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# The ASEAN-US Big Number Report:

# BIG, BIGGER, BIGGEST

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# PREFACE

2017 marks the 50th anniversary of the founding of the Association of Southeast Asian Nations (ASEAN). With a population of some 600 million and a $2.4 trillion GDP, ASEAN is the world's 7th largest economy. It is both a leading producer, and a leading consumer, of a wide range of commodities, resources, goods, and services. It has enjoyed many years of robust economic growth, and has the potential for continued strong growth in the years ahead. By one estimate, it could become the world's 4th largest economy within the next three decades.

This important grouping of countries collectively is a leading trading partner of the United States, with $226 billion in merchandise trade, and two-way investment totalling $299 billion. Many leading U.S. companies have been present in ASEAN for decades, and the economic relationship has developed great depth and breadth over the years.

U.S. companies have long been optimistic about prospects in the region. Annual surveys by the U.S. Chamber of Commerce and American Chambers of Commerce in ASEAN countries consistently show that U.S. companies plan to increase their trade and investment in the region, driven in part by the region's high economic growth, increased economic integration, large and growing consumer class, favorable demographics, and a variety of other factors.

It should therefore come as no surprise to observers and policymakers both in the United States and in ASEAN that healthy and vibrant economic relations are in the vital national interests of both.

At the same time, the economic relationship is typically described in terms of bilateral trade, or direct investment. Both are of course important, but they do not capture the entirety of the economic relationship. They tell only part of the story. What is needed is a new narrative; a new way of telling the story that gives fresh insight and perspective on this very important relationship.

That is what this paper attempts to do.

In this analysis, we look beyond trade and investment to incorporate a wider range of economic activities. These include domestic sales by affiliates in the U.S. and ASEAN markets; financial flows; and, tax revenue accruing to the U.S. and ASEAN governments as a result of this interaction. By assessing a wider range of indicators, we hope to draw a more complete picture of the nature of the economic relationship, and the benefits that it brings to both sides.

In turn, we hope that this more complete picture will help to broaden and deepen the discussion about the relationship's importance. And our intent is that this study not be the final word, but rather the beginning of this new type of conversation.

**John Goyer**
Senior Director, Southeast Asia
U.S. Chamber of Commerce

# EXECUTIVE SUMMARY

This paper takes a new approach to explaining the totality of the US-ASEAN Commercial relationship. Traditionally, the relationship's economic importance is explained in terms of imports, exports, and direct investment. These are indeed important indicators, but they tell an incomplete story. Other indicators add further texture and color, and can help us better understand the relationship.

In addition to two-way trade and investment, the other indicators measured in this paper are the flows of financing between the United States and ASEAN; sales in the domestic market by U.S. affiliates on the ground in Southeast Asia, and ASEAN-based affiliates' sales in the United States; and government revenues derived from the operations of U.S. companies in ASEAN.

Adding up all these indicators yields an ASEAN "Big Number," which is to say, the total value of the economic relationship. The paper estimates that Big Number was $672 billion in 2015. This figure accounted for roughly 27% of ASEAN's GDP that year, indicating the deep and broad economic interdependence between the United States and the region.

Two-way merchandise trade and direct investment are of course the largest individual contributors to the big number at $226 and $299 billion respectively. However, domestic sales were conservatively estimated at $113 billion, financial flows at $23 billion, and government revenue at $9 billion. The methodology used to derive these numbers is explained in Annex I of this paper.

The paper further makes some projections about the economic relationship moving forward. Based on the estimated compound annual growth rate (CAGR) from 2011-15, in a low-growth scenario the size of the relationship would increase to $708 billion by 2020. In a baseline growth scenario – that is, extrapolating based on the same CAGR, the relationship would increase to $955 billion by 2020. In a high growth scenario – which the authors concede is likely to be overly optimistic – the relationship would increase to $1,119 billion by 2020.

Calculating this number posed many challenges. Some of the statistical indicators are not readily available and must be derived. Gauging financial flows required the authors to consider the differing nature and maturities of the debt and equity markets in the region, while caution had to be taken to avoid double counting of intermediate inputs in domestic sales. A dearth of publically available data made calculating the government revenue component of the Big Number especially difficult. Ensuring direct comparability of data across countries was an additional challenge. For all these reasons, the paper takes a cautious, conservative approach in calculating the Big Number. As a result, and despite the size of the Big Number, it likely understates the actual value of the economic relationship.

# THE US-ASEAN BIG NUMBER

## 2.1 INTRODUCTION AND BACKGROUND FROM THE US-INDONESIA BIG NUMBER

Statistical indicators such as foreign direct investment (FDI) and trade alone often fail to capture the true nature and size of the economic activities that take place between countries. FDI flows can be missed if they pass through a third country and are counted as originating from that third country, instead of the source country. Trade too only offers us a partial picture. This is why, in 2016, the U.S. Chamber of Commerce, in partnership with AmCham Indonesia undertook a project to use a new approach to measure the true size of the economic relationship between the US and Indonesia.

This new approach, which to our knowledge had never been tried before, used a methodology that combined five components to arrive at a "Big Number"—one that we hoped would provide a more complete picture of the size and nature of the most important economic activities linking the US and Indonesia. While still an approximation, and likely to be an under-estimate of the true figure, it at least gave us a better indication of the true size of the hidden iceberg, far more so than just the FDI or trade at the iceberg's tip. These five components were: (i) the sum of merchandise trade between the two countries, including imports and exports in both directions; (ii) the flows of financing between the two countries; (iii) the sum of domestic sales by US companies in Indonesia, and by Indonesian companies in the US; (iv) government revenues derived from the operations of US companies in Indonesia (using VAT returns); and, finally (v) the sum of realized FDI, not just of US companies in Indonesia, but also Indonesian companies in the US. Using 2014 as our base year, due to data limitations in 2015 (the data were collected in early 2016), we calculated a figure of US$90.1 billion as the value of the total economic activities

in the bilateral relationship. Converting some of the data to allow us to compare like for like, we were also able to show that this sum was equivalent to 10.1 percent of Indonesia's GDP in 2014.

This presented a very different picture of the US-Indonesia economic relationship in terms of size and importance, compared with Indonesian government data based on just realized FDI or trade, which showed the US position well down in the rankings. For instance, based on Indonesia's Investment Coordinating Agency (BKPM) data, in 2014 realized FDI from the US amounted to just US$1.3 billion, ranking the US as Indonesia's sixth-largest investor, behind Singapore, Japan, Malaysia, the Netherlands and the United Kingdom. Therefore, this exercise served to highlight and reinforce the importance of the economic relationship, especially for Indonesia's economy, and the need to nurture it and maximize its full potential wherever possible.

## 2.2 ...AND SO TO A US-ASEAN BIG NUMBER

Following the success and positive reception of the Indonesia study, the U.S. Chamber of Commerce set out to conduct a similar exercise to uncover the true size and importance of the economic relationship between the US and all the member countries of ASEAN as a whole—a US-ASEAN Big Number.

This presented us with some new data challenges that we did not have when looking only at the US-Indonesia economic relationship. Some of the major challenges included finding comparable data across the 10 member countries, adjusting data for 10 different (and wildly fluctuating) currencies, aggregating the data especially in calculating growth rates, and coping with the huge differences between the economies of the six large ASEAN countries and the four small ASEAN countries. In order to get around the data issues and also to improve on the methodology used previously to calculate the Indonesia Big Number, we relied mainly on US Bureau of Economic Analysis (BEA) data and also changed the way in which we calculated financial flows.

Before presenting the results of our revised methodology to measure the size of economic activities between the US and ASEAN, we first look at the context of the economic relationship in the following three sections.

# 2.3 ASEAN MEMBER COUNTRIES' GDP

Using nominal GDP data for 2015, we rank the relative size of the ASEAN economies in Table 2.1. It is interesting to note that Indonesia dominates the trading bloc in terms of economic size, being more than double the size of the second-largest economy, Thailand, and accounting for fully 35 percent of the total GDP of all ASEAN countries. However, the total size of ASEAN GDP is, in turn, dwarfed by the size of the US economy, with a nominal GDP of US$18,036.6 billion in 2015. This is more than seven times the size of all the ASEAN economies combined. It is also worth noting that ASEAN countries' GDPs fall into two main groups: major and minor. The top six countries—Indonesia, Thailand, Malaysia, Singapore, the Philippines and Vietnam—fall into the major category, while the bottom four countries—Myanmar, Cambodia, Brunei and Lao PDR—fall into the minor category. In reality Vietnam is in between the two groups, but is rapidly approaching the major group given its high levels of growth. We therefore include it in the major category.

Table 2.1

**RANKING OF ASEAN ECONOMIES IN NOMINAL GDP, 2015**

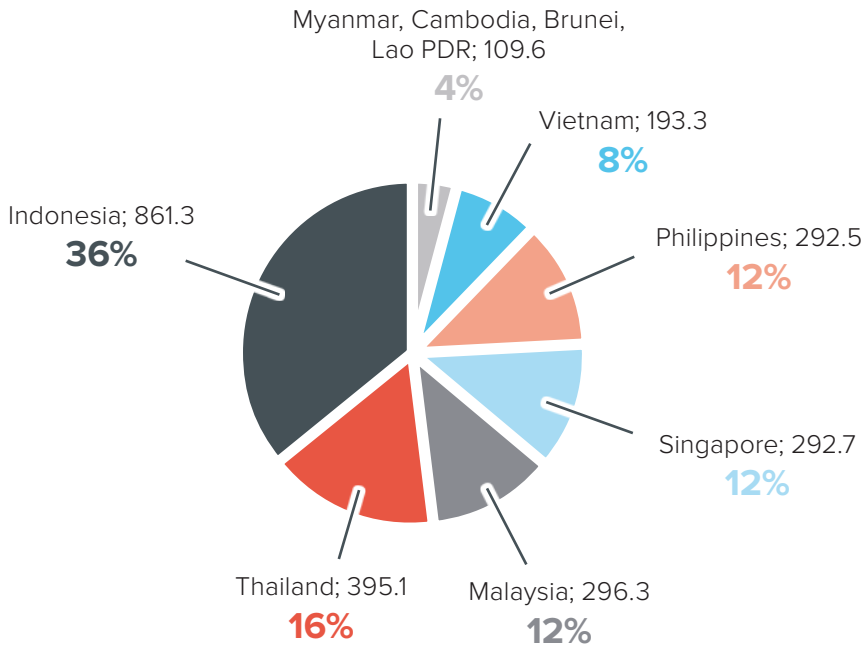
| RANKING | COUNTRY | NOMINAL GDP US$ BN (2015) |
|---|---|---|
| 1 | Indonesia | 861.9 |
| 2 | Thailand | 395.7 |
| 3 | Malaysia | 297.2 |
| 4 | Singapore | 292.9 |
| 5 | Philippines | 292.2 |
| 6 | Vietnam | 193.2 |
| 7 | Myanmar | 66.1 |
| 8 | Cambodia | 18.2 |
| 9 | Brunei | 12.9 |
| 10 | Lao PDR | 12.4 |
| **Total** | | **2,442.6** |

**SOURCES:**
*CEIC, based on data from: Department of Economic Planning and Development, Prime Minister's Office (Brunei); Central Statistical Organization, Ministry of National Planning and Economic Development (Myanmar); National Institute of Statistics (Cambodia); Central Bureau of Statistics (Indonesia); Bank of the Lao PDR; International Monetary Fund (Malaysia); Department of Statistics (Singapore); National Economic and Social Development Board (Thailand); General Statistics Office (Vietnam); and the Philippine Statistics Authority.*

Showing these data in a more visual way in order to highlight the significant differences in relative size of the ASEAN countries, Figure 2.1 uses a pie-chart to highlight the two major categories and also emphasizes the relative size of the Indonesian economy above all others in ASEAN.

Figure 2.1

**RELATIVE SIZE OF ASEAN ECONOMIES IN NOMINAL GDP, 2015 (US$ BN; %)**




**SOURCES:**
*CEIC, based on data from national statistical offices, including: Department of Economic Planning and Development, Prime Minister's Office (Brunei); Central Statistical Organization, Ministry of National Planning and Economic Development (Myanmar); National Institute of Statistics (Cambodia); Central Bureau of Statistics (Indonesia); Bank of the Lao PDR; International Monetary Fund (Malaysia); Department of Statistics (Singapore); National Economic and Social Development Board (Thailand); General Statistics Office (Vietnam); and the Philippine Statistics Authority.*

An alternative way of looking at GDP by country is not in terms of its nominal size but in terms of GDP per capita, which gives an indication of the relative wealth of a country's citizens. Within ASEAN this paints a much different picture (Table 2.2). At US$52,910, Singapore is by far the wealthiest ASEAN country based on GDP per capita, and is in the top 10 wealthiest countries worldwide on this basis—even in nominal terms. Brunei is a distant second at US$30,583, thanks to its oil and gas wealth and very small population, with Malaysia and Thailand following, at US$9,529 and US$6,020, respectively. Despite the huge relative size of its economy, on a per capita GDP basis Indonesia slips down to fifth place, with a GDP per capita of US$3,374.

Table 2.2

**RANK OF GDP PER CAPITA, 2015 (US$)**

**SOURCE:** *CEIC, based on data from national statistical offices.*

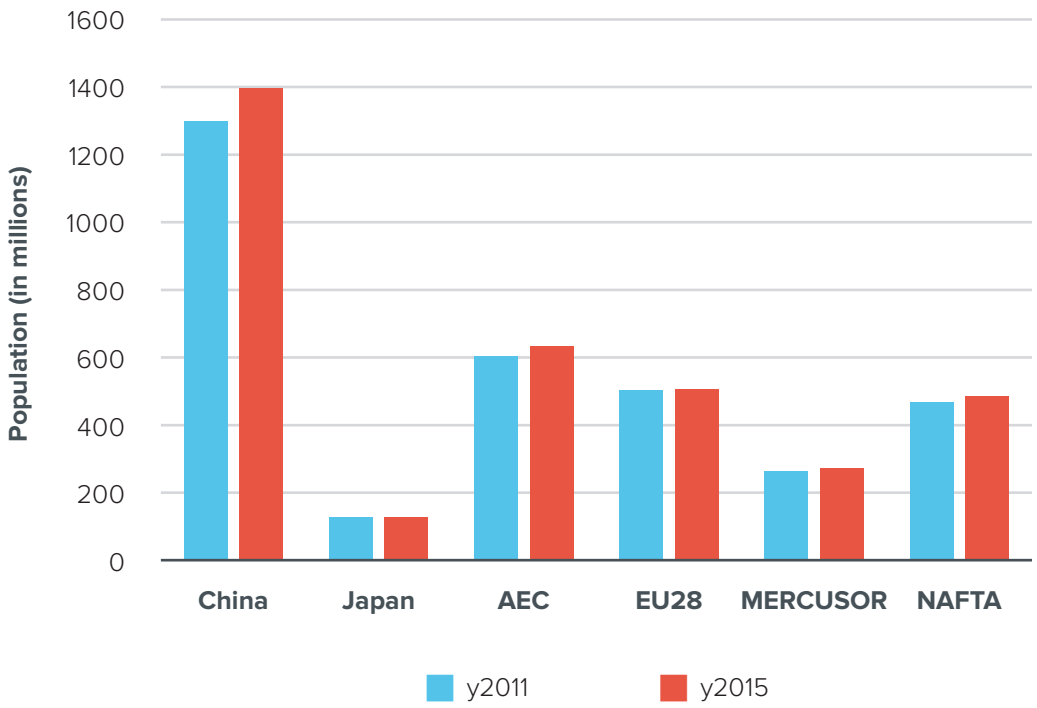
| GDP PER CAPITA RANKING | GDP RANKING | COUNTRY | GDP PER CAPITA (US$) |
|---|---|---|---|
| **1** | 4 | Singapore | 52,910 |
| **2** | 9 | Brunei | 30,583 |
| **3** | 3 | Malaysia | 9,529 |
| **4** | 2 | Thailand | 6,020 |
| **5** | 1 | Indonesia | 3,374 |
| **6** | 5 | Philippines | 2,902 |
| **7** | 6 | Vietnam | 2,106 |
| **8** | 10 | Lao PDR | 1,727 |
| **9** | 8 | Cambodia | 1,171 |
| **10** | 7 | Myanmar | 294 |

It is also interesting to compare the population size of ASEAN as a trading bloc, (the ASEAN Economic Community, or AEC), with other major global trading blocs. The AEC had a total population of over 622 million people in 2015, making it the largest economic and trading community in the world. Its population exceeds that of the European Union (EU), NAFTA, and Mercusor. While both China and India each have far larger populations than the AEC, the AEC's population is growing rapidly, adding 30 million people over the five years analyzed to 2015, and highlighting its future potential with a young and growing population.

Figure 2.2

**POPULATIONS OF MAJOR TRADING BLOCS AND MARKETS, 2011 V. 2015**

**SOURCE:** *OECD. http://stats.oecd.org/Index.aspx?DatasetCode=POP_FIVE_HIST.*



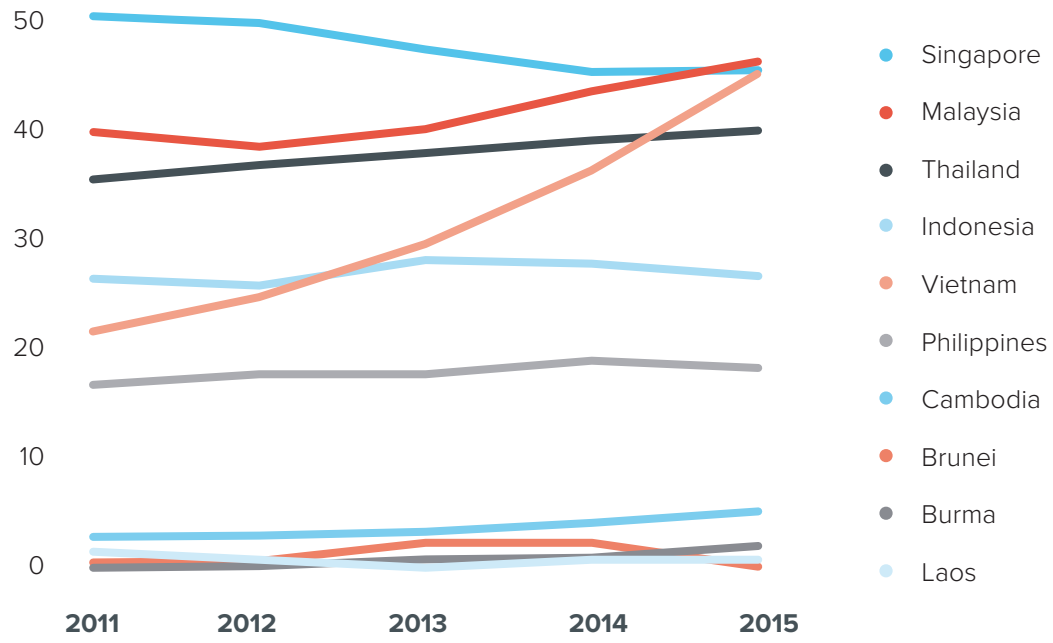

# 2.4 OLD WAYS OF LOOKING AT THE US-ASEAN ECONOMIC RELATIONSHIP

## TRADE

One common way of looking at the US-ASEAN economic relationship has been through the lenses of total trade flows and realized foreign direct investment (FDI). Figure 2.3 shows the relative total trade contributions of the 10 ASEAN members with the US, with a total merchandise trade flow figure of US$226.8 billion in 2015. This figure shows that over the past 4 years the trade contributions of Malaysia, and most dramatically Vietnam, have all but caught up with that of Singapore. Over this period, Singapore's share has declined moderately, while those of the other ASEAN countries have seen little change.

Figure 2.3

**TOTAL TRADE BETWEEN ASEAN AND THE US, 2011-15 (US$ BILLION)**




**SOURCE:**
*US Census data. https://www.census.gov/foreign-trade/balance/index.html.*

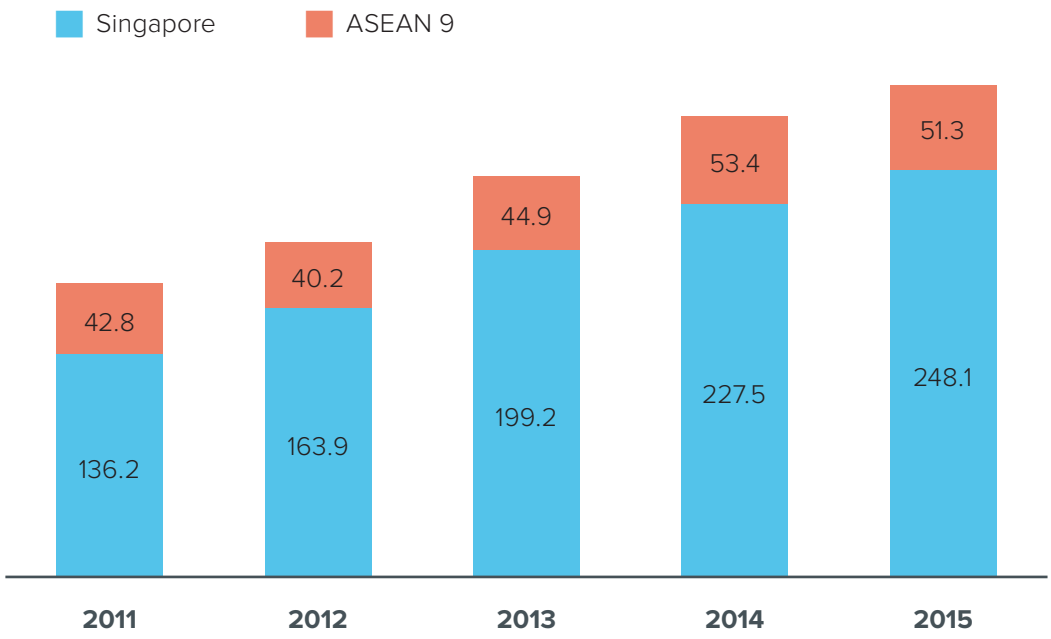
From 2011 to 2015, total trade between the US and ASEAN grew steadily, despite the global slowdown in trade in the aftermath of the global financial crisis. Total trade volumes rose from US$194.7 billion in 2011 to US$226.8 billion in 2015, an increase of 16 percent.

## FOREIGN DIRECT INVESTMENT

The other traditional way of viewing the relationship has been through the lens of foreign direct investment (FDI). Figure 2.4 illustrates the total realized FDI in both directions between the US and ASEAN member countries. Statistically, the problem with using FDI data for comparison purposes is that the FDI is so heavily dominated by Singapore: in 2015, total US-ASEAN FDI was calculated to be US$299.4 billion but, of this total, US$248.1 billion, or 82 percent, was FDI between the US and Singapore. This means that the value of FDI between the US and the other nine ASEAN members combined only accounts for 18 percent of total investment. For this reason, Singapore is treated separately in Figure 2.4, as it dwarfs all the other nine ASEAN countries.

Figure 2.4

**TOTAL FDI BETWEEN ASEAN AND THE US, 2011-15 (US$ BILLION)**




SOURCE: *BEA. https://www.bea.gov/international/factsheet/factsheet.cfm.*

As with trade, FDI between the US and ASEAN grew steadily in the period from 2011 to 2015, although in the case of FDI growth has been even more rapid. Total FDI grew from US$179.1 billion in 2011 to US$299.4 billion in 2015, a 67 percent increase. Again, Singapore is the main driver behind this increase. FDI between the US and Singapore surged from US$136.2 billion in 2011 to US$248.1 in 2015, an 82 percent increase, and significantly higher than the increase in FDI for the whole of ASEAN. Albeit well behind Singapore in terms of volume of FDI, the other three members of ASEAN that have significant FDI flows are Malaysia, Indonesia and Thailand, with investment of US$15.2 billion, US$15.1 billion and US$13.8 billion in 2015, respectively. These three countries also showed more modest, but nonetheless steady, growth in FDI in the period 2011-15, increasing by 21 percent, 23 percent and 15 percent, respectively.

The large volume of regional FDI that flows through Singapore inflates the FDI number for Singapore, while deflating it for other ASEAN countries where much of that FDI will eventually end up. It also gives the appearence that Singapore is the largest regional investor, when in fact much of the investment is coming from the US and other major investor countries using Singapore as a conduit into ASEAN countries.

# 2.5 THE OTHER COMPONENTS OF THE US-ASEAN BIG NUMBER

Taking fluctuating exchange rates into account (Section 2.6), we are able to calculate and then combine the five components that comprise the Big Number for all 10 ASEAN member countries, and determine the total value of the economic relationship between ASEAN and the US for 2015 (Table 2.3). We estimate this figure to be US$672.1 billion in 2015. As already discussed, FDI and trade are the two biggest components of the Big Number. However, domestic sales also make an important contribution, at US$113.2 billion in 2015, while the contributions from financial flows and government revenue are more modest, at US$23.3 billion and US$9.4 billion, respectively.

Table 2.3
**THE BIG NUMBER AND ITS COMPONENTS, 2015 (US$ MILLION)**

| (US$ MILLION) | FDI* | TRADE** | GOVERNMENT REVENUE*** | DOMESTIC SALES* | FINANCIAL FLOWS* | TOTAL |
|---|---|---|---|---|---|---|
| **Brunei** | 16 | 153 | 11 | 62 | 3 | **245** |
| **Myanmar** | 11 | 371 | 79 | 0 | 5 | **466** |
| **Cambodia** | 0 | 3,417 | 94 | 107 | 12 | **3,630** |
| **Indonesia** | 15,123 | 26,722 | 1,935 | 17,912 | 91 | **61,783** |
| **Lao PDR** | 0 | 70 | 15 | 0 | 0 | **85** |
| **Malaysia** | 15,238 | 46,248 | 884 | 14,561 | 334 | **77,265** |
| **Singapore** | 248,089 | 46,740 | 3,922 | 56,031 | 20,814 | **375,596** |
| **Thailand** | 13,765 | 39,862 | 1,251 | 17,073 | 729 | **72,680** |
| **Vietnam** | 1,285 | 45,107 | 183 | 675 | 800 | **48,050** |
| **Philippines** | 5,902 | 18,141 | 1,000 | 6,748 | 507 | **32,298** |
| **Total** | **299,429** | **226,831** | **9,374** | **113,169** | **23,295** | **672,098** |

**SOURCES:**
**BEA. https://www.bea.gov/international/factsheet/factsheet.cfm.*

*****US** Census. https://www.census.gov/foreign-trade/balance/index.html.*

**** OECD (and BEA) http://stats.oecd.org/qwids/#?x=1&y=6&f=4:1,2:1,3:51,5:3,7:1&q=4:1,2,3,100,7,10,119,121,122,31,32,33,123,124,128,129,125,13,45,126,130,131,132,133,16,134,127,21,22,23,24,25,26,27,28,29,30,46,48,35,135,34,36,15,20,38,136,137,138,139,49,51,53,54,55,117,56,57,58,52,61,62,104,105,106,107,108,109,64,110,111,112,114,5,6,8,9+2:1+3:51+5:3,4,5,6,1,7,8+7:1,2,3+1:1,2,25,26,29,27,3,4,5,6,58,7,8,9,10,11,59,60,12,13,14,61,15,16,17,18,62,19,63,75,20,21,22,23,24,36,209,195,197,169,190,70,204,176,170,171,172,173,174,175,191,69,67,205,64,76,65+6:1960,1961,1962,1963,1964,1965,1966,1967,1968,1969,1970,1971,1972,1973,1974,1975,1976,1977,1978,1979,1980,1981,1982,1983,1984,1985,1986,1987,1988,1989,1990,1991,1992,1993,1994,1995,1996,1997,1998,1999,2000,2001,2002,2003,2004,2005,2006,2007,2008,2009,2010,2011,2012,2013,2014,2015,2016.*

## DOMESTIC SALES

Domestic sales are the third-largest component in the US-ASEAN Big Number, at US$113.2 billion in 2015. Unlike the previous U.S. Chamber of Commerce report in 2016 on the US-Indonesia Big Number, in which the total value of domestic sales was calculated based on VAT paid, we use a different approach here. Based on US Bureau of Economic Analysis (BEA) data from 2014, and assuming that multi-national companies with a US or ASEAN equity share of 10 percent or more are included, value added domestically by those companies is summed across all these companies to produce a proxy for domestic sales. This total is then extrapolated based on growth rates in recent years to produce an estimated total value added figure (the domestic sales proxy) for 2015. We found that this methodology gave us a much more credible figure for the size of domestic sales, especially for Singapore.

## FINANCIAL FLOWS

The fourth-largest contributor to the US-ASEAN Big Number is financial flows, at US$23.2 billion in 2015. This is one of the most challenging numbers to disaggregate for country contributions, as we found in the 2016 US-Indonesia Big Number report. In this case, we use data from the IMF to combine the year-end balance of equity, bond and investment fund shares, but unlike the 2016 Indonesia report, we do not in this case include total external debt. Once again, this figure is a proxy for the true total level of economic activity in the finance sector. While we concede that using year-end levels as proxies is not ideal, we hope that in future analysis we will be able to delve further and rely less, if at all, on proxies.

## GOVERNMENT REVENUE

Government revenue accounted for US$9.4 billion of the US-ASEAN Big Number in 2015. Government revenue from US companies that operate in ASEAN is described by BEA data on value added. This calculation is the best approximation of the amount of goods and services from which government revenue is derived, defined by us as value-added tax (VAT). The total is therefore calculated by summing VAT returns in all 10 ASEAN economies, based on their different tax rates and in their individual currencies, and then converting into US dollars. It should be noted that non-tax revenue (NTR), including royalties and excise, have not been included, despite their potentially huge size, due to the scarcity of comprehensive data. As a result, the government revenue component of the Big Number is likely understated by several orders of magnitude.[1]

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1 Sales tax in the United States is levied at the state level. The calculation of revenue for every state in the context of this paper is impractical. It has therefore been excluded from this analysis.

## HOW COUNTRIES COMPARE

Looking more closely at the individual country contributions to the Big Number, Singapore clearly still dominates the ASEAN economic relationship with the US, accounting for US$375.6 billion of the total US$672.1 billion, or 56 percent. And this in turn comes largely from one component: Singapore's share of FDI, which on its own accounts for 36 percent of the entire economic US-ASEAN relationship. Following far behind, Malaysia accounts for US$77.1 billion, Thailand for US$72.7 billion, and Indonesia for US$61.8 billion. Expressed as shares, those are equivalent to 11 percent, 10 percent and 9 percent, respectively. Vietnam is at US$48.1 billion (7 percent), with the Philippines further behind with US$32.3 billion (4 percent). Cambodia, Myanmar, Brunei and Lao PDR together have a combined contribution of less than 1 percent.

## ISSUES OF ACCURACY

The data for some components are by their nature more robust than others, because they are easier to calculate, better recorded, more transparent or simply more complete. For instance, the trade numbers rely on the best and most complete data sources, and are the most reliable. Trade numbers also provide the ability to cross check data across multiple sources. FDI numbers are also reliable, although they can be distorted by the way most countries count the last country of origin of an investment as the investment source, disregarding (or being unaware of) the original investing country. Due to the differing nature and maturities of the debt and equity markets of the region, and Singapore's role as a regional financial hub, the data on financial flows tend to distort country allocations. Despite these caveats, we believe that the aggregate number is nonetheless a good approximation of the total flows.

Domestic sales attributable to US companies in ASEAN and their counterparts in the US can also be problematic due to double counting with the inclusion of intermediate inputs, especially in the case of Singapore. For this report we have used value added (the components of value added consist of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus) by US firms as a proxy for domestic sales, which gives us a considerably more conservative estimate.

Government revenue is perhaps the most problematic number as it relies entirely on the value of VAT paid on domestic sales. In this report the number is derived by multiplying the value added by US companies by each country's relevant VAT rate. As we found in the case of Indonesia in our 2016 report, the government revenue number was significantly understated because corporate income tax, excise taxes, royalites and other concessionary fees could not be included due to a lack of publically available data. The same issue applies in calculating the US-ASEAN component for government revenue.

Where we were uncertain of the validity of the data, or could not access data consistently across all countries, we always erred on the side of conservatism. As a result, we have likely underestimated, as opposed to over-estimated, the true picture.

Figure 2.5

**SOURCE:**
*BEA; US Census; OECD.*

**ASEAN COUNTRIES' INDIVIDUAL CONTRIBUTIONS TO THE BIG NUMBER, 2015 (% OF TOTAL)**

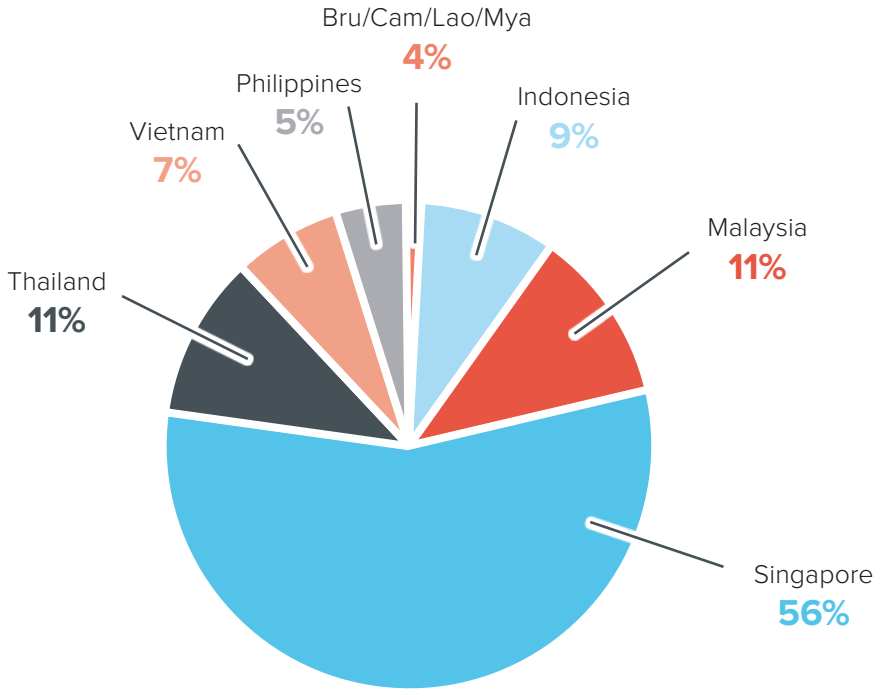



Figure 2.5, demonstrates clearly that Singapore holds a unique position in the ASEAN group resulting from its role as the financial, investment and transhipment hub for the rest of ASEAN. As we found in our 2016 Indonesia report, Singapore acts as the major distribution point for FDI into Indonesia from the US, and this is probably true for the other ASEAN economies as well. Indeed, the numbers seems to confirm this. As noted previously, the trade numbers appear to be much more level, with Singapore, Vietnam and Malaysia each having almost equal shares of the trade component of the Big Number.

## 2.6 THE EXCHANGE RATE CHALLENGE

An additional challenge in calculating the five components of the Big Number is the major fluctuations in global currency markets, especially currencies of emerging markets, over the past few years. While it is true that most trade and FDI data, together with financial flows, are calculated in US dollars, domestic sales and government revenues are in local currencies and need to be converted into US dollars. Trade and investment transactions also usually involve converting into or out of the local currency at some point. Figures 2.6 and 2.7 illustrate the significant

fluctuations of all ASEAN currencies against the US dollar, and against the euro and the Japanese yen. Since 2011, the US dollar has been strong, highlighted by the steady weakening of both the euro and the yen against it. Perhaps somewhat surprisingly, the basket of ASEAN currencies lost slightly less value on average in the period from 2011 to January 2017 than the euro and the yen.

Figure 2.6

**EXCHANGE RATE FLUCTUATIONS OF THE EURO, JPY AND ASEAN BASKET SINCE 2011: US$ STRENGTH (%)**

**NOTE:**
*The ASEAN/US$ line uses a simple average of all 10 ASEAN currencies with no weighting.*

**SOURCE:**
*CEIC, based on data from national statistical offices.*

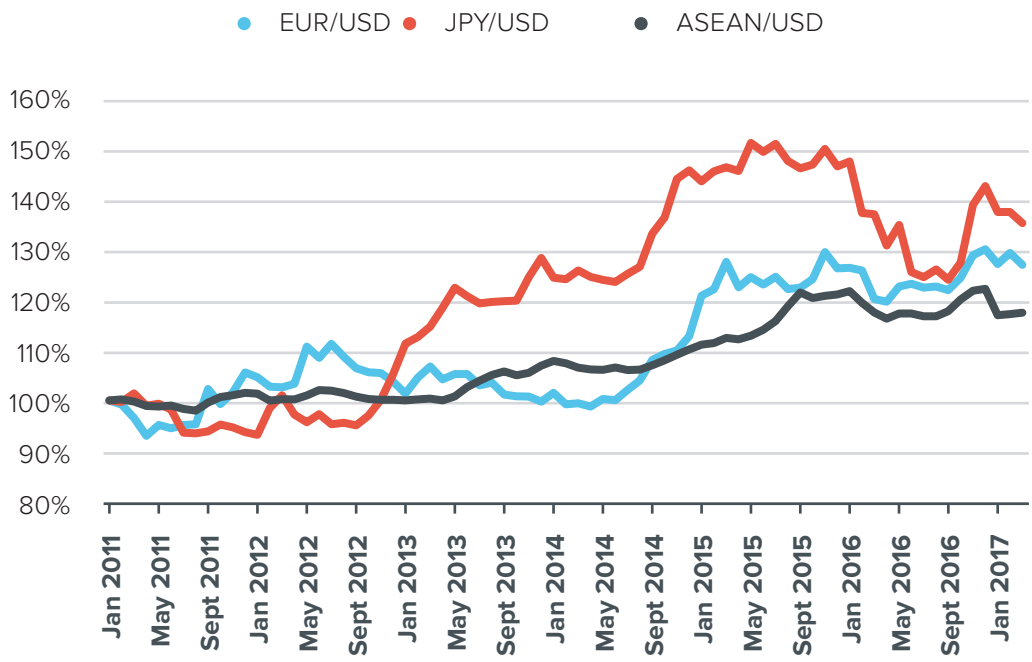
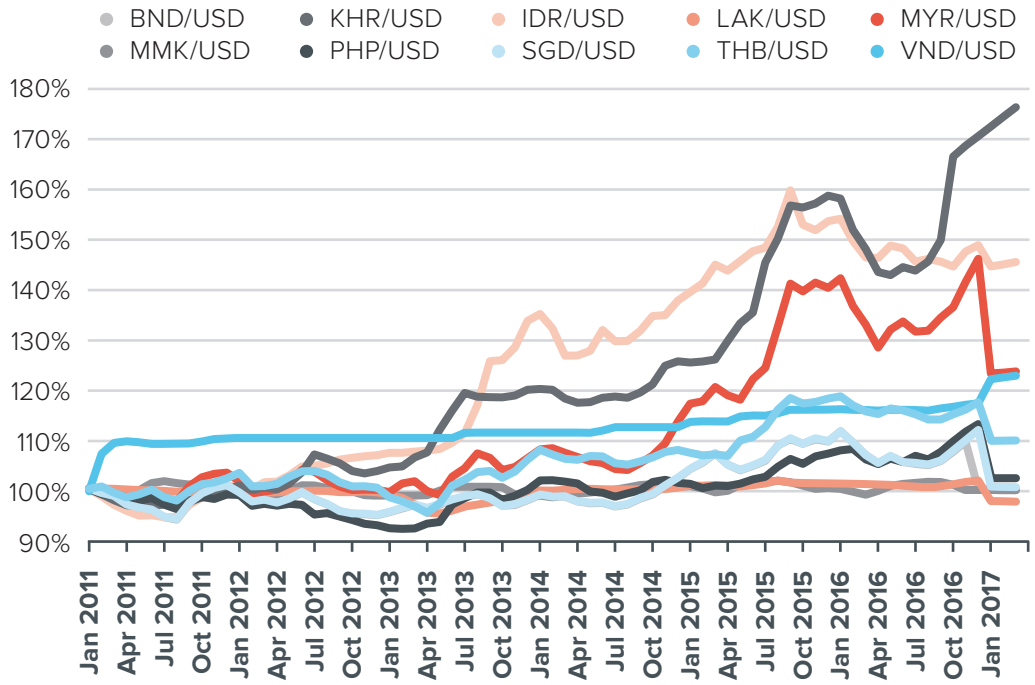



Figure 2.7 illustrates the widely different fluctuations of the 10 ASEAN currencies to the US dollar in the same period. The lines of the chart also show clearly the impact of the first "taper tantrum" in May 2013 and the second "taper tantrum" in March 2015. These points in time coincided with announcements by the US Fed of reductions in the monetary easing policy ("tapering") that had been initiated in the aftermath of the global financial crisis. Interestingly, the only exception to the general weakening trend among the ASEAN currencies in this period was the Singapore dollar—until it too was hit by the aftermath of the "Brexit" vote in the UK in June 2016. The ASEAN currencies most badly affected by the US Fed announcements were the Myanmar kyat, the Indonesian rupiah and the Malaysian ringgit, although the latter was also undermined by domestic political events in 2016 and has since largely recovered in 2017.

Figure 2.7

**SOURCE:**
*CEIC, based on data from national statistical offices.*

**EXCHANGE RATE FLUCTUATIONS OF ASEAN CURRENCIES SINCE 2011 (%): A ROLLERCOASTER RIDE**




# 2.7 TRENDS IN THE ASEAN-US BIG NUMBER OVER FIVE YEARS

Extending our analysis of the Big Number, we used the same methodology to look at the trends in ASEAN countries' contributions to the Big Number, and the Big Number's evolution over time. With 2011-2015 as the period of analysis, we can see that there is a steady increase in the total Big Number over this period (Table 2.4). The size of the relationship grew from US$495.0 billion in 2011 to US$672.1 billion in 2015, an increase of 35 percent. This is an extremely robust expansion during a period that was both volatile and characterized by relatively slow economic growth. Once again, the US-Singapore economic relationship was one of the main drivers, not only due to its size relative to other ASEAN country relationships, but also because of the pace of the expansion: the US-Singapore economic relationship grew by 52 percent over the same period. The most robust expansions over the period were seen in Myanmar, which grew its US relationship by over 5.5 times (albeit from a miniscule base), and Vietnam, which expanded by 97 percent in the same period.

Table 2.4

SOURCE: *BEA, US Census, and OECD.*

**COMPARISON OF TOTAL US ECONOMIC ACTIVITIES WITH ASEAN, 2011-15 (NOMINAL PRICES, US$ MILLION)**

| YEAR | BRUNEI | MYANMAR | CAMB | INDO | LAO | MALAYSIA | S'PORE | THAI | VIET | PHIL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2011** | 369 | 84 | 3,111 | 61,278 | 97 | 67,797 | 245,727 | 63,720 | 24,318 | 28,459 | **494,960** |
| **2012** | 379 | 107 | 3,185 | 60,358 | 67 | 67,658 | 275,766 | 65,746 | 27,072 | 28,778 | **529,116** |
| **2013** | 707 | 267 | 3,187 | 62,019 | 64 | 71,973 | 316,891 | 67,111 | 32,245 | 29,115 | **583,579** |
| **2014** | 672 | 276 | 3,366 | 62,585 | 82 | 76,250 | 354,113 | 72,020 | 41,205 | 33,469 | **644,038** |
| **2015** | 245 | 466 | 3,630 | 61,783 | 85 | 77,265 | 375,596 | 72,680 | 48,050 | 32,298 | **672,098** |

The same nominal US dollar data can then be expressed in percentage terms to highlight the relative shares of the individual member countries of ASEAN in the total economic activities (Table 2.5). This table is revealing, in that it shows relative declines in the shares of countries such as Indonesia, Malaysia and Thailand, and relative increases in the shares of Singapore and Vietnam. Albeit from a small base, Vietnam's share rose from 4.9 percent in 2011 to 7.1 percent in 2015. On the other hand, Indonesia's share declined from 12.4 percent to 9.2 percent. The reasons behind these changes in relative share require further research. However, we could speculate that Vietnam increased its share by ramping up its manufacturing output and joining global manufacturing value chains—in other words by successfully boosting its trade activities above all else. Meanwhile, Indonesia was struggling with lower GDP growth in the aftermath of the end of the commodities boom, having become over-dependent on commodities exports in the period.

Table 2.5

SOURCE: *BEA, US Census, and OECD.*

**COMPARISON OF ASEAN COUNTRY SHARES OF ASEAN'S ECONOMIC ACTIVITIES, 2011-15 (%)**

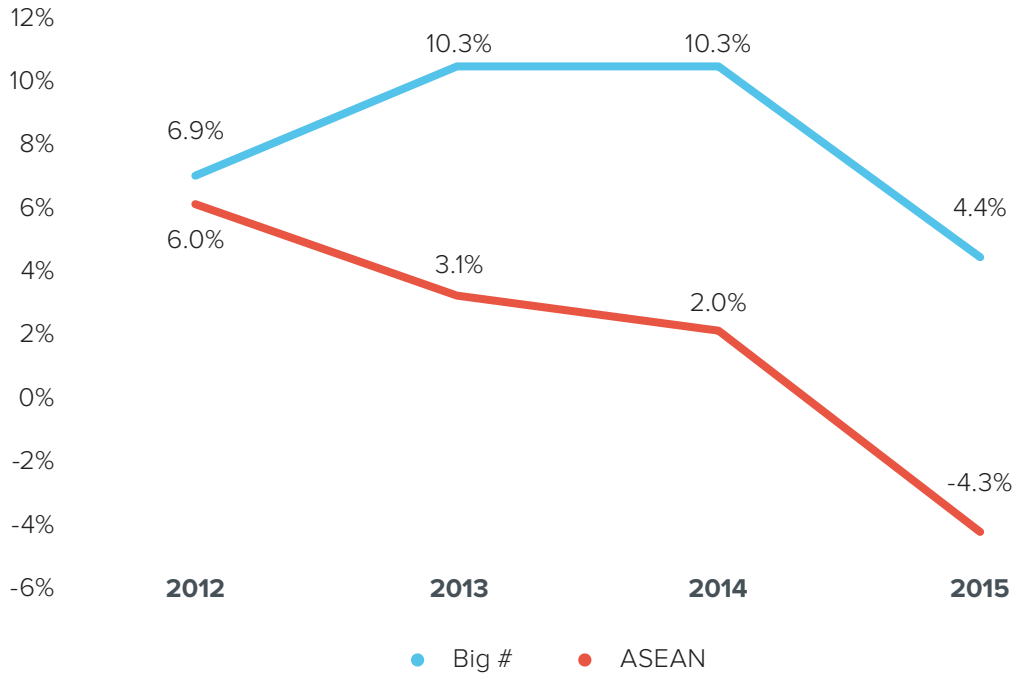
| YEAR | BRUNEI | MYANMAR | CAMB | INDO | LAO | MALAYSIA | S'PORE | THAI | VIET | PHIL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2011** | 0.07 | 0.02 | 0.63 | 12.38 | 0.02 | 13.70 | 49.65 | 12.87 | 4.91 | 5.75 | **100** |
| **2012** | 0.07 | 0.02 | 0.60 | 11.41 | 0.01 | 12.79 | 52.12 | 12.43 | 5.12 | 5.44 | **100** |
| **2013** | 0.12 | 0.05 | 0.55 | 10.63 | 0.01 | 12.33 | 54.30 | 11.50 | 5.53 | 4.99 | **100** |
| **2014** | 0.10 | 0.04 | 0.52 | 9.72 | 0.01 | 11.84 | 54.98 | 11.18 | 6.40 | 5.20 | **100** |
| **2015** | 0.04 | 0.07 | 0.54 | 9.19 | 0.01 | 11.50 | 55.88 | 10.81 | 7.15 | 4.81 | **100** |

A comparison of the annual year-on-year growth of the US-ASEAN Big Number and the total ASEAN GDP number shows that the Big Number has been growing at a faster rate than the total ASEAN GDP number. The compound annual growth rate (CAGR) of the Big Number over the period 2011-15 was an impressive 7.98 percent, while the CAGR of total ASEAN GDP was only 1.68 percent. It would seem that the Big Number CAGR is more than four times the rate of the ASEAN GDP CAGR. However, most of the contraction of the total ASEAN GDP number is probably explained by weakening regional currencies against the US dollar. It must be emphasized that even though the total ASEAN GDP number contracted in 2015 in US dollar terms, all the ASEAN economies with the exception of Brunei registered positive economic growth in local currency terms.

**Figure 2.8**

**TRENDS IN ANNUAL GROWTH OF THE BIG NUMBER AND ASEAN GDP, 2012-15 (%)**

**SOURCE:**
*BEA, US Census, and OECD.*




While the size of the US-ASEAN economic relationship grew at a robust rate from 2011-15, Table 2.6 shows the growth in the size of the relationship relative to total ASEAN GDP over the same period. As noted above, this is probably at least partly explained by the devaluation of ASEAN currencies making their economies relatively smaller in US dollar terms. The combined effect of the modest decrease in ASEAN total GDP in US dollar terms together with the robust continued expansion of US-ASEAN economic activities is that the share of the relationship to total ASEAN GDP increases from 21.6 percent in 2011 to 27.5 percent in 2015. In short, the relationship is large and growing.

Table 2.6

SOURCE: *BEA; US Census; OECD; and CEIC.*

**EVOLUTION OF SHARE OF US-ASEAN ECONOMIC ACTIVITIES TO ASEAN GDP, 2011-15 (NOMINAL US$ BN)**

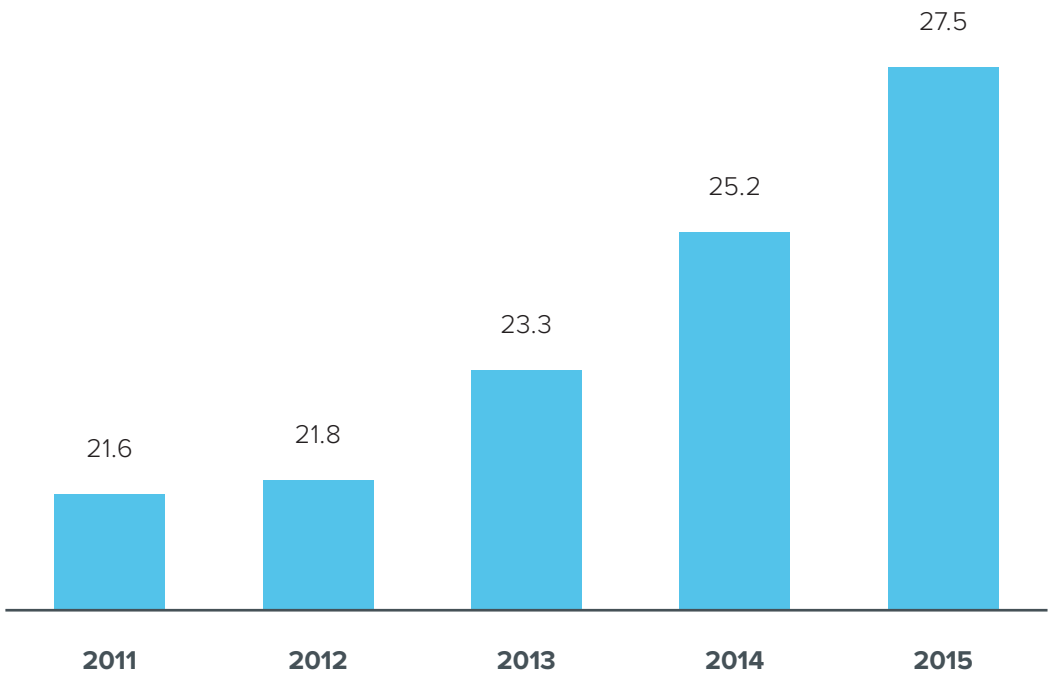
| YEAR | TOTAL US-ASEAN ECONOMIC ACTIVITIES (NOMINAL US$ BN) | TOTAL ASEAN GDP (NOMINAL US$ BN) | US-ASEAN TO ASEAN GDP (%) |
|---|---|---|---|
| **2011** | 495.0 | 2,291.1 | 21.6 |
| **2012** | 529.1 | 2,427.6 | 21.8 |
| **2013** | 583.6 | 2,502.5 | 23.3 |
| **2014** | 644.0 | 2,552.3 | 25.2 |
| **2015** | 672.1 | 2,442.6 | 27.5 |

This increasing share of the US-ASEAN economic relationship is shown more graphically in Figure 2.9.

Figure 2.9

SOURCE: *BEA; US Census; OECD; and CEIC.*

**EVOLUTION OF SHARE OF US-ASEAN ECONOMIC ACTIVITIES AS A % OF ASEAN GDP, 2011-15 (%)**



# 2.8 THE MAIN ASEAN DRIVERS OF THE BIG NUMBER

## THE POSITION IN 2015

The five mini tables in Table 2.7 below show the top-5 ASEAN nations in terms of the share of their contribution to each of the five components of the Big Number, and illustrate the major drivers of the different components. As already discussed, Singapore dominates both FDI and financial flows, and it is also the top contributor to the other three components. Malaysia also figures prominently in both FDI and trade. Thanks to the large size of its domestic market, Indonesia is second in both government revenue and domestic sales, which are closely linked. Thailand is in either third or fourth position in all five components. The Philippines is either fourth or fifth in four of the components, while perhaps surprisingly Vietnam comes second in finance after Singapore, and third in terms of trade. Indonesia is well below Vietnam and Thailand in trade.

Table 2.7

**BREAKDOWN OF ASEAN MEMBER COUNTRY CONTRIBUTIONS TO THE RELATIONSHIP (%)**

| NO. | COUNTRY | FDI | |
|---|---|---|---|
| | | US$ BN | % |
| 1 | Singapore | 248.1 | 82.85 |
| 2 | Malaysia | 15.2 | 5.09 |
| 3 | Indonesia | 15.1 | 5.05 |
| 4 | Thailand | 13.8 | 4.60 |
| 5 | Philippines | 5.9 | 1.97 |
| 6 | Vietnam | 1.3 | 0.43 |
| 7 | Brunei | 0.0 | 0.01 |
| 8 | Myanmar | 0.0 | 0.0 |
| 9 | Cambodia | 0.0 | 0.0 |
| 10 | Lao PDR | 0.0 | 0.0 |
| **Total** | | **299.4** | **100.00** |

SOURCE:
*US Census.*

| NO. | COUNTRY | TRADE | |
|---|---|---|---|
| | | US$ BN | % |
| 1 | Singapore | 46.7 | 20.61 |
| 2 | Malaysia | 46.2 | 20.39 |
| 3 | Vietnam | 45.1 | 19.89 |
| 4 | Thailand | 39.9 | 17.57 |
| 5 | Indonesia | 26.7 | 11.78 |
| 6 | Philippines | 18.1 | 8.00 |
| 7 | Cambodia | 3.4 | 1.51 |
| 8 | Myanmar | 0.4 | 0.16 |
| 9 | Brunei | 0.2 | 0.07 |
| 10 | Lao PDR | 0.1 | 0.03 |
| **Total** | | **226.8** | **100.00** |

SOURCE:
*OECD and BEA.*

| NO. | COUNTRY | GOV REV | |
|---|---|---|---|
| | | US$ BN | % |
| 1 | Singapore | 4.1 | 42.93 |
| 2 | Indonesia | 1.8 | 18.86 |
| 3 | Thailand | 1.2 | 13.09 |
| 4 | Philippines | 1.1 | 11.85 |
| 5 | Malaysia | 0.8 | 8.50 |
| 6 | Vietnam | 0.2 | 1.99 |
| 7 | Myanmar | 0.1 | 1.47 |
| 8 | Cambodia | 0.1 | 0.95 |
| 9 | Lao PDR | 0.0 | 0.31 |
| 10 | Brunei | 0.0 | 0.05 |
| **Total** | | **9.5** | **100.00** |

SOURCE: *BEA.*

| NO. | COUNTRY | DOM SALES | |
|---|---|---|---|
| | | US$ BN | % |
| 1 | Singapore | 56.0 | 49.51 |
| 2 | Indonesia | 17.9 | 15.83 |
| 3 | Thailand | 17.1 | 15.09 |
| 4 | Malaysia | 14.6 | 12.87 |
| 5 | Philippines | 6.7 | 5.96 |
| 6 | Vietnam | 0.7 | 0.60 |
| 7 | Cambodia | 0.1 | 0.09 |
| 8 | Brunei | 0.1 | 0.05 |
| 9 | Myanmar | 0.0 | 0.0 |
| 10 | Lao PDR | 0.0 | 0.0 |
| **Total** | | **113.2** | **100.00** |

SOURCE: *BEA.*

| NO. | COUNTRY | FINANCE | |
|---|---|---|---|
| | | US$ BN | % |
| 1 | Singapore | 20.8 | 89.35 |
| 2 | Vietnam | 0.8 | 3.43 |
| 3 | Thailand | 0.7 | 3.13 |
| 4 | Philippines | 0.5 | 2.18 |
| 5 | Malaysia | 0.3 | 1.43 |
| 6 | Indonesia | 0.1 | 0.39 |
| 7 | Cambodia | 0.0 | 0.05 |
| 8 | Myanmar | 0.0 | 0.02 |
| 9 | Brunei | 0.0 | 0.01 |
| 10 | Lao PDR | 0.0 | 0.0 |
| **Total** | | **23.3** | **100.00** |

Table 2.8 below lists the salient numbers for the top-five countries, expressed both in US dollar terms and as percentage shares.

**Table 2.8**

SOURCE: *BEA, US Census and OECD.*

**WHAT DRIVES THE TOP DRIVERS: BIG NUMBER COMPONENTS OF THE ASEAN TOP-5, 2015**

| RANK | COUNTRY | COMPONENT OF THE BIG NUMBER | | | | | |
|---|---|---|---|---|---|---|---|
| | | FDI | TRADE | GOV REV | DOM SALES | FINANCE | TOTAL |
| 1 | Singapore (US$ bn) | 248.1 | 46.7 | 4.1 | 56.0 | 20.8 | **375.8** |
| | *(Percent)* | *66.02* | *12.44* | *1.09* | *14.91* | *5.54* | ***100.00*** |
| 2 | Malaysia (US$ bn) | 15.2 | 46.2 | 0.8 | 14.6 | 0.3 | **77.2** |
| | *(Percent)* | *19.74* | *59.91* | *1.05* | *18.86* | *0.43* | ***100.00*** |
| 3 | Thailand (US$ bn) | 13.8 | 39.9 | 1.2 | 17.1 | 0.7 | **72.7** |
| | *(Percent)* | *18.94* | *54.85* | *1.71* | *23.49* | *1.00* | ***100.00*** |
| 4 | Indonesia (US$ bn) | 15 | 27 | 2 | 18 | 0 | **62** |
| | *(Percent)* | *24.53* | *43.35* | *2.91* | *29.06* | *0.15* | ***100.00*** |
| 5 | Vietnam (US$ bn) | 1.3 | 45.1 | 0.2 | 0.7 | 0.8 | **48.1** |
| | *(Percent)* | *2.67* | *93.86* | *0.39* | *1.40* | *1.66* | ***100.00*** |

## THE TRENDS ON THE WAY TO 2015 AND WHAT THEY COULD MEAN

Table 2.9 illustrates how the five components of the US-ASEAN Big Number have changed over the past few years. In 2011, trade was the largest component, followed by FDI and domestic sales. By 2015, FDI had become the largest component, with a 23 percent increase in its relative percentage share of the Big Number. Growth in the FDI component primarily came at the expense of trade, which, although it grew in absolute terms, still declined by 14 percent as a share of the whole.

**Table 2.9**

SOURCE: *BEA, US Census, and OECD.*

**THE TRENDS IN THE COMPONENTS OF THE BIG NUMBER, 2011-15 (% OF TOTAL)**

| YEAR | FDI | TRADE | GOVT REVENUE | DOMESTIC SALES | FINANCE | TOTAL |
|---|---|---|---|---|---|---|
| **2011** | 36.18 | 39.33 | 1.57 | 18.88 | 4.04 | **100.00** |
| **2012** | 38.57 | 37.48 | 1.52 | 18.29 | 4.14 | **100.00** |
| **2013** | 41.82 | 35.29 | 1.42 | 16.99 | 4.49 | **100.00** |
| **2014** | 43.62 | 33.53 | 1.33 | 15.76 | 5.76 | **100.00** |
| **2015** | 44.54 | 33.74 | 1.42 | 16.83 | 3.47 | **100.00** |

# 2.9 LOOKING FORWARD BASED ON CURRENT TRENDS

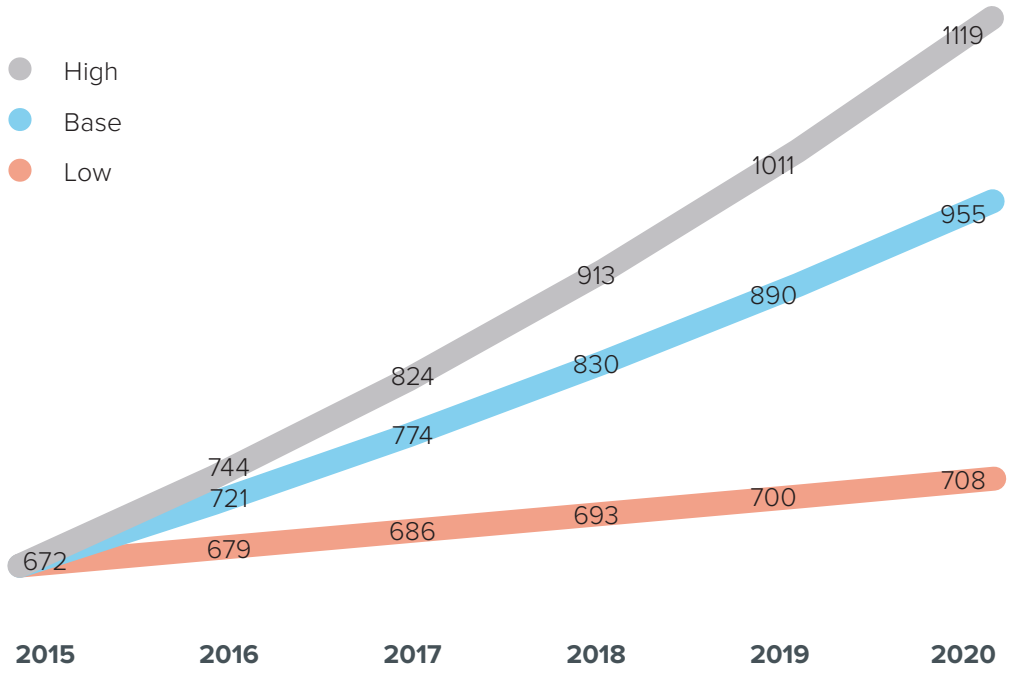
Will this growth trajectory continue? The simplest way to attempt to answer this question, without knowing what the future holds for both the economies of ASEAN or the US, is to simply calculate the compound annual growth rate (CAGR) over the past five years, and then use this rate to extrapolate five years into the future. However, in order to gain a true sense of the future expansion, it is important to use a weighted average based on the size of a county's contribution to the Big Number. Otherwise, small contributors experience huge growth, such as Myanmar, which would distort the picture if a simple average was used.

# SCENARIOS FOR THE ASEAN-US BIG NUMBER GOING FORWARD

In order to estimate what the Big Number might be by 2020, we made various assumptions about the future growth of the US-ASEAN economic relationship. The results of calculations based on low, high, and base case scenarios are presented in Figure 3.1. They show that if the past growth trend were to continue for the next five years, the value of the US-ASEAN economic relationship would grow to about US$955 billion by 2020, a 7.3 percent annual increase on the current (2015) value of the relationship of US$672 billion.

**Figure 3.1**

**EXTRAPOLATING THE RELATIONSHIP FORWARD TO 2020 BASED ON THREE SCENARIOS (US$ BN)**




SOURCE:
*Authors' calculations.*

**THE BASE CASE SCENARIO.** The base case scenario from which the 2020 Big Number was extrapolated was derived by using the country-weighted contributions to the ASEAN Big Number CAGR for the period 2011-16 (once again, country weighting is important here in order to avoid distortions). This value includes data for 2016, which yielded a lower CAGR due to a decrease in the rate of growth in 2016. The 2016 values include some estimates, as full country data across all countries were not yet available. This results in a CAGR of 7.28 percent and a nominal value of US$955 billion for 2020.

**THE HIGH CASE SCENARIO.** The high case scenario is based on the CAGR for the period 2011-15 covered in the period of analysis for this study (i.e., not including the disappointing year of 2016). The CAGR for this period is 10.73 percent and yields a Big Number value of US$1,119 billion. We believe it is unlikely that the best case scenario can be achieved unless there is a significant increase in both investment and trade. Uncertainties over US trade and investment policy under the new administration also temper the more optimistic scenario.

**THE LOW CASE SCENARIO.** The lower CAGR for the period to 2020 is likely partially due to the impact of the devaluation of ASEAN currencies. It remains to be seen whether the 2015 CAGR can now be achieved going forward in view of the 2016 indicative data.

The low case scenario is based on the estimated 2016 weighted average Big Number growth rate of 1.03 percent, yielding a value of US$708 billion. Given that this is the most recent value, it could well prove to be the best indicator for future growth, albeit largely driven by exchange rate considerations.

The final number achieved will be determined by a variety of factors: exchange rate policies, the as-yet-to-be-determined trade and investment policies of the Trump administration, the direction of ASEAN countries' trade and investment policies, as well as a range of other macroeconomic considerations.

# CONCLUSIONS

The United States and ASEAN each have tremendous stakes in the economic relationship. For the United States, ASEAN is a large and rapidly growing export market and an important destination for investment. The substantial sales volumes by U.S. affiliates illustrate clearly ASEAN's important role in US companies' regional and global supply and value chains. The "Big Number" of $672 billion identified by this report – which as the authors emphasize has been calculated conservatively – is more than one-quarter of ASEAN's GDP.

As the report further indicates, the scope for growth of the Big Number is substantial. In a higher growth scenario, this number will reach $1.1 trillion by 2020. Even if economic conditions deteriorate, resulting in slower growth, the Big Number could reach $708 billion. If the trajectory of the past five years holds, then the big number will reach approximately $955 billion by 2020. Plainly, whichever of these scenarios comes to pass, the economic relationship will remain vast.

The question that should occupy policymakers' minds should be how the Big Number can be maximized. Achieving the higher end of the scenarios above will require vigorous engagement by both the US government and private sectors with ASEAN countries, and with ASEAN as an institution.

For their part, ASEAN countries will need to continue to work to create business environments that are attractive to foreign capital. As the ASEAN Business Outlook Surveys have shown repeatedly for a number of years, while US companies want to expand in the region, they face many challenges in doing so, ranging from inadequate infrastructure, corruption, insufficient supply of technical and managerial expertise, difficulties in moving goods through customs, an often non-transparent operating environment, and other difficulties.

A different, but equally daunting challenge will be to continue to promote economic openness in the face of growing protectionism and a backlash against globalization. Four ASEAN countries (Brunei, Malaysia, Singapore, and Vietnam) were members of

the Trans-Pacific Partnership (TPP), a comprehensive trade agreement abandoned by the United States, and which had also included Australia, Canada, Chile, Japan, Mexico, New Zealand, and Peru. In the TPP's absence, Singapore remains the only ASEAN country with which the United States has a free trade agreement. Access to the US market will remain vital for ASEAN's economic growth, for which reason there is concern in the region about the direction of U.S. trade policy. And under TPP, US companies would have obtained valuable new market access as well as high-standard rules, which a variety of studies have shown would have facilitated higher levels of trade and investment.

However, even before the collapse of the TPP, ASEAN was moving forward with a number of trade initiatives, including the Regional Comprehensive Economic Partnership (RCEP), which, in addition to ASEAN, includes Australia, China, India, Korea, Japan, and New Zealand. Furthermore, individual ASEAN members have negotiations going on simultaneously with the EU and numerous other key trading partners.

US investors in the region could well benefit from all those agreements, and in fact ASEAN's active and vigorous pursuit of trade agreements with other partners may draw in additional direct investment by US companies in order that they can maintain their access to Asian markets. In that manner, ASEAN continues to make itself attractive to foreign investment.

However, those agreements do not necessarily help US-based exporters, as TPP would have, nor are those agreements as robust as the TPP in areas such as services market access, investor protections, protection of intellectual property, digital commerce, customs and trade facilitation, competition policy, competition against state-owned enterprises, regulatory and technical barriers to trade, and other areas. The dilemma for the United States now is to determine the means by which to recapture the important gains in terms of both rules and market access, that TPP would have provided in those countries. Without such gains, the higher end of the growth scenario for the Big Number will remain out of reach.

# ANNEX I

# The Methodology:
## Calculating the Size of ASEAN-US Economic Activities

This methodology explains how we make use of various data to build the model to produce our "Big Number," namely the total value of ASEAN-US economic activities. The Big Number comprises five components, which are: **trade; FDI; domestic sales; government revenue; and financing levels.** We have tried as best as possible to capture flow data, the amount of economic activity in a given year, as the basis for the Big Number. The one exception is FDI where the total stock value of FDI is used. The rationale is that the stock of investment, much more than the flow, generates substantial additional economic activity each year. Below we conduct a classification of each of these data components.

### 1. TRADE

This report uses US Bureau of Census data for the calculation of the sum of total trade activity between ASEAN member countries and the US for the calculation of the Big Number.

*Formula:*

**Sum of Trade = ∑ Exports and Imports**
**Sum Trade ASEAN =∑ Sum of Trade ASEAN Countries**

US Bureau of Census data were used as they are consistent across countries.

### 2. FOREIGN DIRECT INVESTMENT (FDI)

*Formula:*

**FDI = ∑ FDI Data In and Out (BEA)**
**FDI ASEAN =∑ FDI ASEAN Countries**

Investment data is more limited than trade data, and the manner by which FDI is calculated and reported varies significantly by country. As the US-Indonesia Investment Initiative reports demonstrated, even single in-country FDI data can vary widely. In this report we have used US Department of Commerce data from the Bureau of Economic Analysis (BEA). In the opinion of the editor, based on interviews with US companies, BEA data give the most accurate description of US FDI into ASEAN. The amount listed for each country represents the total accumulation of FDI into that country and by the country in the US.

## 3. DOMESTIC SALES

*Formula:*

**Domestic Sales = ∑ Sales Data In and Out (BEA)**
**Domestic Sales ASEAN = ∑ Domestic Sales ASEAN Countries**

This report uses "value added" as a proxy for domestic sales data from US Department of Commerce Bureau of Economic Analysis, which is the only source that comprehensively publishes these data. The data taken from BEA are based on its survey of US Multinational Enterprises (MNEs) that operate in ASEAN. We believe this is a better estimation of domestic activity by a US company as it calculates the extent to which production is a result of its own activity as compared to other companies which might be part of its production inputs.

BEA defines value added as "A firm's value added can be measured as gross output (revenue) less its intermediate inputs (purchased goods and services used in production). Alterna-tively, it can be measured as the sum of the costs incurred (except for intermedi-ate inputs) and the profits earned in production. The costs fall into four major categories: compensation of employees, net interest paid, taxes on production and imports, and capital consumption allowances. BEA's value added estimates are calculated as the sum of costs incurred and profits earned in production."[1]

Since BEA data was not yet available for 2015, we estimated the values by taking the Compound Annual growth rate for the economy and multiplied it by the value for 2014 to give an approximation.

## 4. GOVERNMENT REVENUE

*Formula:*

**GR = Gross Value Added (BEA) * VAT Rate %**
**ASEAN GR = ∑ GR ASEAN Countries**

Government revenue from US companies that operate in ASEAN is calculated by taking the Gross Value Added number for each country as reported by BEA and multiplying it by the country-specific VAT rate.

The value added of an industry, also referred to as gross domestic product (GDP)-by-industry, is the contribution of a private industry or government sector to overall GDP. The components of value added consist of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus. Gross value added equals the difference between an industry's gross output (consisting of sales or receipts and other operating income, commodity taxes, and inventory changes) and the cost of its intermediate inputs (including energy, raw materials, semi-finished goods, and services that are purchased from all sources).[2]

Non-tax revenue (NTR), including royalties on raw materials and excise on tobacco and alcohol, extractive industry royalties and other sources of revenue accruing to the respective governments have not been included in our calculation due to scarcity of comprehensive data. As we learned from interviews with major US companies in Indonesia for the Indonesia Big Number report, if NTR were included it would be safe to say that an additional US$4.7 billion would have been added in that country alone in 2014. Although the type of NTR varies significantly by country, we believe that the estimate of government revenue derived from US economic activity is very conservatively stated.

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1 See more at: https://www.bea.gov/international/pdf/concepts-methods/12%20Chapter%20ITA-Methods.pdf.
2 See more at: http://www.bea.gov/faq/index.cfm?faq_id=184#sthash.Sp9kkPyC.dpuf

## 5. FINANCE

With Finance we attempt to measure the net amount of financing made available in each of the ASEAN countries by US companies, using IMF data from the Coordinated Portfolio Investment Survey (CPIS). The portfolio data consists of equity and investment fund shares and total debt securities both long and short. The definition used by CPIS defines portfolio as "cross-border transactions and positions involving debt or equity securities, other than those included in direct investment or reserve assets."
http://datahelp.imf.org/knowledgebase/articles/505731-how-is-portfolio-investment-defined-in-the-coordin

*Formula:*

**Total Portfolio Investment = Equity and Investment Fund Shares (IMF)**
**ASEAN Total Portfolio Investment = $\sum$ TPI ASEAN Countries**

## COMPOUND ANNUAL GROWTH RATE (CAGR) OF EACH COUNTY, 2011-15

Our ranking system also uses the compound annual growth rate (CAGR) for each country, namely the mean annual growth rate of the sector over a specified period of time longer than one year, in this case 2011-15.[3]

$$\text{CAGR} = \left(\frac{\text{Ending Value}}{\text{Beginning Value}}\right)^{\left(\frac{1}{\text{\# of years}}\right)} - 1$$

For this case, we use GDP data by country at constant prices to generate a country growth number. Given that each country's GDP are available in their home currency we convert these values into US dollars using a year-end exchange rate.
The CAGR for ASEAN was calculated by taking a country weighted average of contribution to total GDP and multiplying that by the country-specific CAGR.

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3 Read more: Compound Annual Growth Rate (CAGR) Definition | Investopedia
http://www.investopedia.com/terms/c/cagr.asp#ixzz4Ck79dA00

# ANNEX II

## The Data

| | | 2015 | | | | | |
|---|---|---|---|---|---|---|---|
| | INDICATORS | FDI | TRADE | GOV'T. REV. | DOM. SALES | FINANCE | TOTAL |
| | SOURCES | BEA | US.CENSUS | OECD & BEA | BEA | IMF CPIS | |
| NO. | VALUE | US$ MN | US$ MN | US$ MN | US$ MN | US$ MN | US$ MN |
| 1 | Brunei | 16.00 | 152.85 | 5.03 | 61.91 | 3.00 | 238.79 |
| 2 | Burma | 11.00 | 370.94 | 140.23 | - | 5.00 | 527.17 |
| 3 | Cambodia | - | 3,416.48 | 90.71 | 106.67 | 12.00 | 3,625.86 |
| 4 | Indonesia | 15,123.00 | 26,722.49 | 1,794.51 | 17,912.54 | 91.00 | 61,643.54 |
| 5 | Laos | - | 69.77 | 29.27 | - | - | 99.04 |
| 6 | Malaysia | 15,238.00 | 46,247.90 | 808.93 | 14,560.97 | 334.00 | 77,189.80 |
| 7 | Singapore | 248,089.00 | 46,739.56 | 4,085.56 | 56,030.98 | 20,814.00 | 375,759.10 |
| 8 | Thailand | 13,765.00 | 39,862.50 | 1,246.07 | 17,073.20 | 729.00 | 72,675.78 |
| 9 | Vietnam | 1,285.00 | 45,107.22 | 189.25 | 674.47 | 800.00 | 48,055.94 |
| 10 | Philippines | 5,902.00 | 18,141.58 | 1,127.81 | 6,748.41 | 507.00 | 32,426.80 |
| | **TOTAL** | **299,429.00** | **226,831.30** | **9,517.38** | **113,169.14** | **23,295.00** | **672,241.82** |

# ABOUT THE AUTHORS

**Peter Milne** has been a resident of Jakarta for more than two decades. He is a former author of *The Van Zorge Report on Indonesia* and a co-author of three editions of *The Who's Who of the Yudhoyono's Indonesia*. He was also the author of the 2016 American Chamber of Commerce in Indonesia (AmCham)-US Chamber joint annual investment report on the importance of the US-Indonesia economic relationship, entitled *Vital and Growing: Adding Up the US-Indonesia Economic Relationship*, which is a forerunner on this ASEAN report in terms of methodology. He currently works for the World Bank as a managing editor, covering Indonesia, Southeast Asia, and Central Asia and Eastern Europe. He has a Master's degree in International Politics and Contemporary Conflict from the University of Sussex in the UK.

**Arian Ardie** has an established reputation in strategic risk consulting, derived from a diverse array of engagements and projects. He has in-depth experience in counseling major investors in Indonesia since the early 1990s, as well as assignments in ASEAN, China, Japan, Europe and Australia. He has direct industry experience in the oil & gas, mining, energy and sustainable forestry sectors.

As a consultant to the U.S. Chamber of Commerce and AmCham Indonesia, he was responsible for supporting the development and staging of the *US Indonesia Investment Initiative* and assisted in the writing of the Initiative's four annual investment reports.

Arian has long been engaged in addressing the sustainability issues facing businesses in Southeast Asia's resource sector, and he has worked extensively on community development and sustainable forestry programs in Indonesia's outlying areas. He has also been active in developing the bilateral relationship between the United States and Indonesia, including as a principal on the @america public diplomacy project for the US Department of State.

Arian did his graduate studies at Stanford University's Food Research Institute, and has an honors degree in Economics from Santa Clara University, both in California, USA.

**Muhammad Abduh** obtained his bachelor degree in Agricultural Economics at Andalas University, West Sumatera, and spent the first year of his professional career as a dot.com economic journalist. He also worked for several years supporting the Ministry of National and Development Planning of Indonesia, especially in quantitative analysis. His expertise on Indonesian economic data enabled him to support the preparation of economic policy documents and other initiatives. There he was also involved in a project led by the Abdul Latif Jameel Poverty Action Lab as a data analyst.

After earning his Masters degree in Economics & Public Policy from the University Indonesia in 2016, he joined AmCham Indonesia in supporting its economic analysis team. Now as an independent researcher, Abduh is involved in many research projects funded by various donor institutions such as DFAT of Australia.