater economic integration is further strengthened under ASEAN Community Vision 2025 "Forging Ahead Together" and ASEAN Economic Community (AEC) Blueprint 2016-2025. Both of these chart the direction for enhanced economic integration that will move ASEAN towards a more integrated and cohesive regional economy over the next ten years.

ASEAN's growth and development have been anchored firmly on the principles of an open regional economy and engagement within and with its external partners. As reflected in ASEAN Economic Community (AEC) Blueprint 2016-2025, ASEAN will continue to advance its economic agenda through further liberalisation of its trade and investment regimes, addressing across-the-border and within-the-borders trade restrictive measures. The new ten-year plan not only enhances deeper regional integration in trade and investment, but will also see progressive development of its capital market, improved governance, more responsive regulations, sustainable use of its resource endowments, better

connectivity and upholding of ASEAN centrality. A stronger and more pro-active AEC will enhance prosperity and equitable development for the people of ASEAN and continue to put ASEAN in a leading position in global economic development and growth.

The ASEAN Community is a community of great opportunities as it fosters its cross-border linkages and external links with different partners, including through FTAs such as the Regional Comprehensive Economic Partnership (RCEP). Its dynamism and young demographic profile coupled with pro-growth and investment policies will continue to set the pace for greater trade and investment flows in the region. Despite more pronounced inward-looking policy shifts recently in some parts of the developed world, to fulfill its vision of a community which promotes equitable development and inclusive growth benefitting all its people, ASEAN will continue to progress its regional integration agenda and its openness to trade and investment as part of its overall strategy towards sustained high economic growth and resilience.



US-ASEAN Business Council



Alexander Feldman,
President & CEO,
US-ASEAN Business Council

For more than 30 years, the US-ASEAN Business Council has been at the forefront of advancing the business relationship between the United States and Southeast Asia, and I am pleased to report that there has never been a better time for American businesses to reap the benefits of the tremendous opportunities and potential ASEAN has to offer.

On 31 December 2015, the ten member nations of ASEAN came together to create the ASEAN Economic Community, a single market of 640 million consumers, linked by the ASEAN Free Trade Area and, eventually, the ASEAN Customs Single Window, to create a free flow of goods and services. This development in global supply chains means opportunities for small and medium enterprises (SMEs) and multinationals alike.

Collectively, ASEAN is the second fastest growing economy in Asia after China, expanding by 300% since 2001, and exceeding the global growth average for the past ten years. ASEAN is strategically situated between China and India, and its network of free trade agreements covers more than 50% of the world's population. US investors have already made

clear their belief in the business opportunities which ASEAN offers; ASEAN is the largest destination in Asia for US Foreign Direct Investment (FDI), hosting more US FDI than China, Japan, and India combined.

ASEAN's economy is currently ranked the seventh largest in the world, with a combined GDP of US\$2.4 trillion and is projected to rank as the fourth largest economy by 2050. The ASEAN Connectivity Master Plan established cross-border linkages, helping to bring member nations together by narrowing the gaps in economic development and standards of living across the board.

As ASEAN grows and steadily fulfills its connectivity goals, opportunities exist across a wide range of industry sectors. The region needs billions of dollars in infrastructure investment; not just traditional ports, roads and bridges, but support for the building out of financial systems and digital networks, ICT, education, agriculture, and healthcare frameworks.

I sincerely encourage you to take the time to learn what ASEAN can offer you. Visit our website at www.usasean.org to learn more.



EU-ASEAN Business Council



Donald Kanak, Chairman,
EU-ASEAN Business Council

The key headline which emerged from the EU-ASEAN Business Council's (EU-ABC) Business Sentiment Survey in 2016 was, *optimism about ASEAN's future remains as strong as ever*. The survey of European businesses operating in Southeast Asia clearly reaffirmed the ASEAN region as a bright spot in the global economy and a focus for European investment going forward.

At a time when similar surveys of businesses in other Asian markets were showing a more cautious approach and dampening investment expectations, European businesses in ASEAN overwhelmingly expect their profits to grow and their operations to expand over the medium term. More than two-thirds of the respondents to our survey said that they were planning to expand operations and increase employment in ASEAN over the next five years – good news for jobs and investment.

There is clear confidence from European business about the region, driven by the growth potential of ASEAN markets which are powered by large, youthful populations, strong consumer sentiment, high rates of urbanisation and skilled workforces. Additionally, ASEAN member states are embracing external trade as a driver for growth and are demonstrating their commitment to enhancing economic ties among themselves and with the rest of the world.

Bilateral FTA discussions between the EU and the Philippines and Indonesia are now underway which, when coupled with the concluded deals with Singapore and Vietnam, will form the foundations of a comprehensive region-to-region FTA between ASEAN and the EU – something that would be a significant game changer for both regions and something that European businesses want to see. ASEAN itself continues to make progress with its own ASEAN Economic Community (AEC) objectives, albeit at a slow and steady pace, but progress nonetheless.

There is a clear and mutually beneficial trading and diplomatic relationship between Europe and ASEAN; a relationship that we fully expect to continue to develop and grow as the AEC is developed and as the importance of ASEAN to the world economy continues to be recognised. The EU-ABC will be doing all that it can to help this relationship further, and to support ASEAN and its member states, in both their development and the full implementation of the AEC. With trade growth slowing in some of the world's largest economies, China coping with industrial overcapacity and the American economic debate becoming increasingly inward looking, governments and businesses in ASEAN have a unique opportunity to work together to plan a course towards sustainable and inclusive growth.



UK-ASEAN Business Council



Kevan Watts, Chairman,
UK-ASEAN Business Council

ASEAN was established in 1967, and so will celebrate its 50th anniversary in 2017. Underpinning ASEAN and set out in the 1976 Treaty, were fundamental principles that still hold true 50 years later - namely cooperation in the economic, social, cultural and educational fields to promote regional peace and stability. However, in 2017, ASEAN is not just integrating within itself, but into the rest of the world.

With the UK's decision to leave the European Union (EU), there has never been a greater need to build a strong partnership with ASEAN – both with the institution itself and its ten member states. ASEAN's economy is on target to eclipse Japan's and be the world's fourth largest 'single market' after the EU, US and China, within ten years. This means UK companies need to be looking to ASEAN as an export destination, regardless of all the issues surrounding the decision to leave the EU.

ASEAN@50 is a community of nations which have economies growing year-on-year and they are flexing their international muscles, sucking in FDI and investing overseas in a whole range of sectors. The

ASEAN Economic Community (AEC) is now a reality, but will continue to evolve and move to even greater liberalisation through continued negotiations. The prospect of ASEAN's ten dynamic markets, better connected and harmonised as a single market, should make ASEAN an extremely attractive investment destination for UK companies.

It is much harder to win business in ASEAN from the UK. The biggest investment a company will make in ASEAN is its time and so visiting the region several times will be key to success. Experience ASEAN, feel the buzz from the energy across the region, explore the opportunities and form lasting partnerships in one of the world's fastest growing regions.

The UK-ASEAN Business Council's (UKABC) key role is to raise the awareness to UK companies of ASEAN's diverse, high growth markets. Through the UKABC's signposting of in-depth information, relevant events, visits to the markets and connections to local delivery partners, UK companies are in a better position to make informed choices about their investment and export strategies in ASEAN.

Breaking new ground in global treasury operations with HSBC

Thai Union Group Public Company Limited

When the world's largest canned tuna producer wanted to streamline liquidity flows and cut funding costs to support a global expansion from its home base in Thailand, they turned to HSBC for help.

The company

Since its inception in 1977, the Thai Union Group has grown into a leading global seafood processor and exporter, widely regarded as the largest canned tuna producer in the world. In 1994, the company listed on the Thailand Stock Exchange with a market capitalisation in excess of US\$2.5 billion. While the company is perhaps best known for its canned tuna business, Thai Union also processes a host of seafood such as shrimp, sardines, mackerel, crab, salmon, scallops, herring and even chicken-based products. In addition, they produce a wide range of ambient shelf-stable goods, value-added and pet food products, and a host of chilled and frozen seafood.

Today, Thai Union manages a rich portfolio of trusted global brands including Chicken of the Sea in the US; John West, Petit Navire, Mareblu, Parmentier, King Oscar, Rügen Fisch in Europe; and Fisho, Bellotta and Marvo and Sealect in Asia. The organisation owns production facilities in 12 countries across five continents including North America, Europe, Africa, Oceania and Asia, and sources seafood from the Atlantic, the Pacific and Indian Oceans. In addition, the company's diversified sourcing and processing strategy provides them with the flexibility to optimise their

global supply chain in order to deliver top quality products in a timely and cost-efficient manner to consumers all over the world.

In 2015, Thai Union Group reported a record year for sales revenue, reaching an all time high of US\$3.57 billion, which represented a 3.1% increase over the previous year's US\$3.46 billion revenue. The company continues to drive growth through three key strategies: organic growth, food innovations and mergers and acquisitions. In 2015, Thai Union engaged in three new businesses: Orion International, a major lobster supplier in the US; a joint venture with Savola Foods Company, the largest consumer goods producer in the Middle East; and most recently, an investment in Rügen Fisch, Germany's leading shelf-stable seafood company.

The challenge

As the organisation continued to expand all over the world, it became increasingly difficult to maintain visibility and control over overseas operations, streamline liquidity flows and optimise funding costs.

Most notably, the treasury department was faced with growing inefficiencies due to largely manual transfer processes, which meant the flow of funds was tracked by hand in order to ensure the money arrived in the designated account on time. Not only was this process extremely time consuming and prone to human error, it also prevented the

company from making transfers as often as they would have liked, which in turn meant they were unable to maximise internal funding, resulting in higher loan costs.

Having partnered with HSBC since 1996, Thai Union was keen to explore how they could further work with the bank to improve liquidity in their global operation. Already armed with a working knowledge of the company's treasury department, HSBC and the bank's team of liquidity experts in Singapore and Thailand set about developing an in-depth understanding of the existing structure and challenges the company faced, with a view to streamlining the management of fund flows across continents and between time zones to improve working capital efficiency.

The solution

In order to help overcome the obstacles faced by Thai Union and leverage the company's impeccable reputation in Thailand, HSBC came up with an innovative solution which completely transformed the treasury department. The solution also created the country's first cross-border sweeping arrangement, enabling the organisation to sweep true end-of-day balances into the Bangkok treasury department automatically, streamlining liquidity flows and freeing up funds stuck in the business.

HSBC provided a unique cross-border sweep featuring zero balance for British pound, US dollar and Euro transactions, which were fully automated using a Global Liquidity Engine (GLE) and HSBCnet – HSBC's online banking platform. In addition, this platform enabled the treasury department to track intercompany loans, calculate interest and withholding tax automatically.

Because the treasury function is firmly located in the group's headquarters in Bangkok, HSBC also guided Thai Union to obtain a Treasury Centre Licence from the Bank of Thailand in June 2015, and an International Headquarters Licence (IHQ) from the Ministry of Finance in August 2015.



The Bank of Thailand Treasury Centre Licence offers a host of benefits, reducing transaction costs, increasing efficiencies and helping the holder gain a competitive edge. However, more specifically the licence enables the company to perform tasks such as payments and collection, netting, FX management and liquidity management on behalf of the entire group of companies, and certain functions such as cross-border cash concentration are not permitted without it.

Similarly, the IHQ from the Ministry of Finance offers Thai Union a host of benefits, most notably in the form of attractive incentives including a Corporate Income Tax (CIT) exemption on qualified service income received from overseas, a reduced CIT rate of 10% on the qualified income received from an associated enterprise in Thailand, and exemption on withholding taxes pertaining to dividend and interest payments to overseas entities.

During the implementation of this solution, Thai Union executives in Bangkok and further afield worked closely with HSBC's dedicated local and regional implementation managers to help steer this complex project. The project manager not only coordinated with each of the diverse countries involved, but also acted as the main point of contact in terms of documentation, implementation, testing and training, right up until the time to service was running smoothly. Even after the liquidity solution was fully operational, the implementation manager continued to provide ongoing support, helping to solve any teething problems which arose as the treasury team became better acquainted with their new solution.

The results

As a result of HSBC's innovative solution, Thai Union was able to optimise efficiencies in treasury management by automating a host of previously manual tasks, unlocking cash that was sitting in accounts all over the world to help boost internal funding and increasing visibility across the Group.

With the solution fully implemented, the treasury department released approximately US\$40 million from its overseas subsidiaries, sweeping this cash back to the Bangkok HQ, significantly reducing company debts in the process. Since then, the group has also saved on average US\$800,000 to US\$1 million typically spent on external borrowing costs each year, making a considerable saving for the company. And finally, because the treasury department automated many previously manual processes, the team reduced the propensity for human error and freed up time to focus on other, more important projects.

A first for the country, this ground breaking partnership between Thai Union Group and HSBC also earned the company a new award. The structure was named Best Forecasting Strategy at the Corporate Treasurer Awards 2015.

At a glance

- 1 Established in 1977, the Thai Union Group is a leading global seafood processor and exporter, widely regarded as the largest canned tuna producer in the world.
- 2 In 1994, the company listed on the Thailand Stock Exchange with a market capitalisation in excess of US\$2.5 billion.
- 3 The company produces a wide range of ambient shelf-stable goods, value-added and pet food products, and a host of chilled and frozen seafood.
- 4 Thai Union Group owns production facilities in 12 countries across five continents, sourcing seafood from every ocean in the world.
- 5 HSBC worked with Thai Union to streamline the management of fund flows across continents and between time zones in order to improve working capital efficiency.
- 6 The bank's innovative solution created the country's first cross-border sweeping arrangement.
- 7 The solution enabled the company to sweep true end-of-day balances into the treasury department automatically.
- 8 HSBC also helped the company obtain a Treasury Centre Licence from the Bank of Thailand and an International Headquarters Licence from the Ministry of Finance.
- 9 Once the solution was implemented, a host of previously manual tasks were automated, unlocking cash sitting in accounts all over the world to help boost internal funding.
- 10 The structure was named Best Forecasting Strategy at the Corporate Treasurer Awards 2015.

YOU NEVER KNOW HOW FAR A CONVERSATION WILL TAKE YOU.

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HSBC 

Financial integration continues within ASEAN

A key element in the development of the ASEAN Economic Community (AEC) is the establishment of monetary and financial integration. Given the different stages of economic development among member states, the process is complex and taking time to achieve.

The strategy is designed to facilitate much greater access to banking, capital markets and insurance. It is a bold initiative which calls for a range of reforms. These involve removing restrictions to the intra-ASEAN provision of financial services by its financial institutions.

The plan calls for building capacity and infrastructure to develop and integrate capital markets, in order to liberalise the flow of capital across the region. Other elements include harmonising payments and settlements systems and mutual recognition of the professional qualifications of those working in different member states' financial systems.

Financial liberalisation involves the balancing of regulatory standards, market conduct practices, disclosure requirements, and licencing conditions. This complicated process is ongoing and recognised as necessary in order to consolidate the economic progress achieved in the region.

In capital markets, observers consider that ASEAN has made sound progress on integration. Thailand, Malaysia and Singapore have put in place concrete measures to expand market linkages and harmonise disclosure requirements through the introduction of ASEAN Disclosure Standards.

Investment procedures have been streamlined by these three countries with the ASEAN Trading Link. Set up in 2012, this link provides a single gateway to stock exchanges in all three countries, allowing shares to be purchased through a local stockbroker in all the markets. Issuers can also sell their shares in these markets without having to follow different procedures in each country. The launch of the ASEAN Collective Investment Scheme also allows authorised fund managers to conduct a cross-border offering of funds.

ASEAN members have also agreed to liberalise the cross-border supply of marine and aviation insurance, in addition to goods in international transit insurance. The move will allow companies to offer cover across ASEAN member states helping to reduce costs and encouraging intra-regional trade.

According to the Managing Director of Singapore's Central Bank, Ravi Menon, deeper financial integration in the region will yield substantial benefits for ASEAN economies by helping to mobilise surplus savings more efficiently and channelling them to productive investment opportunities in the region.

Myanmar, is striving to work out how to re-engage with global finance and to rebuild a financial sector that was once the most sophisticated in the region. Drawing such institutions back to Myanmar is going to be a long process constrained by weaknesses in institutions and infrastructure.



Singapore and Malaysia have the most developed financial markets in the region and are expected to lead the integration of ASEAN's banking market.



Singapore and Malaysia have the most developed financial markets in the region and are expected to lead the integration of ASEAN's banking market. One reason is that banks in both these countries have very little scope for expansion in their domestic markets and are keen to expand beyond the region.

As yet, there are only seven ASEAN banks with region wide operations. These are Bangkok Bank, Maybank and United Overseas Bank, each with branches in up to eight other ASEAN countries. However, global commercial banks have a substantial presence in many parts of the region. Standard Chartered has subsidiaries in seven ASEAN countries for example, and a representative office in three. Citibank and HSBC also have subsidiaries in three member countries.

Measured by the size of their assets, most banks are still small, which impacts on levels of efficiency and international competitiveness. The Asian Development Bank considers that the way ahead for ASEAN financial institutions involves developing and expanding their assets to be able to compete against global players in international financial markets.

Despite this considerable challenge, ASEAN Finance Ministers and Central Bank Governors are determined to press ahead with liberalisation in the post AEC phase, leading up to 2020.

Central Bank Governors agreed an ASEAN Banking Integration Framework (ABIF) in December 2014. The ABIF is aimed at ensuring a more stable flow of funds and increasing cross-border trade and investment. Under the framework agreement, ASEAN banks can sign reciprocal bilateral deals to operate in a partner country on the same terms as domestic financial institutions.

A key aim of the ABIF, is to allow banks to establish operations in other member countries to support regionally based companies wanting to expand their business operations into other ASEAN countries. It provides a platform for qualified banks in the region to enjoy greater market access and operational flexibility.

The initial objective of the ABIF is to achieve a more integrated banking market, spearheaded by Qualified ASEAN Banks (QABs), which have the potential for a meaningful presence across ASEAN countries. Any two countries may enter into reciprocal bilateral agreements to provide QABs with greater market access and operational flexibilities consistent with those of domestic banks in their respective host countries.

Specific qualifying criteria for QABs will be agreed on a bilateral basis and focus on financial capacity, quality of governance, track record and the business plan of those banks seeking qualified status.

Acknowledging the different levels of readiness among members, the ABIF process specifies two stages: a multilateral stage and a bilateral one. The multilateral stage will establish ASEAN-wide guidelines, while the bilateral stage will involve negotiations between countries on the admission of QABs. The Framework will be implemented at two speeds: first among the five larger ASEAN economies, and later including the others as their own financial markets mature and they develop regulatory structures.

This will allow five members – Indonesia, Malaysia, the Philippines, Singapore and Thailand – to be the first to implement the Framework by 2020, to be followed by other member states – Brunei, Cambodia, Lao PDR, Myanmar and Vietnam – subsequently.

The larger economies are already moving forward in negotiating bilateral agreements. Bank Indonesia, for example, and the Financial Services Authority of Indonesia and Central Bank of Malaysia, have signed an agreement outlining the measures the two countries will implement under the ABIF. The agreement also sets out the definition of QABs and identifies the market access and operational flexibilities that they can have.

The ABIF platform is seen as complementing the broader economic integration of member states. More importantly it will help expand a group of strong pan-ASEAN banks with the scale and the capability to compete alongside global banks. “As ASEAN becomes an economic powerhouse, so must our banks,” says Ravi Menon.

The implementation of ABIF is also designed and expected to lead to stronger regulatory and supervisory arrangements, leading to more effective surveillance and supervision of QABs. Bilateral negotiations between various member states are expected to become catalysts for



enhancing bank supervision and regulation in individual jurisdictions, in anticipation of an increasingly integrated banking system.

As ABIF policies are adopted, stronger banks will be able to expand through regional mergers and acquisitions, enabling them to compete more effectively in the global financial market.

As banking integration takes shape this will provide a substantial contribution to both economic growth and financial inclusion. An integrated banking sector means greater competition and improved quality of services, which in turn will spur more trade and investment. In addition, SMEs and those without any form of banking will be provided with better access to financial services as the lending capacity of banks improves.

Working with banks in ASEAN

United Overseas Bank Limited (UOB)

ASEAN offers a wide range of opportunities and vast potential for growth with its positive demographic trends, diverse cultures and markets. The region continues to deepen ties through the ASEAN Economic Community (AEC), complemented by the progress of key free trade initiatives such as the Regional Comprehensive Economic Partnership (RCEP). These factors continue to make ASEAN an attractive destination for investors.

Access to financial services in the region is crucial for success and ASEAN's diverse financial markets and regulatory environment poses complexities and challenges for those outside the region. Investors generally seek support from home country relationship banks for entry into foreign markets. However many non-Asian banks have been reducing their footprint in ASEAN as part of an overall focus back to core markets, leaving investors with fewer modes of support.

Nevertheless, investors can still manage their banking relationships in a way that helps mitigate these practical concerns:

- **Diversity in financial markets:** Product offerings vary widely within ASEAN, from the sophisticated markets of Singapore and Malaysia, to the up-and-coming economies of Myanmar and Vietnam. In less mature markets, investors should consider a combination of onshore and offshore products that will meet the overall needs of the business.

For example, a business looking to enter Myanmar may consider securing longer term funding in a liquid currency (USD, GBP, EUR, CNH, JPY, etc.)

for its investments into Myanmar from Singapore, and supplementing this with a local working capital facility in MMK (Kyat) for its ongoing operations. This takes advantage of the liquid currency markets in Singapore and its expertise in transferring offshore funds into Myanmar, whilst riding on the strength of the local Myanmar banks in accessing the liquidity of a restricted currency.

- **Local currency management:** Many ASEAN countries have currency restrictions following the 1997 Asian financial crisis and subsequent regulatory changes. As a result, investors will have to manage larger pools of local currencies and face the challenge of hedging relatively illiquid currencies in the international market. It is advisable to tap on the expertise of local banks when understanding convertibility restrictions and exploring potential offshore solutions.

For example, a business investing in Indonesia will have to manage IDR (Rupiah) for its local receipts and payments. Working with a bank that has a wide local footprint will enable seamless local cash management and access to competitive hedging solutions through its economies of scale in dealing with IDR. Subject to local currency regulations, currency hedging for major ASEAN currencies may be offered out of key ASEAN centres, such as Singapore. This may act as a supplement to complete a currency hedging strategy.

- **Counterparty risks:** Treasurers are increasingly sensitive to bank counterparty risks, and frequently set exposure limits against banks as

part of the company's overall risk management framework. Investors should consider working with a local bank to take advantage of its local reach, complemented by a regional or international bank with which it can offload or supplement its counterparty risk limits.

For example, an investor in Thailand may require the services of a core Thai bank for its local operations including deposit accounts and THB (Baht) hedging. However, due to unfamiliarity with Thai banks, the investor may wish to cap its exposure to the bank. When the limits against its core bank are reached, excess funds can be swept into a well-rated secondary bank in Thailand or ASEAN. Supplementary THB hedging can also be put in place with the secondary bank to enable counterparty limits to be released with the core bank.

- **Enabling regional banking:** As investors grow their presence in ASEAN, managing a wide range of stand-alone banking relationships can be unwieldy and time consuming. Even at the early stages of an investment, it is worth engaging with a pan-ASEAN bank to develop the foundations for regional growth. Cross-border banking is then able to evolve in a controlled manner together with onshore banking, to meet the requirements of a growing business.

For example, an investor looking to enter into Singapore, Indonesia and Vietnam in the longer term should engage with a regional bank to determine a long term financing solution for its capital requirements in the region. A regional working capital facility can then be set up to support the growth of its onshore manufacturing facilities in each of the three countries.



In summary, investors should view financial services as a pan-ASEAN system to support their regional aspirations. The combination of strong local banks, complemented by regional banks that can provide cross border expertise, will enable investors to establish a solid foundation for growth in ASEAN.

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An aerial photograph of Southeast Asia, showing the Malay Peninsula, Sumatra, and the Indonesian archipelago, set against a blue sky background.

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Will ASEAN become global mobility's region of choice

Raj Mann, Immigration Manager, Berry Appleman & Leiden (BAL)



Raj Mann

Businesses have traditionally seen Europe, the Middle East and Africa (EMEA) and North America as the ideal destinations for their global talent, in part, because of the relatively transparent and stable immigration policies of these regions. However, the recent political climate has altered this perception. Tightening of border security owing to increased terrorism fears and the Syrian refugee crisis; the result of the UK's referendum on Brexit; rhetoric regarding immigration during the US Presidential election, all of these recent events will certainly affect business immigration in the two regions, but how? Will Brexit trigger similar referenda across the European Union limiting free movement and trade? Will US inbound immigration policy take a different direction under the new administration? In both regions, significant restrictions on immigration are a real possibility and what such changes will mean for business immigration, is uncertain.

In light of these potential changes, many companies may be looking to alternative locations where they can place

their talent, including Southeast Asia, which has traditionally been seen as a comparatively uncertain region, where immigration officers apply a greater degree of subjectivity to the interpretation and, subsequent implementation of immigration law. This discretionary application of immigration policy makes it somewhat challenging for companies to plan for large scale mobility programmes. For example, Indonesia frequently alters its practices and implements additional requirements and rules with very little notice or transition period. What is set out in law and what occurs in practice often differ significantly. Further, unlike EMEA, which is a region that enjoys a free movement directive, there is no comparable intra-ASEAN regional agreement on free movement.

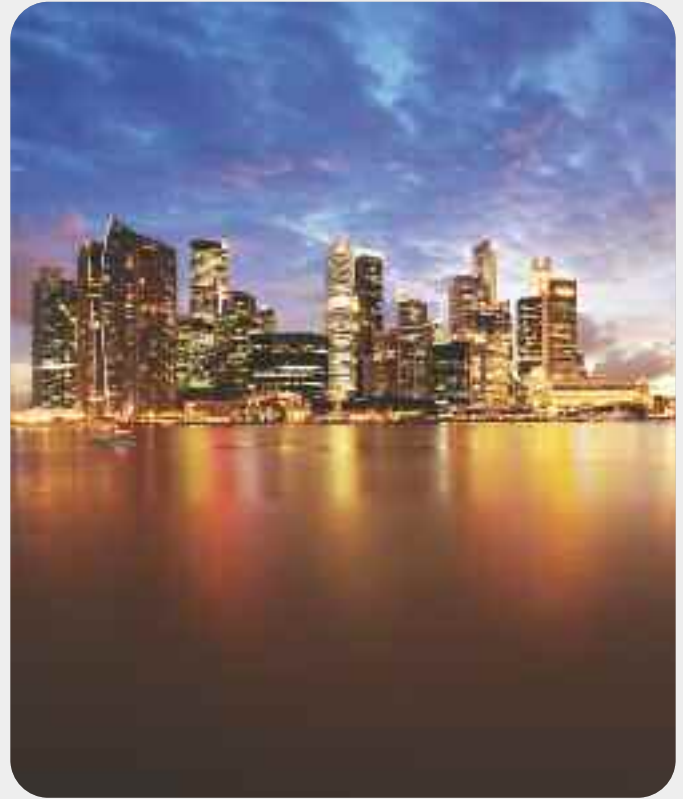
While EMEA and the US become increasingly unpredictable, the climate in Southeast Asia is also shifting. There has been a noticeable change across many jurisdictions throughout the region toward protectionism of local workers. As an example, Singapore

- a key location and headquarters for many multinational companies, because of its relatively straightforward and pro-business immigration system - has, since the implementation of the Fair Consideration Framework in August 2014, shifted towards a far more protectionist position regarding its local labour force.

Earlier in 2016, the Ministry of Manpower (MOM) began to actively scrutinise the hiring practices of sponsoring companies and whether they were embracing and implementing MOM's objectives of "nurturing their Singapore core" as well as whether they are "relevant to Singapore's economy and society". The Tripartite Alliance for Fair and Progressive Employment Practices now assesses sponsoring companies in Singapore, according to three criteria in relation to their Singaporean core. This assessment is aimed to identify "triple weak" companies which have 1) a weak Singaporean core; 2) a weak commitment to nurturing their Singaporean core in the future; and 3) a weak relevancy to the economy and society of Singapore.

In Singapore, the MOM has already served notice on more than 100 companies identified as "triple weak", which will have a direct impact on the ability of these companies to sponsor skilled foreign talent in Singapore. MOM will also require such companies to improve their human resource practices or risk having their work-pass privileges suspended. Applications for new Employment Passes for existing sponsored local talent could also be negatively impacted.

This move towards protectionism is not unique to Singapore within the region. Indeed we are also seeing an increase in protection of the local



workforce in Indonesia, with the continued focus on the upskilling of local employees and emphasis on the local-to-foreign-worker quota. Thailand also has a strict protectionist quota system in place, where sponsoring companies must ensure employment of four local workers for every foreign worker they wish to sponsor. This quota system can prove particularly difficult to manage, given the unpredictability of employee attrition rates.

What does this mean for business?

The increased scrutiny of the ASEAN region's governments regarding hiring practices is noticeable. They are especially concerned about whether



Given the global political climate, Southeast Asia is becoming a key region for multinational companies looking to place their employees.



human resource teams have made sufficient attempts to hire local qualified applicants, before filling positions with skilled foreign workers or graduates. This new emphasis on scrutinising employment based visa applications may result in longer processing times. The Singapore Government has taken a strong protectionist position and is directly addressing concerns about concentrations of foreign workers in certain companies and business sectors. Increasingly, there is a real expectation that companies wishing to sponsor foreign skilled workers, first demonstrate that they have taken reasonable efforts to hire local talent in order to ensure fair employment opportunities and practices.

Companies across the region are experiencing a spike in the number and types of requests for additional information which immigration authorities are making on a case by case basis. These requests seek information about how the sponsoring company's HR and recruitment teams filled the role, the advertisements that were placed and the wording used, whether any local workers were shortlisted and interviewed (and requests to review the resumés that were submitted and rejected), and why local candidates who applied were deemed less suitably skilled than the foreign candidate selected for the role. More

and more, companies across the region are also being asked to provide details of their local workforce as well as written confirmation of their local hiring plans.

In the future, the global mobility teams and HR Departments of companies based in the region, should ensure that they have robust hiring practices in place that emphasise identifying local talent. Given the global political climate, Southeast Asia is becoming a key region for multinational companies looking to place their employees. It is therefore critical that companies cultivate strong partnerships with governments across the region. Companies can do this by implementing corporate processes and practices which demonstrate a commitment to looking first to the local labour market for skilled workers, as well as an awareness of the diversity and foreign-to-local ratios of their current employee population. Southeast Asia may well become the region of choice for top professional talent; however, given the increasing protectionism of local talent, together with the often discretionary application of immigration rules, planning for large scale mobility programmes across the region will not be without its challenges.



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Half a century on: ASEAN is only getting better with age

In the 50 years since its nascency, ASEAN has evolved into a vibrant economic community and global trading hub. The organisation comprises 10 neighbouring countries and 9% of the world's population, which, combined, form the third-largest economy in Asia and seventh worldwide – projected to propel to fourth by 2050¹. Boasting a rising middle class, robust population growth in an ageing world and fast technological uptake, it is one of the largest growing consumer markets in the world, and Deutsche Bank is proud to have been an early provider and continued supporter of its growth. In fact, Deutsche Bank has been present in ASEAN since its birth in 1967, when the Bank established its first Malaysia office.

ASEAN's current demographic, with its median age of 28.9, has a market edge – free from the fetters of more traditional thinking, eager to embrace new business models and quick to drive momentum on digitalisation. And as homegrown businesses grow and member economies progress – in part by moving towards higher value-add industries such as technology and robotics – ASEAN moves towards its 2025 blueprint by looking to improve competitiveness, business environments and integration.

However, corporates operating in ASEAN – and most MNCs now have at least one link of their supply chain there – or those looking to do so, should account for the diversity across the member states; including different currencies, structures and regulatory environments, not to mention developmental, historical, infrastructural and linguistic divergences, and the significant complexities these can create. Moreover, new uncertainties surrounding globalisation, tighter monetary policies, China's slowing growth and other key geopolitical changes will continue to change ASEAN's regulatory, monetary and operating environment.

Despite its unique challenges, ASEAN will offer increasing opportunities as it enters the second half of its first century. Those looking to flourish in the region must ensure they have the right banking partner to take a holistic approach that allows for future scalable growth. This partner must have a deep understanding of the business landscape stemming from a comprehensive on-the-ground presence, work closely with regulators and policy makers, and continuously invest in innovation and technology to stay relevant in a fast-developing landscape.

Deutsche Bank is one such provider that can help corporates steer through this turbulent but potential-rich market. Through its global cutting-edge capabilities and deep understanding of ASEAN, and strong partnerships with local banks and country regulators alike, the Bank is best-placed to offer expert advisory and capabilities to manage payments, collections, liquidity and foreign exchange and facilitate the development of strong supply-chain relationships.

To ensure a holistic banking experience, we continue to invest in digitalisation and automation across the ASEAN region; for example, we are developing ASEAN currency FX solutions, and contributing distributed ledger technology insights to securities servicing, payment and trade finance, while in large geographies like Indonesia, we partnered with a local player to enable the wider collection of payments through supermarket chains. Now is the time for all players committed to the region to reimagine the road to ASEAN 2025 together.

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¹ <http://www.mckinsey.com/industries/public-sector/our-insights/understanding-asean-seven-things-you-need-to-know>

Helping clients achieve their business goals in ASEAN. Today and for many years to come.

Deutsche Bank's engagement in ASEAN is part of a long-term strategy. We have deep roots here that go back 50 years. This has given us a depth of local knowledge that, when coupled with our global expertise, puts us in a unique position to connect our clients within ASEAN to the global financial market and our clients elsewhere to opportunities within the region. Helping clients navigate ASEAN's changing financial landscape to achieve their goals is our focus – today and for many years to come.



Managing the risks amidst ASEAN's opportunities

QBE Insurance

There is no doubt that enormous opportunities exist within the ASEAN economies in the coming years for both local and multinational companies. The further integration of ASEAN through closer trade ties and enhanced economic cooperation, combined with increased spending on infrastructure, will provide a solid platform for the region to continue to grow.

There is also no doubt amidst these opportunities lie multiple risks. Companies need to be mindful of a variety of potential risks – including delayed or lost shipments and delayed or non-payments – any one of which can damage profitability if a business is not appropriately insured.

Consider what happened to a Singapore based company that was very close to finalising a contract with an overseas buyer for a shipment of crude oil. The company chartered a tanker and the oil was already loaded when the overseas buyer suddenly withdrew from the sale. As a result, the company was left in a difficult predicament. Unable to find an alternative buyer on such short notice, they also had obligations related to the charter hire. To alleviate the situation, the oil was transferred from the chartered tanker and back to onshore storage. However, the problems continued as the volume of oil returned to the onshore facility was significantly less than the amount originally loaded onto the tanker.

Fortunately, the company had taken out marine cargo cover on the shipment and was able to make an insurance claim for the difference in the loaded versus unloaded volume. QBE paid the claim while the two sides entered arbitration: the company was seeking compensation for the shortage of returned oil, while the tanker owner was seeking the remaining balance on the ship's hire.

Acting on advice from QBE, the company decided they were satisfied with the amount recovered and ended the arbitration process, thereby preserving their relationship with the tanker owner.

Wherever and whenever cargo is being moved, there are risks present throughout the transport chain. These risks range from loss and damage due to an accident and even unforeseen events related to weather conditions.

An example of the latter occurred when a client of QBE was moving a barge laden with bulk coal bound for Cambodia from Indonesia. The tug towing the barge of bulk coal encountered heavy weather during the passage and was forced to seek refuge from the storm near a small island. As the weather continued to worsen, the tug master ultimately decided the crew and the vessel were in a potentially perilous situation, so they anchored the barge and moved the tug to safer shelter.

When the weather cleared some 48 hours later, the tug returned to find the storm had grounded the barge off a different island. As a result, the barge suffered significant damage – including the port hull being heavily set-in and compressed as well as several severe tears and cuts. After the barge was dry-docked, attending surveyors estimated the barge would require more than 425 tonnes of steel renewal work. The initial estimated cost of the repair was more than US\$1.6 million.

As the hull and machinery of the tug and barge were fully insured, QBE assisted the barge owner in negotiating the repair costs with the shipyard. As a result, the total cost was reduced by around 30% from the initial estimate.

Different types of Marine cover at a glance

- **Marine Cargo** – insurance protection for goods being shipped anywhere throughout the world, from the time they leave the seller's premises until the customer receives the goods at their premises
- **Marine Liability** – cover against potential legal liabilities for marine service providers in areas such as transportation, freight forwarding stevedoring, and ship repairs that provide advice or services to customers or terminal operators
- **Marine Hull** – designed for commercial vessels, covering everything from physical loss or damage to the hull and machinery of the ship to insurance against third-party liabilities
- **Pleasure Craft** – protection for recreational sailors against physical loss or damage to their craft, including cover for any liabilities to third-party property or injuries arising out of the use of the pleasure craft



Beyond transport and logistics concerns, companies involved in international commerce in ASEAN or elsewhere also need to be mindful of payment risk. Typically, companies which sell goods and services on credit terms have a substantial percentage of their working capital tied up as accounts receivable. Trade credit insurance minimises the risks related to delayed or non payments.

For example, initially all was well when a plastic resin manufacturer operating in Thailand opened a new credit trading account for a local buyer. However, after about a year, the local buyer's payments slowed down and their trading account became overdue, with outstanding invoices totalling some 12 million Thai baht.

The local buyer explained that they were unable to pay in full as they were experiencing cash flow issues due to investments they had made in plastic



There is no doubt that enormous opportunities exist within the ASEAN economies in the coming years for both local and multinational companies.



moulding machinery and in their factory. Fortunately, the manufacturer had trade credit insurance. QBE helped the manufacturer to negotiate a repayment plan with the local buyer, under which the buyer promised to make repayments of 500,000 baht per month on outstanding invoices. The buyer also agreed that all new orders would be paid for either in advance or upon delivery.

Again, all seemed well until one of the post-dated repayment cheques was returned due to insufficient funds. At this point, the manufacturer began both civil and criminal proceedings against the local buyer. At the same time, they lodged an insurance claim. Within 24 hours of receiving the supporting paperwork, QBE settled the claim, restoring the manufacturer's cash flow and protecting their business from financial hardship. QBE would also later reimburse the manufacturer for their professional legal costs.

Following the launching of legal action, the local buyer once again, began making repayments to the manufacturer and eventually all monies were paid back. Without trade credit insurance, the manufacturer would have waited more than 18 months to receive the funds they were owed.

In all three of these situations, the companies involved were able to rely on risk management advice as well as their insurance coverage to avoid a situation that would have hindered their cash flow and or negatively impacted their business.

The benefits of having Trade Credit insurance

- Takes risk out of providing customers with credit terms
- Protects cash flow and profit
- Provides early warning system for bad payers or poor risks
- Offers credit management services as well as collections and legal action tools to assist in managing debtors
- Allows access to risk decisions on new customers, regions or sectors

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QBE is in the business of managing risk. We understand risk, and in an increasingly volatile world, we believe our ability to manage risk makes it possible for things to happen.

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a long night ahead."*

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Made possible



Major infrastructure projects gain momentum

ASEAN's commitment to spend more on infrastructure is vital in order to boost economic and social development through the improvement of basic necessities such as power, water and transport throughout the region. The IMF estimates that each dollar spent on capital spending raises a country's output threefold. As a result, the required capital investments are expected to gain considerable momentum over the next few years, generating multiple long term investment opportunities.

The region will need to spend US\$950 billion by 2020, if its economies are to grow and develop, according to Stephen Groff, Regional Vice President of the Manila based Asian Development Bank (ADB). The need to roll out transport projects is increasingly important given urban populations are predicted to double by 2020, with 120,000 people relocating into the cities on a daily basis.

Each member state has its own infrastructure priorities, though transportation and electricity improvements are common themes. This is reflected in Indonesia which has plans for new seaports, airports, railways, power stations, waste water treatment plants and new roads.

Bolstering infrastructure spending is a key Indonesian Government objective. This was reflected in a budget increase in 2016 of 8% announced for public spending on roads, railways and airports, bringing infrastructure spending to 2.5% of GDP. It has introduced an ambitious plan which aims to cut the costs of logistics to the economy to 19% of GDP from 26%. High logistics costs are blamed for a lack of

competitiveness of local products against imports, given the distances between communities in the country's thousands of islands.

Installation of an additional 35,000MW of electricity generating capacity is also aimed to meet 96.6% of demand within the next three years. The plan includes building more than 30 new dams and hydropower plants. In addition, the infrastructure strategy includes calls for building 2,850km of new roads and 3,200km of railways, together with new seaports and airports. Projects underway include the Trans Java toll network, a high speed railway from Jakarta to Bandung and the construction of a 720km rail link from Jakarta to Surabaya.

In Thailand, some US\$50.8 billion of infrastructure projects will be underway before 2018, with financing from a variety of sources including Government borrowing and PPPs, according to Deputy Transport Minister, Arkhom Termpittayapaisith. The projects include the development of Sino-Thai railway, covering a distance of 873km between Bangkok and Nong Khai on the Thai-Lao PDR border.

The plan includes development of dual track railway lines. Elevated mass transit systems are also to be extended in Bangkok and the capacity of ports and airports expanded. Meanwhile, further consideration is being given to proposals for a nationwide high speed rail network.

In 2016, Thailand awarded a US\$920 million contract for its elevated Red Line project in Bangkok, to a Japanese consortium of Mitsubishi, Hitachi

and Sumitomo. Another two rail projects in Bangkok as well as two national high speed railway projects are being pursued on a priority basis. In June 2016, a US\$5.5 billion plan was also announced to expand the country's airports over the next 15 years.

Malaysia is also prioritising investment in infrastructure, upgrading existing transport links and building new roads and railways, which will help propel the country's economy to Developed Nation Status by 2020. The largest project involves development of a "wheel and spoke" railway system around Kuala Lumpur to include several new interconnecting stations. Malaysia and Singapore also launched a tender in August 2016, for the two countries planned high speed Kuala Lumpur-Singapore rail link.

The first phases of Malaysia's Klang Valley Mass Rapid Transit (MRT) and Light Rail Transit extension projects are under construction. Many more related projects have been proposed involving a potential investment of US\$44 billion.

The first section of the MRT Line covering 9.5km between Sungai Buloh and Semantan is due to open in December 2016, with the remainder of the 51km automated metro line opening in July 2017. Contracts are due to be awarded for construction of a second MRT line, a 56km section linking Sungai Buloh with Putrajaya to open in the first half of 2022. A third line is also expected to be built in the Klang Valley, with a decision to be made on a final alignment of the planned underground circular route in early 2017. Klang Valley connects Kuala Lumpur and cities and towns in the adjoining state of Selangor.

International assistance on preferential long terms loans are helping accelerate improvements for ASEAN's less developed members. Infrastructure development in Cambodia, Lao PDR and Myanmar is likely to continue to depend on multilateral assistance. Similarly, in the Philippines and Vietnam, government financing and multilateral agencies



will lead the way, while Indonesia is expected to lean more towards PPPs as a financing option.

Indonesia is involved in attracting finance from Chinese banks, which have already pledged US\$40 billion in loans. In October 2015, Indonesia and China signed a US\$5.5 billion joint venture agreement for the construction of a high speed rail link with 75% funding from China Development Bank.

The ASEAN Infrastructure Fund (AIF), which is co-financed and administered by the ADB, was also launched in 2012, with an initial lending target of up to US\$300 million a year. A year later, its first loans were directed to power projects in Indonesia and Vietnam. ADB co-finances every AIF project on the basis of a 70% - 30% split. The ADB says it is able to leverage up to US\$1 billion a year through this arrangement.

“ASEAN’s commitment to spend more on infrastructure is vital in order to boost economic and social development through the improvement of basic necessities.”

The AIF is structured to be self-sustaining. In addition to equity contributions from its members, it plans to raise additional funds from 2017, by using high investment grade debt which central banks will be able to purchase using their Foreign Exchange Reserves. The availability of greater capital will allow the AIF to also lend to the private sector or state-owned enterprises undertaking PPPs.

Considerably more money is likely to be available as a result of the formation of the Asian Infrastructure Investment Bank (AIIB). The institution, inaugurated in October 2014, is focused on providing funding specifically for Asian infrastructure projects including Southeast Asia.

The Bank has an authorised capital of US\$100 billion with more than 50 member countries subscribing. China provides nearly 30% of the capitalisation.

The World Bank and Lao PDR’s Ministry of Public Works and Transport are looking to a PPP route aimed at enhancing the traffic capacity of the country’s dual lane highway, to serve as the main north-south connection in the country.

In the Philippines, there has been an acceleration of funds being disbursed for infrastructure development. A key element in this strategy is the promotion of PPPs. This is part of a plan by the Government to

increase infrastructure outlays to 5% of GDP in 2016. Measures taken in support of higher and more efficient infrastructure spending range from improvements in procurement procedures to a new public finance management law.

The Philippines Government has reformed the legal framework for PPPs while amendments to the country’s Build Own Operate Transfer Law are also being considered. In 2015, the country’s first PPP road project, the Muntinlupa-Cavite expressway was opened. The toll link cuts the journey time from Metro-Manila to Cavite by 45 minutes. The Government is also looking into new ways to fund PPPs from the capital market such as through the issue of state project bonds.

Vietnam brought a new legal framework on PPP investment in 2015, in an effort to attract FDI to infrastructure development. A number of priority transport projects, including a monorail scheme over the next three years are being considered.

This method of funding can play a big role in speeding up infrastructure development. However, setting up and launching a PPP is a complex arrangement. With this in mind, ASEAN has issued a set of Principles to guide PPP frameworks in member states. These Principles are set out to ensure that this route is the most beneficial.

Investment in ports development continues to gather pace

A modern and well managed maritime sector is crucial to Southeast Asia's economic progress, an archipelagic region which includes some 24,000 islands, spread across 5,200km east to west and 3,400km from north to south.

Possessing access to the world's oceans is of little advantage without modern ports, sound logistics and effective management of maritime facilities. However, there are many areas requiring improvement in order to promote a safe, modern, efficient and competitive shipping sector.

Over the last decade, container ships have almost doubled in size. Ships able to carry 18,400 containers began to enter service in 2014. Essentially, such newer vessels no longer carry their own cranes to offload twenty feet equivalent units (TEUs) and depend on seaports to provide specialised handling equipment. This trend poses a challenge to smaller ports, especially in developing countries, according to the UN Conference of Trade and Development (UNCTAD).

Given an efficient logistics environment, larger ports can allow larger ships to berth with an increased volume of cargo throughput achieved. This in turn draws more manufacturing enterprises to adjacent areas, stimulating industrial development and broadening a country's economy.

As a consequence, there is growing pressure on port facilities, particularly container handling capacities. Container ships carry an estimated 52% of global seaborne trade in terms of value. Containerised cargoes have also

become a significant part of intra-ASEAN trade. Many commodities including rice, for example, previously moved as bulk cargoes, are now moved in containers.

The keen competition between ports in the region is adding to the incentive to raise investment in infrastructure. Aspiring hubs such as Vietnam and Indonesia and those with more developed port facilities such as Malaysia and Thailand, all have hinterlands with rapidly expanding manufacturing activity and export logistic needs.

UNCTAD's Liner Connectivity Index records how well integrated countries are with global container shipping networks. In 2016, this shows Singapore, Malaysia, Thailand and Vietnam as the most well connected ASEAN countries.

The UNCTAD Index is based on five components: number of ships, their container-carrying capacity, maximum vessel size, number of services, and the number of countries which deploy container ships in their ports.

The Port of Singapore, with its daily sailings and connections to 600 ports in 123 countries, remains paramount, handling one fifth of the world's containers. Half the world's supply of crude oil is also shipped via the Port.

Singapore's maritime sector employs around 170,000 people and contributes an estimated 7% to GDP. The country's port is the world's busiest in terms of the number of vessels. It is also the world's largest transshipment hub and the second largest container port after Shanghai.

Despite its success, there is no complacency over Singapore's global and regional ranking. Andrew Tan, Chief Executive of the Maritime and Port Authority of Singapore, says the reason for Singapore's existence is its port, and it has to become more efficient, innovative and productive to stay ahead.

"The maritime sector is undergoing significant transformation with smarter ships, just-in-time logistics and more intelligent ports being built. We envisage a more interconnected port with high speed internet, extensive use of data and innovative mobile solutions to enhance our port's overall competitiveness," Tan says.

A US\$2.8 billion investment at its Pasir Panjang Terminal will see the facility expanded with the latest technology to allow operation of unmanned gantry cranes to handle some 15 million TEUs a year.

The expansion, including two further terminals which are due to be running by the end of 2017, will add 15 million TEUs to Singapore's handling capacity. This will boost container throughput by more than 40%, to 50 million TEUs annually. It is already getting close to its maximum handling capacity of 35 million TEUs, after handling 33.9 million containers in 2015.

Work has also started on a new seaport at Tuas, on 294 hectares of reclaimed land, south of Singapore's existing port. It will be able to handle up to 65 million TEUs, double the existing capacity.

Singapore faces significant competition from Malaysian ports which are also keen to expand. The World Bank is currently assisting Malaysia with the development of a national ports strategy to strengthen the country's maritime sector. While it has been successful in gaining increasing volumes of transshipment container traffic, there is the potential to



improve growth outside the country's primary Port Klang complex, which is Malaysia's busiest port with container traffic predicted to rise to 16.3 million TEUs by 2020.

A third terminal is planned at Port Klang and a joint development is being discussed with China, according to Malaysia's Transport Minister, Liow Tiong Lai. Almost 80% of ships passing through the Strait of Malacca are bound for Chinese ports.

The World Bank's Logistics Performance Index (LPI) measures the efficiency of a country's customs, transport infrastructure, the efficiency of trucking and freight forwarding operations, delivery times, tracking and tracing consignments. The 2016 Index, ranking 160 countries, shows Singapore placed as the fifth most efficient globally, with Malaysia in 32nd.

Thailand and Vietnam are ranked 45th and 64th respectively. Indonesia is ranked 63rd and the Philippines 74th.

Improved ports infrastructure is seen as crucial to the future development of the Philippines' transport system. International Container Terminal Services Inc (ICTSI), for example, is planning to upgrade its home port of Manila to create a major hub in its global network of ports.

The country has nine major ports, Manila, Subic, Batangas, Cebu, Davao, Zamboanga, Cagayan de Oro, Iloilo and General Santos. There are also another 1,300 smaller mostly Government owned ports. Increasingly the Government is seeking to develop PPPs to accelerate the improvement of the country's maritime infrastructure.

Ports development is also a key to Vietnam's economic growth, where cargo handling could rise from 400 million tonnes a year to 2,100 million tonnes by 2030.

Japan's International Cooperation Agency is providing US\$781 million of loans for the development of a major deep-sea port at Lach Huyen to the east of Haiphong, Vietnam's third largest city. The loans will also support the construction of new bridges and road links to the port, which is scheduled to be operational in 2018.

Meanwhile, the Government has approved plans to build a 12 berth deep-water port in the southern province of Ca Mau. The proposed US\$2.5 billion port is due to be developed on a PPP basis on Hon Khai island and will act as a transshipment point for commodities including coal to fuel thermal power plants in the Mekong Delta.

The Government has also indicated that greater foreign investment will be invited and foreign ownership allowed in the state controlled ports sector, in order to attract the investment needed. Vietnam is seeking up to US\$2 billion of private sector investment to develop 19 port projects throughout the country.

Using the maritime geographical attributes of the country is a priority for the Port Authority of Thailand, which has more than 3,000km of coastline as well as nearly 4,000km of rivers and waterways. An improvement of connectivity within the region will allow Thailand to become a competitive maritime gateway.

Thailand's two main ports of Bangkok and Laem Chabang are undergoing major upgrades and modernisation programmes. The aim is to turn Laem Chabang into a gateway for the Greater Mekong sub-region and compete more effectively with Singapore. It currently handles more than half of Thailand's trade. As planned investments take shape this volume could increase dramatically.

Laem Chabang is due to have new rail links and quayside expansion. The aim is to raise its capacity to 20 million TEUs, almost doubling its present capacity. There are also plans to turn Sattahip, a deep-water port south of Laem Chabang from naval to commercial use.

The country's Port Authority is also planning a range of new infrastructure developments including improvements to Bangkok City Port to raise capacity to two million TEUs by the end of 2017.

Port development is also a major focus for Indonesia. Many of its harbours have shallow draft, with its largest port, Tanjung Priok in north Jakarta,

having a maximum draft of 11.5m, which means the largest ships which can dock there carry a maximum load of 5,000 containers.

President Joko Widodo has announced a maritime strategy to develop a coordinated network of ports throughout the country's vast archipelago. In particular, the plan includes building new ports in the underdeveloped eastern parts of Indonesia.

It's estimated US\$46 billion Marine Highway Development Programme, is designed to improve connectivity of the archipelagic economy, in order to reduce the high logistics costs which limit the competitiveness of the country's economy.

A great effort is now underway in Indonesia to increase container handling capacity. The new Priok Port project in Jakarta will see capacity raised from 5.8 million TEUs to 18 million TEUs, by 2023. By that date, ships carrying up to 18,000 containers will be able to access the port through a new 300m wide channel.

This programme, which features a strong PPP element of up to 70%, seeks to upgrade six existing ports and develop 24 new commercial hubs. The main ports of Jakarta, Makassar, Medan, Surabaya, Bitung and Sorong will serve as regional logistics hubs for auxiliary ports. This is designed to raise inter-island connectivity and improve the transport of goods throughout the country. Such is the urgency to press ahead that in 2014, a new Government Department, the Coordinating Ministry for Maritime Affairs was set up to focus on the development programme.

The Port of Rotterdam Authority signed an agreement in September 2015, with the state ports operator to begin development of the deep-draught Kuala Tanjung Port near the city of Medan. The port and associated infrastructure is estimated to involve investments totalling US\$1.2 billion, with a new terminal expected to cost US\$344 million.

The development also involves a container handling area and industrial estate. Significantly, the port is strategically located near the Strait of Malacca, a key regional shipping route. Once the port is fully operational, larger vessels on their way to Europe will be able to transit at Kuala Tanjung Port instead of making diversions to Singapore or Malaysia.

Maritime connectivity is also the key to developing Myanmar's economy. It's ports have the potential to become regional transportation hubs serving markets in China, India and the Indochina region. Growth in imports and exports as a result of increased demand for its agricultural commodities, minerals and natural resources, are likely to be the catalysts stimulating development of port infrastructure in the country.

Myanmar occupies a long eastern seaboard where new ports could provide faster access to Thailand, Cambodia, Lao PDR and Vietnam. One of the main proposals is the development of a new industrial and ports area at Dawei.

In the north of the country, Kyaukpyu is already under development with China's assistance. The port is designed to connect with an oil & gas pipeline linked to Yunnan Province. In addition to Dawei, sites in Thilawa, Sittwe, Kalegauk and Bokpyin have been identified for potential port development. The Thilawa Special Economic Zone project is due to be developed by a consortium of Myanmar and Japanese interests and represents the first of its kind in the country.

Contracts for work on the extensive US\$8.6 billion Dawei project have still to be finalised. Nevertheless, the giant venture promises to transform logistics in the region. Plans include an oil transshipment port, a refinery, steel mills, petrochemical and a major electricity generating station. The development also calls for road, rail and oil pipeline routes running from Dawei into Thailand, to link up with its north-south transport network.

Expansion in the regions rail projects

Almost since their inception, Southeast Asia's railways have been restricted to mainly freight haulage, on metre gauge single-track lines, drawn by locomotives proceeding at 20-70kmph. However, times are changing and railways are now a key part of infrastructure development throughout the region.

Given the complexities and the multibillion dollar investments involved, the process of expanding is long term, but it is steadily gaining traction. Since ASEAN's GDP growth continues to be robust, development of transport infrastructure is a growing priority, with railways a main focus throughout the region.

A key element in Thailand's railway development plans, is to ease the strain and congestion on the country's roads and improve logistical efficiency by increasing the share of rail in freight transport from less than 2% to 8% by 2020. The authorities also want to see trains accounting for 40% of public transit compared to the current 6%.

The country's rail strategy includes 767km of double tracking on existing routes as well as the construction of new lines to connect major provinces in the centre, north and northeast of the country. The latter would provide direct connections between regions rather than routing through the capital.

Thailand also plans to electrify the 141km track between Kanchanaburi and Bangkok and the 248km line between Aranyaprathet and the capital.

In addition, China and Thailand have discussed building a 3,000km regional railway to connect the former's city of Kunming with Thailand. The proposed routes, that cut across neighbouring countries, would need to run through Thailand to eventually reach Malaysia and Singapore. One sector proposed involves an estimated US\$6.3 billion, 427km track between Kunming and the Lao PDR capital of Vientiane, with China providing some 70% of the funding.

Japan is also reportedly interested in financing a project involving a 574km link from Ban Phu Nam Ron on the Myanmar border in Kanchanaburi to Chachoengsao and Aranyaprathet on the Cambodian border. This would provide a key transport link connecting the Japanese funded port and industrial estate project at Dawei in Myanmar to Bangkok, and Thailand's main port of Laem Chabang.

Vietnam's railway system consists of seven lines, all of which are single track and mostly in need of modernisation. The network needs an estimated US\$9 billion of investment over the next 15 years to improve the 2,237km network. According to state-owned Vietnam Railways, the focus will be on the 1,726km north-south railway linking Hanoi with Ho Chi Minh City.

Myanmar's upgrading of track between Yangon and Mandalay, is scheduled to commence in 2017, and should be completed by 2025, says U Ba, General Manager of Myanmar Railways. The estimated US\$1.7 billion project is led by Japan International Cooperation Agency.

The country is opening up to foreign investment and needs to modernise fast in order to fulfil its potential. This means renovating and extending the country's outdated 5,844km network. There is growing demand to develop efficient transportation networks between the rural hinterland and the principal urban centres of Yangon and Mandalay. It currently takes almost twice as long to travel by train between Yangon and the capital Naypyidaw, than by road.

Railway expansion is also firmly on the development agenda in the Philippines. Among the projects is a 900km track to connect La Union, Manila and Legazpi on the country's Luzon Island.

In Malaysia, the US\$5.2 billion electrification and double-tracking of the 329km railway linking Ipoh in Perak State with Padang Besar in the north of Peninsular Malaysia, was officially opened in July 2015. It is one of the country's largest ever infrastructure projects.

Indonesia has plans for a US\$3.24 billion trans-Sumatra railway, covering 2,168km to connect Aceh in the north to Lampung in the south. In addition, a US\$2.76 billion track through Kalimantan, and a 1,686km similarly costed line across Sulawesi linking Makassar in the island's southwest with Manado in the northeast, are also projected. China is reported to have offered to fund the proposed lines in Sumatra and Sulawesi.

There is huge scope for expanding Indonesia's railway system which covers 5,108km, all of which is narrow gauge. Most of the network is operated by the state through PT Kereta Api (Persero). A few freight-carrying railways are privately owned and operated in Sumatra and Kalimantan.



The Ministry of Transportation has allocated a US\$17.3 billion budget to build railway infrastructure in Java, Sumatra, Kalimantan (Borneo), Sulawesi and Irian Jaya (West Papua). This budget was originally to be disbursed up to 2030. However, the Government now wants railway developments outside Java to be accelerated and completed by 2019.

Construction of new lines, double tracking, as well as the electrification now taking place, will speed up the development of networks. In addition, the pending projects for High Speed Rail (HSR) systems with trains travelling in excess of 250kmph also promises to revolutionise transportation in Indonesia, and elsewhere in Southeast Asia.

The ultimate concept is for a series of HSR lines radiating through mainland Southeast Asia as far as Singapore and connecting with China's own high speed network at Kunming in Yunnan Province.

“Since ASEAN’s GDP growth continues to be robust, development of transport infrastructure is a growing priority, with railways a main focus throughout the region.”

The HSR route, while a highly attractive option for the region presents many challenges, not least cost. Thailand has plans for four high speed rail lines ranging over 1,447km at an estimated cost of US\$26 billion. These projected HSR routes include a line between Bangkok-Pitsanulok reaching to Chiang Mai, which is viewed as the country’s logistics hub and a tourism destination.

Indonesia issued a construction permit in August 2016, for its planned 142km high speed rail link to connect Jakarta and Bandung. The project is due to be completed by 2019, after which, the Government plans to extend the link a further 740km to Surabaya.

China Development Bank is reportedly providing 75% of the estimated US\$5.5 billion cost of the project. Construction was set to begin in 2015, and will be completed in 2018, with operations commencing the following year. The track will be revolutionary in that it will be Indonesia’s first high speed line. (*Reuters 30/9/15*)

Thailand’s first high speed line between Bangkok and Phitsanulok will feature Japan’s Shinkansen bullet train on the planned 380km route. A feasibility study is due to be completed for the project by the end of 2016, with bids for construction expected to be invited in 2018. A second phase is expected to extend the high speed line a further 272km to Chiang Mai.

A 243km A line from Bangkok to Nakhon and Ratchasima is also envisaged that would extend to Nong Khai Province. This would also serve as a gateway to the Lao PDR capital of Vientiane. Another line is planned to stretch 193km from the capital to Rayong, Thailand’s eastern seaboard industrial hub and deep-sea port. Another HSR 211km track will join Bangkok to Hua-Min. The latter is a portal to the country’s tourist destinations in the south.

Another ambitious proposal is a high speed system to connect five Malaysian cities with Jurong East in the west of Singapore. While the initial deadline for completion of works in 2020 has been put back, the project is still to go ahead. When the line is completed it will take 90 minutes to travel the 300km route compared to four hours by road.

The process of developing high speed railways across mainland Southeast Asia is beginning. Despite the daunting investment costs, the potential long term benefits are recognised throughout the region. The challenge is to mould viable economic proposals and financially engineer the feasibility of some the costliest infrastructure projects ever undertaken.

In a region where the main cities and their populations are expanding fast, commuter transportation is a growing consideration. Bangkok’s population, for example, is more than eight million and in Ho Chi Minh

City, the population is fast approaching this figure. As a consequence, multiple Mass Railway Transit (MRT) systems are underway in the region in Vietnam, Singapore, Malaysia, Indonesia and Thailand.

Investment in urban transportation is now a priority in Thailand, with six new mass transit systems either proposed or being built in and around the city of Bangkok. However, the Government would like this urban railway network to eventually cover 515km, linking the capital with outlying areas. A 26.3km elevated railway line is also under development in Bangkok, which is planned to be connected to a separate high speed track linking the city's airports.

Other proposals include construction of a light railway system in the southern Thai resort of Phuket, to connect the city's international airport with tourist destinations. A monorail system has also been proposed for Chiang Mai in the north of the country.

Vietnam is proceeding with a bold programme of urban railway construction in Hanoi and Ho Chi Minh City, where there are plans for eight new lines. Japan is funding most of the cost of a US\$2.5 billion project to build the first of these, a 19.7km light railway running from Ben Thanh Market, the city's commercial centre to Suoi Tien in the northeast. The project includes a 17km elevated section.

The Asian Development Bank, German Development Bank and European Investment Bank are also helping to fund a second line with eleven stations, which will include a 9.3km underground section and run from Ben Thanh Market to Tham Luong Depot.

Urban railway development is also a major driver of Singapore's infrastructure improvement strategy and the country seeks to strengthen its transport role in the region. Part of the plan is to double the country's metro system involving an overall investment of US\$42.4 billion from 2011 to 2020.

Singapore is also working on a number of new MRT projects including two new lines and extensions to existing track. The 30km underground Thomson Line and the Eastern Region Line will add 48km to the network. Singapore's Land Transport Authority aims to expand the MRT system to 360km by 2030, doubling the existing length.

In Indonesia, a number of urban mass transit ventures are planned in conjunction with the private sector, including a link between central Jakarta and Soekarno-Hatta International Airport.

Seven overground and six underground stations are being constructed in the first phase of Jakarta's MRT system, with a further eight stations to be built in a second phase. The 15.2km first stage is due to open in 2019, and the entire US\$1.7 billion project completed in 2027.

One of Malaysia's most important and strategic projects involves development of two north east and south west radial lines, and a circular line forming a wheel and spoke system around Kuala Lumpur and the surrounding Klang Valley region.

The project encompasses Malaysia's central Selangor State, which includes the capital Kuala Lumpur, and is the heartland of the country's industry and commerce. It was launched in 2011, and is due to be completed in 2017. Three railway lines will form the backbone of Klang Valley's transport system. The first, a 51km line from Sungai to Kajang is nearing completion and will have 31 stations. Four major interchange stations are an integral part of the plan.

Singapore and Malaysia are finding the means to advance their rail project portfolios, yet for Southeast Asia as a whole, the ambitious long term capital intensive railway projects are unlikely to be met solely from national budgets. As a result, PPP models are likely to be the most viable means of reviving long dormant, and increasingly necessary, transportation ventures throughout the region.

Protecting and investing in ASEAN's bright future

Prudential plc

Prudential plc is one of the largest, oldest - established in 1848 - and best known financial services groups in the world, with operations spanning Asia, the US and the UK. Globally, it has 24 million insurance customers and US\$731 billion in assets under management (as of 30 June 2016).

We have had a presence in Asia for nearly a century, opening for business in Malaysia back in 1924. Today, Prudential is a leading life insurer with operations spanning 13 markets, providing long term protection and savings products to millions of customers.

Of these, eight are members of the Association of Southeast Asian Nations (ASEAN): Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, Thailand and Vietnam. The others, outside the ASEAN group, are China, Hong Kong, India, Korea and Taiwan.

Our asset management businesses are also well established and, since 2012, they have been brought together under the name Eastspring Investments, which works on behalf of retail and institutional investors across ten major Asian markets and with offices in the US and Europe.

Eastspring's assets under management totalled US\$140 billion at 30 June 2016, making it one of the largest investment managers in the

region. It has proven capabilities in the management of sovereign wealth funds and has an established focus on institutional business. We also see continued interests around the world to tap into the huge interest in Asian investment being shown by the world's largest institutional market.

In both life insurance and investment management, the depth of our involvement explains why Prudential considers itself as much an Asian company as a British one. Nowhere is this more evident than in Eastspring's solid relationship with the fast growing ASEAN countries, both as an investment manager on behalf of clients and as an investor.

By any measure, this is an exciting market. We believe that the insurance and asset management industry has a key role to play in building the future of ASEAN. As we look into the next ten or twenty years, we see the need for long term capital investment as one of the critical factors to build the success envisioned for the ASEAN region. Insurance and asset management sectors help mobilise household savings into long term capital which is reinvested in ASEAN countries to build infrastructure, form new businesses and contribute to economic growth, and the insurance, pension and asset management sectors.

Southeast Asia mutual assets under management by country 2011-2020E (US\$ billions)

Country	2015	2016E	2017E	2018E	2019E	2020E	CAGR 2011-2015	Projected CAGR 2015-2020E
Malaysia ¹	59.2	64.3	73.2	82.2	92.0	102.8	18.7%	11.7%
Malaysia ²	100.2	107.2	122.1	137.0	153.3	171.3	11.7%	11.3%
Thailand	96.7	108.9	124.8	143.2	164.5	189.0	18.9%	14.3%
Singapore ³	59.8	62.8	66.4	70.4	75.2	80.6	13.4%	6.1%
Indonesia	19.4	21.9	35.4	29.6	34.6	40.6	12.6%	15.9%
Philippines	19.4	21.9	25.4	29.6	34.6	40.6	12.6%	15.9%
Vietnam ⁴	0.1	N/A	N/A	N/A	N/A	N/A	-3.1%	N/A
Total	295.6	322.0	362.2	406.7	457.9	516.6	15.4%	11.8%

Source: Cerulli Associates, based on data feeds from various organisations

Analyst note: ¹Excludes Bumiputra funds; includes wholesale funds. ²Includes Bumiputra and wholesale funds. ³Includes assets from offshore funds. ⁴There are no projections for Vietnam.

Southeast Asian assets under management are forecast to grow at an 11.8% compound annual growth rate during the second half of this decade to reach US\$516.6 billion by 2020*. Indonesia, one of ASEAN's founders, is expected to lead the way in the growth of funds. Helping to drive this very rapid growth has been a positive development across the region towards de-regulation of the fund management industry, a trend that is likely to continue.

There are powerful consumer trends propelling growth of financial services in the region, driven by rising wealth and the increasing financial literacy of ASEAN's expanding middle class which, in turn, has prompted increased interest in life insurance, investment and financial advisory services.

Asset management has significant room for growth given that many retail investors continue to put their trust in a cash stockpile or in property. Add to that the fact that the take-up of mutual funds has a long way to go, and the potential is clear.

In this rapidly evolving landscape, the successful investment management players are likely to be those, such as Eastspring, that combine two key features: an extensive "footprint" across the region and local expertise and services which are tailored to the specific characteristics of each market.

*Asset Management in Southeast Asia, The Cerulli Report, 2016

Such a network would be expensive to create from scratch, thus there is a huge advantage for companies who have had a long standing presence in the countries concerned. Even for established players, it takes perseverance and an unwavering long term view to participate in this burgeoning market.

At Prudential and Eastspring, we are committed to strengthening our industries throughout the ASEAN region, cooperating with governments, the private sector and civil society. We are proud to offer high quality long term savings and investment products to families and institutions across the region, meeting their ever growing need for fruitful homes for their rising wealth.

Above all, our role as long term capital investors in the ASEAN countries makes us a partner in the region's future success. Eastspring is a major holder of government bonds, corporate debt and equity, as well as investors in the infrastructure, real estate and alternative asset classes.

As we grow our business in Asia, we are equally committed to accelerating the momentum we have achieved through our corporate social responsibility initiatives in helping Asian communities thrive with a bright and secure future.

Investing in the future of the ASEAN countries is a promise we will keep and deliver upon. It would be no exaggeration to say that we see our own future intertwined with that of ASEAN.

Natural gas developments create major opportunities

ASEAN's fast expanding economies and growing populations mean a rising consumption of energy resources, especially oil & gas. The problem is that its crude oil resources are depleting rapidly even though the region's natural gas reserves are among the largest in the world.

The situation varies, with Brunei Darussalam and Malaysia still net exporters of oil. In these countries oil & gas revenues are vital for their economies, notably the former where hydrocarbon exports account for 85% of the Sultanate's GDP.

Nevertheless, while ASEAN's existing oilfields are being depleted, there still remains relatively large and unexplored areas thought to hold considerable resources, particularly in deep-waters offshore.

Indonesia's proven oil reserves, at 3.7 billion barrels at the end of 2014, are the third largest in the region, after Vietnam and Malaysia. However, its potential recoverable resources, at about 40 billion barrels, are by far the most abundant, accounting for around half the total in Southeast Asia.

A significant portion of its oil production currently comes from its Minas and Duri fields, located on the east coast of central Sumatra. These have been in production for more than 60 years. Other mature oil producing areas are in Sumatra, Java and East Kalimantan.

New sources of oil production include the Banyu Urip field, offshore East Java, operated by ExxonMobil. Oil & gas fields are also due to come on stream at South Mahakam and Gendalo-Geheim in the Makassar Strait.

Lower oil and natural gas prices are of benefit to ASEAN states which are heavily dependent on imported supplies. Less expensive imports also represent an opportunity for countries to reduce the price support they give domestic users without major hardship to businesses or the general public.

While Malaysia's oil production has fallen from a peak of 830,000bpd in 2003, its current production of around 670,000bpd is still the second highest in Southeast Asia and represents more than a quarter of its total crude production.

After Indonesia, Malaysia and Brunei Darussalam, Thailand and Vietnam account for most of the rest of ASEAN oil production. Thailand produced 470,000bpd in 2014. Most of its production is offshore in the Gulf of Thailand. This includes a joint exploration with Malaysia in a 7,250km² area. Vietnam has 4.4 billion barrels of proven oil reserves, a level that is sufficient to sustain current production of around 320,000bpd for the next 38 years.

The region is set to remain an important oil & gas producer despite lower international oil prices. While oil production is expected to decline from a current 2.5 million bpd, as mature fields output decline, natural gas production is continuing to rise.

The outlook for natural gas supply is therefore brighter than for oil. The International Energy Agency (IEA) forecasts that the region's gas output

will reach almost 260 billion cubic metres (bcm) annually by 2040, from around 213bcm currently. However, as with oil, gas reserves are unevenly distributed, with the bulk found in Indonesia and Malaysia. The latter, in recent years, has accounted for most new discoveries, notably offshore Sarawak.

According to the IEA, at current levels of production, reserves of natural gas will sustain this level for a further 35 years. An increasing share of remaining gas reserves are located in deep-water areas offshore, in remote parts of the region.

Indonesia, with around three trillion cubic metres (tcm) of proven reserves, has the largest natural gas reserves. Most of its production comes from fields located in Sumatra, the Natuna Sea and the Mahakam block in East Kalimantan. The remaining resources of natural gas amount to more than 15tcm. These include an estimated 2.6tcm of coal bed methane (CBM) located below fields in Sumatra and Kalimantan.

The IEA predicts that Indonesian gas production will rise to more than 130 bcm by 2040, sustained by the development of large offshore projects and rising output from unconventional gas resources, mainly shale gas and CBM.

The country's East Natuna project, the largest untapped cluster of gas fields in Asia with 1.6tcm of recoverable gas reserves, is thought to represent the largest prospect for Indonesia's gas sector. The project which is expected to produce more than 40bcm a year, is being developed by the state-owned oil & gas company, Pertamina, the US' ExxonMobil, Thailand's state-owned PTT Exploration & Production company and France's Total. Another deep-water development project in East Kalimantan led by the US' Chevron, is targeting 12 bcm a year of peak production.



Malaysia holds 2.6 tcm of proven natural gas reserves, ranking second after Indonesia, and 18th in the world. Annual production of 56bcm is also the second largest in the region. Production from offshore Peninsula Malaysia, including the Thailand-Malaysia Joint Development Area, is helping to meet rapidly increasing demand from domestic users.

Fields offshore at Sarawak and Sabah, where there is little local demand, have been mainly developed for exporting liquefied natural gas (LNG). Half of its gas is exported as LNG, making it the second largest LNG exporter after Qatar.

Vietnam's proven reserves of natural gas have grown as a result of offshore discoveries and at the end of 2014, these totalled 0.7tcm.

“ASEAN’s fast expanding economies and growing populations mean a rising consumption of energy resources, especially oil & gas.”

The Lan Tay field in the Nam Con Son Basin, located offshore from southern Vietnam, provides almost two thirds of the country’s total output, with new developments expected to boost production. Prospects are also promising elsewhere in the South China Sea.

Thailand’s gas, as well as its oil deposits, is located mostly offshore in the Gulf of Thailand. Production at 28bcm a year has increased in recent years as new output has come on-stream from the Joint Development Area shared with Malaysia.

Despite its declining oil production, Brunei Darussalam has sustained its gas output at 12 to 13bcm a year, Southwest Ampa is its largest producing gas field, though future prospects are thought to hinge on exploration in the deep-waters of the Baram Delta. Most production feeds the Brunei LNG liquefaction plant, from which it exports to Japan and Korea under long term contracts.

Myanmar is the least explored country in the region for hydrocarbon resources, a fact that is drawing increasing FDI in its sector and which totalled US\$14 billion in 2015. The country has already become a significant gas producer with most output coming from the Yaduna, Yetagun and Zawtika offshore fields which supply Thailand.

Gas from the offshore Shwe field in the Andaman Sea, is the primary source of gas used to feed the Myanmar-China pipeline, commissioned in 2013. It has a capacity to transfer 12bcm a year of gas to China’s Yunnan Province, under a 30 year agreement. While exports are a vital revenue source for Myanmar, as the country develops it is likely that more of its gas will be needed in future by domestic industries and for generating electricity.

The region’s gas resources could receive a major boost from unconventional sources. A study into extracting shale gas deposits in North Sumatra has been made and there are expectations that commercial production could begin in 2018. Exploration activity is also underway for methane recovery from coalfields in Indonesia.

Inadequate infrastructure is the largest impediment for potential producers, as most gas resources are located in the outer islands of the archipelago, a long distance from customers in Java. Transportation improvements will also be the key to unlocking Myanmar’s considerable potential for increased gas production.

However, the costs of developing energy resources in the region are prodigious. According to the IEA, around US\$205 billion is needed for oil

supply infrastructure, mainly for upstream development and the balance for new refineries. Gas requires the largest sum of US\$460 billion, reflecting the increasingly high costs of development and the need for expanded gas transmission and distribution infrastructure.

The region's LNG role is set to expand

ASEAN is one of the world's main suppliers of LNG. The product, which has been reduced to 1/600th of its original volume, through a liquefaction conversion process at cryogenic temperatures, into liquid form, is ideally suited for shipment over long distances where pipelines do not exist.

At the end of 2014, the region had around 20% of global LNG production capacity, equivalent to 85bcm a year. This amount was accounted for by Indonesia (42bcm), Malaysia (35bcm) and Brunei Darussalam (10bcm).

Brunei Darussalam was the first country in Southeast Asia to export LNG starting in 1972, and is still important. Malaysia and Indonesia were also early pioneers in LNG development.

Malaysia exports to Japan, South Korea and China. Production from offshore Sarawak feeds an LNG liquefaction terminal with eight

processing units at Bintulu. The country's export capacity is due to increase with the addition of two Floating LNG (FLNG) plants offshore Sarawak and Sabah, with a total capacity of 3.6bcm.

Indonesia is also a significant exporter to Japan, South Korea and China. Three LNG liquefaction plants at Botang, Arun and Tangguh have a combined capacity of 45bcm a year. Indonesia, which ranks as the world's fifth largest exporter, is building two more plants on the island of Sulawesi at Sengkang and Donggi-Senoro.

Other promising new areas of development include West Papua and Sulawesi. The prospect of FLNG facilities are increasingly seen as the way to open up offshore areas in remote locations such as the Arafura Sea in East Indonesia, where a project is planned.

The availability of infrastructure will be an important determinant of future exploration activity and production growth. Many production areas are located far from demand centres. As a result, they will require either an expansion of transmission infrastructure or liquefaction projects to ship the gas to regasification terminals elsewhere. Singapore and Malaysia, both possess extensive processing and handling facilities. They have ambitions to become hubs for both regional and international trade.



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Our experience is unparalleled

Babcock has been operating in the ASEAN region, in highly regulated markets, for over 25 years. This experience is invaluable in enabling us to transform the way services are delivered to improve operational efficiency and effectiveness.

We manage critical assets, deliver complex programmes and deliver vital skills in local markets; investing our time and expertise to ensure the sustainability of projects.

The breadth of our experience is extraordinary. Our team works across many sectors including oil & gas, emergency services, defence, mining and construction, transport, infrastructure and energy markets.

Babcock is a world leader in the management and performance of critical and complex assets. We are able to bring that experience to bear in the fast-growing and challenging ASEAN market to good effect for our clients.

Working together to meet your goals

Babcock has a global footprint in emergency and mission critical helicopter support, providing services to the private and public sectors across the UK, Australia, Spain, Italy, France, Portugal, Ireland, Sweden and numerous locations in Africa.

Internationally, the business operates around 350 rotary and 50 fixed-wing aircraft, and employs almost 3,000 people worldwide.

As the ASEAN region continues to offer increased opportunities for businesses to prosper, our engineering support services make us perfectly placed to play our part in helping you to achieve your goals.

Innovative support to the oil & gas industry

Babcock always invests in innovation to maintain its market-leading position.

We successfully service long term contracts with government and corporate clients including state and federal governments. Babcock also

works in partnership with public and private sector companies, including mining operations and offshore oil & gas facilities.

We provide world-class offshore energy transportation helicopter services for blue-chip oil and gas companies to support their production, drilling and exploration campaigns.

Our major clients include the PTTEP Australasia group of companies who are part of Thailand's national petroleum exploration and production company, Chevron, Woodside, ConocoPhillips, Eni and Northern Oil & Gas Australia.

We are able to call on our international experience and apply it effectively to the ASEAN region.

Emergency services

Babcock has grown to become one of Australia's largest independent emergency and mission critical helicopter providers. Our 20 multi-engine and single-engine turbine helicopters operate out of nine base locations across Australia to service the needs of the broader ASEAN region.

Babcock was recently awarded an extension to continue its partnership with Queensland Government in operating the Emergency Rescue Helicopter Service for the Torres Strait and northern Cape York region. The three year extension, plus options, includes an upgrade of the primary aircraft and an additional aircraft to be based at Horn Island to act as a backup. A new patient transfer facility will also be constructed at Babcock's facility to house patients awaiting transfer to mainland hospitals.



Safety is always our key priority. It's why Babcock is growing its business with clients in highly complex, emergency and critical environments. Particularly in emergency medical, search and rescue, and surveillance operations. We also are invaluable partners in law enforcement, aerial work and marine pilot transfer services.

The future

In 2016 we cemented our position in the Australasian pacific region with the establishment of our headquarters in Adelaide. This gives us an added ease of access to the wider region and an even greater ability to focus on driving down operational costs and improving asset availability for our clients.

We would relish the opportunity to tell you more about what we do.

ASEAN countries aim to connect with renewable energy

While the region has witnessed phenomenal economic growth over many years and has developed as a global manufacturing power, it is vital that energy challenges are addressed in order to sustain this expansion. One of the most pressing issues for all member states is electricity development, but particularly for the less advanced areas which lack connection to national grids. The necessary investment is likely to be the main element of the region's infrastructure spending over the next 25 years.

In order to meet the power deficit, ASEAN countries are required to add 354,000MW of additional capacity for power generation by 2040, according to the International Energy Agency (IEA). It is estimated that total costs for new generating capacity, distribution and transmission networks could be more than US\$1.2 trillion.

While sustainability concerns are calling for cleaner energy supplies, at present the region is prioritising the use of available resources and affordability. This has led to an increasing use of coal to fire power stations. Fossil fuels dominate in the region, with the aim for clean energy

having to be weighed against an increased use of fossil fuels to sustain economic growth", says Anthony Jade, Senior Advisor at the Asian Development Bank.

In the medium term, member states, especially Indonesia, are likely to rely more on coal in the same way as China, which produces 80% of its energy from coal-fired plants. Coal is estimated to provide about 30% of ASEAN's energy and is expected to rise in the energy mix and could fuel 50% of power generation by 2035.

However, member countries recognise that over the next 20 years, they are going to have to balance energy security with environmental concerns. This will lead to a number of different approaches in the region, depending on each country's individual resources.

An improvement in the more economical use of electricity will be important. A study by the European Chamber of Commerce in Singapore notes that Vietnam, Indonesia, Thailand and Malaysia consume almost three times more energy, related to GDP, compared to North America,

Western Europe or Japan. The report concludes that by 2020, ASEAN could achieve efficiency gains of between 12% and 30%, a projection that would translate into power savings of between US\$15 billion and US\$43 billion.

The ASEAN Plan of Action for Energy Cooperation (APAEC) is focused on promoting clean coal technologies and renewable energy for a more diversified power mix in future. The Plan also seeks to speed development of planned ASEAN Power Grid (APG) interconnection projects, which would both lower costs of producing energy and stimulate the use of renewable energy, particularly hydropower.

Solar and wind power, together with other renewable sources such as biomass will be useful and growing additions to the energy mix, but coal and natural gas will remain the main sources of fuel for next ten to 15 years. The adverse effects of burning fossil fuels will be mitigated by the promise of cleaner technologies and a more efficient usage, resulting from ASEAN's economic integration.

ASEAN countries have potential to further harness renewable energy, especially hydro, geothermal, biomass, wind and solar power. While most electricity consumption is still likely to be met by coal-fired generation up to 2030, hydropower is expected to have the next fastest growth rate, according to ASEAN's Centre for Energy (ACE). The establishment of a regional power system may offer better access to new technologies and to widely dispersed sources of renewable energy.



ASEAN members signed a Memorandum of Understanding in 2007, agreeing to strengthen and promote a broad framework to cooperate towards development of a common policy on power interconnection and trade, and ultimately towards the realisation of a regional power grid. There are a series of interconnection projects under consideration. By 2025, it is envisaged that there will be up to 22,576MW of cross-border power exchanges via interconnections between member countries.

The APG strategy is a flagship programme of ASEAN Vision 2020, and aims to connect those countries with surplus power generation capacity

“ASEAN countries have potential to further harness renewable energy, especially hydro, geothermal, biomass, wind and solar power.”

to those that face a deficit. A regional grid is seen as helping all members to meet rising energy demands and minimise the costs of developing energy infrastructure.

At present, the APG is a collection of interconnected national grids offering bilateral exchanges of electricity, and is not a unified regional grid. However, the APG is progressing as Southeast Asia seeks to expand interconnections beyond bilateral agreements, firstly on a sub-regional basis and eventually into a fully integrated ASEAN system.

The most developed power trading arrangement is the Greater Mekong Sub-Region Economic Cooperation Programme (GMS). Launched in 1992, it includes Cambodia, Lao PDR, Myanmar, Thailand, Vietnam and extends beyond ASEAN to include part of China's Guangxi Zhuang Region and Yunnan Province.

There are 11 operational hydropower plants in the GMS with another seven under construction, most in Lao PDR. Trading arrangements among GMS partners are based on long term bilateral power purchase agreements, signed between utilities and Independent Power Producers (IPPs) in the various countries.

Interconnections between Sarawak and Brunei, the Philippines and Sabah, Peninsular Malaysia and Sumatra, Thailand and Lao PDR and Cambodia

as well as between Vietnam and Cambodia are among the power linkages planned for development over the next four years. A pilot project is also scheduled to supply 100MW from Lao PDR through Thailand and Malaysia to Singapore.

Lao PDR is expected to receive China's help in developing extensive hydro plans such as its projected Xayaburi 1,260MW power project on the Lower Mekong River. Further interconnections can help Lao PDR to monetise its vast hydro resources for export and boost its economy. Myanmar also relies on hydropower for 75% of its supplies. The Philippines relies on hydropower for 21% of its needs with geothermal resources making up 24% and coal for the remainder.

China's state-owned energy company, China Power Investment Corporation, has plans to invest a reported US\$17 billion in a 7,000MW hydropower plant on the Kayan River in Indonesia's West Kalimantan Province in Borneo.

Vietnam has experienced the fastest growing demand for electricity of all ASEAN countries in the last ten years. While it relies on hydropower for 35% of its power generation, in order to ensure future security of supplies, the country is planning to develop more than 10,000MW of nuclear energy by 2030.

Brunei Darussalam has significant solar, hydro and biomass potential. Indonesia is focusing on developing its geothermal resources. Thailand has a particular need to embrace new forms of energy, since its once plentiful gas resources are expected to deplete within the next ten years. This means it will become as dependent on imported fuel as Singapore, but with a much larger population and manufacturing base to provide for.

The challenge has been taken and Thailand will have more solar power capacity than all of Southeast Asia combined, as record funds are poured into the sector. The country aims to increase solar capacity to 6,000MW by 2036, accounting for 9% of total generation. A sharp fall in the cost of solar components and a subsidised tariff scheme has also helped encourage investment in the sector.

Also in Thailand, the largest wind farm in the region was inaugurated in 2013, in the north-eastern province of Nakhorn Ratchasima. The US\$211 million project is designed to be capable of producing 103.5MW.

The Philippines Department of Energy is seeking to triple output from renewable sources to 15,300MW by 2030, with geothermal, solar, wind and biomass projects contributing about 30% of new capacity.

Indonesia has considerable potential to develop geothermal energy since it has 40% of the world's known geothermal resources. There are an estimated 276 sites within the country.

While plans for nuclear power in the region are at an early stage, these are expected to move forward within the next few years, according to the World Nuclear Association.

Vietnam is reported to be the most active of ASEAN members in exploring nuclear power, having undertaken site preparation, workforce training and moving to establish a legal framework. The plan is to install three Russian reactors at Phuoc Dinh in Ninh Thuan Province in the south of the country, with construction scheduled to start in 2019. These plants would be followed by more power stations providing nuclear power.

In 2014, Malaysia announced a feasibility study, on the construction of its first nuclear plant, planned to be in operation by 2024, if public approval is forthcoming. The aim is to have three to four reactors supplying 10% to 15% of the country's power needs by 2030. Indonesia plans a small experimental reactor near Jakarta and has proposed four nuclear power stations.

Thailand's interest in nuclear power, forecasts that demand for electricity will grow by 7% annually over the next 20 years. At present about 70% is generated by power stations fuelled by natural gas. Thailand's Power Development Plan 2010 to 2030, envisages the installation 5,000MW of nuclear capacity, with construction of the first 1,000MW units in 2020, and completion scheduled for 2028. Due to the country's very limited energy resources, the World Nuclear Association expects it to start producing electricity from nuclear plants before 2030.

Investment in additional generating capacity and grids that are both sustainable and cost effective, will be the biggest challenge in meeting the expected growth in demand of the power sector in ASEAN countries, according to the IEA.

Regional cooperation is providing an essential route forward in making the best use of energy resources in ASEAN member states.

Global manufacturing role continues to expand

Following the launch of the ASEAN Economic Community (AEC) at the end of 2015, manufacturing activity is increasing. This process is aided by the tangible progress towards ASEAN economic integration, with the near elimination of tariffs between Indonesia, Malaysia, the Philippines, Singapore and Thailand, a major incentive for long term investment in the region.

Concerns over any perceived fragility in global export markets is balanced by firm expectations of increased Intra-ASEAN investment, which rose to US\$22.1 billion in 2015, from US\$15 billion in 2014. Foreign companies are showing that they share this confidence.

The 2016 McKinsey Global Index (MGI) Connectedness Index, ranks 131 countries tracking their in and outflow of goods, services, finance, data and communications relative to the size of their economies and illustrates where ASEAN members stand in terms of integration into the global economy.

The MGI shows Singapore in first place worldwide. Several other ASEAN countries are in the top 50 with Malaysia at 20th, Thailand 22nd, Vietnam in 37th place and Indonesia ranked 51st.

A notable aspect of the changing landscape of FDI is the growing transfer of labour-intensive manufacturing activities from higher cost locations in Asia to ASEAN countries, especially Cambodia, Lao PDR, Myanmar,

Vietnam and Indonesia. This development is boosting production networks in these countries.

Accordingly, member states now have an opportunity to capture a greater share of world manufacturing, particularly from multinationals seeking a lower cost base than China for example, where labour costs can be four times as high.

In 2015, Vietnam received US\$11.8 billion of investment, a 28% increase, and Myanmar followed with US\$2.8 billion, more than double the amount of the previous year. Lao PDR received US\$1.2 billion and Cambodia US\$1.7 billion.

While FDI inflows to ASEAN members fell 8% between 2014 and 2015 to US\$120 billion, the amount of FDI into manufacturing continues to rise, with many multinational enterprises expanding their activities in the region. Investment from Australia, China, India, Japan, South Korea and New Zealand, increased 11% to US\$40 billion. The six countries are prospective partners with ASEAN in the Regional Comprehensive Economic Partnership.

US companies have substantial operations in Southeast Asia through contract manufacturers arrangements, which involve hundreds of factories producing items such as electronic goods, footwear and apparel, often exclusively for US brands.

About half of US manufacturing investment is focused in computers and electronics featuring firms such as Intel, Seagate, Western Digital and Texas Instruments. Machinery and automobile manufacturers including Caterpillar, Ford, General Motors and General Electric have a long standing presence in the area, while Proctor & Gamble is one of the main consumer goods companies in the region.

In addition, ASEAN is increasingly becoming a major destination for South Korean investment. An estimated 3,770 Korean subsidiaries have operations in a wide range of industries reflecting an overall US\$41 billion investment. The top 20 Korean multinationals all have a presence in the region. Their growing investments are seen in Vietnam, especially in manufacturing activities from companies such as Samsung and LG.

Vietnam, in particular, has made great strides as a manufacturing hub, with a growing number of producers relocating from China. Manufacturing now accounts for 25% of Vietnam's GDP, with the country emerging as a regional leader in low cost ventures.

Over the last few years, Myanmar has also made considerable progress developing a manufacturing base in sectors such as textiles and garments, food and beverages and construction materials, which continue to attract foreign investors.

Cambodia similarly, is also a low cost manufacturing hub with shipments of garments and footwear rising by 11% in 2015. One advantage the country holds is that its garment factories are monitored according to international standards. The US-Cambodia Trade Agreement on Textiles and Apparel, for example, links market access to labour standards.



In Cambodia, the Garment Manufacturers Association is taking the lead by the opening of a specialised training institute for garment workers at the end of 2016, to provide a supplier of trained personnel for multinationals looking to establish a production base in the region. The institute is located within the Phnom Penh Special Economic Zone.

The region's cross-border trade flows are set to deepen and accelerate as the AEC is successfully implemented. This will provide an opening for ASEAN members to become much larger manufacturing hubs, McKinsey believes.

This trend is also being seen elsewhere. "Thailand has been the automotive production hub for the Asia Pacific region, but it is now growing into a global hub," says Morio Owaki, Vice President at Toyota Asia Pacific Engineering and Manufacturing.



Concerns over any perceived fragility in global export markets is balanced by firm expectations of increased Intra-ASEAN investment, which rose to US\$22.1 billion in 2015.



Global manufacturers such as Toyota, Honda, Ford, Nissan, Mitsubishi, BMW and Mazda are among leading companies which form the foundation of Thailand's flourishing industry. This industry, which with its expansion of manufacturers, is considered a classic example of the benefits arising from development of areas allowing related industries to develop and feed off each other.

Around 14 companies and joint ventures employ nearly 100,000 workers. An additional 250,000 people are employed by an estimated 600 companies in the components supply chain, and a further 175,000 are estimated to work in smaller scale manufacturing operations serving the country's automotive industry.

American Axle & Manufacturing's President and CEO, David Dauch, says his company is focusing on expansion in Thailand and points to forecasts indicating that ASEAN will become the sixth largest automotive market by 2018, mainly through growth in Thailand and Indonesia.

Thailand accounts for 55% of ASEAN members' vehicle production, with around 2.5 million units per year. Indonesia produced an estimated 1.1 million vehicles in 2015, though it is seeking to reach an output of 2.6 million by 2020. Malaysia currently produces around 500,000 a year.

Indonesia is the second largest manufacturer in the region. Major global manufacturers Toyota and General Motors, Daihatsu and Honda have invested in facilities. The Government is eager to emulate Thailand's industry success and over the long term, become a self-sourced independent car manufacturing country which delivers complete locally built units containing domestically produced components and sub-assemblies.

A growing share of inward investment is being directed to the sector. This includes US\$250 million from Nissan and US\$800 million from Suzuki, US\$246 million from Daihatsu and US\$100 million from Chrysler to build production plants.

A World Bank analysis suggests that given the decline in the commodities sector there is a critical opportunity for Indonesia to enhance the competitiveness of its manufacturing and services sectors. "In addition to ongoing reforms, a sound industrial strategy will be key, focused on technology transfer or capacity development in terms of product design, engineering and development in promising industries."

There is also significant potential in the Philippines and Vietnam. At present, each of these countries has low unit assembly operations

measured with around 50,000 vehicles a year, but both are keen to expand production to serve their local markets, which will increase as incomes rise.

Suzuki Motor Corporation has plans to build a factory on a 20 hectare site in Myanmar's Thilawa Special Economic Zone, which will be able to produce up to 30,000 cars a year. They already produce a small number of mini trucks at a factory in Yangon. Mitsubishi Motors has also expressed an intention to develop after-sales service centres, while Toyota is also thought to be considering entering the country.

Whether or not the focus is on car production, there is a growing emphasis on developing more value added production throughout the ASEAN region. This means ASEAN's role in global trade is likely to remain significant.

Thailand, for example, is seeking to move from production which involves low technology and low value added output. It also wants to avoid manufacturing which is environmentally damaging and has high energy consumption.

In particular, the Government is seeking to develop new regional manufacturing hubs. These are designed to feature vehicles and production of automotive parts, electronics and telecoms equipment and other digital based industries, robotics, aerospace, medical technology and food.

As part of this strategy, Thailand is also offering a range of tax incentives including an eight year corporate tax exemption, import duty waivers on machinery, personal tax exemption for specialists in certain areas, who are offered permanent residence and permission for foreigners to own land to implement business strategies.

Malaysia meanwhile, is seeking to enhance economic development through its Economic Transformation Programme, to encourage innovation based expansion, a route which is also favoured in

Singapore, as both countries strive to accelerate manufacturing along the value added chain.

Malaysian output is already moving forward from electrical and electronic components to high end consumer goods, photovoltaic cells, modules and ICT products. These now make up a third of the country's total exports.

Singapore's advanced infrastructure and high quality human resources have drawn more than 30 of the world's leading life science companies to make the country their regional hub. GlaxoSmithKline, Abbott, MSD (Merck), Novartis, Pfizer and Sanofi Aventis have invested more than US\$4 billion, making it a global manufacturing base for a range of active pharmaceutical ingredients, biological and nutritional products.

The number of international companies establishing a base continues to rise. The US' Amgen has set up a US\$142 million bio-medical facility at Tuas Biomedical Park (TBP), the company's first Asian production venture. Another US company, AbbVie, is investing US\$320 million in a manufacturing complex in TBP to be completed in 2019.

The future for ASEAN export manufacturing growth looks optimistic and will be further helped by the development of industrial hubs in dedicated export oriented Zones of Development. A number of these are at various stages of completion. They include the Batam Free Trade Zone between Singapore and Indonesia, Thailand's Southern Regional Industrial Estate, Indonesia's Tanjung Emas Export Processing Zone, Malaysia's Port Klang Free Zone, Vietnam's Than Thuan Export Processing Zone and Myanmar's Thilawa Special Economic Zone.

The steady expansion of manufacturing will have beneficial effects on employment and living standards within ASEAN member states. A study conducted by the Asian Development Bank and International Labour Organisation, estimates that up to 14 million new jobs could be generated within ASEAN by 2025.

Southeast Asia competes in global aerospace production industry

Development of the aerospace industry is a priority, particularly for Singapore, Malaysia, Indonesia and Thailand. They are reaching beyond their established maintenance, repair and overhaul (MRO) services to become suppliers of aircraft, engines and equipment.

They are also developing advanced aerospace assembly and manufacturing operations as well as research and development (R&D) activities. This is leading to them to move up the value chain, taking on increasingly more complex work. As a result, a new global force in aerospace is emerging, able to provide engineering services, electronics, composite materials, manufacturing and systems integration, for both the region's airlines and other international clients.

Malaysia is seeking to become the region's leading aerospace nation within the next 15 years, when the sector is predicted to contribute US\$7.7 billion in revenues and provide 32,000 high income jobs.

Composites Technology Research Malaysia (CTRM), based near Batu Benendum airport in Malacca, is a partner in the Airbus A380 programme. It is also producing components for Boeing 737, 767, 777 and 787 airliners, and has work share on development types such as the Airbus A350. The company intends eventually to move into fuselage work to further enhance its role in airliner production.

Singapore has a well established aerospace sector and has grown 10% per year over the last two decades. The sector is due for further expansion

with completion of the Seletar Aerospace Park in 2018. The park is already home to major companies including Pratt & Whitney and Rolls-Royce and home grown companies such as Wah Son Engineering, Wings Over Asia and ST Aerospace.

Singapore also hosts one of the top four international air shows every two years, and is recognised as a world class aerospace design location with some of the biggest global equipment manufacturers having a presence there. Companies including Boeing, Airbus, Rolls-Royce and Thales have entered into partnerships with local universities and research institutes to study advanced materials, fuel cells and repair technologies. European Aeronautics Defence and Space Company (EADS) chose Singapore to establish its first research and technology centre outside Europe.

By 2018, its aerospace output is expected to more than double to at least US\$9 billion, according to projections by Singapore's Economic Development Board (EDB). Production of engine casings, gears, valves and electrical power systems are among a range of products already made in Singapore factories.

Rolls-Royce is producing its Trent 900 engine for the superjumbo Airbus A380 as well as the Trent 1000 for Boeing's 787 Dreamliner at Seletar Aerospace Park. Since launching operations in 2012, the company has delivered 170 engines and in 2016, it expects to deliver a further 150 and reach full capacity of 250 engines a year by the end of 2017.

The next engine venture coming to Seletar is the Trent 7000 which is due to power the Airbus A330neo, replacing the Trent 700 installed on the current A330. Manufacture of the new engine is expected to commence in 2017.

Close to the engine assembly and test unit at Seletar, is Rolls-Royce's titanium wide chord fan blade production facility, which is expected to be manufacturing 7,600 fan blades a year by 2018.

Pratt & Whitney has 2,000 staff employed at the park and has invested US\$110 million in the 16,000m² plant. The investment is focused on producing components for the company's new generation turbofan engine, which is intended to reduce fuel consumption by up to 16%.

Vietnam's Aerospace Engineering Services JSC, is also due to partner Airbus to produce parts for their aircraft. Airbus has identified the Asia-Pacific region as a core market with the region accounting for nearly one third of its 4,300 aircraft in service or on order.

Malaysia's answer to Singapore's Seletar Aerospace Park is Asia Aerospace City, a dedicated industrial hub at Subang, close to Sultan Abdul Shah Airport outside Kuala Lumpur. The facility, which is being developed by the state agency Mara Aerospace & Technologies, is due to be completed in 2018, and is expected to attract new foreign inward investors.

Rolls-Royce, for example, announced in February 2016, that it will produce Trent 1000 engine fan cases in Malaysia. This results from the UK company signing a 25 year agreement with UMW M&E, the investment arm of Malaysia's UMW Holdings, which has established an aerospace subsidiary.



Malaysia is placing a particularly high priority on training, which has seen numerous new academic institutions and aerospace curriculums established in recent years. These include the Advanced Composite Training Centre at UniKL-Malaysia Institute of Aviation Technology and the Advanced Aeronautics Technology Centre, in addition to related diploma and degree level courses at public universities. The Government has also allocated funds to develop a second campus for Kuala Lumpur University's Institute of Aviation Technology.

Investment in research is showing impressive results. Aerospace Malaysia Innovation Centre is researching an optimal algae strain to produce jet fuel. Malaysian aero structures company, CTRM has become a specialist in the production of composite parts.

The Indonesian Government also plans to establish an aerospace design centre to develop the country's capabilities in developing aircraft and related technologies for commercial and military applications. The facility is to be developed within the Bandung Institute of Technology, which has close links to the state owned aerospace manufacturer PT Dirgantura, Indonesia, a licenced assembler of Airbus' Super Puma helicopters as well as Messerschmitt-Boelkow-Blohm's BO105 light helicopters.

Gusti Putu Suryawirawan, Director General at the Ministry of Industry, says that the design centre will play a key role in shaping industrial aerospace capabilities.

Indonesia is already preparing to produce a locally designed 19 seat turboprop airliner the N-219. The country's largest low-cost carrier Lion Air, has ordered up to 50 of the new aircraft with options on an additional 50. Another local airline, Nusantara Buana Air, has also signed a memorandum for 20 N-219s to provide feeder services around the country's vast archipelago.

Further indications of Indonesia's burgeoning aerospace sector is indicated by Honeywell International, establishing a plant on Bintan Island to manufacture aircraft communications, navigation equipment and cockpit components.

Indonesia also concluded a US\$1.3 billion deal with the Republic of Korea in August 2016, to jointly develop a new generation of fighter aircraft with Korea Aerospace Industries (KAI). The investment will account for around one fifth of the project's cost with 100 Indonesian engineers participating in the programme. The agreement allows for Indonesia to receive technical data and a prototype aircraft from the project.

Thailand also has ambitious aerospace plans and seeks to emulate the success of the automotive industry. Officials believe it is set to grow and benefit from a rising demand in global aviation as a result of its pool of available skilled labour and both its geographical position and strong government support. The World Bank's Ease of Doing Business 2016 report, for example, puts Thailand as the second ranked emerging economy in Southeast Asia and the 49th in the world.

A number of prominent foreign aerospace companies, including GE, Senior Aerospace, Triumph Group, Chromalloy, Ducommun, Aeroworks, Eurocopter, Driessen and Minebea, have already established Thai based manufacturing operations.

Arnd Balzereit-Kelter, MD of Germany's Leistriz, which is a supplier of components for the forging of compressor blades for aero engines, says that "Many of its employees in Thailand come from the country's automotive and electronics industries."

The Thai Government's recognition of the opportunities that lie in the aerospace sector has led to the implementation of the Aerospace Industrial Estate Development Plan (2016-2045), at the new U-Tapao-Pattaya International Airport, which is a former military facility adapted for civil use serving the region south of Bangkok. It is due to be officially opened early in 2017.

Ronald Vuz, President of Triumph Structures, a manufacturer of aerospace composite structures, says that "Thailand is centrally located and very pro-business. We are in a Free-Trade Zone which is a big reason why we invested. The country also has strong regulations and policies with great logistics. It is very easy to get products in and out."

Aviation maintenance, repair and overhaul (MRO) industries seeks global reach

This market is a vital part of the global civil aviation industry. MRO is essential to ensure passenger and cargo carrying aircraft are kept in condition of airworthiness as defined by strict international and domestic regulations of the civil aviation authorities.

With the world's airlines spending more than US\$60 billion a year on MRO, the industry is extensive and growing fast, especially in Southeast Asia. This in turn is driving a phenomenal expansion in the region.

Lufthansa Technik Philippines, for example, estimates that more than 37% of global commercial aircraft will soon be based in the Asia-Pacific region, as low-cost carriers expand their fleets.

Much of the future servicing requirements for these aircraft will also be in the region, where airlines are among the fastest growing in the world. Boeing forecasts that ASEAN fleets will triple in size to 3,500 aircraft by 2032.

This surging aviation expansion is being accompanied by a rapid development of MRO providers and not only in established hubs such as Singapore and Malaysia. The Philippines, Indonesia, Thailand and Vietnam are all keen to expand.

Singapore is currently the leading hub for MRO services, accounting for 25% of the market and is expected to be one of the beneficiaries of the region's fast expanding aviation growth. The sector already generates an annual turnover of some US\$5.8 billion and employs more than 18,000 people.

The largest local MRO company is Singapore Technologies (ST) Aerospace which has been operating since 1976, when it was established to service military aircraft. Now with a global reach, the listed company has 8,000 certified engineers and operates space for 30 twin-aisle and 11 narrow body airliners.

In 2014, Boeing and SIA Engineering Company (SIAEC), a subsidiary of Singapore Airlines, established a joint venture to service the US manufacturer's aircraft. The agreement also covers the provision of MRO services for Singapore Airlines' Boeing 777-300ER aircraft and the fleet of new 787 Dreamliners ordered by Scoot, a local budget carrier.

There are now more than 100 MRO operations in Singapore alone and more are developing throughout the region. These are being established to provide services through joint ventures with foreign companies.

At the Singapore Airshow in February 2016, the US' GE Aviation announced new investments in MRO activities including an advanced technologies centre for research and development into repairs.

Malaysia's Economic Transformation Programme is emphasising MRO services as a key industry to expand value added industrial development and skilled employment.

The country's Aerospace Industry blueprint (2015-2030) seeks to gain 5% of the global MRO market by the end of the plan. By 2030, aerospace activities are projected to generate revenues of some US\$13.7 billion annually and provide 32,000 jobs. The sector now employs around 19,000 people with 160 companies involved, he says.

According to Trade and Industry Minister, Mustapa Mohamed, Malaysia's aerospace industry attracted investment totalling US\$969 million in 2015. In 2016, Malaysia Airlines announced a venture with the US' Aircraft Propeller Service to set up a new facility at Kuala Lumpur International Airport to maintain ATR turboprop aircraft.

MRO is also the main current focus of Indonesia's aerospace development, with the sector generating revenues estimated at US\$900 million in 2015, a figure expected to rise to US\$2 billion by 2020. However, for this degree of expansion to take place, the industry's capacity will need to increase at least threefold.



In 2016, Lithuania's FL Technics started MRO operations for airlines operating to and from Indonesia's Soekarno-Hatta International Airport in Jakarta. The head of the new facility, Martynas Grigalavicius comments: "There are approximately 500 Airbus and narrow-body airliners flying in the region, all of which require maintenance support. We hope our European experience and know how will help local airlines in the area."

However, while there are some 60 to 70 aviation MRO companies already in Indonesia, GMF AeroAsia, a subsidiary of the principal airline Garuda, is the only airframe and engine overhaul facility in the country which is internationally certified.

The company holds both European Aviation Safety Agency (EASA) and US Federal Aviation Administration (FAA) certification. GMF also established its own EASA-approved Part 147 training organisation in 2009.



With the world's airlines spending more than US\$60 billion a year on MRO, the industry is extensive and growing fast, especially in Southeast Asia.



At present most of Indonesia's MRO companies are content to comply with certification provided by Indonesia's Directorate General of Civil Aviation. This is far less costly but only extends to the domestic market. However, today, Indonesian MRO businesses are only taking an estimated 30% of the market available.

Thailand is also intending to develop as a full service aviation hub. MRO industries and training bodies are being encouraged to set up in Bangkok at Suvarnabhumi International Airport. Studies are also taking place to develop Nakhon Ratchasima Airport, 220km northeast of Bangkok, as a new service centre.

Thailand's Board of Investment is offering a wide range of incentives to foreign inward investors, including provision of sites and factories close to air and seaports and free trade zones. Further incentives are available for aerospace companies if they collaborate with Thai academic and research institutions.

MRO is also growing in importance in the Philippines, where revenues from these activities are predicted to rise more than six fold to US\$1.5

billion by 2025, compared to US\$226 million in 2014. This reflects the steadily expanding scope of the country's capabilities. Lufthansa Technik, for example, is providing services for Air France's Airbus A380 fleet, which has necessitated building a third hangar to accommodate its growing volume of work.

Other parts of the region are also seeking to develop as regional and global MRO hubs. Vietnam's Aerospace Engineering Services Company (AESC) received US FAA certification in December 2015, for its services. The privately owned AESC also holds EASA certification, the only Vietnamese concern to hold both certifications. The firm's clients include Vietnam Airlines, Jetstar Pacific, Vietjet Air as well as foreign carriers including Lao Airlines, Cambodia Angkor Air and Air Bagan.

Nguyen Duc Cuong, Chairman of the Vietnam Aviation Aerospace Association, says the country is quite capable of becoming a leading maintenance centre in the region, with large repair facilities available in Bien Hoa City and Da Nang. The Chairman believes Vietnam's MRO potential could attract airlines from both the US and Europe.

ASEAN at the centre of global aviation expansion

Half of global aviation traffic growth over the next 20 years is expected to arise from flights within or to and from the Asia-Pacific region, and ASEAN's airlines will be at the forefront of this development.

In less than a decade, the region's airline capacity has risen 80%. Multiple indicators including high passenger volume and steady increases in domestic and international hotel bookings, reflect the upturn in the region's air travel. According to Boeing's forecast, passenger traffic in Southeast Asia is expected to grow at 6.5% annually over the next 20 years.

It forecasts that the region will require 3,750 new aircraft, valued at US\$550 billion, with more than three quarters of new deliveries being single-aisle airliners. At the same time this rate of growth will accentuate the need for regional investment to support and expand aviation infrastructure, Boeing says.

ASEAN is the only region in the world which has as many aircraft on order as it has active fleet. Regional airlines plan to expand capacity and

open new routes. Indonesian carriers, Garuda and Lion Air have both surpassed Singapore Airlines to become the region's largest airlines in terms of fleet size, with Garuda continuing to have the most extensive international network.

Some 300 million passengers travelled by air to and from and within Southeast Asia in 2015, according to a World Bank analysis. The dramatic rise in air travel is largely down to the increase in lower and middle income travellers and the availability of affordable fares from budget airlines, which continue to expand their fleets and reach.

The Low-Cost Carriers (LCCs) and dozens of other budget airline start-ups have grown rapidly in popularity and are now estimated to represent nearly 60% of the total seats sold each year. The gradual but ongoing removal of visa requirements for travel by ASEAN citizens within member states is also a further stimulus to growth.

The fastest growing recent LCC entrant by far has been Indonesia's privately owned Lion Air. Around 24 LCCs now operate in the region with

600 aircraft providing services. As of July 2016, for example, Lion Air had 250 aircraft, Malaysia's Air Asia had 200 and Vietnam's VietJet 36. These LCCs as well as others in the region have many more aircraft on order. Lion Air awaits delivery of nearly 500 aircraft and VietJet a further 250.

As incomes rise throughout the fast growing economies of the region, demand for air travel is set to continue its growth curve, especially in the highly populated archipelagic areas of Indonesia and the Philippines. Some of the world's busiest budget airline routes are now located in Southeast Asia. These include Singapore to Jakarta and Kuala Lumpur to Bangkok.

Forging alliances with airline companies in other member states has allowed ASEAN carriers to extend their operations. Malaysia based Air Asia has established several subsidiary airlines. These include Indonesia Air Asia and Thai Air Asia. The airline group also operates from the Philippines as both Air Asia and Zest Air. In Malaysia, another franchise Air Asia X, has been set up to operate long range budget routes, while Air Asia Japan commenced operations in 2016.

A number of budget airlines are forging medium and long haul routes beyond ASEAN. In the Philippines, Cebu Pacific, Jetstar Pacific, which are owned by Vietnam Airlines and Australia's Jetstar, Singapore Airlines' subsidiary Scoot and Air Asia are branching out to Australia and North Asia.

Singapore Airlines and Thai Airways affiliate Nok Air, have set up a joint venture known as Nok Scoot to operate Boeing 777 twin-aisle airliners on medium to long haul routes from Bangkok's Don Mueang International Airport.



Lion Air has established Malindo Air, a joint venture airline with Malaysia's National Aerospace and Defence Industries. Based at Kuala Lumpur airport, the carrier operates Boeing extended range 737-900 airliners and plans to develop routes covering China, Japan and India and within the ASEAN area.

Garuda Indonesia's budget subsidiary, Citilink, is another fast growing LCC. It operates a modern fleet including ATR turbo-prop airliners, built by Airbus and Italy's Alenia Aermacchi, as well as Airbus A320s. Citilink

“Multiple indicators including high passenger volume and steady increases in domestic and international hotel bookings, reflect the upturn in the region’s air travel.”

expects to operate around 49 airliners by the end of 2017, expanding to regional routes outside the Indonesian archipelago, for example to China and Saudi Arabia, as a result of acquisitions of new edition A320s.

Aviation is also fast expanding in Vietnam, with the privately owned VietJet Air providing increasing competition to the state owned Vietnam Airlines. There are now 24 international airlines providing services to Myanmar, spurred by the country’s fast expanding tourism industry. Some ten domestic airlines are also operating in Myanmar.

The region’s airlines are continuing to increase their fleet sizes. At the 2016 Farnborough Air Show in the UK, Air Asia placed a US\$12.4 billion order with Airbus for 100 A321neo single-aisle airliners. Vietnam based Jetstar Pacific also placed a US\$980 million order for ten Airbus A329neo aircraft. Philippines Airlines meanwhile, has ordered six Airbus A350-900 airliners valued at US\$1.8 billion, with options on another six of the twin-aisle aircraft. They are to be operated on flights between Manila and New York and other long haul routes.

The region’s easing of cross-border aviation restrictions has been a leading factor in allowing airline operations to flourish. ASEAN’s Single Aviation Market strategy though, is still evolving. While the policy has gone a considerable way in liberalising services between member states, achieving the same level as the Open Skies regime of Europe, is still yet to be reached.

Malaysia’s Minister of Transport, Liow Tiong Lai, has stated that the liberalisation of ASEAN’s aviation sector will be a major catalyst for the region’s economic growth through to 2030.

With full liberalisation, ASEAN airlines would no longer have to create local companies in joint ventures with local partners in individual ASEAN countries in order to obtain a national airline operating licence in the respective country. This would reconnect local subsidiaries with their parent companies, allowing greater flexibility to open up new routes and divert aircraft to the most profitable routes.

Adoption of the ASEAN Single Aviation Market will strongly support efficiencies and industry growth, while progress towards a full Open Skies regime continues. With the interests of aviation industries in all ten country’s to consider, progress takes time.

However, airlines based in the region already have the right to fly over each other’s airspace without landing, and the right to land to refuel or carry out maintenance. Further progress will be needed to emulate the common aviation market seen in Europe where airlines, especially LCCs, can fly cross-border routes that do not originate or connect with an airline’s country of origin.

The drive towards an ASEAN Single Aviation Market is designed to foster a competitive aviation market and to propel the region’s airlines into bigger regional and global markets.

Digital revolution is set to transform ASEAN economy

ASEAN countries are set to enter the top five global regions in terms of the application of digital technologies. By 2025, the manufacturing sector will have embraced fast evolving advanced technologies and its citizens will be increasingly using advanced digital communications in their personal lives as well as in the workplace.

The internet combined with advanced technology represents the most essential modern element in social and material progress, as well as a bridge to global economies. The sector is also critical for providing services for growth in other sectors, including financial, business, utilities and logistics.

The broadband speeds are increasingly a pre-requisite consideration in capturing the possibilities of e-commerce and emerging technologies such as cloud computing. The latter is useful for SMEs since it allows them to reduce costs by subscribing to online solutions rather than having to invest in expensive hardware systems.

A report by consultancy firm A T Kearney, predicts that Singapore, Malaysia and Thailand will be among the top 20 countries in the global digital rankings by 2025, while most of the other ASEAN countries should be positioned in the top 40 worldwide. The report adds that the implementation of a radical digital agenda could add US\$1 trillion to the region's GDP over the next ten years.

National personal identification systems have been introduced in the region to provide a gateway to access public services in Singapore and

Malaysia. The Philippines has recently introduced legislation to commence its own national ID system. Within the next decade most public services in the region should be digitally available.

The Philippines Business Process Outsourcing (BPO) industry, which has grown considerably each year over the last decade, illustrates how new economic sectors are assisted by ICT development. BPO was a nascent industry but by 2015, it employed 800,000 people and is expected to employ a workforce of one million people by the end of 2016, according to The World Bank.

BPO has become the country's largest source of private sector employment and the second largest contributor of foreign exchange after remittances. The Philippines Central Bank predicts that if current growth rates continue, the IT and BPO sector will overtake remittances as the country's main source of foreign exchange by 2017.

The global BPO industry is forecast to be valued at US\$250 billion by 2020, and the Philippines hopes to secure 19% of this market within the next five years from around 12% in 2014. This will be aided as the sector moves from contact centres to more knowledge based businesses such as back office systems development, accounting, medical transcription and other IT enabled back office support enterprises, including media services.

Technology developments are pivotal to the future growth of virtually every economic sector. In this process, regional infrastructure projects are vitally important. Indonesia's Nusantara Super Highway project, also

known as the Palapa Ring, will form a nationwide fibre optic cable network which will be the backbone of its ICT development. It is destined to propel the country into an advanced digital age and ranks as one of Asia's most ambitious telecoms projects.

Eventually it will cover 36,000km with cable both underwater and over ground. According to Indonesia's Ministry of Communications and Information, the project aims to reach 440 cities and will link the main islands of Sumatra, Java, Kalimantan (Borneo), Nusa Tenggara, Papua, Sulawesi and Maluku. The Ministry hopes it will be completed in 2018.

Cross-border initiatives are also of strategic importance. The agreement signed in Kuala Lumpur in March 2014, to build the SEA-ME-WE 5 fibre optic cable link, is designed to connect Southeast Asia, the Middle East and Western Europe. Existing cable links do not have sufficient capacity to accommodate projected internet traffic.

The 20,000km cable linking Singapore and France became operational in 2016, and is designed to provide transmission speeds of up to 100Gbps. It is due to be operated by a consortium of 15 companies resident in countries along its route including Singapore Telecommunications, Telekom and Myanmar Posts and Telecommunications (MPT).

The new cable will ease the strain on other telecoms networks linking Europe and the two regions, many of which connect via the US at present. "With significant growth in data traffic in recent years, SEA-ME-WE 5 will address the urgent need for a new generation data superhighway to cater for the increasing demand for next generation internet applications," according to Bill Chang, Chief Executive Officer of Singapore Telecommunications.



A willingness to invest heavily in technology has been important in the development of digital economies in Singapore and Malaysia. The introduction of a national high speed broadband network has been a priority in Malaysia, with the country committing US\$3.7 billion to install cable links to 1.3 million homes over the last four years.

In Malaysia, the Multimedia Development Corporation is encouraging the use of cloud services among SMEs in the country's Multimedia Super Corridor, which is a Special Economic Zone extending 15km from central Kuala Lumpur to the city's international airport.

Malaysia has invested US\$2.6 billion in its high speed broadband project to provide connectivity to 2.3 million homes, offices and businesses, under Malaysia's Tenth Development Plan.



The internet combined with advanced technology represents the most essential modern element in social and material progress, as well as a bridge to global economies.



Singapore has also invested heavily and now ranks as one of the world's most advanced digital societies both in the region, and globally, when it comes to fast internet access with average speeds of 61Mbps.

Potential opportunities provided by broadband services extend beyond commerce and include education, transportation and healthcare. According to Singapore's Communications and Information Minister, Dr Yaacob Ibrahim: "We all recognise the potential of ICT to positively transform the way we work, live and play. Sensors, for example, can be placed in homes, this allows hospitals and clinics to monitor their patients' health and wellbeing remotely, changing the way we deliver healthcare needs to the community."

The benefits to countries with advanced domestic telecoms infrastructures, such as Singapore and Malaysia will be substantial but even for the less developed areas, faster development provides a greater opportunity to join the digital world.

ICT Ministers of the ten ASEAN member countries have drawn up a masterplan which seeks to improve mobile applications for use in areas such as healthcare provision, transport as well as e-governance. Another

aim is in the provision of broadband internet access to every school in the ASEAN community through the development of policy frameworks and a national statistics portal.

Indonesia has established a National Broadband Network strategy under its Masterplan for Acceleration and Expansion of Indonesia Economic Development 2011-2025 (MP3EI). Under this plan, the wired access target for a 20Mbps connection is set to rise from 21% to 75%.

Thailand aims to extend basic internet services to 95% of the population by 2020. The strategy also aims to provide 100Mbps fibre optic services to key cities by the same date.

Latest 4G technology offers download speeds three times faster than 3G connections, which are the most advanced available in the region at present. Swedish telecoms company Ericsson estimates that 4G technology usage will expand from around 15% to 60% by the end of 2019.

Vietnam hopes to see 3G and 4G networks covering 95% of homes by 2020. Indonesia will need to start moving towards 4G, as cellular data traffic is expected to expand more than tenfold by 2019, according to Ericsson's Mobility Report.

A huge number of people have gained access to the internet in recent years through their mobile devices. While the uptake varies, the trend is clear in every ASEAN member state.

Smartphone supplies in the region reached just over 100 million units in 2015, representing a year-on-year growth of 22%. Around 30 million of the delivered handsets were capable of operating on advanced 4G networks. Indonesia remained the largest overall market, accounting for nearly 29%, followed by Thailand and the Philippines, with growth levels of 22% and 14% respectively.

In a short period, Cambodia has reaped the benefits of a successful roll-out of mobile services. It has avoided a costly rebuilding of fixed line telecoms infrastructure by its launch of cellular services.

This process is being replicated in Myanmar where commercial cellular services have only been available since 2014. Reform of the sector is an integral part of lifting millions of people out of poverty, says Ulrich Zachau, The World Bank Country Director for Myanmar. Bold new investments are already helping to accelerate the process.

The transformational change in Myanmar's telecoms sector has been the entry of foreign operators in the domestic cellular market joining the national operator, MPT. Since the arrival of Qatar owned Ooredoo and Norway's Telenor, a fourth licence was also issued in 2016, to Vietnam's Viettel. The latter expects to invest US\$1.5 billion on the construction of a 3G network with its coverage due to reach 95% of the population within three years.

Japan's mobile operator KDDI and the trading house Sumitomo Corporation, signed an agreement with MPT in July 2014, to invest US\$1.96 billion to jointly operate a new mobile phone business. KDDI's Senior Vice President, Yuzo Ishikawa commented: "We have entered

what could be called the last rapidly growing market. With our telecoms infrastructure expertise, we hope to greatly contribute to the development of Myanmar's economy."

The initial foreign investors who recognised the potential of investing in the development of Myanmar's mobile telecoms and their strategies have been vindicated. In 2016, Telenor Digital Businesses said it had secured more than 16 million subscriptions, giving it more than 30% of the market. The number of data users has also been much higher than expected, according to Petter Furberg, Telenor's Senior Vice President.

"The biggest surprise is that 55% of our customers are data users on a monthly basis, most of them on smartphones. Voice traffic grew 93% from January to June, but data usage grew 196% over the same period," he says.

Meanwhile Myanmar's Ministry of Transport and Communications has entered into a leasing agreement with Intelsat for transponders to extend 2G and 3G mobile telecoms services beyond major cities, which will hasten the expansion of high speed connectivity for businesses and communities in rural as well as urban areas.

Ericsson predicts that by 2020, smartphone subscriptions in the region will grow three times to almost 800 million, while 4G subscriptions will constitute almost 25% of mobile subscriptions, with the remainder mostly operating to internet compatible 3G standards.

ASEAN has an opportunity to move to the forefront of the fast growing global digital economy with many of the fundamentals already in place. These building blocks include robust and growing economies, a literate population, a rapidly growing smartphone penetration and well developed ICT.

Mining sector is optimistic for expansion and a bright future

ASEAN is a region rich in mineral resources with vast potential for new discoveries. Extraction of these can be one of the main drivers in the region's economy. However, developments need to be measured against environmental considerations and effect on local populations.

If managed well, natural resources can help economies expand and develop in a sustainable way, benefiting local communities as well as national economies and the companies involved. In this, a meaningful attention to human rights and to environmental questions is essential as is a process of awarding contracts, which are fully transparent.

These social factors are of increasing concern where governments are also seeking to add value to their natural resources by retaining more minerals for refining in their own countries rather than exporting unprocessed ores. Myanmar, for instance, though it is a major source of jade and other gemstones only derives revenue from the export of raw

stones, with domestic earnings on extracted stones equivalent to some 10% of the final sale price.

As new policies begin to unfold, the region is also coping with a decline in commodity prices. In particular, the cooling of the Chinese economy, the world's leading consumer of metals, has tended to slow investment in mining globally.

However, the situation is still one of optimism in ASEAN's mining sector. Resilient demand from a fast expanding power sector is continuing to support growth in coal production. Indonesia's electricity strategy, for example, envisages that half of its planned increase of 35,000MW generating capacity will be coal-fired.

It has extensive mineral resources, with deposits distributed throughout the country. As a result, mining has become a major activity in provinces such as Papua, Bangka-Belitung, West Nusa Tenggara and East

Kalimantan. The country ranks as the world's main exporter of thermal coal as well as the second largest in tin and until recently, the third and fourth major exporter of copper and nickel respectively.

Vietnam, which has around 8.8 billion tonnes of coal deposits in the north-east and 29 billion tonnes in the Northern Delta region, also plans to build more than 70 coal-fired power stations by 2030. It has many other extractable reserves of minerals including tungsten, titanium zinc, rare earths, as well as phosphates, iron ore and coal. The country is also estimated to contain 7% of world deposits of bauxite with some 5.5 billion tonnes in the country's Central Highlands.

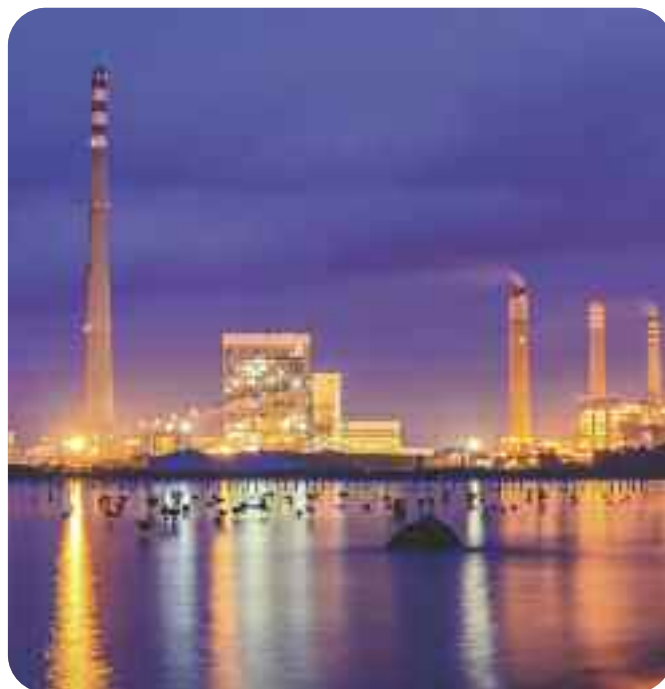
Malaysia contains substantial gold deposits in a belt stretching from Kelantan, Terengganu and Pahang through to Johor and Sabah. Cambodia also has considerable potential to develop, with significant deposits of gold, titanium, copper and bauxite.

Other parts of the region offer similar potential. The Philippines with some nine million hectares of highly mineralised areas, is estimated to have some of the world's largest reserves of nickel, gold and copper, according to the country's Mines and Geosciences Bureau (MGB).

Some 60% of the Philippines' land area of 30 million hectares has high mineral potential, according to the MGB. In 2013, the Philippines Government, valued its deposits at around US\$850 billion. The southern part of the country is seen as having a wealth of resources which includes gold, copper, nickel, manganese, chromite, silver, lead, zinc and iron ore.

The Philippines gold production rose 12% to 20.6 tonnes in 2015. The country also produced 83,835 tonnes of copper concentrate, according to the MGB. It produced 467,000 tonnes of nickel in 2015, 24% of the globally mined total.

Despite these resources, 2016 has seen a halt on the expansion of mining operations as the country weighs the benefits of mining against



environmental and social considerations. The new Government has not hesitated to suspend the operations of mines considered not to be meeting environmental rules. An audit has reported that many mines producing nickel and other minerals fall short of required standards.

Nevertheless, up to US\$30 billion of mining investments are predicted over the next five to ten years including the huge Tampakan copper-gold project.

The US\$5.9 billion open cast mining project, which covers the provinces of South Cotabato, Sarangani, Sultan and Davao del Sur has estimated reserves of 18 million tonnes of gold and 15 million tonnes of copper, according to the Department of Environmental and Natural Resources. If approved the project will produce an average of 375,000 tonnes of copper a year and 360,000 ounces of gold over its estimated 17 year life.



The Philippines with some nine million hectares of highly mineralised areas, is estimated to have some of the world's largest reserves of nickel, gold and copper.



The regional focus on adding value to the minerals being mined. Vietnam's 2012 Mining Law, requires companies to include downstream processing and higher value production in their licence applications.

In Indonesia, the Government wants to add value to mining activities by insisting that its minerals, including nickel, be refined and processed within the country, rather than exported as ore.

The sector accounted for almost 6% of Indonesia's GDP before 2014, when nickel ore exports were controlled. Since then the contribution has declined to around 4%, since it wants to retain nickel and bauxite to feed its own 70 smelter projects currently in various stages of development.

The deliberate decision to curtail exports of selected ores, has reduced the value of the country's mineral export income. According to a 2015 report by UN Conference on Trade and Development (UNCTAD), the value of Indonesia's minerals exports fell from US\$15 billion in 2013, to US\$9.4 billion in 2014, reflecting a halt to copper ore exports for seven months during that year. However, with the added value of domestic refining and processing of previously exported raw ores, the value of minerals exports is projected to rise to US\$21.6 billion in 2017.

Major mineral ores which are affected by the ban include nickel, bauxite and copper. Several large mining companies have temporary exemptions from the regulations on the basis that they have committed to build smelters in the future.

In other moves, foreign investors in Indonesia are also required to divest at least 20% and 51% of their stakes respectively by the fifth and 20th year of a mine's production. The divestment schedule is applicable to all minerals.

Indonesia along with the rest of the region are likely to find accommodations with investors over time. Given the capital intensive and long term nature of the mining industry, investment will be needed from the global market, to fund the exploration and development.

Mining can make a significant contribution to countries' GDP, exports, government revenues, employment and perhaps most importantly if done responsibly, the economic development of the country's remote regions where mining operations are located. In the long term, the vast and still to be extracted mineral potential in the region is likely to remain a powerful magnet for investors.

ASEAN increases its focus on development of agriculture

Agriculture is a key element of economic growth in most ASEAN countries. Farming's contribution to their GDP remains immense.

A high percentage of people are employed in the farming industry from 80% in the case of Lao PDR, 70% in Myanmar, 47% in Vietnam, 40% in Thailand, 35% in Indonesia and 32% in the Philippines.

ASEAN countries produce a wide range of food and agricultural products, some of whom rank as top global exporters in products such as rice, fruit, vegetables and coffee. They are also prime world producers of crops such as palm oil, cashew nuts and pepper.

In addition to food, ASEAN countries are also important world suppliers of commodities accounting for 3.3 million tonnes a year of rubber, which represents 70% of global production.

Farming continues to be a vital focus for ASEAN members. There is a drive to improve farming methods and grow more food. This effort is made more urgent due to population growth, because the number of people living in the region is projected to reach 800 million by 2050, a third higher than at present.

This population expansion and changing food consumption patterns, as demand for more dairy and meat products grows, is making food security a primary focus. Indonesia, Malaysia and Thailand are the countries most challenged by greater demand for animal protein products.

A basic objective of member states in the sector, is to enhance the international competitiveness of the region's food, agriculture and forestry products. Other important focus areas include harmonisation of quality standards and food safety.

The national level strategies of member states are no longer seen as sufficient to tackle the immense food security challenge and ASEAN is in an increasingly influential position to develop and implement region wide responses to these problems. These efforts are being conducted through bodies such as ASEAN Integrated Food Security (AIFS) Framework and the ASEAN Multi-Sectoral Framework on Climate Change: Agriculture Fisheries and Forestry Towards Food Security (AFCC).

Member states have implemented a number of cooperation projects in the food and forestry sectors. These cover exchange of information, crop production, postharvest processing and handling, training programmes and trade promotion initiatives.

AIFS is working to integrate programmes which stabilise national and regional food prices and supplies, to provide improved and updated mechanisms which quickly help member countries to cope with food emergencies.

ASEAN members have around 69 million hectares of their land areas under arable agriculture and another 44 million hectares dedicated to palm oil and rubber. Huge as this resource is, raising productivity in

the region is a challenge. Most farms are smallholdings of about 1.2 hectares, with farmers often lacking knowledge about modern farming practice.

There is considerable scope for improving yields, including better growing methods, reducing waste and post-harvest losses resulting from poor storage and bringing produce to markets in more timely ways.

New methods of cultivation are proving successful. Indonesia's rice partnership is a Government and industry initiative to engage smallholder rice farmers with the aim of increasing rice growing through the use of new technologies and innovative financing programmes. A first trial has resulted in 17% higher yields for participating farmers and at the same time, reducing their use of water by 20%. The trial programme is to be extended to reach up to five million Indonesian farmers by 2020.

Agriculture has the potential to make a much greater contribution to the national economy of Myanmar. This will require significant investment, greater mechanisation, legal changes to land laws to give farmers secure rights to their land and the ability for them to choose which crops they grow.

Observers believe that investment will allow the country to regain its former role as Southeast Asia's rice bowl, a distinction the country last held in the 1950s. It is also considered to have the potential to develop as a major exporter of vegetables to China and other ASEAN states. Fishing also provides enormous development potential for Myanmar, which has a coastline of 3,000km and inland water areas covering 3.3 million hectares.

According to a recent World Bank assessment, Vietnam's agriculture sector has ample opportunities for future growth and for developing food exports. Even though the country is vulnerable to climate hazards,



the sector has made enormous progress which has seen the country emerge as one of the leading exporters of agro-food commodities.

Indonesia is also making efforts to improve farming efficiency and has signed a Memorandum of Understanding in April 2016, allowing for Denmark to invest up to US\$153 million into the cattle, corn and sugar plantation industries. One million hectares of farmland in Southwest Sulawesi, Kalimantan, West Nusa Tenggara and East Nusa Tenggara, are to be allocated for ranching, with a further 500,000 hectares respectively for corn and sugarcane plantations.

The ASEAN member states recognise the need for developing and modernising farming methods and are seeking to join with the private sector and foreign investors to raise productivity and quality levels.

Private sector increases its role in healthcare provision

Southeast Asia has witnessed huge advances in the health of its citizens in less than 20 years, advancing from caring for the sick, to huge preventative initiatives.

The number of births attended by skilled health personnel for instance and immunisation coverage of children for measles in ASEAN countries, is now at least equal to the US and UK. Neonatal mortality rates are the lowest and case detection rates for tuberculosis are the highest, according to a CIMB ASEAN Research Institute report.

Improvement is particularly evident in the least developed countries. Cambodia, for example, has made substantial strides in improving maternal health and early child care, and has also proved successful in HIV/AIDs prevention and treatment. At least 95% of those infected have access to antiretroviral treatment, a coverage rate that is among the highest in the developing world, according to The World Bank.

However, the region faces multiple challenges, and as a result ASEAN members continue to make healthcare improvement a major priority. As communicable diseases have successfully been placed under control and infant mortality rates much improved, the focus is shifting to treatment of chronic diseases and providing for people living longer.

In Malaysia, healthcare expenditure is forecast to grow by an average 10.5% a year reaching almost US\$23 billion by 2018, more than double the level it was in 2013.

Singapore's 2015 budget, allocated US\$54 billion to healthcare provision, a rise of 8.5%. Most of its spending on health services derives from private

sector savings and state-run insurance funds in addition to direct government spending.

ASEAN is moving steadily towards providing universal healthcare to its citizens at least at a basic level. Insurance schemes for lower income groups have been introduced. These include Health Cards and "30-baht" systems in Thailand (referring to its less than US\$1 cost for low earners), Vietnam's Health Fund for the Poor along with Health Equity Funds in Cambodia and Lao PDR. Even the most developed member state, Singapore, also provides a safety net through the state-subsidised Medifund and other systems.

Singapore has the highest per capita spend on healthcare in Southeast Asia. Some 70% to 80% of its citizens access a public health system via three major public healthcare finance schemes. Apart from Medifund, these include Medsure and Medshield Life. The Government carries around 30% of expenditure for the system, with the rest provided via healthcare insurance packages.

Those with much bigger populations to serve are also committed to universal provision. Malaysia's public healthcare system is considered one of the best in Asia, primarily due to a well developed co-existing Government and Private Healthcare system. This has allowed for a significant amount of health coverage and provision to be facilitated by private providers.

At the beginning of 2014, Indonesia, with an estimated population of 244 million people, launched its Jaminan Kesehatan Nasional (JKN), the country's first national health insurance programme. Initially covering half

the population, the programme is expected to be extended to the whole country by 2019.

The Philippines is striving to provide the whole population with universal healthcare, which now extends to around 82% of its people. As a result, the state's healthcare spending is projected to rise to US\$20 billion annually by 2018, from US\$12.5 billion in 2013.

Levels of care are by no means evenly distributed within Southeast Asia and the region still faces challenges. According to the WHO, health spending per capita is around 4% of GDP in ASEAN countries compared to an average of 9.5% in the leading 34 world economies and members of the Organisation of Economic Cooperation and Development (OECD).

In order to improve delivery of healthcare, the Philippines, Vietnam and Indonesia are decentralising the provision of state-funded services to local government. New technology also has a part to play in Indonesia's vast archipelago. According to Romeo Fernandez Lieda, Director of privately owned Siloam Hospitals group "the introduction of telemedicine to reach rural areas is essential in Indonesia and a great opportunity for investment."

All countries are seeking to expand and develop provision of healthcare to its citizens through cooperation with the private sector. In this, PPPs will be a necessary and growing tool to bridge the gap.

An expanding middle class in the urban populations of larger cities has served to push demand for high quality healthcare, thereby creating a flourishing private sector. Growing urban populations combined with rising incomes is creating demand for higher levels of healthcare provision. This demand is increasingly being met by the private sector. As a result,



privately administered and owned medical facilities comprise a growing industry, especially in Singapore, Malaysia and Thailand. Privately operated hospitals are now providing internationally recognised high level surgery and specialist medicine including organ transplants.

Singapore's Healthcare Masterplan anticipates PPP involvement to provide 4,100 new hospital beds by 2020, including 1,900 community care hospital beds, mainly to cater for the ageing population's needs. Four additional acute hospitals are also planned over the next 15 years.

Singapore is also bolstered by its fast expanding clinical research and biomedical industries. This in turn has led to a fast growing medical tourism industry. An estimated 1.5 million Indonesians, for example, are predicted to seek medical treatment elsewhere in the region each year.



Southeast Asia has witnessed huge advances in the health of its citizens in less than 20 years, advancing from caring for the sick, to huge preventative initiatives.



Malaysia's Ramsay Sime Darby Healthcare and Pantai Hospital Kuala Lumpur, have partnered with insurance companies in Vietnam to bring in patients for treatment. This has led to a doubling of Vietnamese patients receiving medical treatments in Malaysia.

Vietnam's Government offers a range of tax incentives to foreign healthcare investors and is allowing overseas physicians to practice in the country. Indonesia also permits majority foreign shareholdings in specialist healthcare suppliers. It has also amended its laws to allow greater ownership by foreign companies in hospitals across the country.

Indonesia's plans focus on encouraging PPPs to develop hospitals as well as other essential infrastructure. Siloam Hospitals has said it plans to extend its portfolio of seven hospitals to 40 by 2017, through new developments and acquisitions.

Dr Milind Sabnis, a healthcare specialist with industry analyst Frost & Sullivan, has said that demand for hospital beds, especially outside Jakarta, cannot be met by public hospitals alone. Indonesia has 73 major private hospitals with 42 of them located in the Jakarta area. Dr Sabnis says he expects more to be developed in cities such as Makassar, Pekanbaru and Balikpapan.

Myanmar, which is seeking to achieve universal health coverage by 2030, is also opening up its healthcare sector to foreign investors. Two hospitals are to be built in Yangon in a joint venture between Thailand's

Thonburi Hospital Group and Myanmar's Ga Mone Pwint Company. The US\$100 million investment will provide a total of 400 beds. Indonesia's Lippo Group is seeking to build up to 20 hospitals in Myanmar by 2025, in a joint venture with Serge Pun & Associates Group and First Myanmar Investment (FMI), in a potential US\$1 billion investment programme. Lippo has already upgraded facilities at FMI's Pun Hlaing Hospital.

More partnerships and cross-ownership of health facilities across the region is expected to be a continuing trend among ASEAN countries. The Royal Rattanak Hospital in Phnom Penh, Cambodia's first private hospital offering international standards, for example, is financed by Thailand's Dusit Medical Services.

Singapore's Parkway Pantai, an Asian-wide healthcare supplier, is in a joint venture with the Brunei Investment Agency in managing a specialist cardiac centre in Brunei. In another PPP, Singapore's Government has joined with Integrated Healthcare Holding in leasing capacity and services from private healthcare suppliers.

These cross-border investments will be helped by ASEAN integration initiatives to allow medical workers to work in any member country via the full implementation of Mutual Recognition Agreements. An ongoing liberalisation process is also proceeding through ASEAN's Framework Agreement on Services and through the Healthcare Services Sectoral Working Group.



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Diagnostics hold the key to sustainable healthcare in ASEAN

Roche Diagnostics

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Roche serves customers across the entire healthcare spectrum – from research institutions, hospitals and commercial laboratories to physicians and patients. Roche has operated in the ASEAN region for over 40 years and has a direct presence in Singapore, Thailand, Vietnam, Indonesia, Malaysia, Philippines and Myanmar.

Roche Diagnostics established a Centre of Excellence in its Singapore headquarters in 2015, which houses a state of the art training centre featuring the latest testing solutions across all diagnostics areas. It also serves as a new second line technical support centre for customers across the Asia Pacific region.

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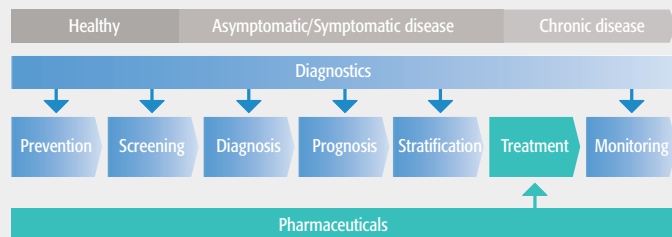
Value of diagnostics

ASEAN leaders have rightly identified healthcare as a key sector for region-wide integration. There is an urgent need for stronger health promotion, access to quality healthcare and disease prevention strategies if the region is to maintain the health gains made over decades.¹

Increasing investment in diagnostics has the potential to transform healthcare in ASEAN, given the rise of non-communicable diseases (NCDs) like diabetes, heart disease and cancer. According to the WHO, deaths from NCDs are predicted to increase by 15% by 2020, if the current situation doesn't improve, with Southeast Asia being a key affected region.² This would be unfortunate as the majority of premature deaths from heart disease, stroke, and diabetes can be prevented and managed with better deployment of diagnostics.³

Revaluing an undervalued tool

Once seen as a transitory step on the road to treatment, IVD tests have emerged as an essential tool for providers and payers to make decisions about resource utilisation. Tests that rule patients into and out of treatment are critical to cost-effective, personalised healthcare. From prevention and screening to diagnosis, prognosis, stratification and monitoring, IVDs offer the ability to deliver optimal, individualised medical care to patients and the economic benefits of a healthier, more productive population to societies.



They have the potential to reduce costs by enabling earlier, individualised interventions which can diminish subsequent health problems,⁴ avert adverse outcomes,⁵ reduce or eradicate time spent in hospital⁶ and avoid the cost of late-stage or unnecessary treatment.⁷

Clearly, indiscriminate diagnostic testing is not the answer: sustainable healthcare demands that diagnostics be used appropriately. However, a recent meta-analysis of 42 IVD utilisation studies across the globe (conducted between 1997 and 2012 and evaluating 1.6 million tests), found that underuse is a much bigger problem than overuse.⁸ Data shows that globally, diagnostics account for approximately 2% of healthcare funding, however, it guides more than 60% of healthcare decisions.⁹

All stakeholders in the healthcare system - patients, physicians, governments, laboratories, payers, drug manufacturers, diagnostics manufacturers and most of all patients - benefit when medical care is individualised, effective and cost-efficient. IVDs may provide one of the least expensive, yet highest impact tools to make that care a reality.

Case Study: IVDs detect disease early, saving lives and resources

Technical advances in the accuracy and sensitivity of diagnostic tests can amplify the benefits of early detection. Cervical cancer, which develops slowly over years, is preventable if detected early.¹⁰ Yet, according to WHO, cervical cancer was the fourth most common cancer in women in 2012, accounting for more than 500,000 new cases and approximately 265,000 women died worldwide. More than 85% of those deaths occurred in less developed regions.¹¹

Since the 1940s, the Pap smear has been the gold standard¹² for cervical cancer screening and prevention. However, studies show that up to one-third of cervical cancers occur in women with normal results from a traditional Pap smear.¹³

To better stratify patients by risk, a new HPV (human papilloma virus) screening test with simultaneous genotyping for the most dangerous types of the virus - known as HPV 16 and 18 (these account for 70% of all cervical cancer cases) - was developed.¹⁴

A recent budget impact model showed that using the new test for primary screening at five year intervals reduced the annual incidence of cervical cancers by 30% and annual mortality by 70%.¹⁵ Further, the diagnostic strategy of HPV primary screening plus triage by HPV16/18 genotyping and Pap smear, reduced the total cost per patient screened per year by 7%, resulting in annualised payer budget savings of more than US\$10.4 million.¹⁵



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Raising education and skill levels is a priority

ASEAN countries have made huge strides in building the required foundations for an educated, forward looking society. Literacy rates have improved remarkably in the region. According to UNESCO figures the literacy average is at, or above, 90% in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. While most of the region's population can now read and write, net school enrolment rates have increased in all member countries.

However, there is still a great deal more to do since higher education can only be developed if earlier educational stages are sound. Governments recognise that for them to be competitive with other trading blocs, is dependent on the region providing workforces with the necessary skills needed for businesses and industries.

Member states are committing increasing resources to the task. Malaysia's national budget for 2016, allocated US\$9.9 billion to education. Ambitious targets for improving access to quality education throughout all parts of the country have been set, with recent policies seeking to increase the number of teachers and to lower student teacher ratios.

The reforms also aim at raising teaching standards in the classroom for core subjects. These include English, Mathematics and Sciences alongside Malay. Ultimately, the objective is to see the education system placed among the top third in the world.

Higher entry levels for teachers are also called for, as well as greater private sector collaboration and more parental involvement. The programme also emphasises improved teacher training and enhanced terms for those achieving the standards required. More ICT systems are to be introduced for distance and self-paced learning programmes.

One of the principal reforms will see new Secondary and revised Primary curricula rolled out to international benchmarks by 2020. This will see greater school based management, autonomy on curricula implementation and a culture, whereby teachers share best practice and hold peers accountable for meeting professional standards, the Ministry of Education says.

In Indonesia, access for all to education has also increased dramatically, with children from poorer families enrolling earlier and staying in school

longer. The Constitution demands that at least 20% of the total Government budget is committed to education, which has led to more than a doubling of spending in real terms on education since 2002.

While the majority of the population has, at most, only completed basic education, there are now more than 30 million secondary school graduates and more than ten million tertiary education graduates in Indonesia's workforce.

The strategy is to provide universal access to secondary level through a compulsory 12 years of schooling and doubling enrolment in higher education by 2020. Under reasonable assumptions, the total number of Indonesians who are educated beyond early secondary school level will more than double over the next ten years.

One of the priorities is to expand vocational courses to meet employment needs. Indonesia allocated US\$3.2 billion to higher education and research spending in 2015, an indication of the nation's strategy to triple the number of students in technical programmes and increase the number of doctoral students five-fold by 2025. The aim is also to establish a community college in every district and increase the number of entrants to higher education institutions by providing more scholarships and raising secondary school enrolments. English language training is also necessary.

Education is proving the key to successful adaptation to changing market requirements. This is illustrated by Vietnam's experience where educational improvements have played an important role in the success of the country over the last two decades.



A committed effort to promote access to primary education for all and to ensure its quality through centrally setting minimum quality standards, has contributed to Vietnam's reputation for having a young, well educated workforce.

An increasing availability of personnel capable of training, is helping to attract international technology based industries to Vietnam. The Ministry of Science and Technology is now trying to develop a cluster of SMEs in the country.

The Cambodian Government has launched its National Strategic Development Plan (2014-2018), which aims at capacity building and human resource development. The intention is to strengthen technical and vocational education and training (TVET) in order to increase the productivity of under-educated and unskilled people in the labour force.

“Governments recognise that for them to be competitive with other trading blocs, is dependent on the region providing workforces with the necessary skills needed for businesses and industries.”

Myanmar is working on a Comprehensive Education Sector Review to develop a strategic plan for the country's education system, where teaching is still largely based on rote learning. The review is recognition that improvements in the formal education system and other training programmes will be needed to prepare more of its workers for jobs in manufacturing and service industries, which will be the basis of the country's future economic growth.

Myanmar, in common with the Philippines, has the advantage of English as a primary language. The latter, with its pool of English speaking low cost workers has been able to build the world's largest business processing outsourcing industry, which has developed from call centres to provide a range of back office support services, engineering design and software development.

There is a growing focus on educational development in Myanmar after years of under development. The country's education sector review now underway to help guide educational policy reform, has been described by United States Agency for International Development (USAID) as remarkably frank and comprehensive.

The ASEAN Work Plan on Education 2016-2020, seeks to build on individual member states' educational developments, focusing on eight areas. These comprise strengthening Southeast Asian history and indigenous knowledge, improving the quality of basic education and

access for all, developing information and communications technology in education, vocational training and lifelong learning. Other areas include education for sustainable development, higher education development and developing quality assurance mechanisms as well as capacity building for teachers.

A consortium led by the British Council with the German Academic Exchange Service, Campus France, the European Association for Quality Assurance in Higher Education and the European University Association are working with ASEAN counterparts to help develop the higher education sector.

Raising educational standards and skill levels in the labour force are central to growth prospects. However, a report from the OECD and Asian Development Bank suggests that it will be necessary to allow students flexibility to enter, exit and re-enter education depending on their financial and social circumstances, and create pathways between academic and vocational tracks.

It will be the countries displaying higher levels of education and those able to push the technological frontiers who will reap the economic benefits. Southeast Asia's potential for providing highly skilled workers will spur the introduction of new and advanced technologies for making high value goods. This can place ASEAN countries at the hub of innovation and industrial growth in global markets.



Tourism sector will provide huge investment opportunities

ASEAN's tourism sector is a large contributor to the economies of member states providing jobs, investment and important foreign exchange earnings. International tourism receipts in the region continue to increase year-on-year and in 2015, they reached US\$108.3 billion. Member countries see substantial potential to develop the sector further and are seeking a greater share of the receipts from what has become a US\$1.2 trillion global industry.

Thailand, which is the top destination saw the sector rebound strongly in 2015, with a 20% increase in visitors to 29.9 million. Myanmar has seen a huge 52% surge to 4.7 million visitors, from three million in 2014.

While attracting more high spending international visitors to the region, much of the dramatic growth has come from the increase in travel between ASEAN countries. This has been helped by rising incomes and the fact that airline schedules and route capacities have all expanded since deregulation of the region's aviation industry. More competition has in turn helped to reduce prices and provide more direct flights between ASEAN countries.

The London based World Travel & Tourism Council (WTTTC), which represents the global industry's private sector, forecasts that the direct contribution of travel and tourism to GDP in the region, will total US\$216 billion by 2024. It also sees capital investment in travel and tourism related projects reaching US\$96.4 billion in the next decade.

In the Philippines, the Entertainment City Manila project, located in Manila Bay, is targeted for completion in 2017. The promoters aim to position the resort as a rival centre to classic gambling resorts such as Las Vegas or Monte Carlo. The projected US\$15 billion investment includes four casino

resorts, one of which opened in 2013, as well as incorporating amusement parks, theatres, conference facilities and sports stadiums.

The region's attractions embrace a wide clientele, many of whom are keen on entertainment and shopping opportunities as much as beaches and cultural sites. One Thai retail developer, Central Group, is investing a reported US\$250 million in the Central Embassy Mall in Bangkok's commercial district. This project is typical of the growing number of high end ventures designed to bring global brands to Thailand and other countries for the first time. Foreign retailers are also showing interest: Japan's department store operator Takashimaya Company is due to launch its first store in Thailand in 2017.

In the last three years, Myanmar has started to receive greater investment in its own spectacular visitor appeal with tourism expanding rapidly. It's tourism masterplan is to reach 7.4 million visitors by 2020.

As a result, foreign hotel groups are steadily extending their presence in the country. Considerable hotel development is underway by leading international groups, to develop new hotels in Yangon and other resort areas. In 2015, the Spanish hospitality group, Melia Hotels International, said it had agreed to operate a new 400 room hotel in Yangon. The project is being developed by the local real estate company Hoang Anh Gia Lai Myanmar.

Their Vice President Asia Pacific, Bernardo Cabot, commented that the hotel would boost the company's brand awareness and be an opening to enter other destinations within Myanmar.

Hilton Worldwide Holdings plans to open more hotels in Myanmar over the next three years. Projects in Bagan, Mandalay and in Inle Lake in Shan

State are planned. Hilton says it is working in conjunction with the local Eden Group. The Accor, Shangri-La and Pan Pacific Groups have also declared plans to enter the Myanmar hospitality market.

Indonesia is also a target for many developers. Sofitel Asia Pacific Vice President, Markland Blaiklock says: "Indonesia is a key growth market for us and we see immense potential to grow the brand here. We are looking at opportunities to expand our presence in both Bali and Jakarta."

Vietnam's surging tourism industry is also proving attractive to developers. In 2014, the US' Rose Rock Group, announced a cooperation agreement with the local Vung Ro Petroleum Company. This aims to develop a US\$2.5 billion residential and 760 room hotel project on the south central part of the country's coast at Vung Bay. In the south at Ho Tram, Canada's Asian Coast Development is building a golf course and casino resort.

Ease of travel is vital and the visa exemption launched by Vietnam in 2015, is a critical tool for promoting travel to the country. The move exempts visitors from France, Germany, Italy, Spain, the UK, Russia, Scandinavia, Japan and South Korea from visa requirements.

Vietnam's General Department of Tourism is aiming for 8.5 million foreign visitors by 2020. Part of the strategy involves encouraging cruise liner visits and developing island resorts.

Officials in the Philippines are also keen to increase tourism. At current rates of growth, visitor numbers are expected to exceed 11.5 million by the end of 2022. To achieve such an ambitious goal will require greater focus on tourism related infrastructure, especially development of new destinations in the country. This means that airports as well as roads will require improvement, according to the Secretary of the Philippines Department of Tourism, Wanda Corazon Teo.



The Head of Tourism Authority in Thailand, Yuthasak Supasorn, has similarly ambitious targets and has said that the Authority is targeting US\$57 billion in revenues from domestic and international tourism in 2017. This is likely to be driven by the increasing number of Chinese tourists who account for almost 30% of foreign visitors to Thailand.

Brunei Darussalam established a new Ministry of Primary Resources and Tourism in October 2015, to encourage more visitors particularly through the promotion of eco-tourism. It's industry will also be helped by the US\$150 million modernisation of its international airport. Tourism accounted for around 1.5% of it's GDP in 2014, with forecasts that this contribution could rise to 4.7% by 2025, to reach US\$365 million and also provide 20,000 jobs, the equivalent of 7.7% of total employment.

“In the last three years, Myanmar has started to receive greater investment in its own spectacular visitor appeal with tourism expanding rapidly.”

Indonesia is encouraging more cruise ships to call at its ports, particularly in the relatively unspoiled eastern parts of the country. Tourism Minister, Arief Yahya, says that licencing for cruise vessels and the issuing of visas is being made simpler. The aim is to raise the number of cruise ship visitors from around 120,000 to 600,000. This will mean ports having to accommodate larger vessels in places such as Bali, Lombok, Flores, Semarang and Probolinggo in Java, South Kalimantan, Belawan, Para Pare and Tanjung Priok.

Malaysia is also making long term investments in developing port and shore-line infrastructure catering for cruise ships. Overall, it hopes to earn US\$24 billion from the sector in 2016, which would account for an estimated 15% of GDP. The Malaysia Tourism Transformation Plan envisages generating US\$39 billion in revenues by 2020.

In view of this trend, ASEAN member states see the travel and tourism industry as crucially important for their development. Malaysian Prime Minister, Najib Razak, has stated that it is vital for the socio-economic benefits because it promotes people to people connectivity, one of the key strategies towards the ASEAN Economic Community.

Developing new visitor attractions and marketing these to an international audience is vital if the benefits of tourism development are to be more evenly spread in the region, and also to relieve pressures on traditional and increasingly overcrowded visitor sites. ASEAN's most visited cities and resorts are Singapore, Bangkok, Kuala Lumpur, Phuket,


Pattaya, Ho Chi Minh City, Manila, Denpasar, Chiang Mai, Jakarta, Hanoi and Siem Reap.

Cambodia's strategy, for example, aims to reduce congestion at its most popular sites such as Angkor Wat, by developing and promoting other tourism areas in the country. Indonesia also wants to develop away from Bali to other areas of potential.

Member states are keen to help the region's tourism by developing a free flow of services and trained personnel. They also want to improve skills by implementing a Mutual Recognition Arrangement (MRA) of qualifications for those working in the hospitality sector. A Regional Secretariat has been set up in Indonesia to facilitate the introduction of the MRA. The move includes setting up an ASEAN Tourism Qualifications Equivalent Matrix, to serve as a key reference for associated training institutions, as well as an ASEAN Tourism Professional Registration System.

A central part of the ASEAN tourism strategy is also the creation of a single entry visa to all member countries.

There is every incentive for ASEAN to press ahead with improvements to its tourism sector. Foreign tourists from all over the world continue to be attracted to the region, with year on year growth in visitor numbers continuing to be recorded. For those who know the region, this is unsurprising. Few regions of the world possess such a diversity of attractions.

A photograph of President Joko Widodo of Indonesia, wearing a dark blue suit and a red tie, shaking hands with a group of men in suits. The background is slightly blurred, showing an indoor setting with gold curtains and a lamp.

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President of Indonesia Joko Widodo meets with Asia House corporate members.

Member country profiles...



BRUNEI DARUSSALAM



The slide in global hydrocarbon prices has inevitably had a knock-on effect on the country's economy. Even though international crude prices have stabilised and started to rise towards the end of 2016, the Sultanate's GDP declined more than 9% from some US\$17 billion in 2014, to US\$15.49 billion in 2015. As markets improve, the Government anticipates that offshore exploration will allow a substantial increase in future output of crude oil & gas. While Brunei has sufficient financial reserves to weather these challenges, a shift in the global energy market is providing an opportunity to reframe economic priorities. While the oil industry is the main economic sector, the construction industry stimulated by infrastructure developments is performing well. Work also continues on a new oil refinery and aromatics petrochemicals complex on Pulau Muara Besar island. This also includes a bridge to link the complex to the mainland. The plant is expected to inject US\$2 billion a year into the Brunei economy once it is commissioned in 2018.

Additional efforts are being made to diversify the economy by encouraging investment in agriculture, fisheries and forestry. There are plans to transform the country into a regional trading and financial hub. Brunei Economic

Development Board has set up a programme to attract investment from both local and foreign entrepreneurs with innovative ideas which will help diversification. There are also substantial prospects for developing the Sultanate's tourism industry. This has been boosted by the expansion and modernisation of Royal Brunei Airlines, which includes the acquisition of the latest Boeing 787s, which are deployed on routes to Dubai and London. Additional modern airliners are being bought to expand regional routes. Brunei International Airport's recently completed overhaul, has doubled the airport's handling capacity from 1.5 million to three million passengers a year.

Located on the northern shore of the island of Borneo, Brunei Darussalam consists of two unconnected parts, with a total area of 5,765km² and occupies only 1% of Borneo's land area. It is bound on all sides by the Malaysian State of Sarawak. To the north there is a 161km stretch of coastline next to the South China Sea. The island is also shared with the Indonesian provinces of West, South, East and Central Kalimantan.

Of the total population in Brunei, around 140,000 live in the capital Bandar Seri Begawan. Other major towns are the port of Muara, the oil producing Seria and its neighbouring Kuala Belait. Brunei Shell Petroleum housing and facilities have created a large expatriate community in the Panaga area. The majority of the population live in the eastern part of Brunei, while the remainder live in the mountainous southeastern region, in the district of Temburong. Most of Brunei is within the Borneo lowland rainforest eco-region, which covers the majority of the island. There are also areas of mountain rainforest inland.

Culture is deeply connected to religion, with the family being the focal point of the social structure. Islam is the primary religion. The monarchy provides a royal heritage with a direct family line going back to 1405, and this is the only Malay Islamic Monarchy in the world.

Bandar Seri Begawan is Brunei's centre of commerce, finance and government. One of the city's most prominent features is the Sultan Ali Saifuddin Mosque, a tribute and indication of the nation's deep rooted Islamic faith.

Brunei joined ASEAN on 7 January 1984, becoming the sixth member and hosted the 23rd ASEAN Summit in October 2013.

BRUNEI DARUSSALAM

Joined ASEAN:	7 January 1984
Head of State:	His Majesty Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah
Area:	5,765km ²
Border countries:	Malaysia
Coastline:	161 km
Capital city:	Bandar Seri Begawan
Total population:	436,600
Population of capital:	140,000
Climate:	Tropical, hot, humid and rainy
Languages:	Malay, English, Chinese
Religions:	Muslim 67%, Buddhist 13%, Christian 10%, other 10%
Ethnic groups:	Malay 66.3%, Chinese 11.2%, indigenous groups 3.4%, other 19.1%
Monetary unit:	Brunei Dollar (BND)
Natural resources:	Petroleum, natural gas, timber
Major exports:	Crude oil, natural gas, garments
Major export trading countries:	Japan 35.9%, South Korea 14.8%, Thailand 10.8%, India 9.8%, NZ 5.6%, Australia 5%
Major imports:	Machinery and transport equipment, manufactured goods, food, chemicals
Major import trading countries:	Singapore 27.9%, China 25.3%, Malaysia 12.4%, UK 10.6%, South Korea 4.9%
Internet domain:	.bn
International dialling code:	+673



CAMBODIA



Driven by the country's garments manufacturing industry, construction, agriculture and a fast developing tourism sector, Cambodia's economy is displaying robust growth with GDP increasing by 7% in 2015. The garments and footwear sector, producing many of the world's leading brands, employs around 400,000 people and accounts for some 70% of Cambodia's total exports. The sector continues to expand with exports up 9.4% in the first half of 2016, almost double the rate in 2015. The country is also an increasingly popular tourism destination. Its world heritage sites have established the country on the tourist map. Cambodia received 4.8 million visitors in 2015, up from 4.5 million the previous year. Many tourists are drawn to the Angkor temples in Siem Reap Province, built between the ninth and 13th centuries. Cambodia's export base has the potential of being expanded if offshore oil deposits are exploited and ventures to mine iron, bauxite, gold and gemstone deposits are pursued. A promising economic outlook is balanced by considerable challenges to build basic infrastructure and develop educational and healthcare services. International donor assistance continues to play a significant part in development efforts.

As well as ancient sites, the beaches in Sihanoukville in the southeast and the capital Phnom Penh, are the principal visitor destinations. Other attractions include the area around Kampot and Kep, with the Bokor Hill Station.

Cambodia is located in the southern portion of the Indochina Peninsula. It is bordered by Thailand to the northwest, Lao PDR to the northeast, Vietnam to the east and the Gulf of Thailand to the southwest.

Cambodia's landscape is characterised by a low lying central plain which is surrounded by uplands and low mountains and includes the Tonle Sap (Great Lake) and the upper reaches of the Mekong River Delta. Extending outwards from this central region are transitional plains, thinly forested and rising to elevations of about 200m above sea level.

The Mekong River flows south through the country's eastern regions. To the east of the Mekong there is a region of forested mountains and high plateaus, which extend into Lao PDR and Vietnam. In southwestern Cambodia, there are two distinct upland areas, the Kravanh Mountains and the Damrei Mountains. The southern coastal region adjoining the Gulf of Thailand, is a narrow lowland strip, heavily wooded and sparsely populated, which is isolated from the central plain by the southwestern highlands.

The Mekong River provides fertile, irrigated fields for rice production. Exports of clothing generate most of Cambodia's foreign exchange but tourism remains an important part of the economy.

Buddhism is the main religion and this creates an identity and a behaviour pattern for each person. This also enforces a sense of hierarchy within society. Cambodia is a collective society. This places emphasis on groups rather than the individual.

Cambodia joined ASEAN on 30 April 1999, making them the tenth member and hosted the 21st ASEAN Summit in November 2012.

CAMBODIA

Joined ASEAN:	30 April 1999
Head of State:	His Majesty King Norodom Sihamoni
Area:	181,035km ²
Border countries:	Lao PDR, Thailand, Vietnam
Coastline:	443km
Capital city:	Phnom Penh
Total population:	15.9 million
Population of capital:	1,519,000
Climate:	Tropical and humid. Monsoon season May to November. Dry season December to April
Languages:	Khmer, French, English
Religions:	Buddhist 96.4%, Muslim 2.1%, other 1.3%, unspecified 0.2%
Ethnic groups:	Khmer 90%, Vietnamese 5%, Chinese 1%, other 4%
Monetary unit:	Riel (KHR)
Natural resources:	Oil & gas, timber, gemstones, iron ore, manganese, phosphates, hydropower potential
Major exports:	Clothing, timber, rubber, rice, fish, tobacco, footwear
Main export trading countries:	US 23.1%, UK 8.8%, Germany 8.2%, Japan 7.4%, Canada 6.7%, China 5.1%, Vietnam 5%, Thailand 4.9%, Netherlands 4.1%
Major imports:	Petroleum products, cigarettes, gold, construction materials, machinery, motor vehicles, pharmaceutical products
Main import trading countries:	Thailand 28.7%, China 22.2%, Vietnam 16.4%, Hong Kong 6.1%, Singapore 5.7%
Internet domain:	.kh
International dialling code:	+855



INDONESIA



Indonesia has embarked on a change of political direction with the election of Joko Widodo in July 2014. The Government is committed to vastly improve the country's infrastructure. The agenda includes almost doubling electricity power generation and developing maritime resources as well as railways and roads. Significantly higher budget allocations for new projects have already been made, with Government spending of more than US\$9 billion agreed for 2016. The increased allocation for the infrastructure programme has been enabled by reform of long standing energy subsidies. The private sector is also due to play an important role in the promotion of PPP schemes to address the need for new highways, container ports, airports, power stations, railways and urban transit projects. The overhaul of infrastructure is a vast undertaking in a country which spans an archipelago of approximately 18,000 islands, stretching from Asia to Australia, and an economy that needs to continue to develop rapidly in order to support a population of more than 250 million people.

Transportation and connectivity is a major challenge. Indonesia's islands are spread over both sides of the equator. The largest are Java, Sumatra and Borneo, shared with Brunei and Malaysia, New Guinea, shared with Papua New Guinea and Sulawesi. The capital, Jakarta, is on Java and is the nation's largest city, followed by Surabaya, Bandung, Medan and Semarang.

Indonesia has at least 150 active volcanoes, including Krakatoa and Tambora. Volcanic ash is a major contributor to the vast agricultural fertility which has historically sustained the high population densities of Java and Bali.

Tourism is an expanding sector. Although the main attraction is Bali, many of the country's best beaches are located on the less known Toglan Islands off the coast of central Sulawesi, Karimunjawa in the Java Sea and the Banda Islands in Maluku Province. Other popular tourist attractions include the temples of Borobudur, the tropical rainforest of Sumatra, the mountainous Lorentz National Park in Papua and West Nusa, home to the Komodo Dragon. Indonesia's eastern most province of Papua contains 1,500 islands and west of Papua lies the Maluku archipelago, once known as the Spice Islands.

Indonesia is perhaps the most culturally diverse of the ASEAN states. There are over 300 ethnic groups in Indonesia. Due to this diverse nature, there is a strong pull towards each person's ethnic group or place of birth or family. The national motto is "Unity in Diversity".

Indonesia is a founding member of ASEAN and hosts its secretariat in Jakarta. The country also hosted the 19th ASEAN Summit in November 2011.

INDONESIA



Joined ASEAN:	8 August 1967 (Founder Member)
Head of State:	President Joko Widodo
Area:	1,904.569km ²
Border countries:	Timor-Leste, Malaysia, Papua New Guinea
Coastline:	54,716km
Capital city:	Jakarta
Total population:	258.3 million
Population of capital:	9,121,000
Climate:	Tropical, hot and humid. More moderate in the highlands
Languages:	Bahasa Indonesia, English, Dutch, local dialects (of which most widely spoken is Javanese)
Religions:	Muslim 86.1%, Protestant 5.7%, Roman Catholic 3%, Hindu 1.8%, other 3.4%
Ethnic groups:	Javanese 40.6%, Sundanese 15%, Madurese 3.3%, Minangkabau 2.7%, Betawi 2.4%, Bugis 2.4%, Banten 2%, Banjar 1.7%, other 29.9%
Monetary unit:	Rupiah (IDR)
Natural resources:	Petroleum, tin, natural gas, nickel, timber, bauxite, copper, fertile soils, gold, silver, coal
Major exports:	Oil & gas, coal, electrical appliances, plywood, textiles, rubber
Main export trading countries:	Japan 12%, US 10.8%, China 10%, Singapore 8.4%, India 7.8%, South Korea 5.1%, Malaysia 5.1%
Major imports:	Machinery and equipment, chemicals, fuels, foodstuff
Main import trading countries:	China 20.6%, Singapore 12.6%, Japan 9.3%, Malaysia 6%, South Korea 5.9%, Thailand 5.7%, US 5.3%
Internet domain:	.id
International dialling code:	+62



Lao PDR recorded 7% increase GDP in 2015, one of the highest economic expansions by any ASEAN economy, according to World Bank data. An increasing development of the country's natural resources, mostly minerals, hydropower and forestry has helped it achieve consistently high economic returns for the last decade. The communist state has moved to gradually introduce business reforms since 2005, and opened a stock market in the capital Vientiane in 2011, as part of a tentative step towards a market economy. The economic outlook remains broadly favourable, supported by the power sector and growing ASEAN integration.

The mountainous landlocked country which borders Thailand, Vietnam, Cambodia, China and Myanmar has an abundance of water, forests and mineral resources. In particular, hydropower, timber, gold and copper contribute increasing amounts of GDP and export revenues. There are two main mining ventures operated by China's MMG Sepon and Australia's PanAust respectively, which are exploiting copper and gold deposits in the southwest of the country. The Government is also anticipating increasing returns from its Hongsa coal-fired power plant and its Nam Theun dam project, which is intended to generate electricity for sale to Thailand. USAID says that by some estimates, hydropower and mining will contribute 25% of Lao PDR's GDP by 2020.

The country's thickly forested landscape consists mostly of rugged mountains, the highest of which is Phou Bia at 2,818m, with a number of plains and plateaus. The Mekong River forms a large part of the western boundary with Thailand, whereas the mountains of the Annamite Chain form most of the eastern border with Vietnam.

Dong Hua Sao at the southern end of the country, prevents access to the sea but cargo boats travel along the entire length of the Mekong in Lao PDR during most of the year. Smaller power boats and pirogues provide an important means of transportation on many of the tributaries of the Mekong.

Vientiane, located on the curve of the Mekong River, has French inspired architecture, it's a vibrant city and popular tourist destination. Other large cities include Luang Prabang, Savannakhet and Pakse.

LAO PDR



Buddhism is the religion of 67% of the population. The people are influenced largely by Buddhist teachings and this is reflected in the culture. Lao PDR is so far untouched by the modern demands and pace of life. Collectivism is also a strong part of its culture. There are 65 ethnic minorities, each with their own language, making individualism also possible.

Lao PDR joined ASEAN on 23 July 1997, along with Myanmar and hosted the 29th ASEAN Summit in 2016.

LAO PDR

Joined ASEAN:	23 July 1997
Head of State:	President Bounnyang Vorachit (since 20 April 2016)
Area:	236,800 km ²
Border countries:	Myanmar, Cambodia, Thailand, Vietnam, China
Coastline:	Landlocked
Capital city:	Vientiane
Total population:	7 million
Population of capital:	799,000
Climate:	Tropical. Monsoon season May to November. Dry season December to April
Languages:	Lao PDR, French, English, various ethnic languages
Religions:	Buddhist 67%, Christian 1.5%, other 31.5%
Ethnic groups:	Lao PDR 55%, Khmou 11%, Hmong 8%, other 26%
Monetary unit:	Kip (LAK)
Natural resources:	Timber, hydropower, gypsum, tin, gold, gemstones
Major exports:	Wood products, coffee, electricity, tin, copper, gold
Main export trading countries:	Thailand 30.4%, China 27%, Vietnam 17.6%
Major imports:	Machinery and equipment, vehicles, fuel, consumer goods
Main import trading countries:	Thailand 60.9%, China 18.6%, Vietnam 7.3%
Internet domain:	.la
International dialling code:	+856



MALAYSIA



Malaysia's GDP grew 5% in 2015. The country has progressed from being a producer mainly of raw materials, such as tin and rubber, to a diversified economy and a leading exporter of electronics, electrical parts and components as well as natural gas and palm oil. Malaysia's New Economic Model launched in 2010, is ongoing and aims for the country of 30.9 million people, to reach high income status by 2020. This aim is intended to be achieved while ensuring that growth is sustainable. The plan includes a number of reforms to achieve growth that is intended to be primarily driven by the private sector and to move the economy into higher value added activities in both industry and services. The World Bank says that this strategy hinges on structural reforms. The accelerated implementation of productivity, enhancing reforms to boost education and training and competition, will be the key to long term growth and to secure the country's passage to the ranks of high income economies.

Malaysia consists of two regions separated by 1,030km of the South China Sea. West Malaysia is in the southern third of the Malay Peninsula and East Malaysia occupies the northern quarter of the island of Borneo. West Malaysia is bound by Thailand to the north, the South China Sea to the east, Singapore to the south and the Strait of Malacca to the west.

East Malaysia is bound by Indonesia to the south, the South China Sea to the west and north and the Sulu Sea to the northeast. West Malaysia consists of a range of steep forest covered mountains, with coastal plains to the east and west and the principal river is the Pahang. East Malaysia has a broad swampy coastal plain, which rises to jungle covered hills in the interior.

As well as its status as a leading business destination, Malaysia offers beautiful scenery and a huge variety of tourist attractions, from beaches to dense rainforests.

Leading destinations include the Pulau Payar Marine Park at Langkawi, the Gunung Mulu National Park in Sarawak, Sipadan Island in Sabah and Penang's Georgetown, a UNESCO World Heritage site.

Malaysia is a multi-cultural society. The main cultural groups are the native Malays, together with groups of Chinese and Indian ethnicity. Individual lifestyles are maintained. Families tend to socialise within their own ethnic groups but the desire to conform socially, makes Malaysians strive for harmonious relationships in every aspect of their lives.

Malaysia hosted the 27th ASEAN Summit in November 2015.

MALAYSIA



Joined ASEAN:	8 August 1967 (Founder Member)
Head of State:	Sultan Abdul Halim Mu'adzam Shah
Area:	329,847km ²
Border countries:	Brunei Darussalam, Indonesia, Thailand
Coastline:	4,675km
Capital city:	Kuala Lumpur
Total population:	30.9 million
Population of capital:	1,493,000
Climate:	Tropical. Southwest monsoons April to October, northeast monsoons October to February
Languages:	Bahasa Malaysia, English, Chinese, Tamil, Telugu, Malayalam, Panjabi, Thai
Religions:	Muslim 60.4%, Buddhist 19.2%, Christian 9.1%, Hindu 6.3%, Confucianism, Taoism and other Chinese religions 2.6%, other 1.5%
Ethnic groups:	Malay 50.4%, Chinese 23.7%, indigenous 11%, Indian 7.1%, other 7.8%
Monetary unit:	Ringgit (MYR)
Natural resources:	Tin, petroleum, timber, copper, iron ore, natural gas, bauxite
Major exports:	Electronic equipment, petroleum and liquefied natural gas, wood and wood products, palm oil, rubber, textiles, chemicals
Main export trading countries:	Singapore 13.9%, China 13%, Japan 9.5%, US 9.4%, Thailand 5.7%, Hong Kong 4.7%, India 4.1%
Major imports:	Electronics, machinery, petroleum products, plastics, vehicles, iron and steel products, chemicals
Main import trading countries:	China 18.8%, Singapore 12%, US 8.1%, Japan 7.8%, Thailand 6.1%, South Korea 4.5%, Indonesia 4.5%
Internet domain:	.my
International dialling code:	+60



According to the World Bank, Myanmar's economy grew 7% in 2015. This was slightly down on the previous year due to the effects of heavy floods and a more challenging external environment. However, the country's medium term growth is projected to average 8.2% a year, an indication that the country is fast emerging from its previous isolation and moving from a centrally directed economy to a market-led system. A Government led by the National League for Democracy (NLD) took office in April 2016, the first civilian administration in decades. The new Government has launched economic policies and accelerated efforts for the peace process under the leadership of the State Counsellor, Daw Aung San Suu Kyi.

The country has one of the lowest population densities in the region with fertile lands and untapped agricultural potential, in addition to huge unexploited natural resources. Its geographic location connecting China and India, two of the world's most powerful economies, makes Myanmar well positioned to resume its traditional role as a trading hub and major supplier of minerals, gas and agricultural produce.

Since 2010, a reform programme has been rolled out to make the economy more efficient, including floating the currency and introducing new fiscal regulations. Developing the private sector and stimulating FDI is also a priority. In addition, essential infrastructure improvements are underway beginning with the introduction of a national cellular telecoms network. With the liberalisation of the telecoms sector, mobile and internet use has increased significantly from less than 20% and 10% in 2014, to 60% and 25% respectively. Establishing a credible and consistent policy and regulatory environment in the telecoms sector, is helping to stimulate private investment and economic growth.

Myanmar, the second largest country in Southeast Asia, is bordered by China on the northeast, Lao PDR on the east, Thailand on the southeast, Bangladesh on the west, India on the northwest and the Bay of Bengal to the southwest, with the Andaman Sea defining its southern periphery.

In the north, the Shan mountains form the border with China. Hkakabo Razi, located in Kachin State, at an elevation of 5,881m, is the highest point in Myanmar. Mountain ranges, namely the Rakhine Yoma, the Bago Yoma and the Shan Plateau divide three river systems, the Salween, the Sittaung and the Irrawaddy, the longest at nearly 2,170km flows into the Gulf of Martaban.

MYANMAR



There are around 100 different ethnic groups within Myanmar with many of these groups largely untouched by western cultures, leaving their own rich cultural traditions still intact. Buddhism is the main guiding force in the lives of the Myanmar people.

Myanmar joined ASEAN along with Lao PDR on 23 July 1997 and hosted the 25th ASEAN Summit in November 2014.

MYANMAR

Joined ASEAN:	23 July 1997
Head of State:	President Htin Kyaw (since 30 March 2016)
Area:	676,578km ²
Border countries:	Lao PDR, Thailand, Bangladesh, China, India
Coastline:	1,930km
Capital city:	Naypyidaw
Total population:	56.8 million
Population of capital:	992,000
Climate:	Summer is tropical, cloudy, hot and humid. Southwest monsoon June to September. Winter less cloudy with lower humidity. Northeast monsoon December to April.
Languages:	Burmese
Religions:	Buddhist (89%), Christian (4%), Muslim (4%), other (3%)
Ethnic groups:	Burman 68%, Shan 9%, Karen 7%, Rakhine 4%, Chinese 3%, Indian 2%, Mon 2%, other 5%
Monetary unit:	Kyat (MMK)
Natural resources:	Petroleum, timber, tin, antimony, zinc, copper, tungsten, lead, coal, marble, limestone, precious stones, natural gas, hydropower
Major exports:	Natural gas, wood products, pulses, beans, fish, rice, clothing, jade, gems
Main export trading countries:	China 37.7%, Thailand 25.6%, India 7.7%, Japan 6.2%
Major imports:	Fabric, petroleum products, fertiliser, plastics, machinery, transport equipment, cement, construction materials, crude oil, food products
Main import trading countries:	China 42.2%, Thailand 18.5%, Singapore 11%, Japan 4.8%
Internet domain:	.mm
International dialling code:	+95



The Philippines is one of the most dynamic economies in Southeast Asia and saw its GDP expand by 5.8% in 2015. Growth has been robust in the past five years, averaging 6.2% since 2010. In the first half of 2016, the nation's economy expanded at a rate of 6.9%, exceeding economic growth recorded in Malaysia, Thailand, Vietnam as well as China. According to the World Bank, the country has sound economic fundamentals and a globally recognised competitive workforce. Services and industry remain the main engines of growth, with agriculture still feeling the lingering effects of Typhoon Hainan. The country has proved remarkably resilient, not just to the impact of climate disruptions but also global recession. Government spending is increasing as it seeks to bring in the private sector to provide much needed development of the country's infrastructure. A stable level of remittances also provides a strong basis for currency stability and is helping to build up international reserves. The country enjoys a savings rate that exceeds investment, while its human resources continue to be in high demand around the world. The new administration's ten point socio-economic agenda emphasises equitable tax reform, enhanced public spending, greater transparency and accountability, improved ease of doing business, in addition to continued investment in education, skills, healthcare and poverty alleviation.

The Philippines is made up of over 7,000 islands but the majority of people live on just 11 of them. These islands make it the country with the fifth longest coastline in the world. It is bordered by the Philippine Sea to the east, the South China Sea to the west and the Celebes Sea to the south. The island of Borneo is located a few hundred km southwest.

Most of the mountainous islands are covered in tropical rainforest and are volcanic in origin. The highest mountain is Mount Apo, which measures up to 2,954m above sea level and is located on the island of Mindanao. To the east of the Philippines on the ocean floor lies the Philippine Trench, where the Galathea Depth is the third deepest place on earth. The longest river is the Cagayan in Northern Luzon. Manila Bay, upon the shore of which the capital city of Manila lies, is connected to Laguna de Bay, the largest lake in the Philippines, by the Pasig River.

The Philippines contains some of the world's most captivating scenery, including the beaches of Boracay, Panglao and Pagudpad, as well as historical sites such as Intramuros, Cebu City, Corregidor and Bataan.

THE PHILIPPINES



The main religion in the Philippines is Christian Malay, with over 80% of Filipinos practicing Catholicism. Family values are at the heart of the Filipino family. It is recognised and accepted that family members often work for the same company. There is a strong sense of social propriety to conform to societal norms of behaviour.

The Philippines are a founder member of ASEAN and last hosted the Summit in January 2007.

THE PHILIPPINES



Joined ASEAN:	8 August 1967 (Founder Member)
Head of State:	President Rodrigo Duterte (since 30 June 2016)
Area:	300,000km ²
Border countries:	None
Coastline:	36,289km
Capital city:	Manila
Total population:	102.6 million
Population of capital:	11,449,000
Climate:	Tropical marine. Northeast monsoon from November to April and southwest monsoon May to October
Languages:	Filipino, English
Religions:	Roman Catholic 80.9%, Muslim 5%, Evangelical 2.8%, Iglesia ni Kristo 2.3%, Aglipayan 2%, other Christian 4.5%, other 1.8%, none 0.1%
Ethnic groups:	Tagalog 28.1%, Cebuano 13.1%, Ilocano 9%, Bisaya/Binisaya 7.6%, Hiligaynon Ilonggo 7.5%, Bikol 6%, Waray 3.4%, other 25.3%
Monetary unit:	Peso (PHP)
Natural resources:	Petroleum, gold, silver copper, nickel, cobalt, timber, salt
Major exports:	Semi-conductors and electronic products, transport equipment, garments, copper products, petroleum products, coconut oil, fruits
Main export trading countries:	Japan 21.1%, US 15%, China 10.9%, Hong Kong 10.6%, Singapore 6.2%, Germany 4.5%, South Korea 4.3%
Major imports:	Electronic products, mineral fuels, machinery and transport equipment, iron and steel, textile fabrics, grains, chemicals, plastic
Main import trading countries:	China 16.2%, US 10.8%, Japan 9.6%, Singapore 7%, South Korea 6.5%, Thailand 6.4%, Malaysia 4.8%, Indonesia 4.4%
Internet domain:	.ph
International dialling code:	+63



SINGAPORE



Singapore is one of the wealthiest countries in Asia with a Gross National Income of US\$55,150 per capita. It saw its highly-globalised economy grow by 2% in 2015. The country's strong manufacturing and services sectors are the main stay of its economic strength. Singapore, even with relatively high salary levels, continues to be an attractive destination for FDI, particularly ICT companies. The island is seen as providing one of the world's most business friendly regulatory environments and is ranked among the world's most competitive economies. Strong manufacturing and services sectors are the principle elements of an economy which features electronics production, financial services, oil drilling equipment, refining, processed food and beverages, rubber products and ship repair. There is a strong focus on value added activities including chemical, aero-engineering, pharmaceuticals and biotechnology industries.

Singapore is located off the southern tip of the Malay Peninsular, 137km north of the Equator. As an island country, it is made up of 63 islands and is separated from Malaysia by the Straits of Johor. There are two man-made connections to Malaysia, the Johor-Singapore Causeway in the

north and the Tuas Second Link in the west. Jurong Island, Pulau Tekong, Pulau Ubin and Sentosa are the largest islands after Singapore Island, which contains the capital, Singapore City.

Singapore's land area consists of forest and nature reserves and its primary rainforest is Bukit Timah. Most work in Singapore is in the service sector and poverty levels are low compared to other countries in the region.

Tourism forms a large part of the economy with over ten million visitors each year. Gambling has been legalised and the country's casino resorts have proved popular destinations.

A largely Buddhist (Chinese) state, Singaporeans may claim that they are an egalitarian society, yet they retain strong hierarchical relationships in most aspects of their lives. Singapore is a multi-ethnic society, where culturally diverse, Chinese, Malay and Indian traditions co-exist in a westernised cosmopolitan metropolis.

Singapore is a founder member of ASEAN and hosted the 13th Summit in November 2007.

SINGAPORE

Joined ASEAN:	8 August 1967 (Founder Member)
Head of State:	President Tony Tan Keng Yam
Area:	697km ²
Border countries:	None
Coastline:	193km
Capital city:	Singapore City
Total population:	5.7 million
Climate:	Tropical, hot and humid with two monsoon seasons. Northeastern monsoon from December to March, southwestern monsoon June to September
Languages:	Mandarin, English, Tamil, Malay, Hokkien, Cantonese, Teochew
Religions:	Buddhist 42.5%, Muslim 14.9%, Taoist 8.5%, Hindu 4%, Catholic 4.8%, other Christian 9.8%, other 0.7%, none 14.8%
Ethnic groups:	Chinese 76.8%, Malay 13.9%, Indian 7.9%, other 1.4%
Monetary unit:	Singapore dollar (SGD)
Natural resources:	Fish, deep-water ports
Major exports:	Machinery and electronic equipment, consumer goods, pharmaceuticals, chemicals, refined petroleum products.
Main export trading countries:	China 13.7%, Hong Kong 11.5%, Malaysia 10.8%, Indonesia 8.2%, US 6.9%, Japan 4.4%, South Korea 4.1%
Major imports:	Machinery and equipment, foodstuffs, consumer goods, mineral fuels, chemicals
Main import trading countries:	China 14.2%, US 11.2%, Malaysia 11.2%, Japan 6.3%, South Korea 6.1%, Indonesia 4.8%
Internet domain:	.sg
International dialling code:	+65



THAILAND

Thailand, which is the second largest economy in Southeast Asia, saw GDP grow by 2.8% in 2015, to US\$395.3 billion. The country of over 68 million people is one of the world's most important manufacturers of electronic products including computers and integrated circuits. Thailand has also become the principal car and motorcycle manufacturer in the region. It ranks as a popular choice for foreign investors, positioned at 46th in the World Bank's Ease of Doing Business Report in 2016. According to Bank forecasts, Thailand's economy will grow from 2.9% to 3.3% over the period 2016-2018. Growth is expected to be bolstered by the implementation of major public investments in infrastructure and improvements in the quality of public services.

Thailand is located at the centre of the Indochina Peninsula and is bordered to the north by Myanmar and Lao PDR, to the east by Lao PDR and Cambodia, to the south by the Gulf of Thailand and Malaysia and to the west by the Andaman Sea and Myanmar.

Thailand is home to several distinct geographic regions. The north of the country is mountainous, with the highest point being Doi Inthanon at 2,565m above sea level, the northeast consists of the Khorat Plateau and the east by the Mekong River.

Southern Thailand has the Kra Isthmus, a narrow land bridge, which connects the Malay Peninsula with the mainland of Asia. The centre is dominated by the Chao Phraya River valley, which runs into the Gulf of Thailand. The Gulf of Thailand is also an industrial centre, with the main port in Sattahip being the entry gates for Bangkok's Inland Seaport.

Thailand is the Greater Mekong sub-region's most visited international destination. Other top destinations include Bangkok, Chiang Mai and the beach resorts of Pattaya and Phuket.

The Andaman Sea hosts the most popular and luxurious resorts in Asia. Phuket, Krabi, Ranong, Phang Nga and Trang and their lush islands all lay along the coast of the Andaman.

The Chao Phraya River and Mekong River are the sustainable resources of rural Thailand. Industrial scale production of crops use both rivers and their tributaries. The Gulf of Thailand covers 320,000km² and is fed by the Chao Phraya, Mae Klong, Bang Pakong and Tapi Rivers.

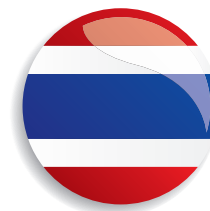


Thailand is a stronghold of Buddhism. Many of the rules of etiquette are by-products of the Buddhist religion. Great emphasis is placed on outward forms of courtesy and politeness. The family is the cornerstone of Thai culture and has a strong hierarchical social structure.

Thailand is a founder member of ASEAN and hosted the 14th Summit in 2009.

THAILAND

Joined ASEAN:	8 August 1967 (Founder Member)
Head of State:	Privy Council President PREM Tinsulanonda serves as Regent (since 13 October 2016)
Area:	513,120km ²
Border countries:	Myanmar, Cambodia, Lao PDR, Malaysia
Coastline:	3,219km
Capital city:	Bangkok
Total population:	68.2 million
Population of capital:	6,902,000
Climate:	Tropical, rainy, warm, cloudy southwest monsoon from May to September. Dry, cool northeast monsoon, November to March
Languages:	Thai, English, ethnic and regional dialects
Religions:	Buddhist 94.6%, Muslim 4.6%, Christian 0.7%, other 0.1%
Ethnic groups:	Thai 75%, Chinese 14%, other 11%
Monetary unit:	Baht (THB)
Natural resources:	Tin, rubber, natural gas, tungsten, tantalum, timber, lead, fish, gypsum, lignite, fluorite, arable land
Major exports:	Textiles and footwear, fishery products, rice, rubber, jewellery, automobiles, computers, electrical appliances
Main export trading countries:	US 11.2%, China 11.1%, Japan 9.4%, Hong Kong 5.5%, Malaysia 4.8%, Australia 4.6%, Vietnam 4.2%, Singapore 4.1%
Major imports:	Capital goods, intermediate goods and raw materials, consumer goods, fuels
Main import trading countries:	China 20.3%, Japan 15.4%, US 6.9%, Malaysia 5.9%, UAE 4%
Internet domain:	.th
International dialling code:	+66



VIETNAM

Vietnam has emerged as one of Asia's great success stories with GDP growing to 6.7% in 2015, compared to 6% the previous year. Vietnam has benefited from a programme of internal restructuring, a transition from its agricultural base towards manufacturing and services. It has also prospered since joining the WTO in 2007. Normalisation of trade relations with the US has helped to ensure Vietnam is consistently ranked as one of Asia's most attractive destinations for foreign investors. The country has boosted its international economic integration with a number of free trade agreements.

Vietnam is the most eastern country on the Indochina Peninsula. It is bordered by China to the north, Lao PDR to the northwest, Cambodia to the southwest and the South China Sea to the east. With a population of over 90 million, Vietnam is the 13th most populous country in the world.

The country features tropical lowlands, hills and densely forested highlands, with level land covering no more than 20% of the area. Vietnam is divided into the highlands and the Red River Delta in the north, the Gai Truong Son (central mountains), the coastal lowlands and the Mekong River Delta in the south.

The nation has seven developed ports and harbours at Cam Ranh, Da Nang, Hai Phong, Ho Chi Minh City, Hong Gai, Qhi Nhon and Nha Trang. There are also more than 17,000km of navigable waterways, which play a significant role in rural life.

Vietnam has a vast cultural legacy and is also endowed with a 3,444km coastline, providing ample opportunity to develop sea based tourism around spectacular bays, beaches and islands. These include areas such as Mong Cai City, Halong Bay, Hai Phong City, Nam Dinh Province and Da Nang.

The teachings of Confucius highly influence the individual in Vietnamese society. This stresses for, amongst other things; loyalty, honour, sincerity and respect for age. Collectivism is a general part of society with an individual seen as secondary to a group.

Vietnam joined ASEAN 28 July 1995, making it the seventh member and hosted the 17th Summit in 2010.



VIETNAM

Joined ASEAN:	28 July 1995
Head of State:	President Tran Dai Quang (since 2 April 2016)
Area:	331,210km ²
Border countries:	Lao PDR, Cambodia, China
Coastline:	3,444km (excluding islands)
Capital city:	Hanoi
Total population:	95.2 million
Population of capital:	2,668,000
Climate:	Tropical in the south, monsoons in the north with the hot, rainy season May to September. Warm and dry October to March
Languages:	Vietnamese, English, French, Chinese, Khmer
Religions:	Buddhist 9.3%, Catholic 6.7%, Hoa Hao 1.5%, Cao Dai 1.1%, Protestant 0.5%, Muslim 0.1%, none 80.8%
Ethnic groups:	Kinh (Viet) 85.7%, Tay 1.9%, Thai 1.8%, Muong 1.5%, Khmer 1.5%, Mong 1.2%, Nung 1.1%, others 5.3%
Monetary unit:	Dong (VND)
Natural resources:	Phosphates, coal, manganese, rare earth elements, bauxite, chromate, timber, hydropower
Major exports:	Clothes, shoes, marine products, crude oil, electronics, wooden products, coffee, rice, machinery
Main export trading countries:	US 21.2%, China 13.3%, Japan 8.4%, South Korea 5.5%, Germany 4.1%
Major imports:	Machinery and equipment, petroleum products, steel products, raw materials for clothing and shoe industries, electronics, plastics, automobiles
Main import trading countries:	China 34.1%, South Korea 14.3%, Singapore 6.5%, Japan 6.4%, Hong Kong 5.1%, Thailand 4.5%
Internet domain:	.vn
International dialling code:	+84



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Generali

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