**Book**

# Data on connectivity

ASIA-EUROPE FOUNDATION

# ASEF OUTLOOK REPORT 2016/2017

# CONNECTIVITY: FACTS AND PERSPECTIVES

## Volume I: Data on Connectivity

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ASEF OUTLOOK REPORT 2016/2017

# CONNECTIVITY: FACTS AND PERSPECTIVES

## Volume I:
## Data on Connectivity

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# PREFACE

In today's inter-dependent and inter-linked world, connectivity is gaining growing importance at national, regional, inter-regional, and global levels. This trend is especially evident in Asia and Europe which, over 2,000 years ago, were connected by the ancient Silk Road. Various initiatives have been launched in recent years within, and between, the two regions to promote connectivity in multiple dimensions, ranging from infrastructure and trade to digital and human connectivity. Among them are the Master Plan on ASEAN Connectivity, the EU's Trans-European Networks, China's "One Belt, One Road" Initiative, and others.

Indeed, with the rapidly growing flow of goods, services, capital, information and personnel between Asia and Europe, connectivity has not only become a buzzword, but an emerging area for cooperation between the two regions. At the 10th Asia-Europe Meeting (ASEM) Summit (ASEM10) in 2014 in Milan, Italy, Asian and European leaders *"underscored the significance of connectivity between the two regions to economic prosperity and sustainable development and to promoting free and seamless movement of people, trade, investment, energy, information, knowledge and ideas, and greater institutional linkages."*[1]

At the 3rd ASEM Transport Ministers' Meeting (ASEM TMM3) in April 2015 in Riga, Latvia, the ASEM partners committed themselves to strengthening transport connectivity between Asia and Europe, with an emphasis on the development of multimodal transport corridors to connect the two continents.[2]

The 11th ASEM Summit (ASEM11), which will be held in July 2016 in Ulaanbaatar, Mongolia, has chosen *20 Years of ASEM: Partnership for Future through Connectivity* as its theme. The outcome of ASEM11 will undoubtedly further enhance the public awareness of connectivity, and usher in new opportunities for potential cooperation between Asia and Europe.

As ASEM's only inter-governmental institution mandated to foster mutual understanding, and to strengthen the ties between Asia and Europe, the Asia-Europe Foundation (ASEF) has actively promoted people-to-people connectivity between the two regions since its inception in 1997. Against the new backdrop, ASEF endeavours to facilitate ASEM-wide dialogue and cooperation on connectivity by engaging with multi-sectoral stakeholders, particularly civil society, from both regions in open discussions on the topic. On the occasion of ASEM's 20th anniversary and ASEM11, ASEF dedicates one of its flagship publications, the *ASEF Outlook Report 2016/2017*, to the topic of Asia-Europe connectivity.

1 Chair's Statement of the 10th ASEM Summit (ASEM10), "Responsible Partnership for Sustainable Growth and Security", available at http://www.aseminfoboard.org/sites/default/files/documents/2014_-_ASEM10_-_Chair_Statement.pdf.

2 "Declaration of the 3rd ASEM Transport Ministers' Meeting (ASEM TMM3) on the Development of Euro-Asian Multimodal Transport Connectivity", available at http://www.aseminfoboard.org/events/3rd-asem-transport-ministers-meeting-asem-tmm3.

Launched in 2012, the biennial *ASEF Outlook Report* has sought to reflect the latest trends in Asia-Europe relations, from both an Asian and European perspective. The third edition of the ASEF *Outlook Report* features an overview and analysis of both the hard and soft aspects of connectivity in the Asia-Europe context. A group of scholars and experts from ASEM countries has contributed the content. Similar to the previous two editions, the *ASEF Outlook Report 2016/2017* consists of two volumes; Volume I presents data illustrating the status of Asia-Europe connectivity in various spheres, and Volume II is devoted to qualitative research papers on the past, present, and future development of Asia-Europe connectivity.

In short, the *ASEF Outlook Report 2016/2017* attempts to explore two questions that are highly relevant to the ASEM process. First, where do Asia and Europe stand in terms of connectivity? Second, what can ASEM do to advance Asia-Europe connectivity? ASEF hopes that this publication can enrich and add value to the ongoing discussions among the ASEM stakeholders on Asia-Europe connectivity, and provide a useful reference point for ASEM policy makers.

On behalf of ASEF, I sincerely thank His Excellency, Mr PUREVSUREN Lundeg, Foreign Minister of Mongolia, for contributing the foreword to this *ASEF Outlook Report*. My gratitude also goes to the authors and my colleagues at ASEF for their valuable contribution to this publication.

**Ambassador ZHANG Yan**
Executive Director
Asia-Europe Foundation (ASEF)

# FOREWORD

As the Foreign Minister of Mongolia, the host country of the 11th Asia-Europe Meeting Summit (ASEM11), it gives me great pleasure to address the readers of the Asia-Europe Foundation's ASEF Outlook Report 2016/2017. In today's increasingly complex world, dialogue is needed more than ever. This is the reason why Mongolia joined ASEM and decided to organise the next Summit in Ulaanbaatar in order to make our nation's own modest contribution to the ASEM process.

As a Mongolian, I am truly pleased that the ASEM Summit will take place in Mongolia for the first time, in a nation that both geographically and historically has been a bridge between the two oldest continents. As the former Prime Minister of Italy Mario Monti said: *"The first free trade zone was established by the Mongol Empire."* There is plenty of recorded historical evidence to support his statement. It was during the Yuan dynasty, established by the Mongols, when the famous Venetian merchant Marco Polo, accompanied by his fellow brothers, discovered Asia for the Europeans. It was during those days when the Mongol horse, *Urtuu*, or the horse relay system of Asia and Europe truly and efficiently connected the vast lands ranging from the Pacific Ocean to the shores of the Black and Adriatic seas. Historians today argue that the speed and efficiency of the Mongol horse relay system of the 13th century is equivalent to the 21st century Internet.

One cannot talk about ASEM without touching upon the concept of connectivity that has become the buzzword of ASEM meetings. Mongolia approaches this concept in its broadest interpretation. Connectivity in the ASEM framework encompasses not only tangible or physical infrastructure links between the two continents, which include rail, highway, air and maritime routes, but also much wider links ranging from cultural, educational, spiritual and even philosophical interaction between Asia and Europe. Despite some harsh, critical views on Asia-Europe connections nowadays, the achievements in this regard should not be undervalued and belittled. Compared to 20 years ago, Asia and Europe enjoy a much greater degree of connectivity thanks to conscious and intentional efforts made by ASEM partners.

From the beginning, the ASEM process aspired towards building a platform for information dialogue, and this has been reaffirmed at a number of ASEM meetings, mostly recently at the *12th ASEM Foreign Ministers' Meeting* (ASEM FMM12, 5-6 November 2015, Luxembourg) and the *ASEM Symposium on the Future Direction of ASEM* (30 March 2015, Bangkok, Thailand).

The challenge lies in how to strike the right balance. We need to try to keep ASEM as a platform for informal dialogue, yet at the same time seek productivity and beneficial results. ASEM is not a negotiating body, nor should it be, as its mandate is not to tackle particular and concrete issues. As an informal platform of dialogue, ASEM's value may lie in the fact that the issues that are not appropriate to be discussed or debated at other international forums, can be considered.

ASEM should be a platform of dialogue, not only between governments, but also between business communities, civil society, academia, youth and other stakeholders from Asia and Europe. We are truly pleased to see the continuation of ASEM-related meetings and activities involving various groups from both continents and applaud the role played by ASEF in this regard. Mongolia also supports ASEM's principle of consensus and inclusiveness, and believes that these principles must be safeguarded and continued.

Mongolia believes that informal dialogue and the free exchange of views are the most important values of the ASEM process. In this context, the format of retreat sessions has gained even greater importance. There are enough international public forums where world leaders and other stakeholders meet; however these forums often lack the space to provide opportunities for meaningful dialogue.

Indeed, Mongolia would like to see ASEM used as a stepping stone that could ultimately lead to solving the world's most pressing issues and, in particular, the issues of primary importance between Asia and Europe such as climate change, disaster reduction and risk management, sustainable development, and water administration. Certainly, both sides need to see tangible outcomes from ASEM meetings. However, it is impossible to achieve widely acceptable results without the prior exchange of opinions. Some argue that meetings without concrete results may potentially marginalise the ASEM process, as was the case with some other international public forums. Mongolia is equally aware of this concern and will strive to do its utmost to host a successful 2016 ASEM Summit.

The ASEM process rests firmly on three pillars: political, economic, and cultural. Mongolia values these three pillars and also wishes to preserve their equality and importance. A platform of dialogue based on unequal footing across these three pillars risks derailing the entire process. In light of this, Mongolia would like to preserve ASEM in its present form, while seeking results wherever possible.

ASEM is a platform for dialogue between two very different continents. In Europe, the continent's integration process has gained serious momentum, despite occasional and temporary setbacks. Asian nations have faced a similar process, but as a whole the Asian continent has a fairly long way to go. This, in turn, has an impact on Asian-European dialogue, giving its critics the ammunition to criticise ASEM's perceived deficiencies. However, the last 20 years of ASEM has produced successes that outweigh ASEM's alleged failures.

This year ASEM will celebrate its 20th anniversary. As the chair of the ASEM working group for the 20th anniversary celebrations, Mongolia suggests that the celebratory activities take place in all ASEM countries as it is a common celebration for all its partners. The highlight of ASEM's 20th anniversary falls on its 11th Summit in Ulaanbaatar and we are working on a special programme to celebrate this momentous occasion.

On the more substantive side of the 20th anniversary celebrations, it is a perfect time to reflect on the achievements and lessons from the past two decades and seek to project the future. In this regard, we value highly the results of the Bangkok seminar on the *Future Direction of ASEM* and the study on the same subject commissioned by the European Union. As we celebrate the 20th anniversary of ASEM, Mongolia is looking forward to its further expansion. As the next host for the ASEM Summit, Mongolia actively participates in the ASEM-related activities. In May of 2015, Mongolia successfully organised a seminar on renewable energy. In 2016, Mongolia will host and organise a series of meetings and events under the ASEM umbrella leading up to the Summit.

I would like to conclude this article by saying that preparations for the 11th ASEM Summit in July 2016 are in full swing. We are determined to do our utmost to make this event special. We are looking forward to welcoming you in Mongolia this year.

Bayarlalaa.[1]

**Mr PUREVSUREN Lundeg**
Foreign Minister of Mongolia

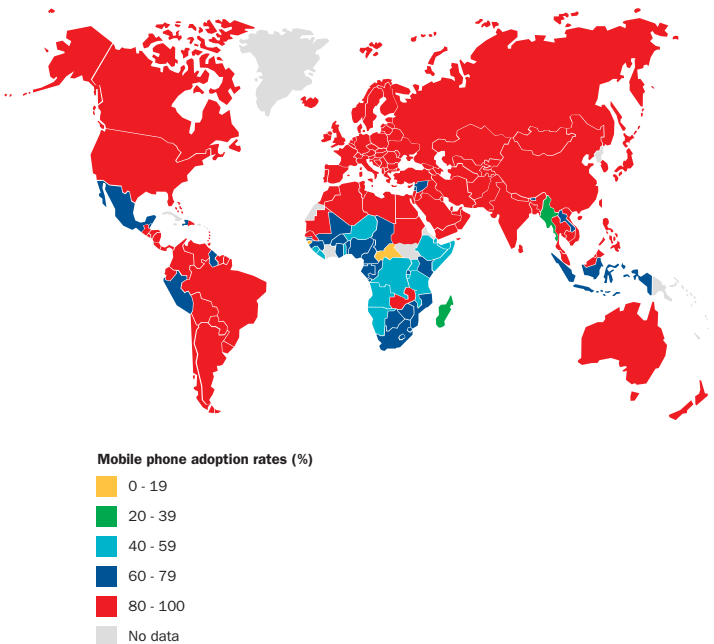
1 "Thank you" in Mongolian.

## List of Abbreviations and Acronyms

| | |
|---|---|
| ASEF | Asia-Europe Foundation |
| ASEM | Asia-Europe Meeting |
| BoP | Balance of Payments |
| DAC | Development Assistance Committee |
| DSL | Digital Subscriber Line |
| EGIDS | Expanded Graded Intergenerational Disruption Scale |
| ERASMUS | European Region Action Scheme for the Mobility of University Students |
| ETI | Enabling Trade Index |
| EU | European Union |
| FDI | Foreign Direct Investment |
| GCI | Global Cybersecurity Index |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas |
| GNI | Gross National Income |
| ICT | Information and Communications Technology |
| IDA | International Development Association |
| IDP | Internally Displaced Person |
| IP | Intellectual Property |
| LPI | Logistics Performance Index |
| LSCI | Liner Shipping Connectivity Index |
| LUCF | Land use and forestry |
| MNC | Multinational Corporation |
| MOOC | Massive Online Open Course |
| ODA | Official Development Assistance |
| OECD | Organization for Economic Cooperation and Development |
| OWC | Office Web Components |
| PSTN | Public Switched Telephone Network |
| SIM | Subscriber Identification Module |
| TEU | Twenty-foot Equivalent Unit |
| UN | United Nations |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNHCR | United Nations High Commissioner for Refugees |
| USB | Universal Serial Bus |

# 1. Digital Connectivity

## 1.1. Population owning a mobile phone (% of total population, 2014)

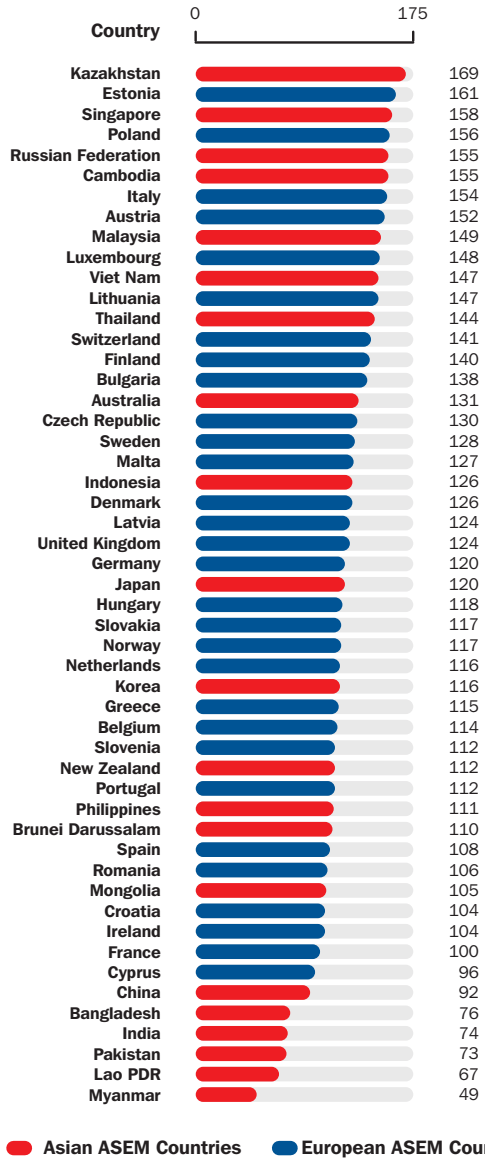



*Source: The World Bank (2016) World Bank Report: Digital Dividends*[1]

The data presents the number of people who own a mobile phone in selected regions as a percentage of the total population in 2014.

1 The World Bank (2016) *World Bank Report: Digital Dividends*. Available at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/13/090224b08405ea05/2_0/Rendered/PDF/World0developm0000digital0dividends.pdf [Accessed 6 February 2016].

## 1.2. Mobile cellular subscriptions in ASEM countries (per 100 people, 2014)




*Source: The World Bank (2016) Mobile cellular subscriptions (per 100 people)*[2]

2 The World Bank (2016) *Mobile cellular subscriptions (per 100 people)*. Available at: http://data.worldbank.org/indicator/IT.CEL.SETS.P2/countries/1W?display=default [Accessed 8 March 2016].

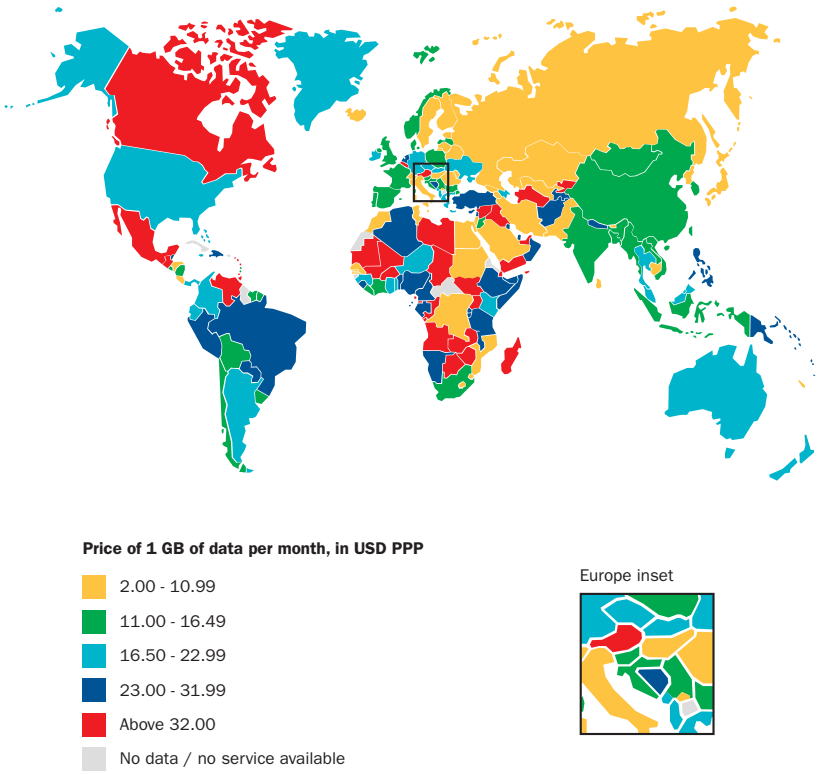
Mobile cellular telephone subscriptions refer to the number of subscriptions to a public mobile telephone service that provide access to the Public Switched Telephone Network (PSTN)[3] using cellular technology. It includes the number of post paid subscriptions and the number of active prepaid accounts (that have been used during the last three months) and applies to all mobile cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, as well as subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging and telemetry services.

Mobile cellular telephone penetration in many countries has surpassed 100%. Interestingly, Kazakhstan tops the list with 1.69 mobile cellular subscriptions per person on average. A number of factors account for the high penetration rate: standard issuing of car phones; inactive pre-paid accounts; and most commonly, multiple SIM cards, a trend common in both developing and developed nations. Different service providers offer different prices, allowing subscribers to enjoy various lower on-net call rates. The incentive to hold multiple SIM cards varies. People in Eastern Europe and developing Asian countries often use them to economise, while those in Western Europe use them to have a mobile connection for more than one device.[4]

3 Publicly Switched Telephone Network (PSTN): The world-wide dial-up telephone network or portion of that network. It facilitates long distance phone calls and Internet access.

4 UN Stats Millennium Development Goals and Indicators (2014). *The Official United Nations Site for the MDG Indicators*. Available at: http://mdgs.un.org/unsd/mdg/Metadata.aspx?IndicatorId=0&SeriesId=780 [Accessed 16 February 2016].

### 1.3. Price of mobile broadband services (price per gigabyte a month, USD, 2014)




*Source: The World Bank (2016) World Bank Report: Digital Dividends*[5]

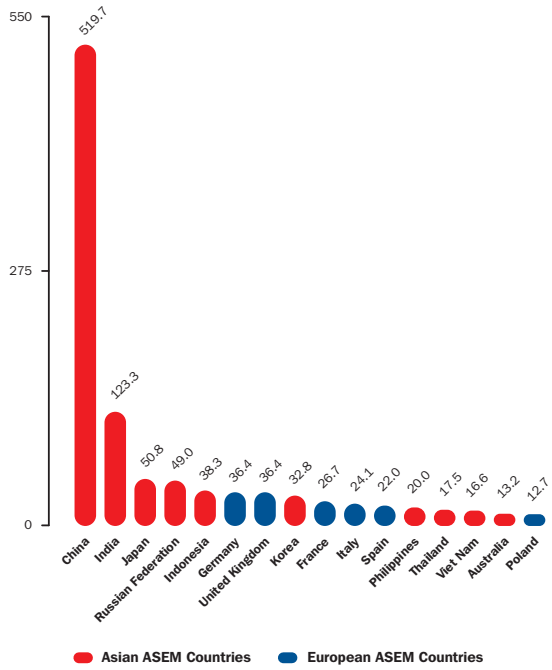
Globally, mobile broadband prices are falling, but large differences remain between regions. North, South and Central America register high prices for mobile data, attributable to bundling.[6] In general, Northern Asia, in particular the Russian Federation and Kazakhstan have cheaper mobile broadband services than Southern and Southeast Asia.

Overall, mobile broadband services tend to be more expensive in developing countries, but they still tend to cost considerably less than fixed broadband services.

5 The World Bank (2016) *World Bank Report: Digital Dividends*. Available at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/13/090224b08405ea05/2_0/Rendered/PDF/World0developm0000digital0dividends.pdf [Accessed 6 February 2016].

6 Bundling is a profit-making strategy employed by companies that combines various goods and services offered into one streamline package.

### 1.4. Top 16 ASEM countries ranked by smartphone users (million, 2014)



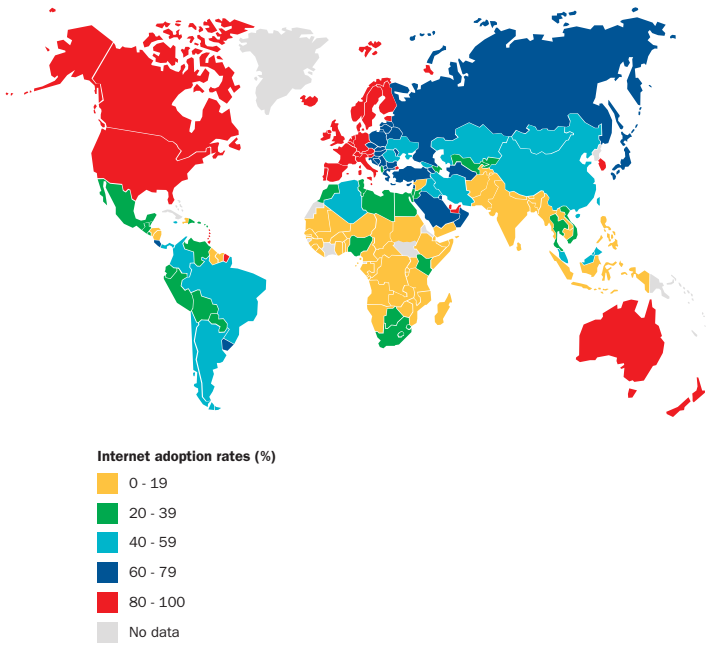

*Source: eMarketer (2015) Asia Pacific Boasts More Than 1 Billion Smartphone Users*[7]

The data captures the number of smartphone users for every 1 million people in selected ASEM countries.[8] This includes individuals of any age who own at least one smartphone and use the smartphone(s) at least once per month. China and India have the greatest number of smartphone users amongst ASEM countries. China leads by a huge margin with 519.7 million users, almost 400 million ahead of India with 123.3 million users. Asia-Pacific, on the whole, is expected to see a huge growth in smartphone ownership, driven by the emerging middle class and the proliferation of a wide range of cheaply manufactured smartphones and affordable service plans. Smartphone penetration among mobile phone users is expected to grow from 37.3% in Asia-Pacific to 51.5% in 2019.[9]

The projected increase in Internet users in developing Asia is expected to be driven by the widespread adoption of smartphones rather than traditional PCs via fixed broadband. This has immensely disruptive effects on news distribution, advertising and retail industries as the pattern of consumption changes with the use of smartphones.

7 eMarketer (2015) *Asia Pacific Boasts More Than 1 Billion Smartphone Users*. Available at: http://www.emarketer.com/Article/Asia-Pacific-Boasts-More-Than-1-Billion-Smartphone-Users/1012984 [Accessed 25 February 2016].
8 Data available for 16 ASEM countries only.
9 eMarketer (2015). *Asia Pacific Boasts More Than 1 Billion Smartphone Users.* Available at: http://www.emarketer.com/Article/Asia-Pacific-Boasts-More-Than-1-Billion-Smartphone-Users/1012984 [Accessed 25 February 2016].

### 1.5. Population with Internet access (% of total population, 2014)




*Source: The World Bank (2016) World Bank Report: Digital Dividends*[10]

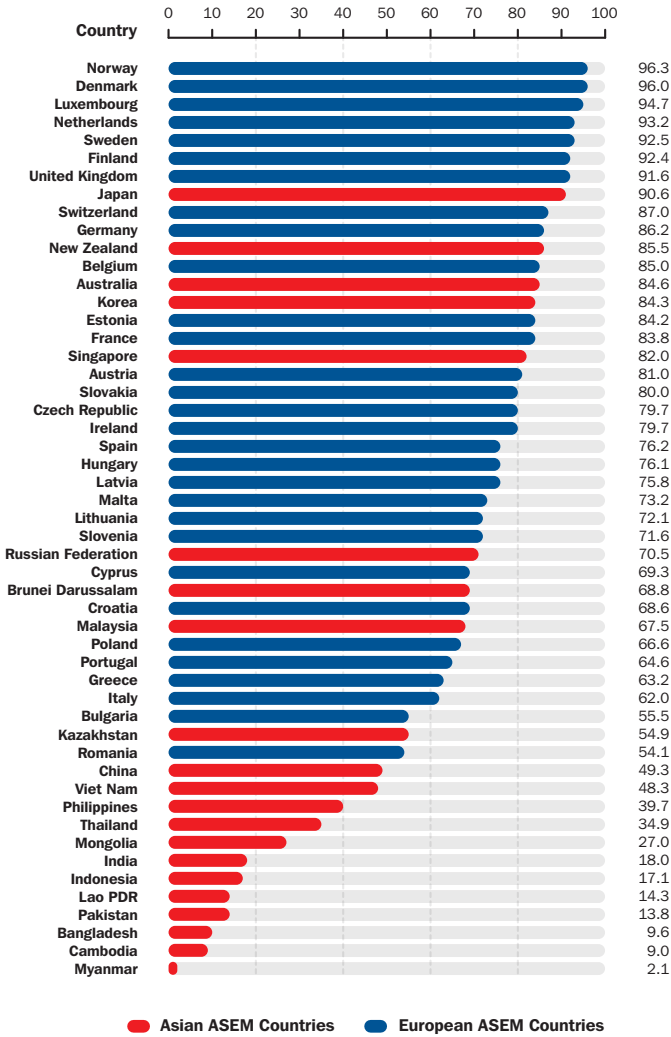
The data captures the number of people with Internet access in selected regions as a percentage of total population in 2014.

More than half the global population – 4.3 billion people – lack Internet access, and 49% of them live within the bottom 40% of the global income distribution. In high income countries, 66% of the bottom 40% of the income distribution, and 90% of the upper 60%, have access to the Internet. In North Africa and the Middle East, the upper 60% is twice as likely to have Internet access, compared to the bottom 40%. South Asia has the largest digital divide within the region, with the upper 60% of the population four times more likely to have Internet access than the bottom 40%. Sub-Saharan Africa ranks second in the digital divide, with the upper 60% of the income distribution three times more likely to have Internet access than the bottom 40%.

As PCs and laptops are costlier and require a certain level of literacy, mobile phones are increasingly becoming the main tool for Internet access in developing regions. However, despite high mobile phone penetration rates, Internet access remains low. This may be explained by the limited use of smartphones and the high costs of mobile broadband services in developing regions.

10 The World Bank (2016) *World Bank Report: Digital Dividends*. Available at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/13/090224b08405ea05/2_0/Rendered/PDF/World0developm0000digital0dividends.pdf [Accessed 6 February 2016].

## 1.6. Internet users in ASEM countries (per 100 people, 2014)




*Source: The World Bank (2016) Internet users (per 100 people)*[11]

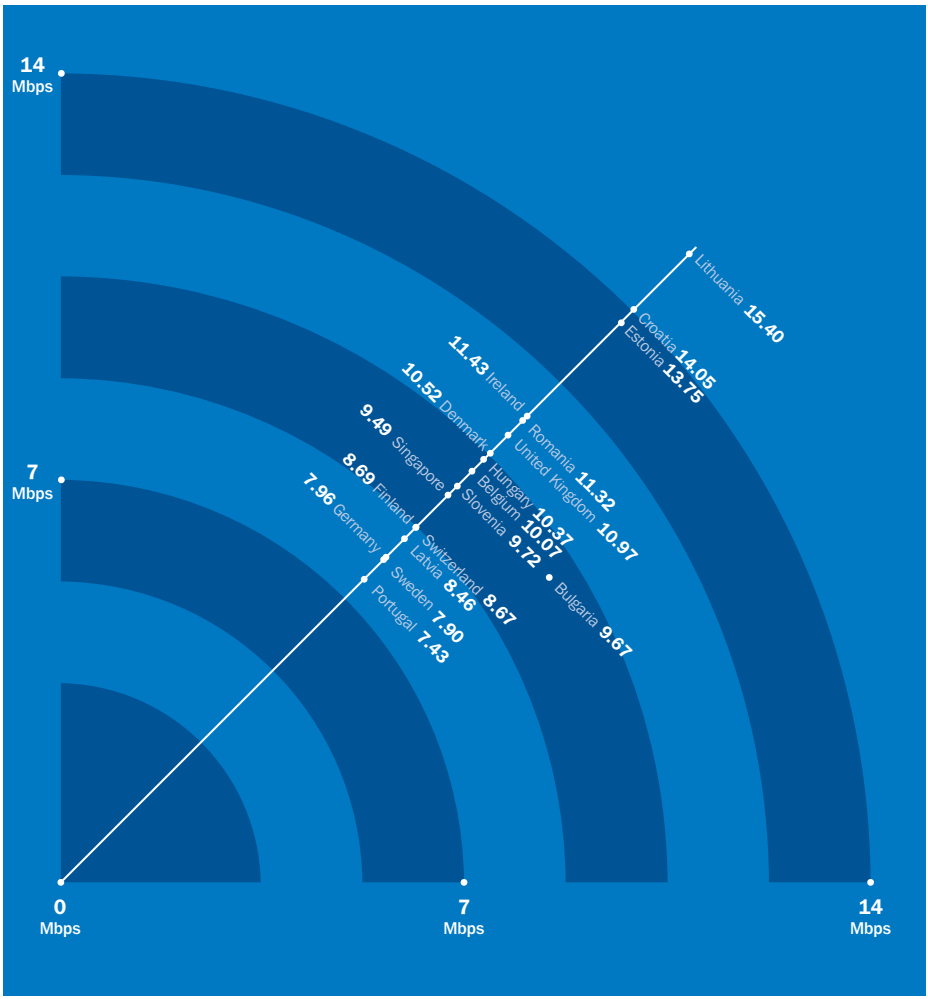
11 The World Bank (2016) *Internet users (per 100 people)*. Available at: http://data.worldbank.org/indicator/IT.NET.USER.P2 [Accessed 8 March 2016].

Internet users are individuals who have used the Internet (from any location) in the last 12 months. The Internet can be accessed on devices such as a computer, mobile phone, personal digital assistant, games machine or digital TV.

The data captures the penetration rate of Internet usage in ASEM countries. Developed European and Asian countries have the highest rates of Internet penetration, with access to either wired broadband or mobile broadband. Norway and Denmark top the list with 96.3 and 96.0 Internet users per 100 people respectively. Developing Asian countries are concentrated at the lower end, with penetration rates of below 50 per 100 people and as low as 2.1 per 100 people in Myanmar. China, with 49.3 Internet users per 100 people, ranks relatively low (40$^{th}$ out of 51 ASEM countries), but its total Internet user numbers top the global list, accounting for 21.97% of world Internet users.[12]

12 Internet Live Stats (2014) *Internet Users by Country (2014)*. Available at: http://www.internetlivestats.com/internet-users/china/ [Accessed 15 February 2016].

### 1.7. Top 18 ASEM countries with the highest average download speed of public WiFi (Mbps, 2014)



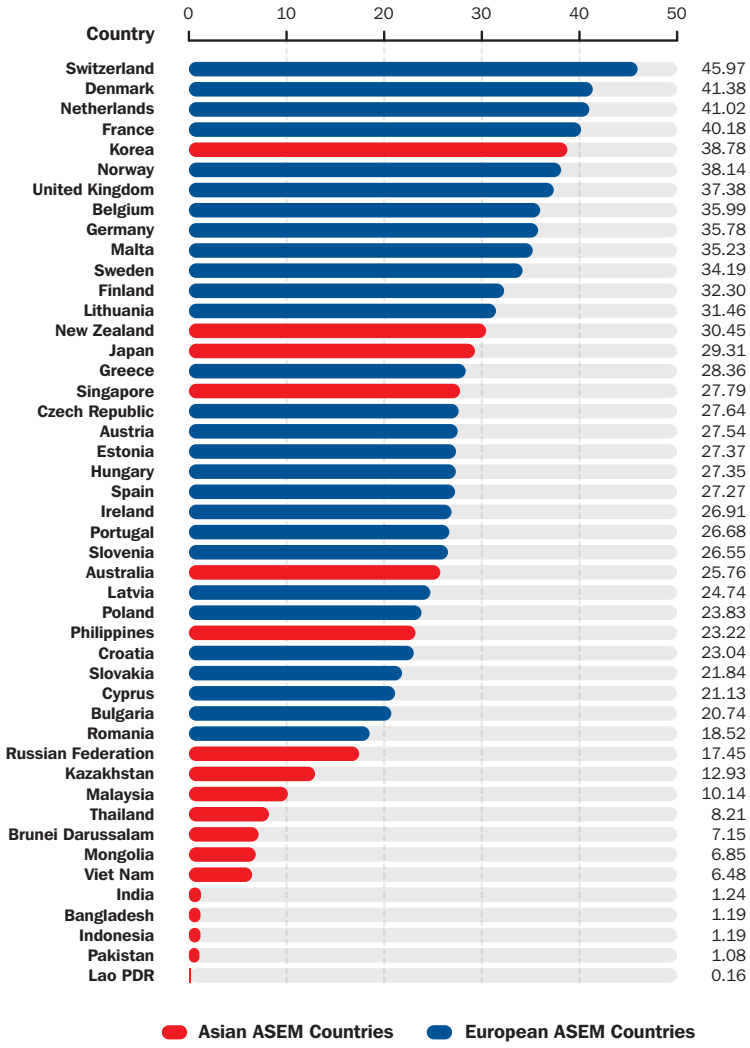

*Source: Eedicicco, L. (2014) 'The 20 best countries for fast public wi-fi'*[13]

13 Eedicicco, L. (2014) *'The 20 best countries for fast public wi-fi'*. World Economic Forum. Available at: https://agenda.weforum.org/2014/12/the-20-best-countries-for-fast-public-wi-fi/ [Accessed 8 March 2016].

The data presents the top 18 ASEM counties with the fastest public WiFi. Calculations were based on the average download speed of public WiFi in 2014.

Eastern European countries dominate the list of speediest WiFi connections. Lithuania (15.40 mbps), Croatia (14.05 mbps) and Estonia (13.75 mbps) have a reputation for good Internet connectivity thanks to government initiatives to install strong broadband infrastructure. Korea, China and Japan, typically recognised for their high speed of WiFi, were not featured in this list.

## 1.8. Fixed broadband subscriptions in ASEM countries (per 100 people, 2014)




*Source: The World Bank (2016) Fixed (wired) broadband subscriptions (per 100 people)*[14]

14 The World Bank (2016) *Fixed (wired) broadband subscriptions (per 100 people)*. Available at: http://data.worldbank.org/indicator/IT.NET.BBND.P2 [Accessed 8 March 2016].

Fixed (wired) broadband subscriptions refer to subscriptions to high speed access to public Internet, at downstream speeds of 256 kbit/s or greater. This includes cable modem, DSL, fibre-to-the-home/building and other fixed (wired) broadband subscriptions. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks and technologies listed under the wireless broadband category. It includes both residential and organisations' subscriptions.

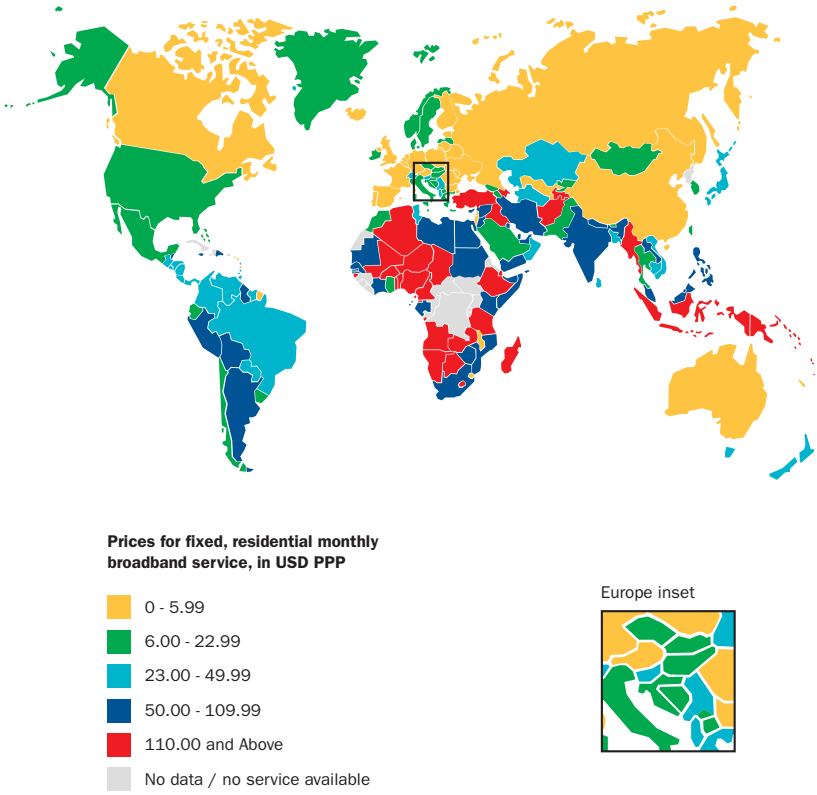
The data captures the number of fixed broadband subscriptions for every 100 people in 46 ASEM countries in 2014.[15] The measure is indicative of the robustness of fixed Internet infrastructure in these countries. Developed ASEM countries with the most extensive and reliable Internet infrastructure see the greatest number of fixed broadband subscriptions per 100 people, while developing countries with weak, unreliable infrastructure and vast rural areas, see the least.

European countries dominate the upper percentile of the list. Switzerland ranks first with 45.97 subscriptions per 100 people. Korea with 38.78 subscriptions per 100 people, Japan with 29.31 subscriptions per 100 people and Singapore with 27.79 subscriptions per 100 people, pepper the mostly European group. Developing countries such as India (1.24 subscriptions per 100 people) and the Lao PDR (0.16 subscription per 100 people) are concentrated at the lower end. However, this is not to say that Asian nations are falling behind in digital connectivity. The entrance of affordable smart phones, and a rapidly growing middle class, saw Asia account for 48.4% of global internet users in 2015.[16]

15 Data available for 46 ASEM countries only. At the time of data extraction, data for Cambodia, China, Italy, Luxembourg and Myanmar were not available.

16 Internet Live Stats (2015) *Internet Users in Asia November 2015*. Available at: http://internetworldstats.com/stats3.htm [Accessed 13 February 2016].

### 1.9. Price of fixed broadband services (price per 1 Mbit, USD, 2014)



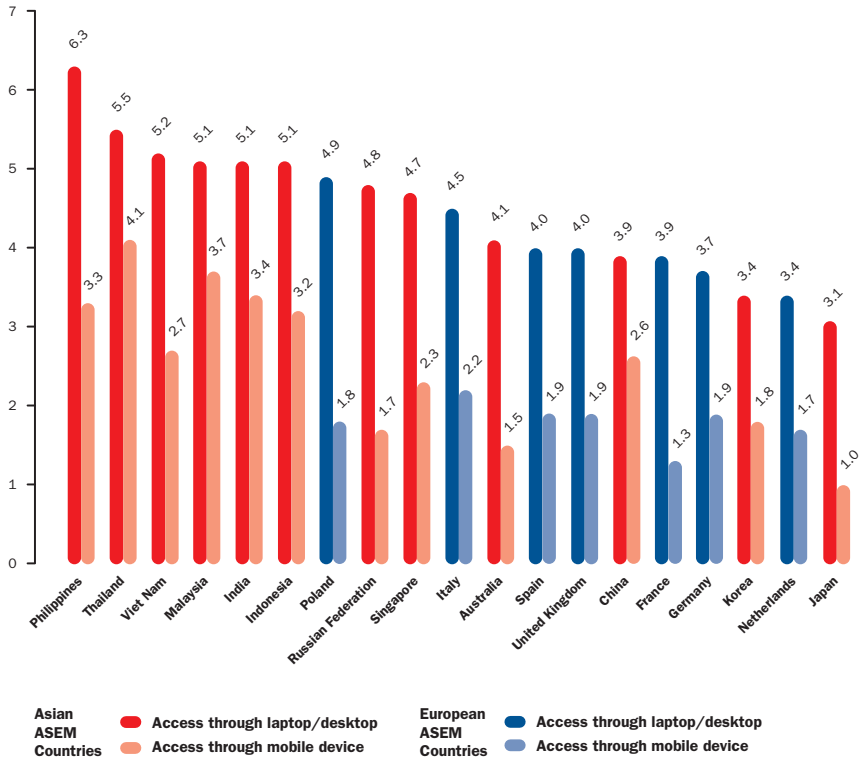

*Source: The World Bank (2016) World Bank Report: Digital Dividends*[17]

The data presents the price of fixed broadband services in regions around the world in 2014.

The cost of fixed broadband data appears to be, on average, cheaper than mobile data in all regions of the world, except South Asia, the Middle East and Africa. Differences in the price of Internet broadband across the regions are more extensive than for mobile broadband services. European countries offer the cheapest fixed broadband service rates in the world, attributed to the vibrant competition in the markets.

17 The World Bank (2016) *World Bank Report: Digital Dividends*. Available at: http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/01/13/090224b08405ea05/2_0/Rendered/PDF/World0developm0000digital0dividends.pdf [Accessed 6 February 2016].

**1.10. Time spent using the Internet (average hours per day, 2014)**




*Source: Kemp, S. (2015) Digital, Social & Mobile in 2015*[18]

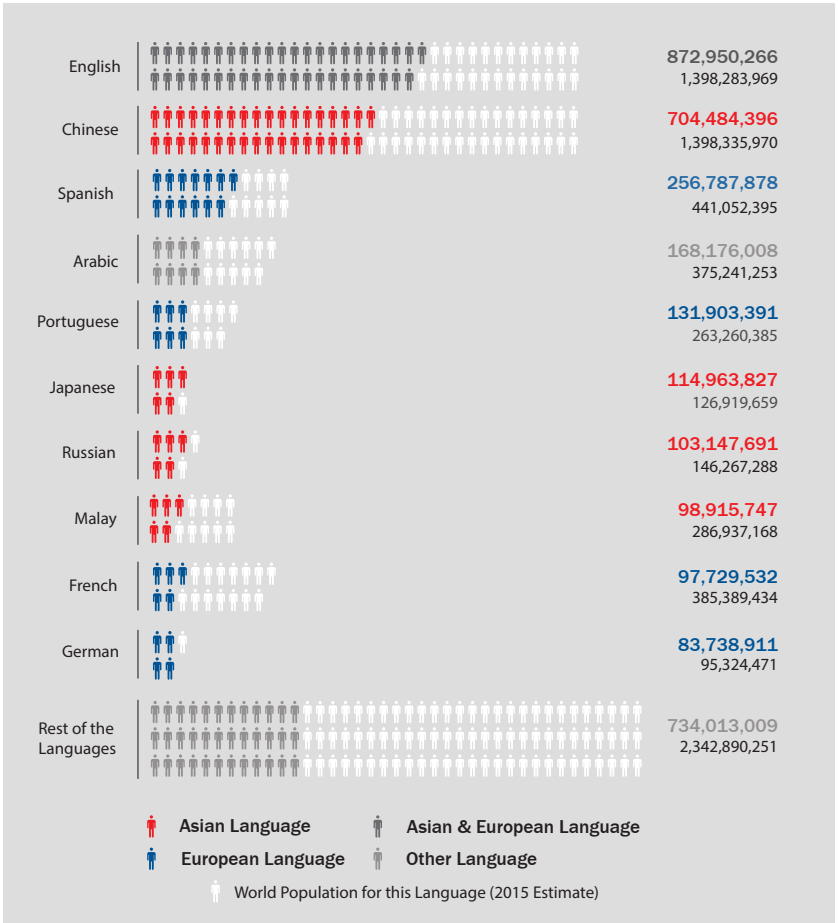
The data captures the average number of hours spent by Internet users per day (only including people with access to Internet) in selected ASEM countries[19]; it distinguishes between hours spent on the Internet accessed via personal computers and mobile devices.

The average Internet user spends around 4 hours and 25 minutes each day online, with Southeast Asian countries registering the highest average daily use. Filipino Internet users spend more than 6 hours per day online, with Thais, Vietnamese, Indonesians and Malaysians also all averaging more than 5 hours of use per day, while European countries range from at most 4.9 hours a day (Poland) to 3.4 hours a day (Netherlands). However, it is important to note that most people in emerging countries do not have Internet access. This group represents a minority of the population. What we do see, however, is that when people in the Philippines, for example, do get online Internet usage becomes a significant activity in their daily routine.

18 Kemp, S. (2015) *Digital, Social & Mobile in 2015*. Available at: http://wearesocial.sg/blog/2015/01/digital-social-mobile-2015/ [Accessed 8 March 2016].
19 Data available for 19 ASEM countries only.

European countries also significantly prefer to access the Internet via their personal computers, spending on average less than 2 hours on their mobile devices to connect to the Internet. Compare this to countries like Philippines, Thailand and Viet Nam where people spend on average 3.4 hours a day accessing the Internet on their phones. This could be due to the younger population demographics in Asia relative to the ageing population in Europe. Japan has the least time spent accessing the Internet through mobile devices.

### 1.11. Top 10 languages used in the Internet (millions of users, 2015)




*Source: Internet World Stats (2016) Internet World Users by Language*[20]

The data presents the 10 most widely used languages on the Internet in 2015. It features 4 European languages, 4 Asian languages, 1 Asian & European language and 1 other language. The 6 official languages of the United Nations (Arabic, Chinese, English, French, Russian and Spanish) are all included in the top 10.

20 Internet World Stats (2016) *Internet World Users by Language*. Available at: http://www.internetworldstats.com/stats7.htm [Accessed 8 March 2016].

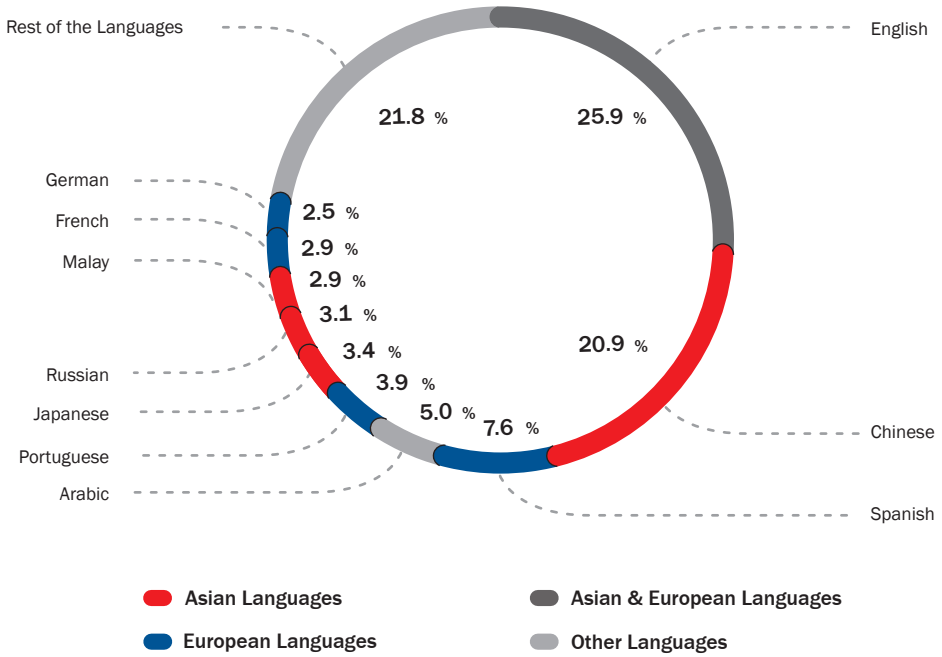
English is the most widely used language on the Internet, followed by Chinese, Spanish, Arabic and Portuguese. While English remains the most pervasive language on the Internet, its users' growth has been rather slow. In comparison, Arabic-speaking Internet users have experienced the steepest growth, followed by Russian and Chinese speakers. Meanwhile the population of users that has grown most slowly in the last 15 years are mostly European, with the exception of Japan. These populations also appear to have the highest rates of Internet penetration (90.6% for Japanese, 87.8% for German), suggesting a continued slow user growth to come, relative to the emerging ASEM countries with lower penetration rates (Arabic 44.8%, Chinese 50.4%, Malay 34.5%).

This information is insightful because, as more information is accessed online, Internet access becomes increasingly important for economic productivity and a well-informed citizenry.[21] Where previously the dominance of European languages had limited the spread of Internet use by excluding those not fully literate in those languages, it appears that more Asian languages, particularly Chinese, are coming to the fore. With greater Internet adoption rates, more Internet content in these languages become available, which in turn fuels the Internet penetration rates in these countries.[22] This has important implications for connectivity between Asia and Europe in the spirit of creating a global Internet and enhancing the spread of information and knowledge to support economic growth and greater people to people links.

21 Viard, V.B. and Economides, N. (2015) *'The Effect of Content on Global Internet Adoption and the Global 'Digital Divide'*, Management Science Articles in Advance, pp. 1-22. Available at: http://www.stern.nyu.edu/networks/The_Effect_of_Content_on_Global_Internet_Adoption.pdf [Accessed 30 January 2016].

22 Ibid.

**1.12. Internet users by language (% of total Internet users, 2015)**



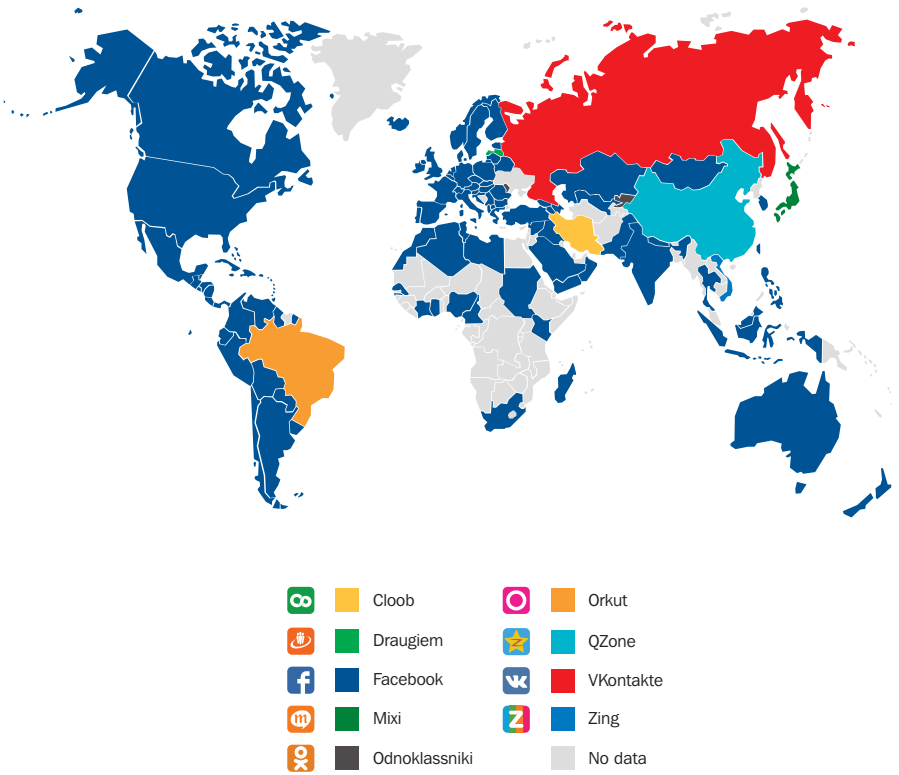

*Source: Internet World Stats (2016) Internet World Users by Language*[23]

The data presents the 10 largest groups of Internet users by their language of use on the Internet in 2015.

The users of these 10 languages account for 78.2% of all Internet users. With rapidly increasing access to the Internet in developing countries, Arabic-, Russian- and Chinese-speaking Internet users are set to grow tremendously. If Chinese users keep pace with the current growth rate, they will likely overtake English speaking users as the biggest group of Internet users.

23 Internet World Stats (2016) *Internet World Users by Language*. Available at: http://www.internetworldstats.com/stats7.htm [Accessed 8 March 2016].

**1.13. Dominating social media networks worldwide (2011)**




*Source: Henrikson, J. H. (2011) The Growth of Social Media: An Infographic*[24]

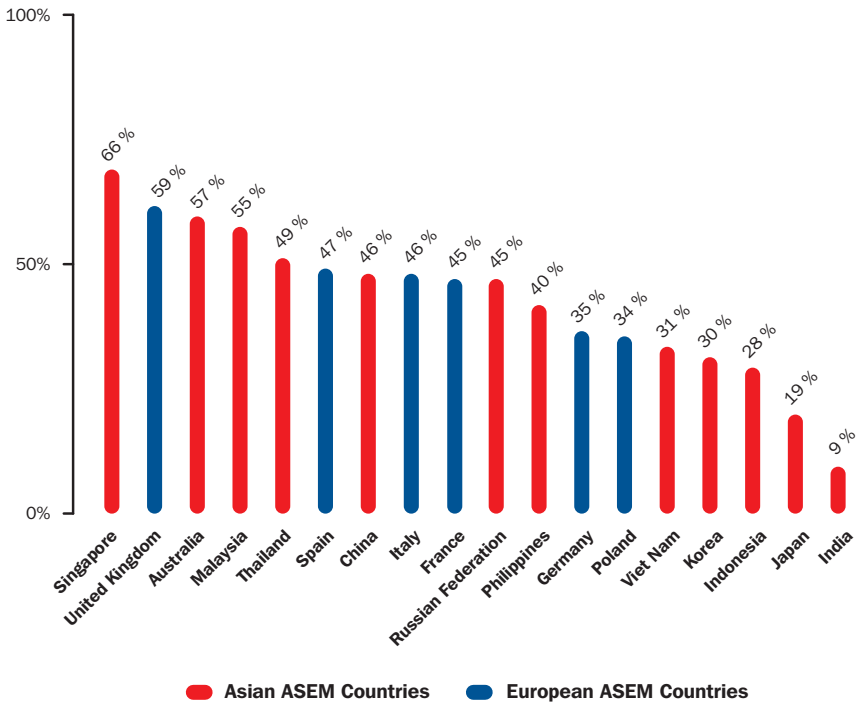
The infographic showcases the top social media networks worldwide. US-based Facebook, with near 1.6 billion monthly active users, is the dominant social network. As of 2016, Facebook is also the top social network in Europe with 323 million users and in a significant part of Asia with 540 million users.[25]

With social media platforms like Facebook and Twitter extending their reach across Asia and Europe, they serve as opportune platforms for connectivity, as they create large webs of people to people links, facilitate cultural exchanges, change the way news is distributed and even change how government bodies reach out to civil society.

24 Henrikson, J. H. (2011) *The Growth of Social Media: An Infographic.* Available at: http://www.searchenginejournal.com/the-growth-of-social-media-an-infographic/32788/ [Accessed 8 March 2016].

25 VincosBLog (2016) *World Map of Social Networks*. Available at: http://vincos.it/world-map-of-social-networks/ [Accessed 18 February 2016].

**1.14. Active accounts on the leading social network (% of population, 2014)**




*Source: Kemp, S. (2015) Digital, Social & Mobile in 2015*[26]

The data captures the number of active accounts on the respective leading social networks for 18 ASEM countries, as a percentage of their population.[27] Facebook features as the top social platform for the majority of the countries, with the exception of Tencent in China and VKontakte in the Russian Federation.

The data reflects the penetration of social media as a frequent online activity among the population. The majority of the ASEM countries listed frequent social media above the global average (29% of global population have an active account on their respective country's leading social network), highlighting the increasing presence of social media in many ASEM countries today.

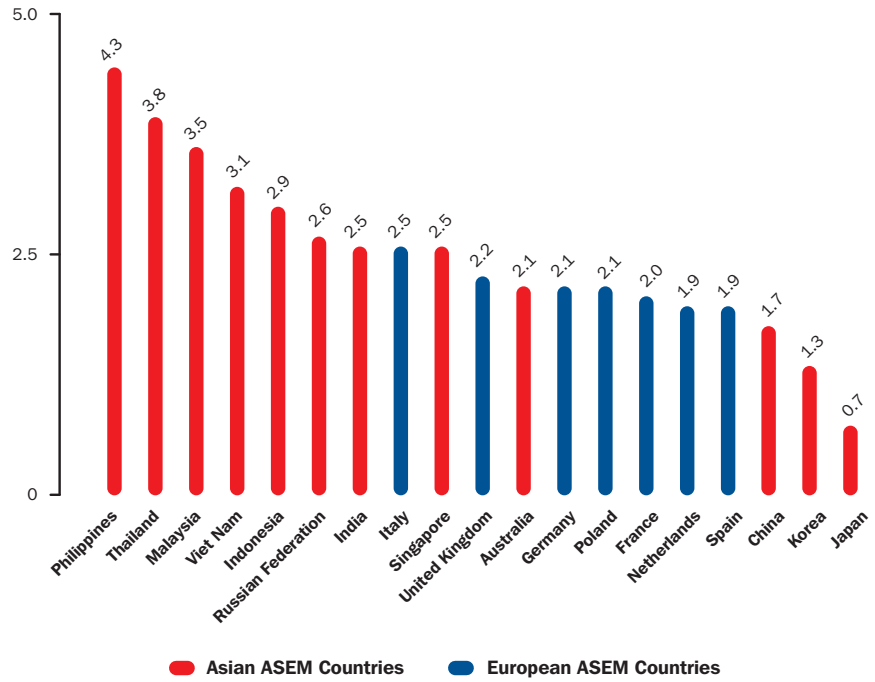
26 Kemp, S. (2015) *Digital, Social & Mobile in 2015*. Available at: http://wearesocial.sg/blog/2015/01/digital-social-mobile-2015/ [Accessed 8 March 2016].

27 There may be slight discrepancies as the data for each social media platform was collected in different periods across 2014 and 2015.

There is some variation amongst the lowest performing countries. Indonesia and India's low shares of active accounts on Facebook may be explained by the low rate of Internet penetration (17.1% and 18.0% respectively). Amongst those with access to social media, usage is high, with the average number of hours per day spent at 2.9 in Indonesia and 2.5 in India.

On the other hand Japan, with 19% active social media usage, has an Internet penetration rate of 90.6%. Compared to India and Indonesia, this suggests limited receptiveness to social media in Japan.

**1.15. Time spent on social media (average hours per day, 2014)**




*Source: Kemp, S. (2015) Digital, Social & Mobile in 2015*[28]

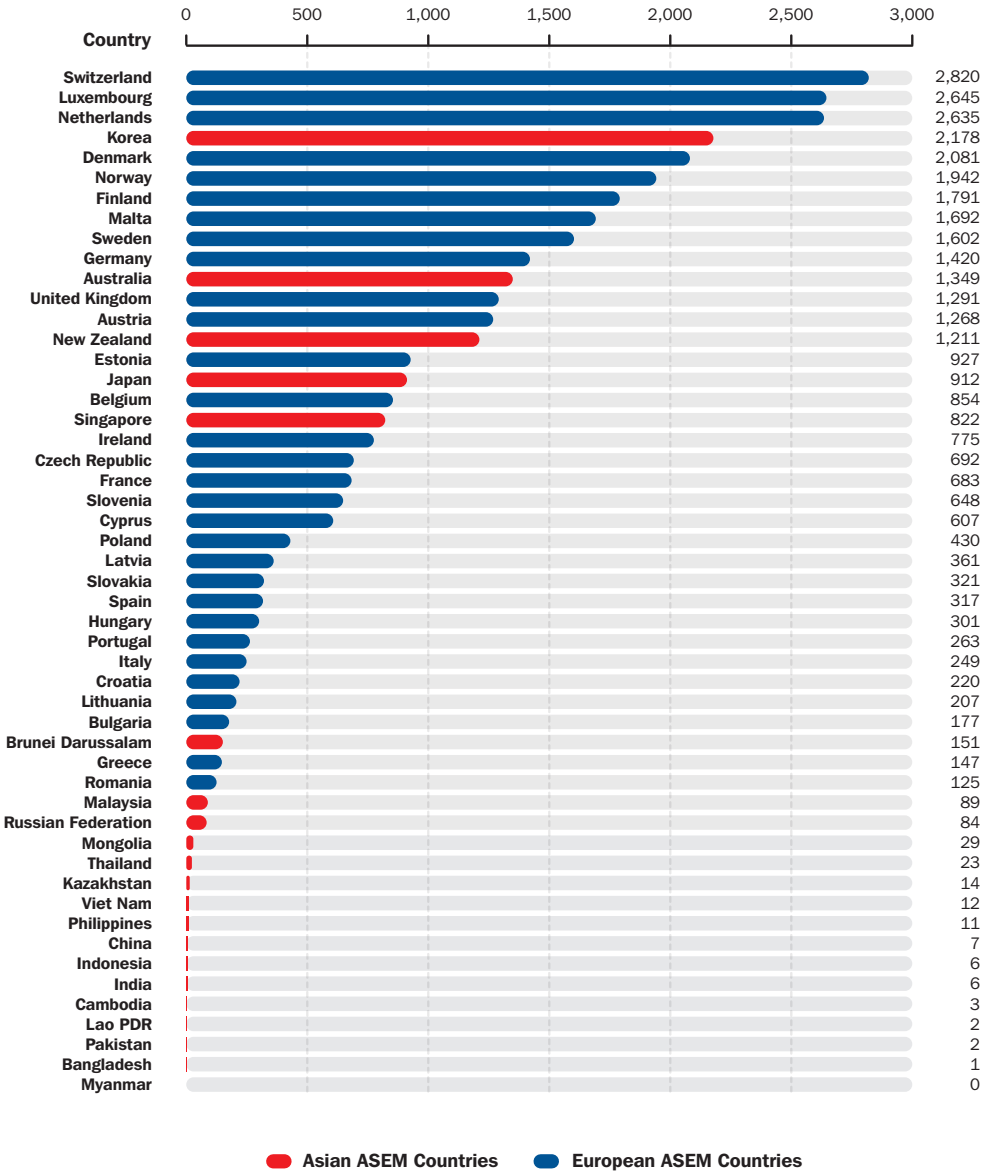
The data captures the average number of hours spent using social media each day, based on people who use social media, excluding non-users, in selected ASEM countries.[29] Social networking has become the most popular online activity worldwide, accounting for one in every four minutes online.[30] While Internet users still make up a relatively small group of the population in developing countries, they tend to be more active compared to European users, with social media making up a large proportion of their time spent online. Compared to developed countries, where social media saturation point has been reached, developing countries use new social media sites at much higher rates.

28 Kemp, S. (2015) *Digital, Social & Mobile in 2015*. Available at: http://wearesocial.sg/blog/2015/01/digital-social-mobile-2015/ [Accessed 8 March 2016].
29 Data available for 19 ASEM countries only.
30 Global Web Index (2015) *GWI Social Summary Q1 2015*. Available at: https://www.globalwebindex.net/hs-fs/hub/304927/file-2812772150-pdf/Reports/GWI_Social_Summary_Report_Q1_2015.pdf [Accessed 19 February 2016].

The age distribution of the country also carries some influence, with a larger younger demographic correlating to more time spent on social media, as in Southeast Asian countries such as Thailand and Indonesia. On the other hand, the ageing populations in Europe, as well as Korea and Japan, spend less than 2 hours a day on social media sites with Japan trailing behind at just 0.7 hours a day. In an analysis of the age distribution of social media users on top social media sites (Facebook, Twitter and LinkedIn), users aged 55 years and above made up less than 10% of all social media users, while the 16-34 age group accounted for more than half of all users.[31]

31 Statista (2014) *Age Distribution of Active Social Media Users Worldwide as of 3rd Quarter 2014, by Platform*. Available at: http://www.statista.com/statistics/274829/age-distribution-of-active-social-media-users-worldwide-by-platform/ [Accessed 19 February 2016].

### 1.16. Secure Internet servers in ASEM countries (per 1 million people, 2014)



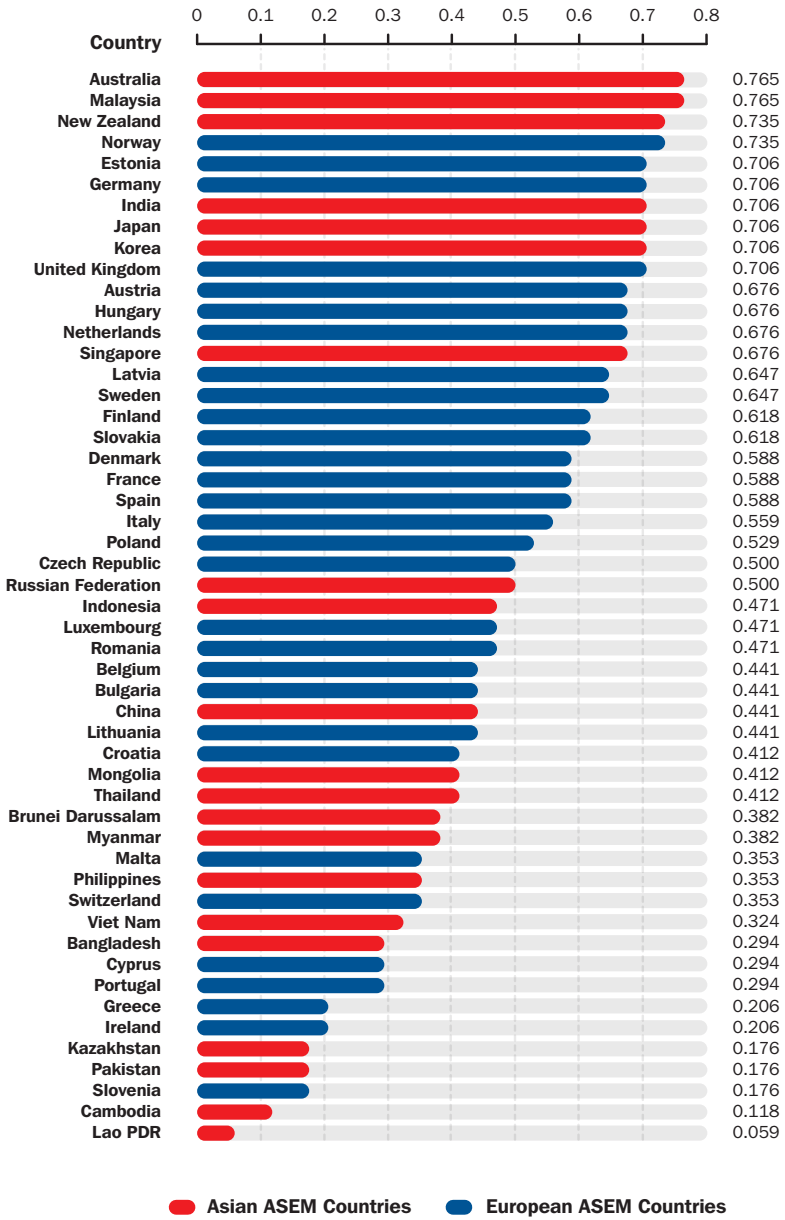

*Source: The World Bank (2016) Secure Internet servers (per 1 million people)*[32]

32 The World Bank (2016) *Secure Internet servers (per 1 million people).* Available at: http://data.worldbank.org/indicator/IT.NET.SECR.P6/countries [Accessed 8 March 2016].

Secure Internet servers use encryption technology to protect data from unauthorised interception, guaranteeing secure online transactions. This is indicative of e-commerce in the country.

In the last two decades, developing countries have seen a surge in the number of subscriptions to fixed and mobile broadband, reducing the digital divide. However, there still exists a gap in more advanced ICT technologies. As captured in the data set, while developed European and Asian countries have more than 300 secure internet servers per 1 million people, with countries like Switzerland, Luxembourg and Netherlands exceeding the 2,500 per 1 million people mark, developing Asian countries have less than 30 secure internet servers per 1 million people.

## 1.17. Global Cybersecurity Index (2015)




*Source: International Telecommunication Union (2015) Global Cybersecurity Index & Cyberwellness Profiles*[33]

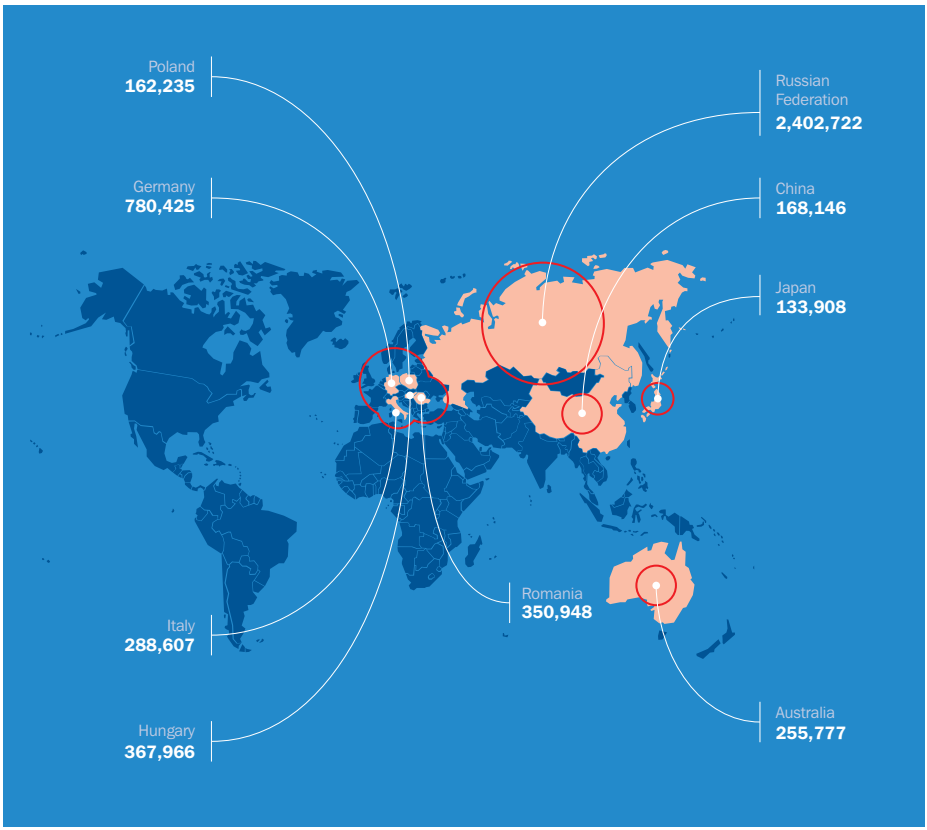
33 International Telecommunication Union (2015) *Global Cybersecurity Index & Cyberwellness Profiles*. Available at: http://www.itu.int/dms_pub/itu-d/opb/str/D-STR-SECU-2015-PDF-E.pdf [Accessed 8 March 2016].

The *Global Cybersecurity Index* (GCI) measures a country's level of commitment to protection against cybercrime in five areas: legal measures; technical measures; organisational measures; capacity building; and international cooperation. It is important to note that the index does not consider the success of any one measure. It merely measures the existence of these structures to safeguard against cybercrime. A higher value (on a scale of 0-1) indicates a greater preparedness against cybercrime.

The ASEM countries that rank among the most prepared are Australia (0.765), Malaysia (0.765), New Zealand (0.735), Norway (0.735) and Estonia (0.706). The least prepared countries include Kazakhstan (0.176), Pakistan (0.176), Slovenia (0.176), Cambodia (0.118) and the Lao PDR (0.059).

Many countries share the same ranking, which indicates that they have the same level of readiness, but the measure does not compare the robustness of cyber defence. For example, Germany and Japan, the countries with the highest and lowest cybercrime losses as a percentage of GDP respectively, have a similar GCI value of 0.706.

### 1.18. Top 9 ASEM countries where hacker activities originate (2013)




*Source: Go-Gulf (2013) Cyber Crime Statistics and Trends*[34]

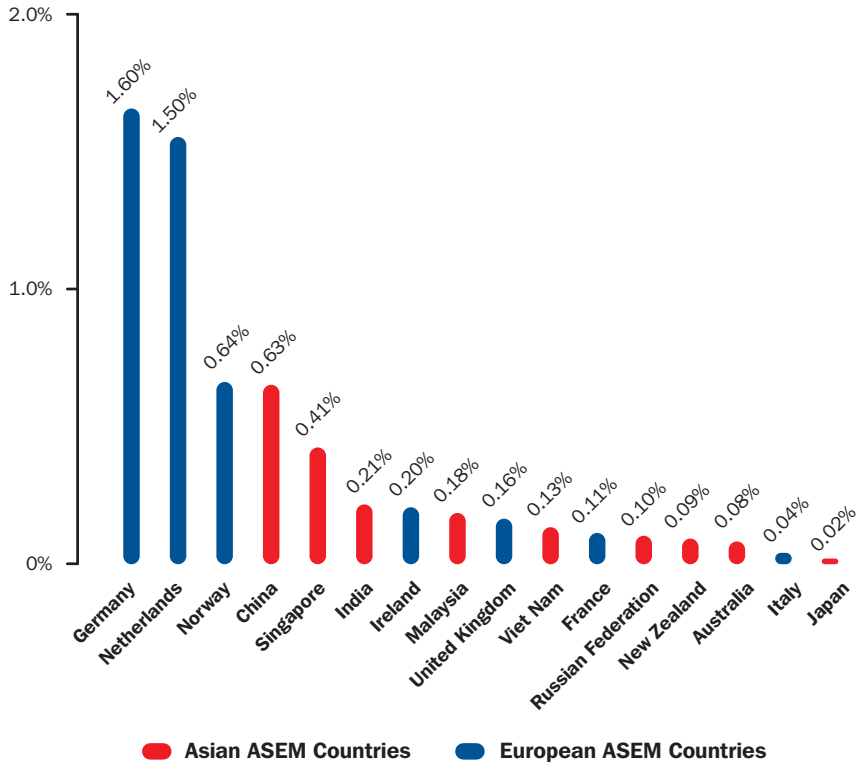
The data presents 9 ASEM countries where the highest number of hacker activities, detected in February 2013, originated. The exploitation of computer systems and technology dependent establishments and networks by hackers is understood as a hacker activity. Hackers use malicious code to mutate computer code and logic which, in turn, compromises data. It is one of many types of cybercrimes and is usually a precursor to other forms of cybercrimes, such as information and identity theft.[35]

The Russian Federation has the worst record, with 2,402,722 hacker activities in February 2013. Its position at the top may be explained by the level of technological proficiency in Russian cyber hackers.

34 Go-Gulf (2013) *Cyber Crime Statistics and Trends*. Available at: http://www.go-gulf.com/blog/cyber-crime/ [Accessed 8 March 2016].

35 Kim, Y., Kim, I., Park, N. (2014) 'Analysis of Cyber Attacks and Security Intelligence'. In: Park, J.J.J.H., Adeli, H., Park, N., Woungang, I. ed(1). *Mobile, Ubiquitous, and Intelligent Computing MUSIC 2013*. Springer Berlin Heidelberg. Available at: http://link.springer.com/chapter/10.1007%2F978-3-642-40675-1_73 [Downloaded 3 March 2016]

**1.19. Cybercrime in selected ASEM countries (% of GDP, 2014)**




*Source: Center for Strategic and International Studies (2014) Net Losses: Estimating the Global Cost of Cybercrime Economic impact of cybercrime II*[36]

Cybercrime has consequences for innovation and competitiveness, national security and global economic growth. The data attempts to quantify losses caused by cybercrime in selected ASEM countries[37] as a percentage of their GDP. The estimate looks at both direct and indirect costs, as well as tangible and intangible costs. It takes into account the loss of intellectual property, the theft of financial assets and sensitive business information, the cost of recovering from cyber attacks and additional costs for securing networks. It also includes opportunity costs, reputational damage to the hacked company, non-monetary effects on innovation, national defence and the long-term competitiveness of both countries and companies.

36 Center for Strategic and International Studies (2014) *Net Losses: Estimating the Global Cost of Cybercrime Economic impact of cybercrime II*. Center for Strategic and International Studies. Available at: http://www.mcafee.com/sg/resources/reports/rp-economic-impact-cybercrime2.pdf [Accessed 8 March 2016].

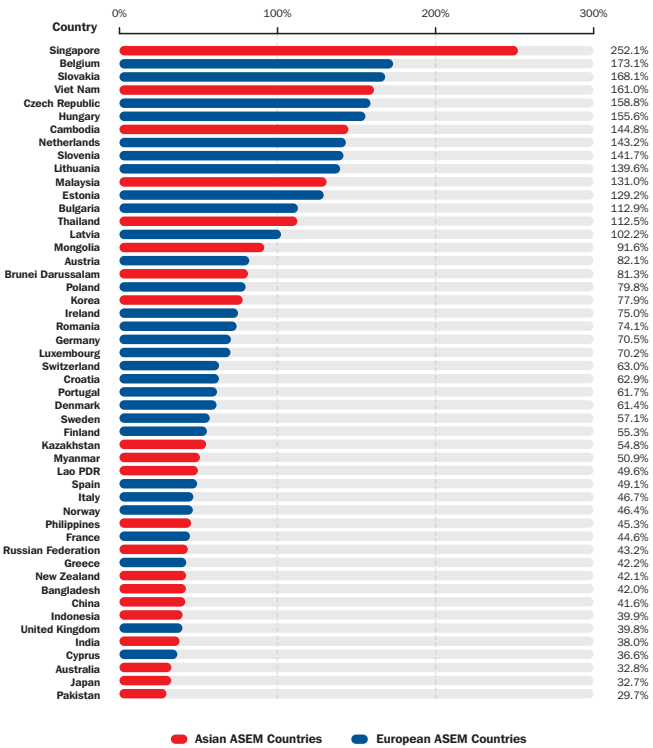
37 Data available for 16 ASEM countries only.

Most of the countries featured are high income countries, a prime target for cybercriminals. As well as offering greater ease of access to vital information through the transition to an electronic infrastructure (e.g. financial systems and social networks), developed countries also promise more profitable returns. There is wide variation in cybercrime losses within the group. Germany features the highest losses (1.60%) as a percentage of GDP, while Japan and Italy rank last with losses of 0.02% and 0.04% of GDP respectively. Japan's language may act as a natural layer of defence against cybercrime, thus explaining its position at the bottom. Overall, differences in the thoroughness of national accounting could account for the variation amongst the countries, as their level of security defences and income levels do not diverge tremendously.

Developing countries are also becoming increasingly popular targets as their access to, and usage of, the Internet for commercial purposes continues to grow. While few developing countries were featured in the list, it could be that many developing countries see greater losses than are recorded, as they tend not to record cybercrime statistics.

# 2. Economics of Connectivity

## 2.1. Merchandise trade (% of GDP, 2014)




*Source: The World Bank (2016) Merchandise trade (% of GDP)*[38]

38 The World Bank (2016) *Merchandise trade (% of GDP)*. Available at: http://data.worldbank.org/indicator/TG.VAL.TOTL.GD.ZS [Accessed 8 March 2016].

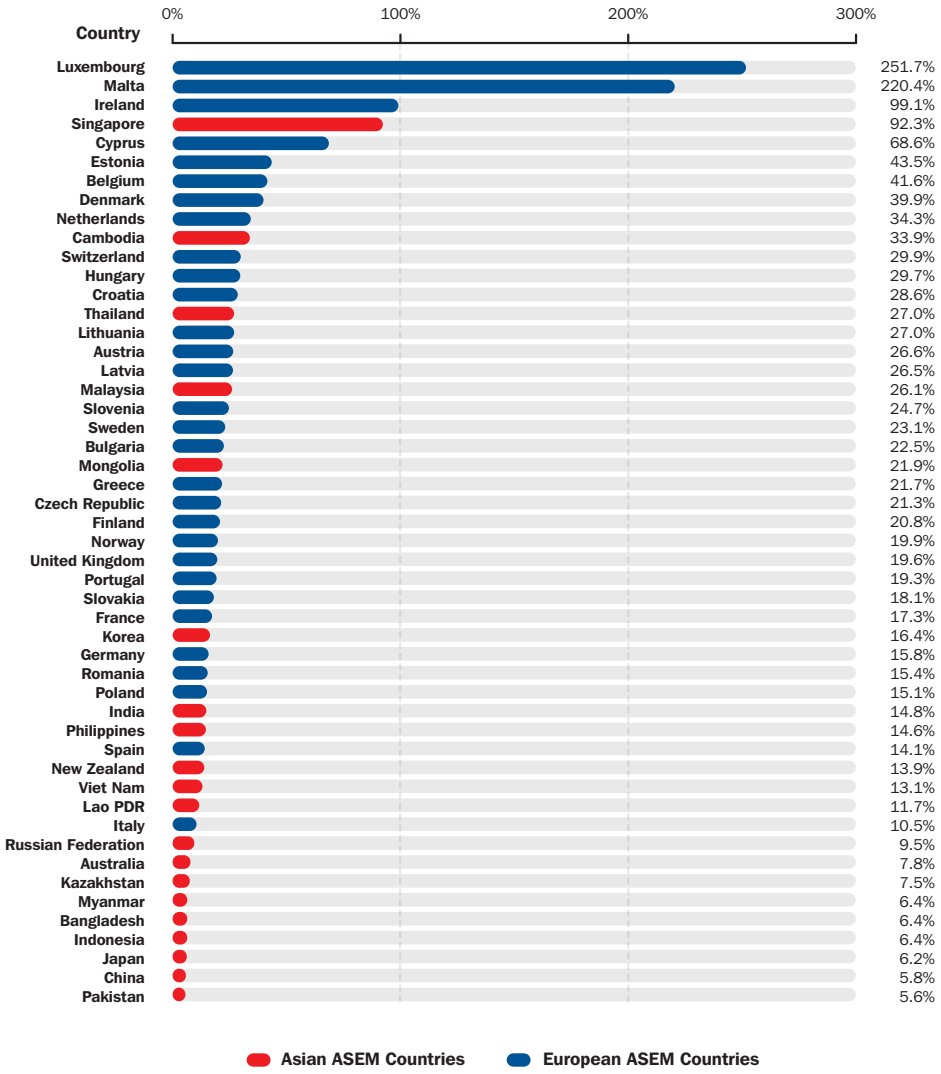
The data captures the volume of merchandise trade as a percentage of GDP in 50 ASEM countries[39] in 2014. Merchandise trade is the sum of merchandise exports and imports, excluding services, capital transfers and foreign direct investments (FDI). It focuses on physical goods that enter (imports) and leave (exports) the country. The data is calculated as merchandise trade divided by the value of GDP, in USD.

Singapore ranks first with the highest merchandise trade as a share of GDP at 252.1%, followed by Belgium (173.1%) and Slovakia (168.1%). Singapore's merchandise trade has been steadily declining in the past four years, falling from 281.5% in 2011.

Overall, world merchandise trade in 2014 averaged 2.8%, barely exceeding the increase in world GDP.[40] Developing countries saw the highest yearly growth rates in merchandise exports and imports in 2014 (2.1% in the first half of the year, 5.1% in the second half of the year), while developed countries continued to see sluggish growth rates (1.8% and 2.5%).[41] Weak import demand in the EU continues to weigh heavily on world merchandise trade following the financial crisis due to the large share of the EU in world imports which stands at 32% (including trade between EU members) and 15% excluding it.

39 Data available for 50 countries only. Data on Malta was not available.
40 World Trade Organization (2015) *Modest Trade Recovery to Continue in 2015 and 2016 Following Three Years of Weak Expansion.* Available at: https://www.wto.org/english/news_e/pres15_e/pr739_e.htm [Accessed 10 March 2016].
41 Ibid.

## 2.2. Trade in services (% of GDP, 2013)




*Source: The World Bank (2016) Trade in services (% of GDP)*[42]

The data captures the volume of service trade as a percentage of GDP for 50 ASEM countries.[43] Trade in services is calculated as the sum of service exports and imports, divided by a country's total GDP, in USD.

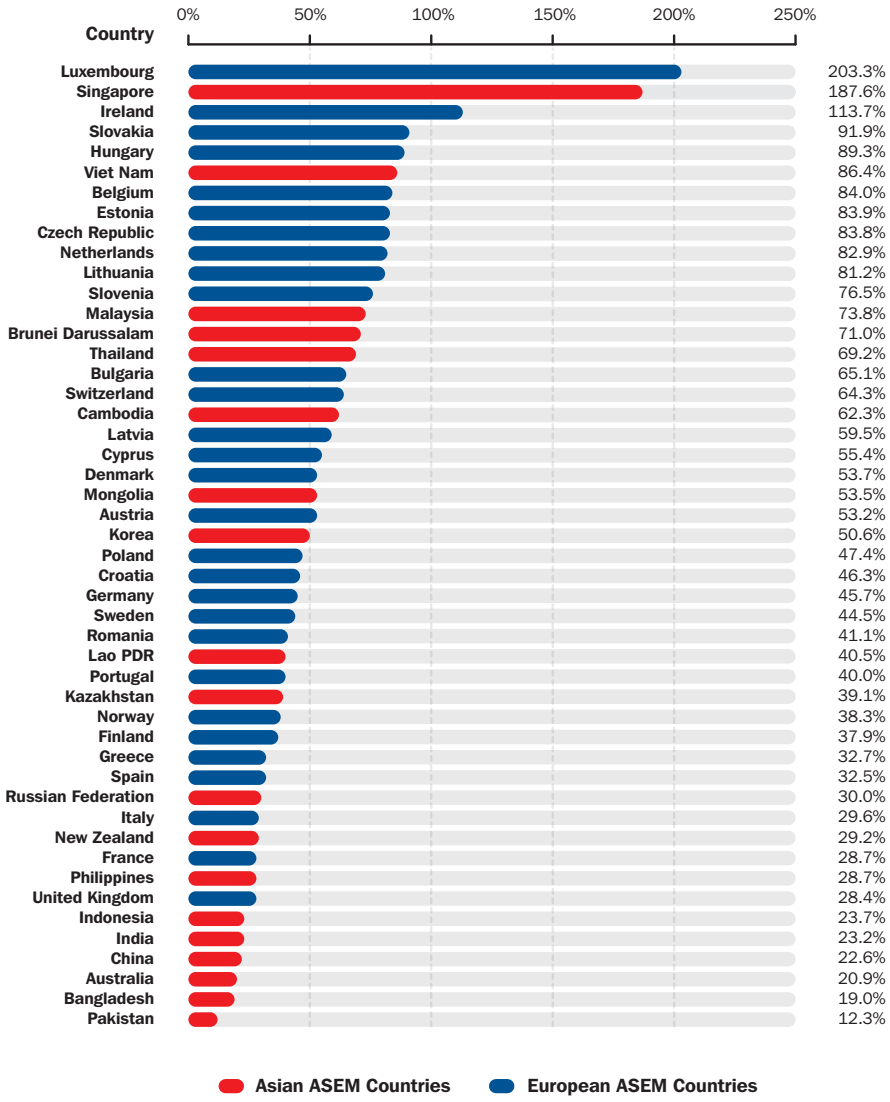
42 The World Bank (2016) *Trade in services (% of GDP)*. Available at: http://data.worldbank.org/indicator/BG.GSR.NFSV.GD.ZS/countries [Accessed 8 March 2016].

43 Data available for 50 countries only. Data for Brunei Darussalam was not available.

Luxembourg and Malta registered the highest service trade as a share of GDP values at 251.7% and 220.4% respectively in 2013, and led by a wide margin. Overall, ASEM countries see much lower volumes of trade in services, ranging from 5.6% to 99.1% (excluding Luxembourg and Malta), compared to trade in merchandise (range of 29.7% to 252.1%). The non-transportability of services, which requires physical proximity, and difficulty in defining and categorising services from goods may explain this.[44] However, trade in services plays a major role in boosting economic growth by supporting performance of industries and is important for the development of modern and resilient economies.

44 Eurostat (2014) *International trade in services.* Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/International_trade_in_services [Accessed 10 March 2016].

## 2.3. Exports of goods and services (% of GDP, 2014)




*Source: The World Bank (2016) Exports of goods and services (% of GDP)*[45]

45 The World Bank (2016) *Exports of goods and services (% of GDP)*. Available at: http://data.worldbank.org/indicator/NE.EXP.GNFS.ZS/countries [Accessed 8 March 2016].

The export of goods and services represents the value of all goods and market services provided by a country to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees and other services, such as communication, construction, financial, information, business, personal and government services. Compensation of employees and investment income and transfer payments are not included in this measure.

The data captures the ratio of exports of goods and services to total GDP as a percentage for 48 ASEM countries.[46] Small countries such as Luxembourg and Singapore registered the greatest volume of exports as a ratio to their GDP. As countries with small domestic markets and limited resources, they focus on high productivity, specialising in a few highly profitable industries and selling their goods and services to the global market. These economies generate more income from exports than their entire domestic industry. However, Luxembourg and Singapore have lower domestic value added[47] in exports (value added/total value) of 41.0% and 58.2% respectively, compared to resource rich countries like Australia (85.9%) and Indonesia (88.0%) that rank among the lowest on this list.[48]

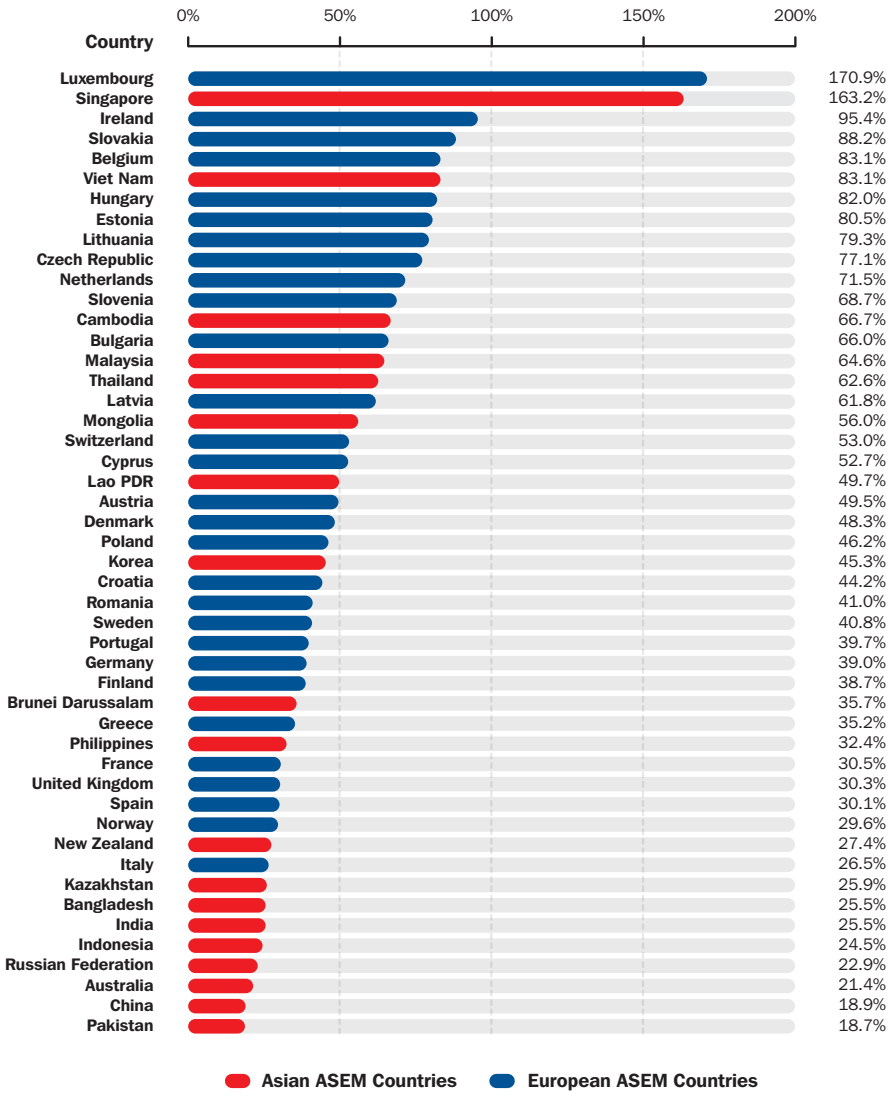
The data provides us with a good estimation of a country's sensitivity to external demand shocks. Asian economies, on the whole, saw a fall in share of exports of their GDP from 2013, which could indicate a shift towards a more internal consumption driven economy in order to reduce susceptibility to global shocks.

46 Data only available for 48 ASEM countries. Data for Japan, Malta and Myanmar was not available.

47 Domestic value added in gross exports is an estimation of value added, by an economy, in producing goods and services for export, simply defined as the difference between gross output at basic prices and intermediate consumption at purchasers' prices. The measure is a percentage share of value. Value added can be decomposed into the following components: compensation of employees; gross operating surplus; mixed income; and other taxes on production less subsidies on production. It can also be derived as the difference between GDP (at market prices) and taxes on products less subsidies on products.

48 OECD (2016) *Domestic value added in gross exports (indicator)*. Available at: https://data.oecd.org/trade/domestic-value-added-in-gross-exports.htm#indicator-chart [Accessed on 9 March 2016].

## 2.4. Imports of goods and service (% of GDP, 2014)




*Source: The World Bank (2016) Imports of goods and services (% of GDP)*[49]

49 The World Bank (2016) *Imports of goods and services (% of GDP)*. Available at: http://data.worldbank.org/indicator/NE.IMP.GNFS.ZS/countries [Accessed 8 March 2016].

Imports of goods and services represent the value of all goods and other market services received from the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees and other services, such as communication, construction, financial, information, business, personal and government services, and excludes compensation of employees, investment income and transfer payments.

The data captures the share of imports as a percentage of GDP for 48 countries.[50] Production of exports in the context of global value chains has made imported foreign inputs a crucial element of export production. In 2014, roughly 80% of world trade took place with global value chains.[51] Thus, a similar pattern emerges, with small countries like Luxembourg (170.9%) and Singapore (163.2%) with high foreign input content in export production, seeing more income accounted for by imports than the domestic economy. Vertical specialisation brought about by foreign direct investment (FDI) has particularly benefitted developing Asian countries and Eastern European countries such as Cambodia and Hungary.

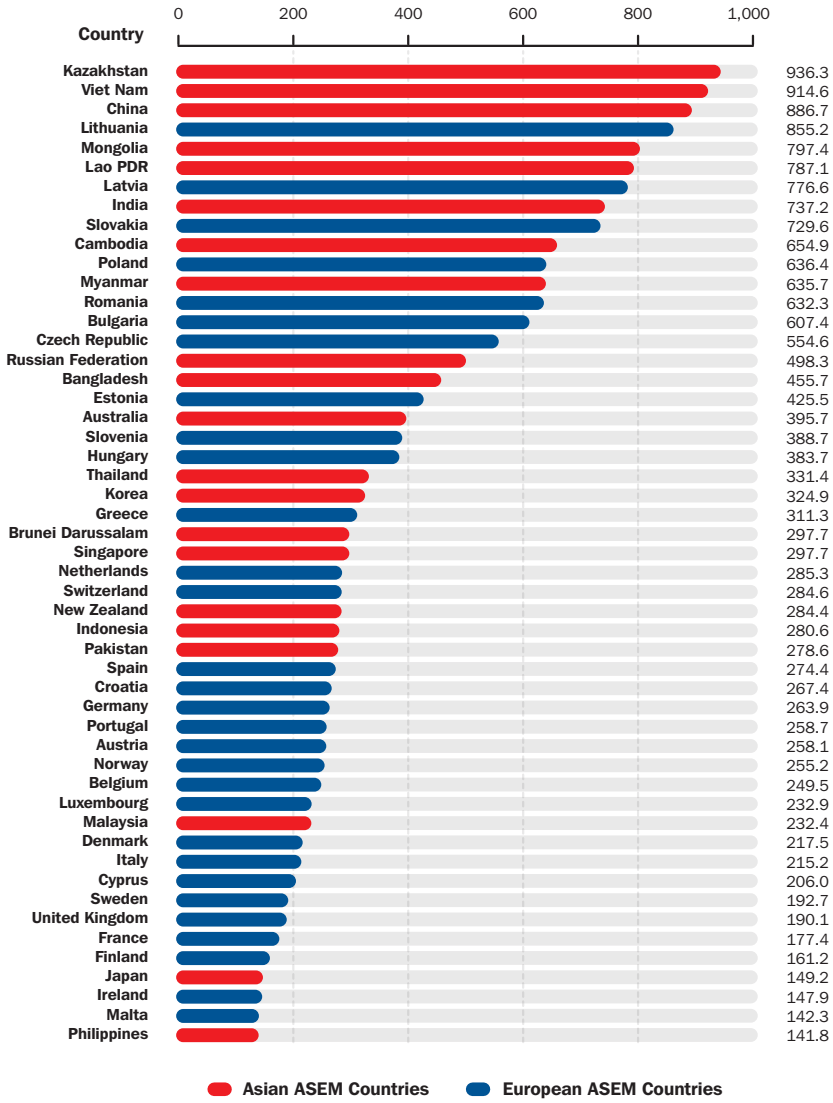
Countries with large domestic markets and abundant natural resources such as China (18.9%), the Russian Federation (22.9%) and even small but resource-rich Brunei Darussalam, contribute heavily to global value chains by supplying primary products for industrial production. However, these countries do not rely heavily on imports for export production and have the lowest shares of imports as a percentage of their GDP.[52]

50 Data only available for 48 ASEM countries. Data for Japan, Malta and Myanmar was not available.

51 APEC (2014) *Opportunities for SMEs to Play Larger Role in Global Value Chains.* Available at: www.apec.org/Press/News-Releases/2014/0511_valuechains.aspx [Accessed 26 February 2016].

52 World Trade Organization (2015) *International Trade Statistics 2015.* Available at: https://www.wto.org/english/res_e/statis_e/its2015_e/its15_highlights_e.pdf [Accessed 28 February 2015].

## 2.5. Export Value Index (2000 = 100) in ASEM countries (2013)




*Source: The World Bank (2016) Export value index (2000=100)*[53]

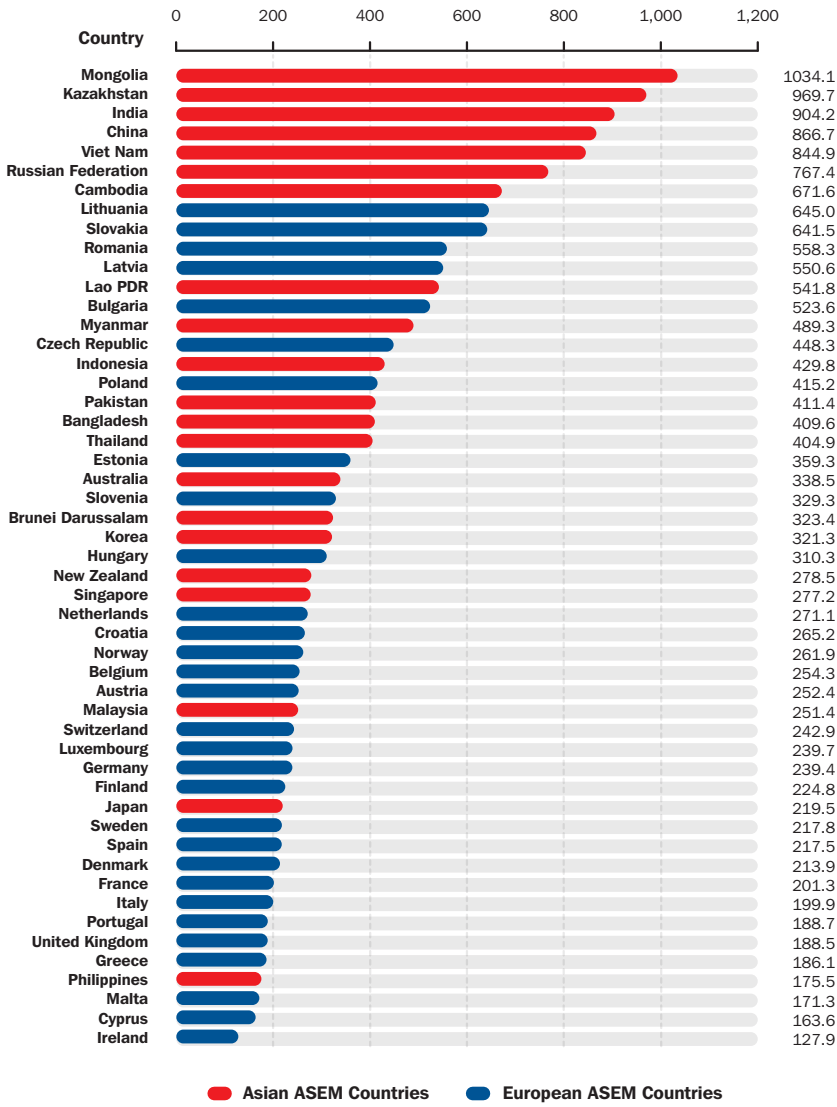
53 The World Bank (2016) *Export value index (2000=100).* Available at: http://data.worldbank.org/indicator/TX.VAL.MRCH.XD.WD [Accessed 8 March 2016].

The *Export Value Index* (base year 2000) presents the current value of a country's exports (in USD) as a percentage of the average for the base period, reflecting the growth rate of all ASEM countries in the last 13 years.

The fastest growing exporting economies saw their exports increase up to nine times in the 13-year period. Kazakhstan registered the greatest growth in export value with a ninefold increase (936.3%), with increasing oil prices accounting for roughly 60% of the increase. Amongst developing countries there is wide variation, with countries scattered across the list. Viet Nam ranks second with a 914.6% growth since 2000, while the Philippines registers the slowest growth (141.8%).

European countries concentrate at the bottom of the distribution. Besides their comparatively slower rate of growth when considered against developing countries, these developed markets were also heavily affected by the Great Recession of 2007 to 2009. Slovakia and Poland are the only two EU members to have not been hit by the recession, thus accounting for their relatively high position in the *Export Value Index* distribution.

## 2.6. Import Value Index (2000 = 100) in ASEM countries (2013)



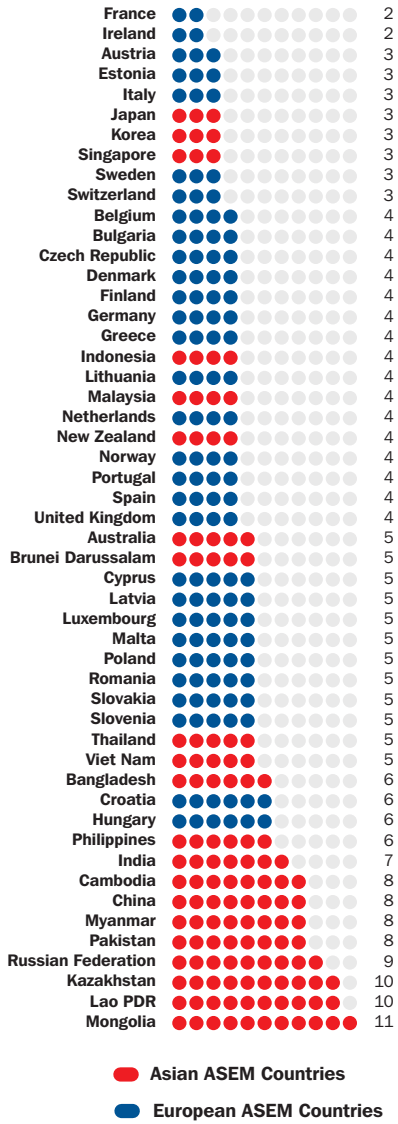

*Source: The World Bank (2016) Import value index (2000=100)*[54]

54 The World Bank (2016) *Import value index (2000=100).* Available at: http://data.worldbank.org/indicator/TM.VAL.MRCH.XD.WD/countries [Accessed 8 March 2016].

The *Import Value Index* (base year 2000) presents the current value of a country's imports as a percentage of the average for the base period over the period of 13 years. A similar pattern to the *Export Value Index* emerges, with fast growing economies concentrated at the top and European economies at the bottom.

Mongolia saw the greatest increase in import value during this period with a tenfold increase in the 13-year period. Kazakhstan, India, China and Viet Nam follow to make up the top 5 fastest growing countries in import values.

## 2.7. Number of documents required to export (2014)




*Source: The World Bank (2016) Documents to export (number)*[55]

55 The World Bank (2016) *Documents to export (number).* Available at: http://data.worldbank.org/indicator/IC.EXP.DOCS [Accessed 8 March 2016].

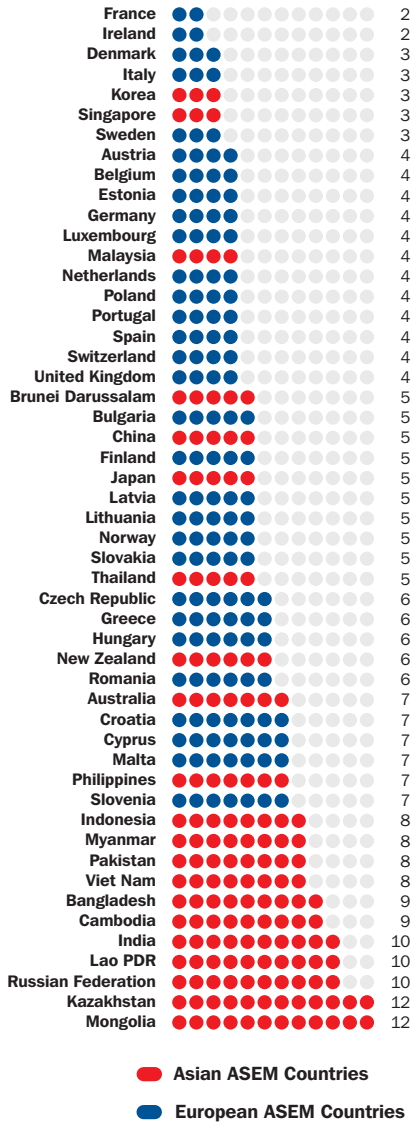
The data captures the number of documents required per shipment to export goods, including those required for clearance by government ministries, customs authorities, port and container terminal authorities, health and technical control agencies and banks, excluding documents that are renewed annually and those that do not require renewal per shipment.[56] It is one of the measures of the ease of trading across borders, a component of the *Ease of Doing Business* index. A high ranking on the index points to a more conducive regulatory environment for the starting and operation of a local firm.

Across the ASEM countries, the number of documents required per shipment span from 2, the greatest ease of exporting, to 11, with most clustering around the 3 to 5 range. France and Ireland require the fewest documents to export, while the majority of the countries clustered around the median (4 documents) are European, with several Asian markets peppering the cluster (e.g. Indonesia, Malaysia). The Asian ASEM countries trail behind. Different ASEM countries vary on their performances across the indicators, depending on their priorities to various areas of business regulation reform and the capability of various agencies.[57]

56 Doing Business (2014) *Ease of Doing Business and Distance to Frontier*. Available at: http://www.doingbusiness.org/~/media/GIAWB/Doing Business/Documents/Annual-Reports/English/DB14-Chapters/DB14-Ease-of-doing-business-and-distance-to-frontier.pdf [Accessed 30 January 2016].

57 Ibid.

## 2.8. Number of documents required to import (2014)




*Source: The World Bank (2016) Documents to import (number)*[58]

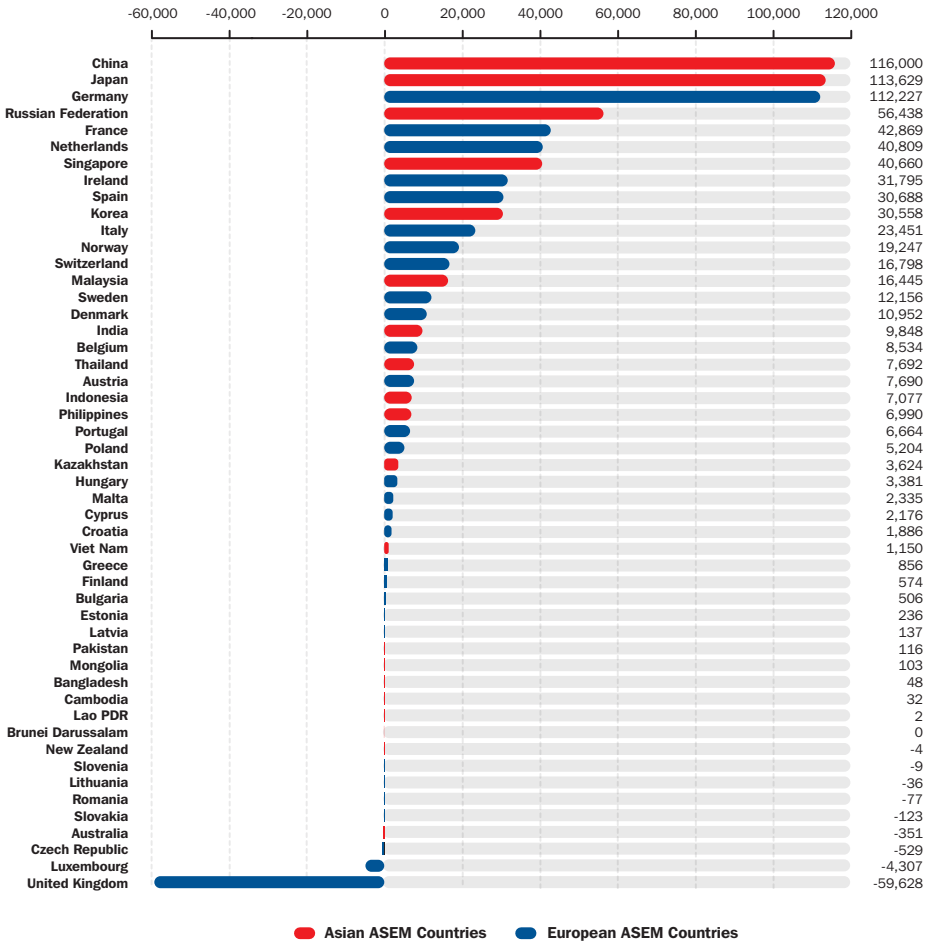
58 The World Bank (2016) *Documents to import (number).* Available at: http://data.worldbank.org/indicator/IC.IMP.DOCS [Accessed 8 March 2016].

The data captures the number of documents required per shipment to import goods, including those required for clearance by government ministries, customs authorities, port and container terminal authorities, health and technical control agencies and banks, excluding documents that are renewed annually and those that do not require renewal per shipment.[59] It is one of the measures of the ease of trading across borders, a component of the *Ease of Doing Business* index. A high ranking on the index points to a more conducive regulatory environment for the starting and operation of a local firm.

A pattern similar to that of *Number of documents required to export* emerges, with European markets registering the best performance and developing countries concentrated at the lower end.

59 Doing Business (2014) *Ease of Doing Business and Distance to Frontier*. Available at: http://www.doingbusiness.org/~/media/GIAWB/Doing Business/Documents/Annual-Reports/English/DB14-Chapters/DB14-Ease-of-doing-business-and-distance-to-frontier.pdf [Accessed 30 January 2016].

## 2.9. Outflows of foreign direct investment (FDI) (USD at current prices, current exchange rates in million, 2014)




*Source: UNCTADStat (2015) Foreign direct investment: Inward and outward flows and stock, annual, 1980-2014*[60]

60 UNCTADStat (2015) *Foreign direct investment: Inward and outward flows and stock, annual, 1980-2014*. Available at: http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sRF_ActivePath=P,5,27&sRF_Expanded=,P,5,27&sCS_ChosenLang=en [Accessed 12 January 2016].

The data captures the volume of FDI directed abroad in 2014 for 50 ASEM countries.[61] The data is based on millions of USD in current prices and exchange rates.

Data on FDI flows are presented on net bases (capital transactions' credits, less debits between direct investors and their foreign affiliates). Net decreases in assets are recorded as credits (with a positive sign) while net increases in assets are recorded as debits (with a negative sign).

FDI flows with a negative sign indicate that at least one of the three components of FDI is negative and not offset by positive amounts of the remaining components, known as reverse investment or disinvestment.[62]

China, Japan and Germany rank as the top 3 FDI sending countries, with China's FDI outflow totalling USD 116,000 million, Japan at USD 113,629 million and Germany at USD 112,227 million.

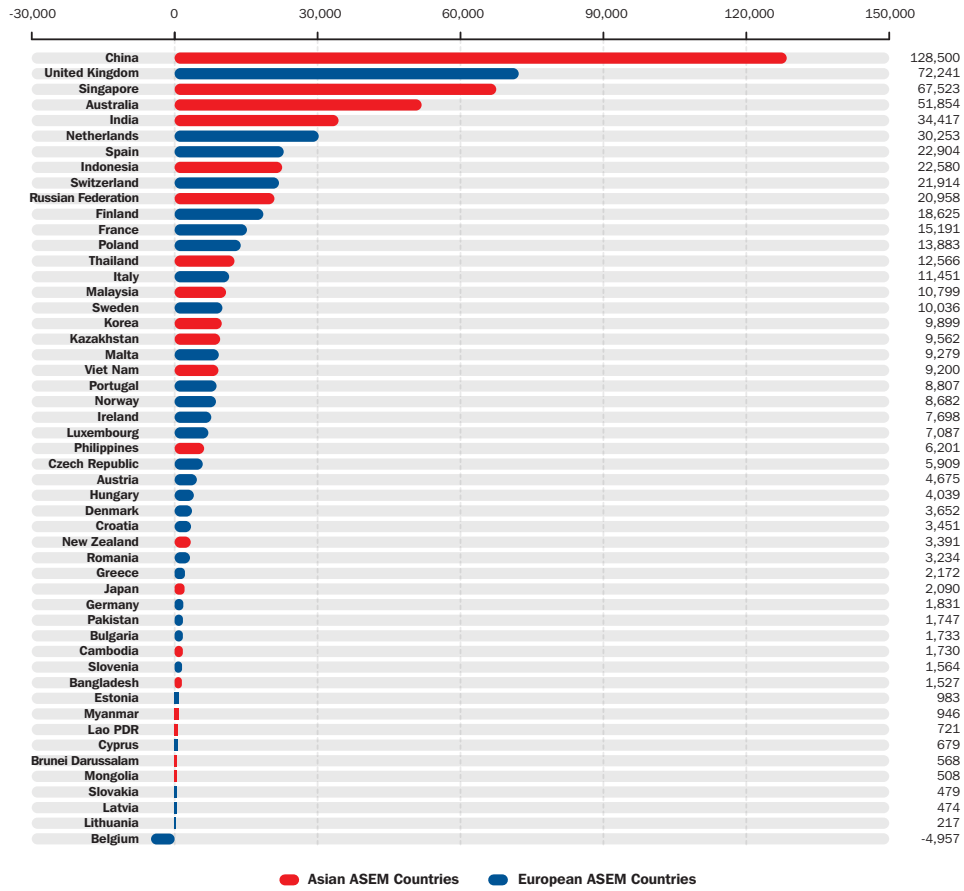
A pattern similar to that for FDI inflows emerges. China is a major player in outward investments, with FDI outflow growing by 15% from 2013 to 2014's total of USD 116,000 million. Although outward investment by developed countries still dominates total FDI outflow, they are experiencing sluggish growth, while outflow from developing countries is growing rapidly. The UK in particular, which recorded the highest FDI inflow in 2014[63], saw significant disinvestment, with FDI outflows totalling – USD 59,628 million.

61 Data available for 50 ASEM countries only. Data on Myanmar is not available.

62 UNCTADStat (2015) *Foreign direct investment: Inward and outward flows and stock, annual, 1980-2014*. Available at: http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sRF_ActivePath=P,5,27&sRF_Expanded=,P,5,27&sCS_ChosenLang=en [Accessed 12 January 2016].

63 GOV.UK (2014) *UK Attracts Highest Levels of Inward Investment on Record*. Available at: https://www.gov.uk/government/news/uk-attracts-highest-levels-of-inward-investment-on-record [Accessed 25 February 2016].

## 2.10. Inflows of foreign direct investment (USD at current prices, current exchange rates in million, 2014)




*Source: UNCTADStat (2015) Foreign direct investment: Inward and outward flows and stock, annual, 1980-2014*[64]

64 UNCTADStat (2015) *Foreign direct investment: Inward and outward flows and stock, annual, 1980-2014*. Available at: http://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sRF_ActivePath=P,5,27&sRF_Expanded=,P,5,27&sCS_ChosenLang=en [Accessed 12 January 2016].

The data captures the volume of FDI flowing into all ASEM countries in 2014. The data is recorded in millions of USD at current prices and current exchange rates and represents FDI made by non-resident investors in the reporting economy. FDI includes the following three components: equity capital[65]; reinvested earnings[66]; and intra company loans.[67]

Global FDI inflows in 2014 fell by 16% from USD 1.47 trillion in the previous year, as a result of the fragility of the global economy, policy uncertainty and increased geopolitical risk.[68] Developed countries were particularly affected, experiencing declines in FDI inflows in 2014. EU foreign direct investment is recovering after the global financial and economic turmoil.

China, which received USD 128,500 million in 2014, was the top investment destination, leading by a wide margin. However, growth of FDI inflow to China is slowing due to rising labour costs, with investors preferring to invest in manufacturing in low wage countries like Cambodia and Viet Nam. A shift in the structure of FDI inflows has also been trending with a greater proportion of FDI into China directed towards the service industry.

Meanwhile, FDI inflows to Southeast Asia remained strong, especially for developing countries. The total FDI inflows for Southeast Asian countries increased by 5.4% from the previous year. Thailand and Philippines saw remarkable growth of 135% and 134% respectively.[69] This may be explained by measures implemented to incentivise and facilitate FDI inflows into the region. The Russian Federation, on the other hand, saw a decline of more than 70% in FDI inflows as a result of international sanctions which restricted access to the international financial market, causing volatility in the Russian foreign exchange market and the depreciation of the rouble.[70]

65 Equity capital is the foreign direct investor's purchase of shares of an enterprise in a country other than its own.

66 Reinvested earnings comprise the direct investor's share (in proportion to direct equity participation) of earnings not distributed as dividends by affiliates or earnings not remitted to the direct investor. Such retained profits by affiliates are reinvested.

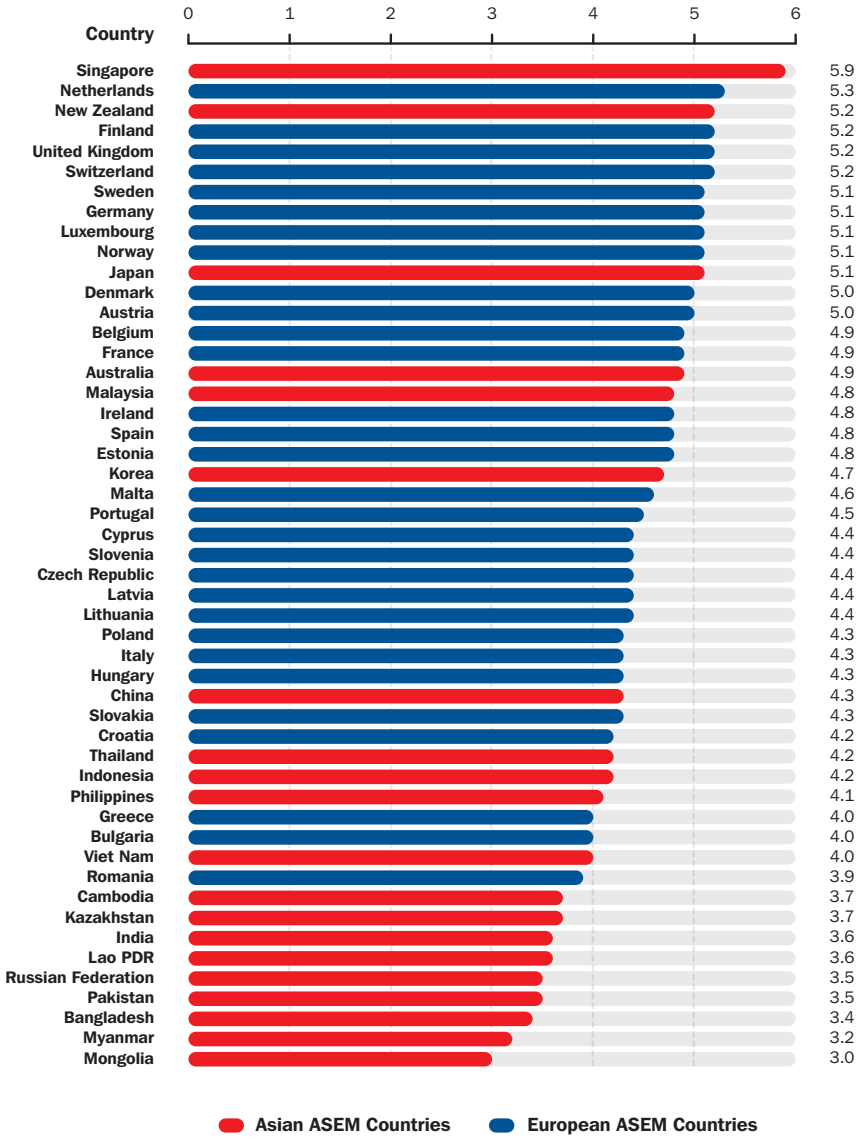
67 Intra-company loans or intra-company debt transactions refer to short- or long-term borrowing and lending of funds between direct investors (parent enterprises) and affiliate enterprises.

68 The State Council, The People's Republic of China (2015) *China Becomes World's Largest FDI Recipient amid Mixed Global Outlook*. Available at: http://english.gov.cn/news/top_news/2015/06/25/content_281475134110982.htm [Accessed 24 February 2016].

69 UNCTADStat (2015) *United Nations Conference on Trade and Development.* Available at: https://www.unctadstat.unctad.org/ReportFolders/reportFolders.aspx?sCS_referer=&sCS_ChosenLang=en [Accessed 24 February 2016].

70 UNESCAP (2015) *ASIA-PACIFIC TRADE AND INVESTMENT REPORT 2015.* Available at: http://www.unescap.org/sites/default/files/Chapter 3 - FDI.pdf [Accessed 24 February 2016].

## 2.11. Enabling Trade Index (2014)




*Source: World Economic Forum (2014) Global Enabling Trade Report 2014*[71]

71 World Economic Forum (2014) *Global Enabling Trade Report 2014*. Available at: http://www3.weforum.org/docs/WEF_GlobalEnablingTrade_Report_2014.pdf [Accessed 8 March 2016].

The *Global Enabling Trade Report* provides a tool for the international trade community to monitor progress on implementing the measures set out under the Trade Facilitation Agreement.[72] The measures look at seven pillars: domestic market access; foreign market access; efficiency and transparency of border administration; availability and quality of transport infrastructure; availability and quality of transport services; availability and use of ICTs; and operating environment.

The data captures the *Enabling Trade Index* (ETI) scores of selected ASEM countries.[73] The strongest indicator of a country's ETI score is income level. Developed countries typically see higher ETI scores compared to developing countries. This may be explained by the lower trade costs they enjoy as a result of the enhanced capabilities in administration, infrastructure regulations and telecommunications associated with high levels of development. However, developing countries do outperform in the foreign market access pillar where they enjoy preferential trade agreements.

Amongst developing countries, countries vary in ETI performance based on the degree of openness of the economy. For example, Malaysia, with a score of 4.8, ranking 17$^{th}$ in the list, punches above its weight. This may be explained by the Malaysian government's efforts to streamline and simplify regulations across its administration. Resource-rich countries also typically score lower than their counterparts with similar income levels. The Russian Federation occupies a low 46$^{th}$ position, enabling trade to a lesser degree.

Research has found that improved border administration is an achievable goal to facilitate trade, and consequently spur development. Inter-regional cooperation and the sharing of good practices, adapted to regional contexts, are also encouraged. Research suggests that the quality of logistics, connectivity and border administration are just as, if not more, important as tariffs in determining bilateral trade costs.

72 Trade Facilitation Agreement contains provisions for faster and more efficient customs procedures through effective cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues. It also contains provisions for technical assistance and capacity building.

73 Data available for 50 ASEM countries only. Data on Brunei Darussalam is not available.

## 2.12. Domestic ownership of inventions made abroad (2012)

| Country | Total patents owned by domestic residents | Number of patents owned by resident(s) of country x that has been invented by at least one foreign resident from country |
|---|---|---|
| Germany | 18,125 | 3,413 |
| France | 8,595 | 2,225 |
| Netherlands | 4,535 | 1,582 |
| Sweden | 3,864 | 1,480 |
| China | 18,202 | 1,280 |
| Japan | 43,904 | 1,219 |
| United Kingdom | 4,854 | 893 |
| Finland | 2,183 | 834 |
| Korea | 11,537 | 598 |
| Belgium | 1,205 | 527 |
| Luxembourg | 426 | 386 |
| Austria | 1,286 | 338 |
| Denmark | 1,213 | 328 |
| Singapore | 842 | 309 |
| Ireland | 460 | 247 |
| Italy | 2,800 | 190 |
| Spain | 1,619 | 185 |
| Australia | 1,579 | 182 |
| Norway | 653 | 115 |
| India | 1,178 | 92 |
| Russian Federation | 876 | 76 |
| Malta | 68 | 64 |
| Czech Republic | 186 | 51 |
| New Zealand | 307 | 32 |
| Cyprus | 36 | 31 |
| Poland | 295 | 24 |
| Hungary | 137 | 21 |
| Portugal | 133 | 18 |
| Slovenia | 107 | 12 |
| Indonesia | 26 | 11 |
| Slovakia | 37 | 7 |
| Lithuania | 44 | 7 |
| Greece | 89 | 5 |
| Romania | 21 | 5 |
| Latvia | 30 | 2 |

**Asian ASEM Countries** **European ASEM Countries**

*Source: OECD (2016) Domestic ownership of inventions made abroad*[74]

74 OECD (2016) *Domestic ownership of inventions made abroad*. OECD.STAT. Available at: http://data.worldbank.org/indicator/TG.VAL.TOTL.GD.ZS [Accessed 8 March 2016].

The data captures the number of patents, filed under the Patent Cooperation Treaty, owned by resident(s) of country A for inventions that have been invented by at least one foreign resident (inventor) from country B in 2012. Cross-border ownership[75] of patents is a reflection of the degree of internationalisation of technology in a country. International collaboration by researchers can take place either within a multinational corporation (MNC) with research facilities in several countries, or through a joint research venture among several firms.[76] The data looks at 36 ASEM countries.[77]

There has been an increasing trend towards the globalisation of technology in OECD areas, as more companies set up research facilities abroad. Germany owns the most inventions made abroad with 3,413 patents. France (2,225), the Netherlands (1,582), Sweden (1,480) and China (1,280) are next.

Small countries tend to have a higher degree of internationalisation.[78] This may explain why the ratio of patents for inventions abroad to total patents owned by domestic residents is highest for countries such as Luxembourg (90.6%), Ireland (53.7%), Belgium (43.7%) and Singapore (36.7%). This means 90.6% of all patents owned by a resident in Luxembourg have at least one inventor from another country. Countries that are geographically close to one another, with similar technological specialisation and a common language, are also more likely to collaborate.[79] Nordic countries, Sweden (38.3%), Finland (38.2%) and Denmark (27%), have a particularly high propensity to collaborate together. With the exception of Singapore, Asian countries including China (7%), Korea (5.2%) and Japan (2.8%) have the lowest ratios of patents for inventions abroad to total patents.

75 The inventor is the creator of the invention. Where there may be more than one inventor residing in different countries, all are entitled to be designated accordingly on the patent as long as they made technical creative contributions to the development of the invention, regardless of the comparative share of contributions. The owner need not necessarily be the inventor. The applicant is the future owner of the patent, vested by proprietary right to the invention after the patent is granted, and is not necessarily the inventor of the patent. With increasing internationalisation of technology and R&D and locations abroad of research facilities of multinational firms, the owner is often an employer or an entity contractually assigned. The rights to ownership vary in different countries based on national laws.

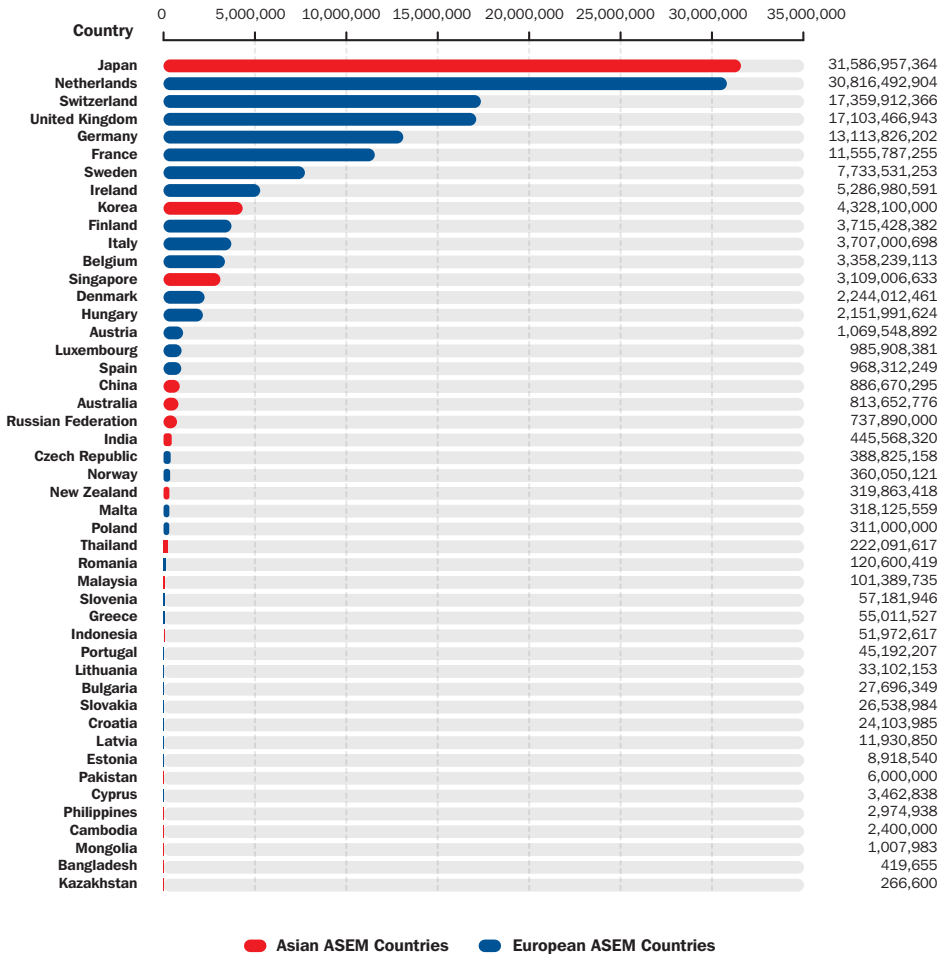
76 Bergek, A. and Bruzelius, M. (2010) *'Are Patents with Multiple Inventors from Different Countries A Good Indicator of International R&D Collaboration? The Case of ABB'*, Research Policy, (39), pp.1321-1334. Available at: http://dx.doi.org/10.1016/j.respol.2010.08.002 [Accessed 7 March 2016].

77 Data available for 36 ASEM countries only.

78 Guellec, D. and Van Pottelsberghe de la Potterie, B. (2001) *'The Internationalisation of Technology Analysed with Patent Data'*, Research Policy, 30, pp. 1253–1266. Available at: http://www.oecd.org/sti/inno/40807432.pdf [Accessed 7 March 2016].

79 Ibid.

## 2.13. Receipts between residents and non-residents for the use of intellectual property (BoP, current USD, 2013)




*Source: The World Bank (2016) Charges for the use of intellectual property, receipts (BoP, current US$)*[80]

80 The World Bank (2016) *Charges for the use of intellectual property, receipts (BoP, current US$).* Available at: http://data.worldbank.org/indicator/BX.GSR.ROYL.CD/countries [Accessed 8 March 2016].

The data looks at the total value of receipts from abroad earned by the residents of 47 ASEM countries in 2013[81] for the authorised use of proprietary rights and for the use of produced originals or prototypes through licensing agreements. This includes copyrights on books, computer software, cinematographic recordings and related rights such as television broadcasts.

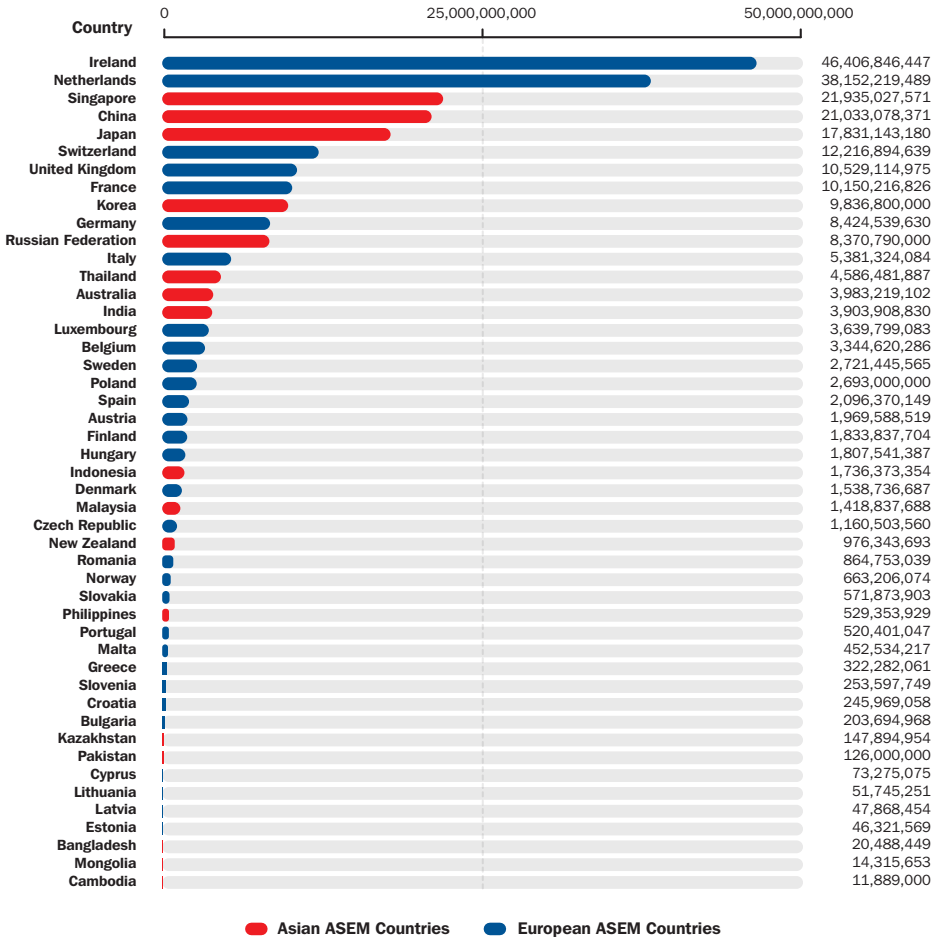
Japan received the most in earnings at USD 31,586,957,364 for the use of its intellectual property. While Japan's technological know-how explains its position at the top, preferential international tax regimes explain the second and third rankings of the Netherlands and Switzerland, with the Netherlands earning USD 30,816,492,904 and Switzerland USD 17,359,912,366. The Netherlands offers IP arrangements where interest, services and royalty payments are not subjected to withholding tax.[82] This makes it an attractive location for setting up subsidiary companies to which parent companies license their IPs, and explains the high volume of payments flowing into the country.[83]

81 Data available for 47 ASEM countries only. Data for Brunei Darussalam, the Lao PDR, Myanmar and Viet Nam are not available.

82 Mossack Fonseca. (2014). *Tax Advantages of Dutch Holding Companies*. Available at: http://www.mossfon.com/news/tax-advantages-dutch-holding-companies/ [Accessed 7 March 2016].

83 Jolly, A. (2015) *The Handbook of European Intellectual Property Management: Developing, Managing and Protecting Your Company's Intellectual Property*. 4. UK: Kogan Page Publishers. Available at: https://books.google.com.sg/books?id=EUBCCgAAQBAJ&pg=PA160&lpg=PA160&dq=netherlands+highest+earnings+for+intellectual+property&source=bl&ots=kmnwlJgnkU&sig=MMqc1Eq3rNjWKgjrpk2Wk8WeLTk&hl=en&sa=X&ved=0ahUKEwijt4CFy63LAhXTkI4KHaSfBJ0Q6AEILTAE#v=onepage&q=netherlands%20highest%20earnings%20for%20intellectual%20property&f=false [Downloaded: 7 March 2016].

## 2.14. Payments between residents and non-residents for the use of intellectual property (BOP, current USD, 2013)




*Source: The World Bank (2016) Charges for the use of intellectual property, payments (BoP, current US$)*[84]

84 The World Bank (2016) *Charges for the use of intellectual property, payments (BoP, current US$)*. Available at: http://data.worldbank.org/indicator/BM.GSR.ROYL.CD [Accessed 8 March 2016].

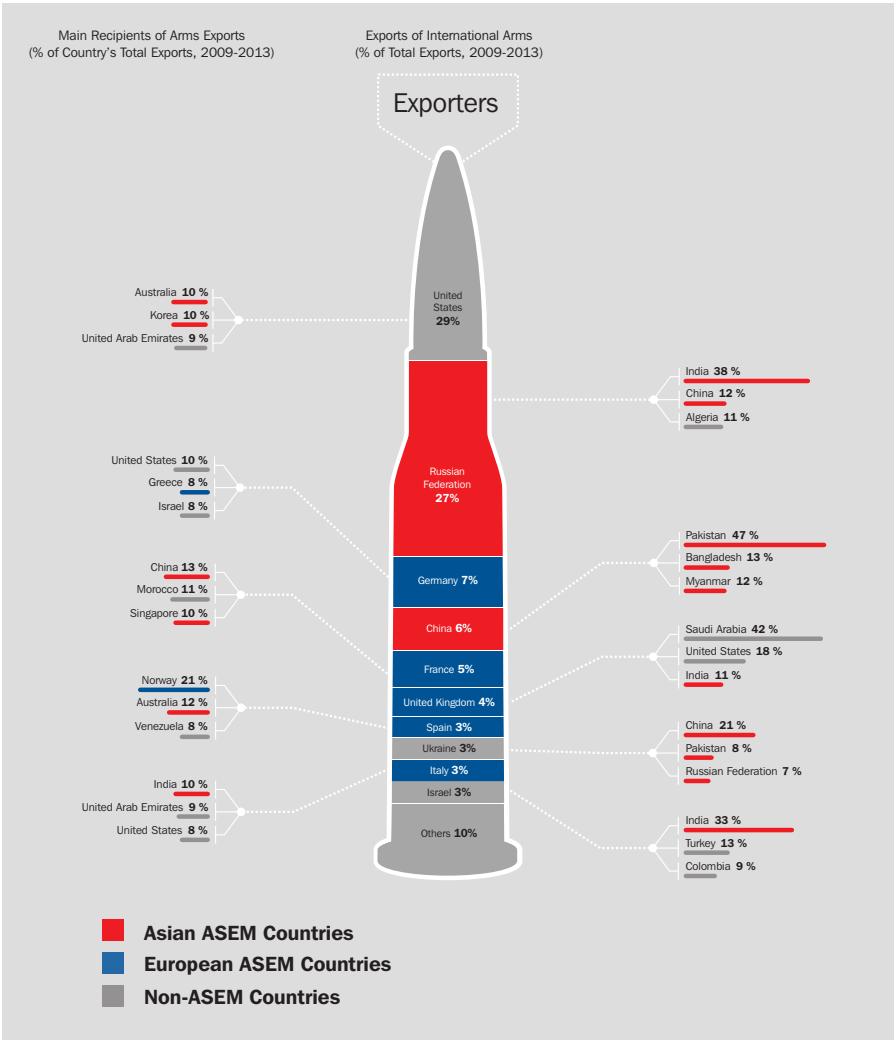
The data looks at the total value of payments made by the residents of 47 ASEM countries[85] in 2013 to non-residents abroad for the authorised use of proprietary rights and for the use of produced originals or prototypes through licensing agreements.

Ireland ranks first with USD 46,406,846,447 for the use of IP, followed by the Netherlands with USD 38,152,219,489. This may be explained by a tax avoidance strategy in IP licensing and revenue, in which parent companies set up multiple subsidiary and holding companies in the Netherlands and Ireland to take advantage of preferential national tax regulations.[86] As a result, Ireland and the Netherlands see a large volume of payments abroad in the form of royalties for IP rights.

85 Data available for 47 ASEM countries only. Data for Brunei Darussalam, the Lao PDR, Myanmar and Viet Nam are not available.

86 Wesley, D. (2013) *Double Irish Deception: How Google—Apple—Facebook Avoid Paying Taxes*. Available at: http://visualeconomics.creditloan.com/double-irish-deception-how-google-apple-facebook-avoid-paying-taxes/ [Accessed 7 March 2016].

## 2.15. Exports of international arms (% of total arms exports, 2009-2013)




*Source: The Economist (2014) Measuring the arms merchants*[87]

87 The Economist (2014) *Measuring the arms merchants*. Available at: http://www.economist.com/blogs/graphicdetail/2014/03/daily-chart-13?fsrc=scn/fb/te/bl/ed/measuringthearmsmerchants [Accessed 8 March 2016].

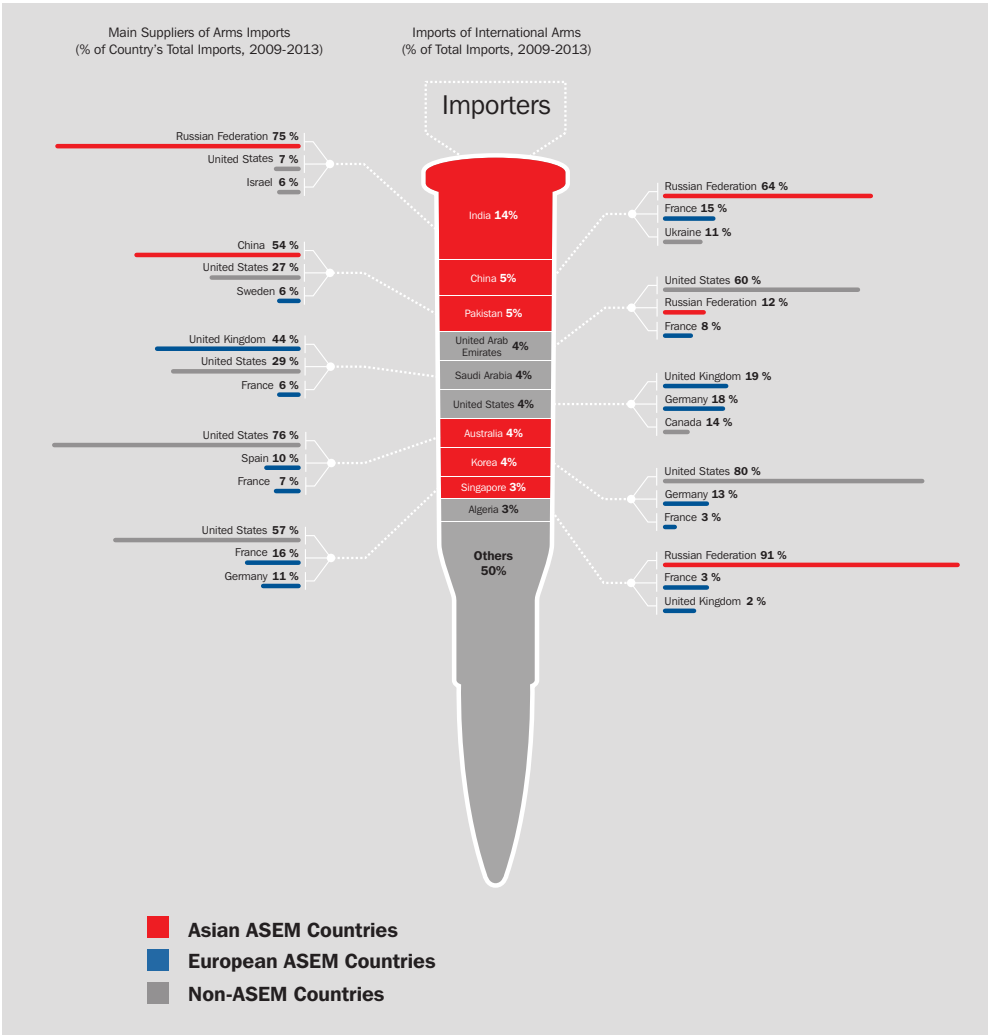
The infographic presents the top international exporters of arms by looking at the exports of countries as a share of global arms exports over five years (2009-2013). It also presents the top recipient of arms for each exporter.

The top 2 countries, USA and the Russian Federation (whose arms exports make up 29% and 27% of global arms exports respectively), represented more than half of the international arms exports in the world between 2009 and 2013. Germany (7%), China (6%) and France (5%) keep a steady distance behind. China and the Russian Federation increased their share of global arms exports from the previous five years by 200% and 12.5% respectively. If China continues to increase its arms export at this rate, China will overtake Germany to become the third largest arms dealer in the world.

With regards to the main recipients of exporting countries, factors such as political ideologies as well as economic regulatory environments, heavily influence international arms trade relationships. The top 2 exporters employ different strategies to target different markets. The USA, unparalleled in its technological capabilities, exports heavily to developed countries like Australia, Korea and the United Arab Emirates. The Russian Federation, which offers a wide range of affordable and technologically competitive weaponry, exports primarily to developing countries like India, China and Algeria. It also directs its arms trade towards countries that do not do business with the West for political or economic reasons.[88]

88 Harress, C. (2015) *Russian Defense Manufacturing Hits New High As China, India Take Advantage Of Moscow's Affordable And Advanced Technology*. Available at: http://www.ibtimes.com/russian-defense-manufacturing-hits-new-high-china-india-take-advantage-moscows-2230370 [Accessed 3 March 2016].

## 2.16. Imports of international arms (% of total arms imports, 2009-2013)




*Source: The Economist (2014) Measuring the arms merchants*[89]

89 The Economist (2014) *Measuring the arms merchants*. Available at: http://www.economist.com/blogs/graphicdetail/2014/03/daily-chart-13?fsrc=scn/fb/te/bl/ed/measuringthearmsmerchants [Accessed 8 March 2016].

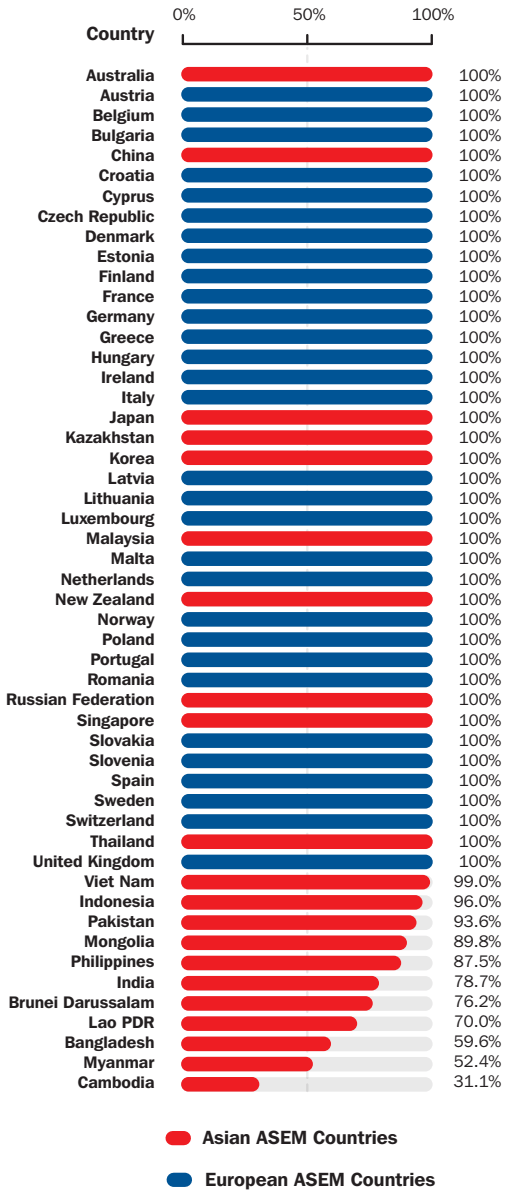
The infographic presents the top importing countries of arms by looking at each country's share of arms imports as part of the global international arms imports. It also presents the top supplying countries for each importer.

India's share of arms imports over the five year period was the highest at 14%, while the shares of the remaining top importing countries ranged between 3% to 5%. India's share of arms imports was almost triple that of the larger and rapidly developing China. China continues to import mainly from the Russian Federation, but has since developed a more robust domestic defence industry. China no longer needs to import as many weapons as it has developed the capability to produce advanced weaponry on a large scale.[90]

India mainly imports arms from the Russian Federation, with imports from the country accounting for 75% of India's total arms imports. While India has been trying to diversify its sources of international arms, the Russian Federation is likely to remain a major supplier in India's defence procurement.

90 Smith, A. (2014) *Here's Why Russia Has Sent $13 Billion Worth Of Weaponry To India In Recent Years. Available* at: http://www.businessinsider.sg/why-russia-sends-so-much-weaponry-to-india-2014-8/?r=US&IR=T#.VtaJz089KM8 [Accessed 3 March 2016].

## 2.17. Access to electricity in ASEM countries (% of population, 2012)




*Source: The World Bank (2016) Access to electricity (% of population)*[91]

91 The World Bank (2016) *Access to electricity (% of population).* Available at: http://data.worldbank.org/indicator/EG.ELC.ACCS.ZS [Accessed 8 March 2016].

The data captures the number of people with access to electricity in 2012 as a percentage of the total population in 51 ASEM countries.

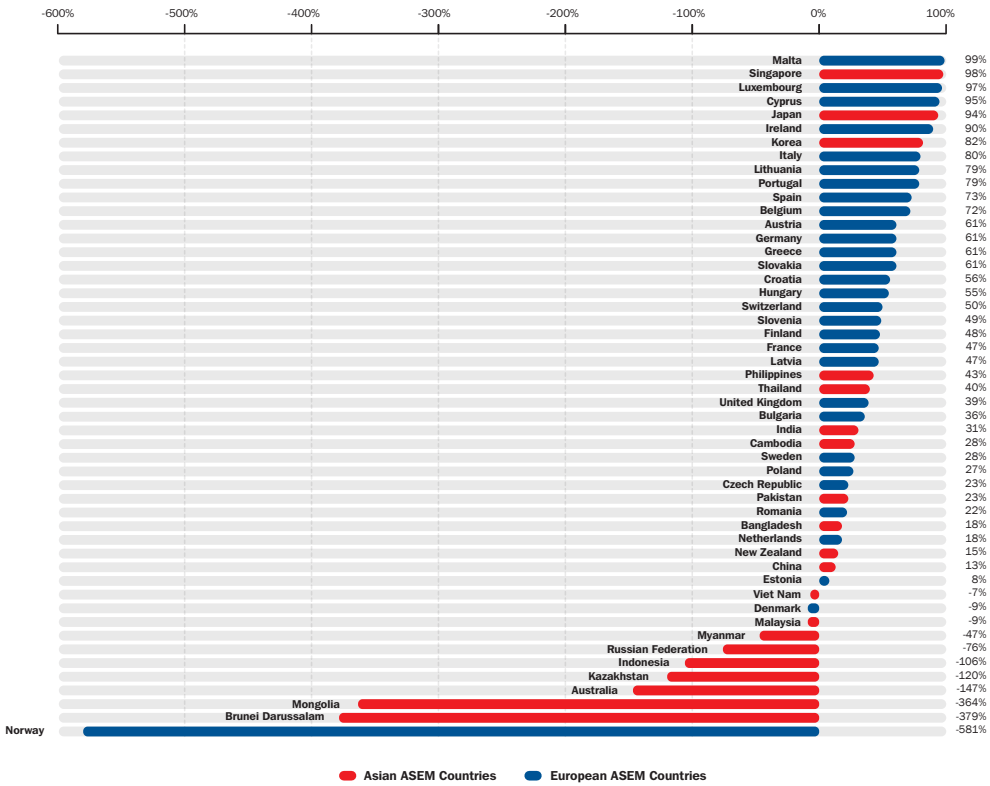
Roughly 1.3 billion people worldwide lived without access to electricity in 2012 and almost 50% of this group lives in developing countries in Asia.[92] The heavy reliance on unstable fossil fuel sources, costly distribution infrastructure and the scattered settlement patterns of rural areas, explain the difficulty developing countries have in providing complete access to electricity.

The rates of electricity access in Asia vary widely, with less than 10% of the population in Viet Nam, Indonesia and Pakistan living without access to electricity, and more than 50% without electricity access in Cambodia. The largest populations living without access to electricity amongst ASEM countries reside in South Asia. In addition, the rates of electricity access tend to be over-emphasised in developing countries. The existence of weak distribution infrastructure in many areas, while categorised as having electricity access, means another one billion people worldwide are dependent on unreliable and poor quality electricity.[93]

92 International Energy Agency (2016) *World Energy Outlook: Energy access Database*. Available at: http://www.worldenergyoutlook.org/resources/energydevelopment/energyaccessdatabase/ [Accessed 5 March 2016].

93 World Watch Institute (2012) *Energy Poverty Remains a Global Challenge for the Future*. Available at: http://www.worldwatch.org/energy-poverty-remains-global-challenge-future-1 [Accessed 5 March 2016].

### 2.18. Net energy imports in ASEM countries (% of energy use, 2012)




*Source: The World Bank (2016) Energy imports, net (% of energy use)*[94]

Net energy import is measured using estimates of energy use minus domestic energy production, both measured in oil equivalents. Energy use refers to the use of primary energy before conversion to other end use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport. A country that registers a negative value is a net exporter.

94 The World Bank (2016) *Energy imports, net (% of energy use).* Available at: http://data.worldbank.org/indicator/EG.IMP.CONS.ZS/countries [Accessed 8 March 2016].

The data captures the volume of net energy imports as a share of energy use for 50 ASEM[95] countries in 2012.[96] The measure reflects energy dependency. For countries such as Malta (99%), Singapore (98%) and Luxembourg (97%) with scarce energy resources, energy dependence is inevitable and net energy imports are high, leaving them particularly vulnerable to external shocks.

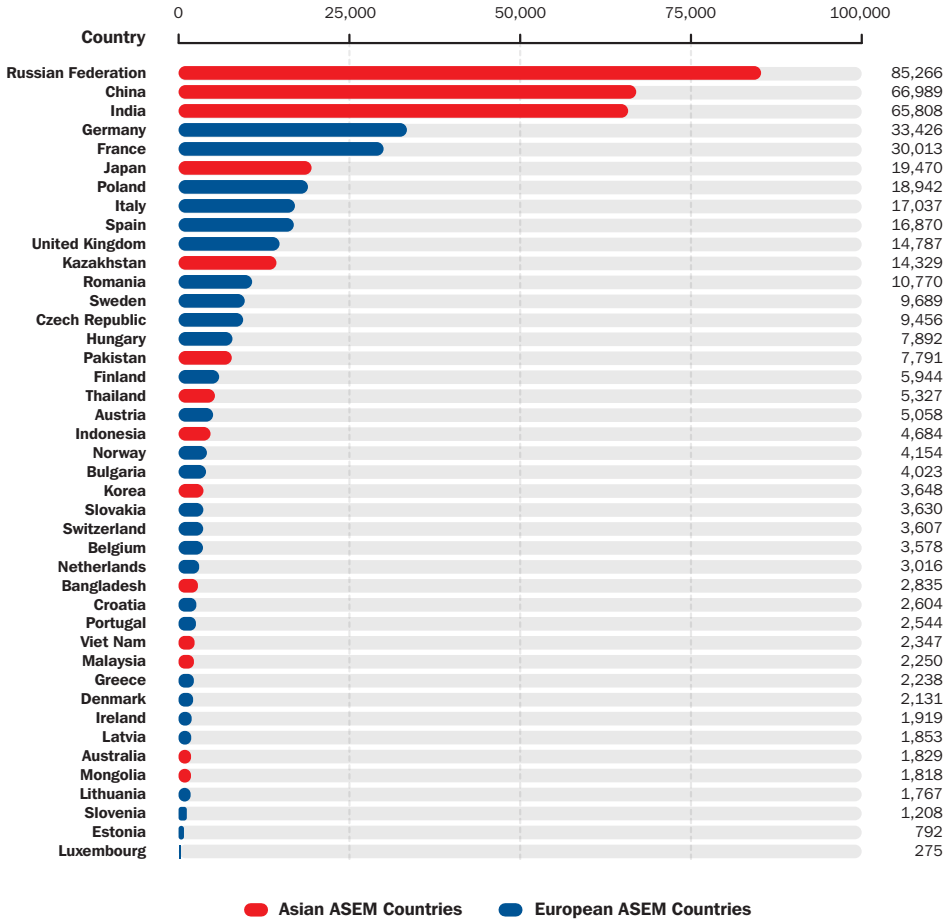
The demand for energy in rapidly developing China, a naturally coal rich country, has seen its transition from a net exporter of energy to a net importer of coal, natural gas and oil. To reduce dependency, China has been looking to improve energy efficiency, diversify import sources and increase investment on domestic exploration and the production of crude oil.[97]

95 Data available for 50 ASEM countries only. Data for the Lao PDR is not available.

96 The 2012 figures for this measure were featured (instead of 2013) because data on more countries was available. The figures for 2012 and those available for 2013 are similar.

97 Talamantes, M.J.H. & Yao, S. (2014) *Energy Security and Sustainable Economic Growth in China.* London: Palgrave Macmillan. Available at: http://www.palgraveconnect.com/pc/doifinder/view/10.1057/9781137372055.0001 [Accessed 8 March 2016].

## 2.19. Rail lines in ASEM countries (total route in km, 2014)




*Source: The World Bank (2016) Rail lines (total route-km)*[98]

98 The World Bank (2016) *Rail lines (total route-km).* Available at: http://data.worldbank.org/indicator/IS.RRS.TOTL.KM [Accessed 8 March 2016].

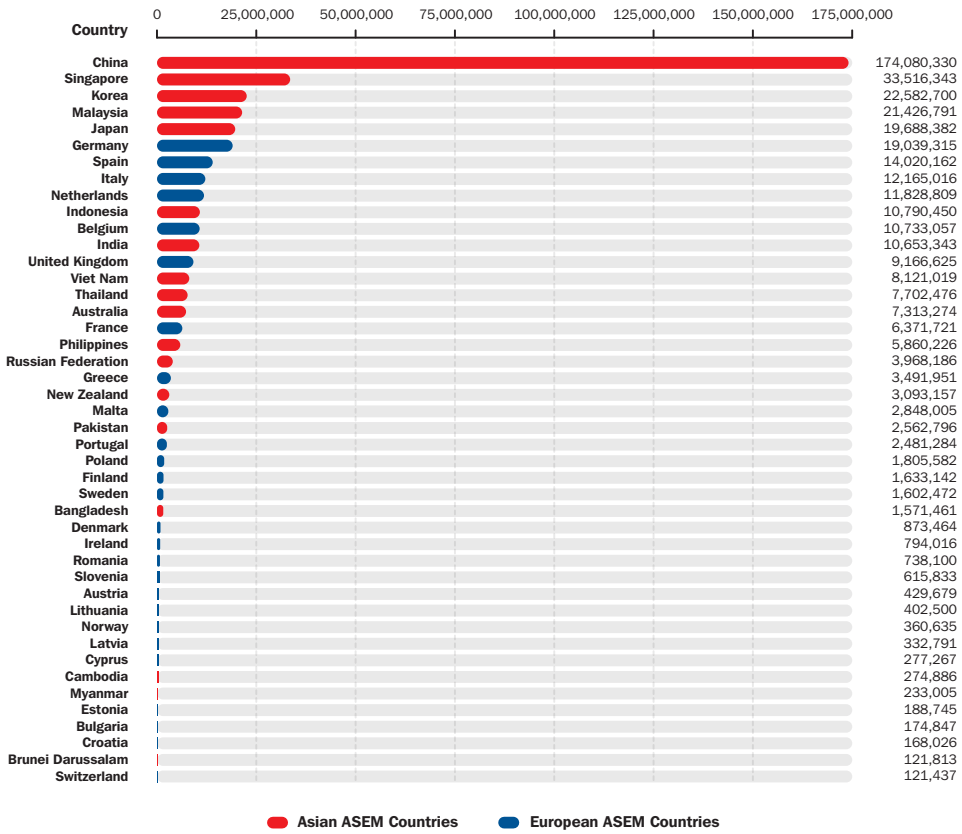
The data captures the total route of rail lines in 42 ASEM countries.[99]

Rail lines constitute the length of railway routes available for train services. The number of parallel tracks is not considered. The measure reflects the ease of transportation within a country, which is vital to the efficient functioning of economic activities, the everyday mobility of people and the cohesion of the population.

Overall, the data correlates with land area, with the Russian Federation and China housing the longest rail lines. Some anomalies include Kazakhstan, with a land area of 2,699,700 sq. km, coming 11th in the list; Indonesia, with a land area of 1,811, 570 sq. km, placed 20th in the list; and Australia, with a land area of 7,682,300 sq. km, at 37th in the list.

99 Data available for 42 ASEM countries only. Data for Brunei Darussalam, Cambodia, Cyprus, the Lao PDR, Malta, Myanmar, New Zealand, the Philippines and Singapore are not available.

### 2.20. Container port traffic in ASEM countries (20-foot equivalent units, 2013)




*Source: The World Bank (2016) Container port traffic (TEU: 20 foot equivalent units)*[100]

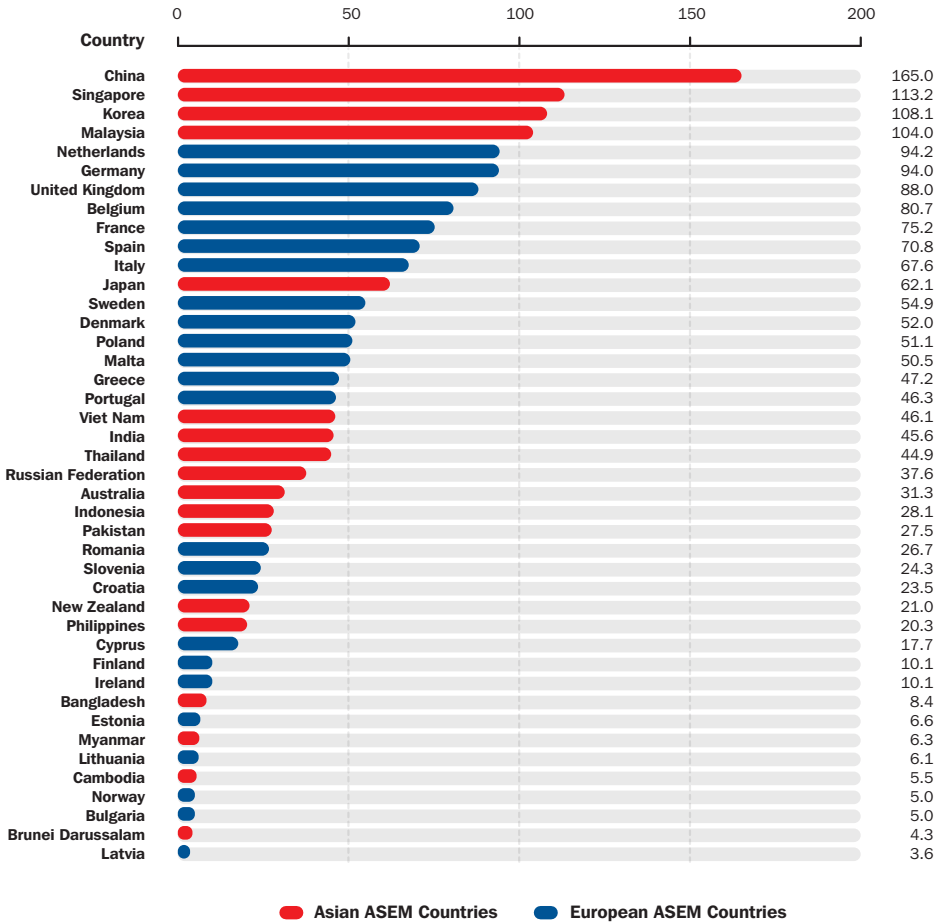
The data captures the volume of container port traffic in 44 ASEM countries[101] for which data was available for 2013. Container port traffic looks at the flow of containers moved from land to sea and vice versa, in standard-size containers (20-foot equivalent units or TEUs). Data refers to both coastal shipping and international journeys. Transhipment traffic at the intermediate port is counted as two lifts, once to offload and again as an outbound lift. It also includes empty units.

China leads by a large margin, with 174,080,330 TEUs. China's high rate of economic growth has been mainly driven by an industrialisation strategy focused on exports. Singapore ranks second with 33,516,343 TEUs, explained by its role as one of the world's top trading hubs.

100 The World Bank (2016) *Container port traffic (TEU: 20 foot equivalent units).* Available at: http://data.worldbank.org/indicator/IS.SHP.GOOD.TU/countries?display=default [Accessed 8 March 2016].

101 Data available for 44 ASEM countries only. Data on the Czech Republic, Hungary, Kazakhstan, the Lao PDR, Luxembourg, Mongolia and Slovakia are not available.

## 2.21. The Liner Shipping Connectivity Index (2014)




*Source: The World Bank (2016) Liner shipping connectivity index (maximum value in 2004 = 100)*[102]

102 The World Bank (2016) *Liner shipping connectivity index (maximum value in 2004 = 100).* Available at: http://data.worldbank.org/indicator/IS.SHP.GCNW.XQ [Accessed 8 March 2016].

The *Liner Shipping Connectivity Index* (LSCI) measures how well a country is connected to global shipping networks, which is an indication of a country's accessibility to global trade. The index is based on four components: the frequency of ships calling the port (for imports, exports or transhipment activities); carrying capacity of containers; number of shipping companies deploying vessels into a country's port; and maximum vessel size. A higher index value indicates easier access to a global maritime freight transport system with high capacity and high frequency, which means greater participation in international trade.[103]

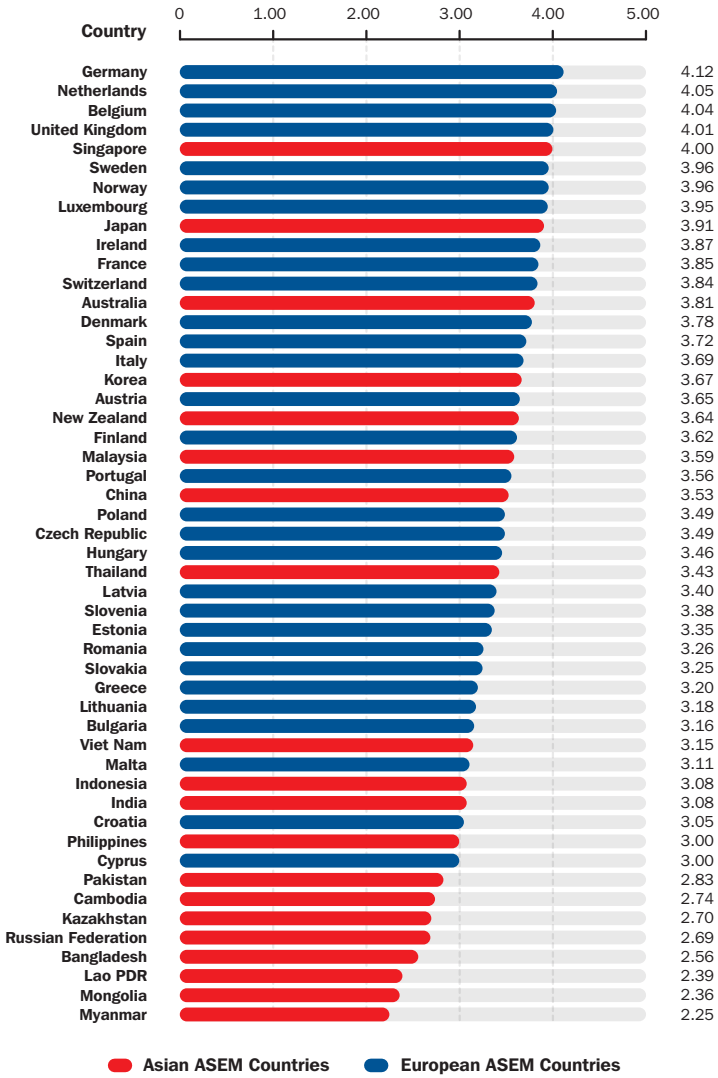
The data captures the LSCI of 42 ASEM countries[104]. It mostly corresponds with that of container port traffic, with China and Singapore leading with indexes of 165.0 and 113.2 respectively. Singapore's high LSCI index can be explained by the high volume of transhipment activities it sees as a transhipment hub. Japan features as an exception, with an index of 62.1 despite container port traffic of 19,688,382 TEUs. This is roughly 600,000 TEUs more than Germany, although Germany has an LSCI of 94.0. This shows that Japan's shipments are mostly domestic.

In contrast, the UK has an LSCI of 88.0 despite container port traffic of only 9,166, 625 units, indicating a much higher volume of trade with other countries.

103 The Geography of Transport Systems. (2016) *Liner Shipping Connectivity Index and Container Port Throughput* Available at: https://people.hofstra.edu/geotrans/eng/ch3en/conc3en/liner_shipping_connectivity_index.html [Accessed 10 March 2016].

104 Data available for 42 countries only. Data on Austria, the Czech Republic, Hungary, Kazakhstan, the Lao PDR, Luxembourg, Mongolia, Slovakia and Switzerland are not available.

## 2.22. Logistics Performance Index (2014)




*Source: The World Bank (2016) Logistics Performance Index*[105]

105 The World Bank (2016) *Logistics Performance Index*. Available at: http://lpi.worldbank.org/international/scorecard [Accessed 8 March 2016].

The *Logistics Performance Index* (LPI) is an interactive benchmarking tool created to help countries identify the challenges they face in their performance on trade logistics and the steps they may take to improve. The LPI measures the efficiency of trade supply chains on a scale of one to five, with five indicating the most logistics-friendly countries. The international score uses six key dimensions[106] to benchmark countries' performance and also displays the derived overall LPI index. It allows global comparisons on the six indicators and the overall LPI index. However, a country's actual ranking or score should not be interpreted in isolation, but relative to other performers. It is important to note that the LPI is a perception index, based on surveys of logistics professionals' perception of each country's performance in the six areas.

The data compares the LPI scores of 50 ASEM countries.[107] The countries with the best LPI scores are overwhelmingly high income countries, including Germany, the top performer with a score of 4.12, and countries like the Netherlands (4.05) and Belgium (4.04). This is explained by the healthy policy environment and concerted efforts in ensuring infrastructure provision, regulation and development of services and facilitation of trade through friendly border procedures. Meanwhile the poorest performing countries are low income Asian countries, such as Myanmar, with the lowest score of 2.25 and Mongolia (2.36). Disadvantageous geographic factors such as being landlocked, hinder, and often disrupt, the ability of the government to direct policies towards improving trade logistics.[108]

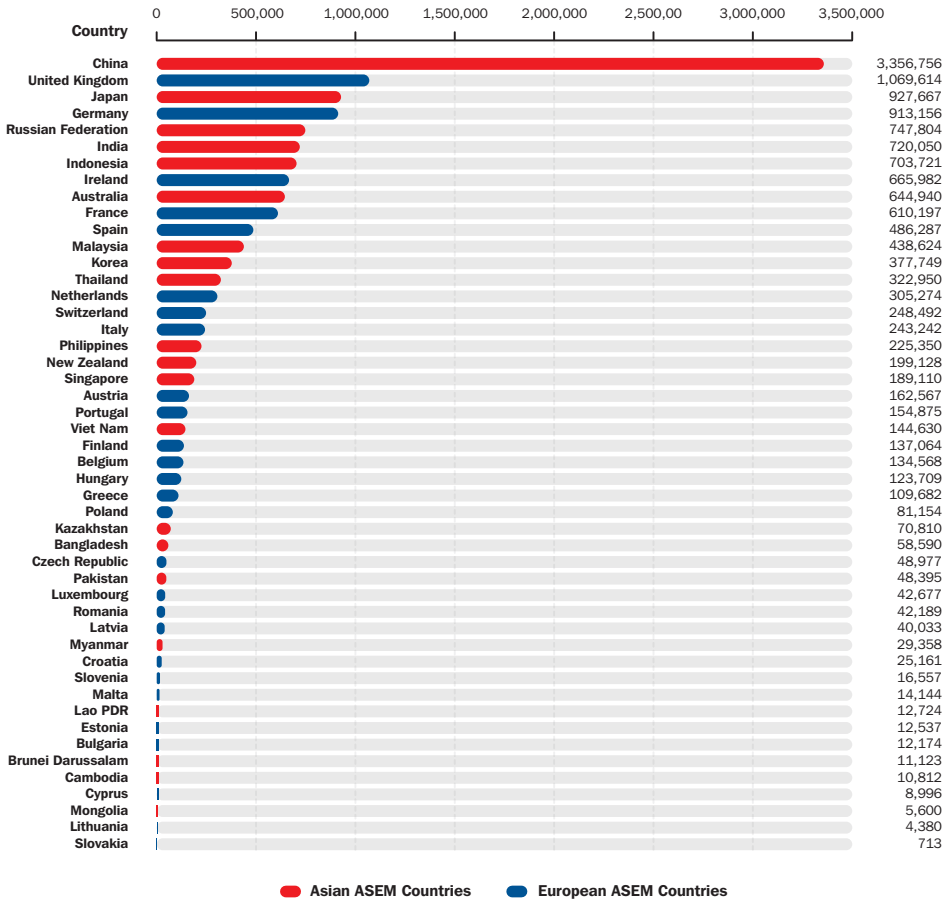
Since 2007, the importance of trade logistics for economic growth has been widely established. Good governance and geographical challenges to connectivity hinder a country's effectiveness in facilitating trade. Greater sharing of information on policy making and coordination among countries to facilitate trade will help low income and poor performing countries improve their logistic performance.

106 The logistics performance index (LPI) is the weighted average of the country scores on six key dimensions: efficiency of the clearance process by border control agencies, including customs; quality of trade and transport related infrastructure; ease of arranging competitively priced shipments; competence and quality of logistics services (e.g., transport operators, customs brokers); ability to track and trace consignments and timeliness of shipments in reaching destination within the scheduled or expected delivery time.

107 Data available for 50 ASEM countries only. Data for Brunei Darussalam is not available.

108 The World Bank (2014) *Connecting to Compete 2014. Trade Logistics in the Global Economy. The Logistics Performance Index and Its Indicators.* The International Bank for Reconstruction and Development. Available at: http://www.worldbank.org/content/dam/Worldbank/document/Trade/LPI2014.pdf [Accessed 25 February 2016].

### 2.23. Departures of air carriers registered in ASEM countries (2014)




*Source: The World Bank (2016) Registered carrier departures worldwide*[109]

Registered carrier departures worldwide include domestic and out-of-the-country departures by air carriers registered in the country. For statistical use, departures are equal to the number of landings made or flight stages flown.[110]

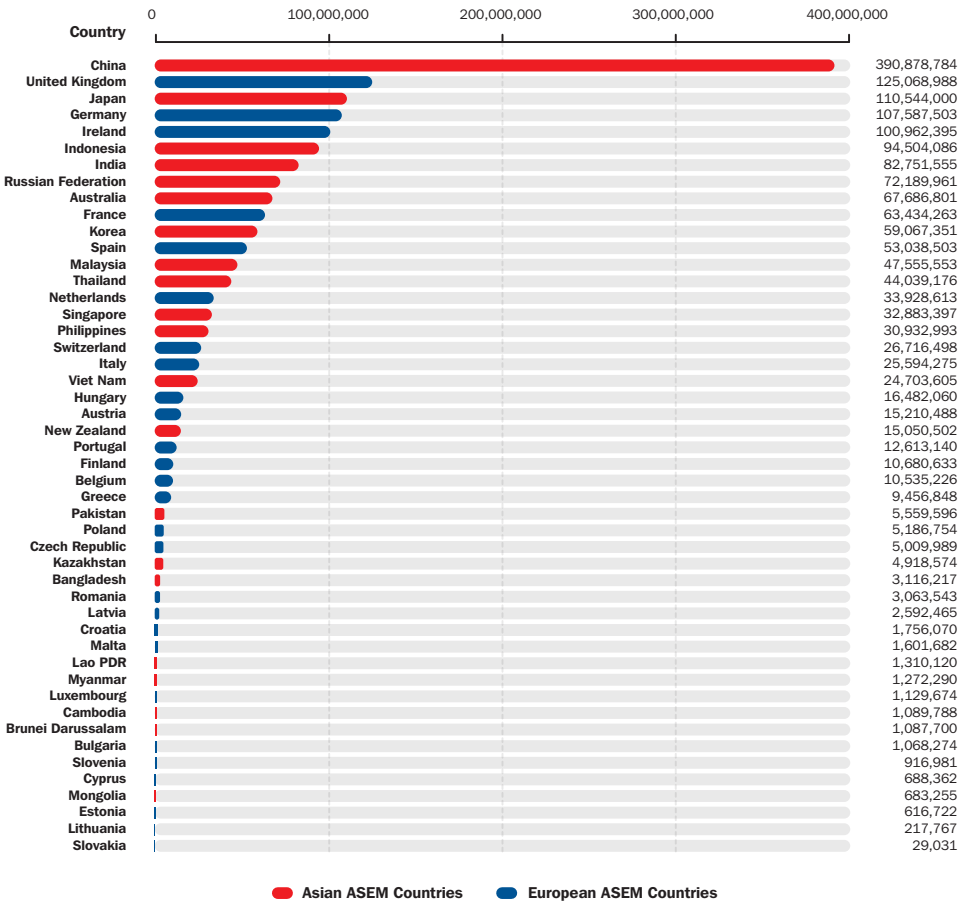
The data captures the number of registered carrier departures of 48 ASEM countries.[111] The distribution of registered carrier departures mirrors that of the total aircraft passengers.

109 The World Bank (2016) *Registered carrier departures worldwide.* Available at: http://data.worldbank.org/indicator/IS.AIR.DPRT/countries [Accessed 8 March 2016].

110 A flight stage is the operation of an aircraft from take-off to its next landing.

111 Data available for 48 ASEM countries only. Data on Denmark, Norway and Sweden are not available.

## 2.24. Domestic and international aircraft passengers of air carriers registered in ASEM countries (2014)




*Source: The World Bank (2016) Air transport, passengers carried*[112]

112 The World Bank (2016) *Air transport, passengers carried.* Available at: http://data.worldbank.org/indicator/IS.AIR.PSGR [Accessed 8 March 2016].

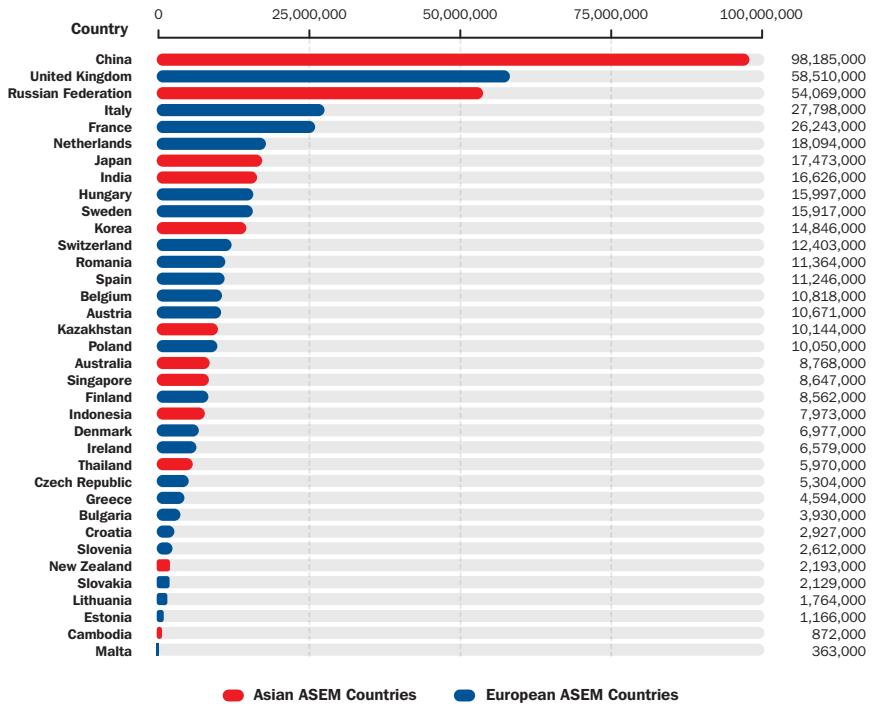
The data captures the number of all aircraft passengers, domestic and international, on registered air carriers in 48 ASEM countries in 2014.[113]

China had the largest volume of aircraft passengers (390,878,784) in 2014, leading by a wide margin. Countries with growing populations, increasing living standards and rising rates of economic growth are experiencing rapid aircraft passenger growth rates. This includes China at 5.6% per year, India (6.9% per year), Indonesia (6.4% per year), the Philippines (5.9% per year) and Viet Nam with 6.2% per year.[114] European countries like the United Kingdom, Germany, France and Italy, as well as Japan, are experiencing slow passenger growth rates, reflecting their declining and ageing population, and are expected to see a decline in their rankings.

113 Data available for 48 ASEM countries only. Data on Sweden, Norway and Denmark are not available.

114 IATA (2016) *New IATA Passenger Forecast Reveals Fast-Growing Markets of the Future*. Available at: http://www.iata.org/pressroom/pr/Pages/2014-10-16-01.aspx. [Accessed 24 February 2016].

**2.25. International outbound tourists in ASEM countries (number of departures, 2013)**




*Source: The World Bank (2016) International tourism, number of departures*[115]

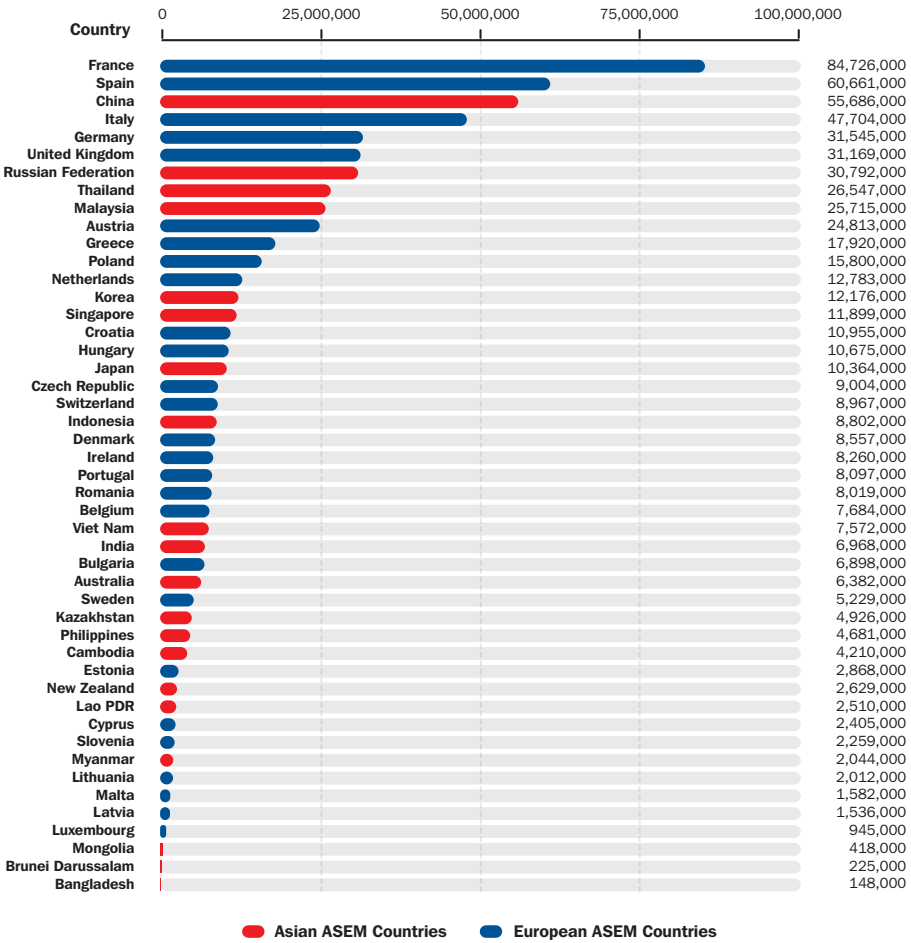
International outbound tourists measures the number of departures people make from their country of usual residence to another country for any purpose, other than one in which they are remunerated. The data on outbound tourists refers to the number of departures registered, not to the number of people traveling. A person who travels out of the country several times during a given period is counted each time as a new departure.

The data presents the number of international tourists travelling out of the country for 36 ASEM countries.[116] Large countries such as China, with 98,185,000 international outbound tourists, the United Kingdom with 58,510,000 international outbound tourists and the Russian Federation with 54,069,000 international outbound tourists top the list. This is due to the large number of households able to afford international travel. As well as contributing in numbers to global tourism, China also has the highest-spending tourists. Destination countries such as the United Kingdom have made concerted efforts to encourage Chinese tourists, including reducing the cost of visas by almost 75%.

115 The World Bank (2016) *International tourism, number of departures.* Available at: http://data.worldbank.org/indicator/ST.INT.DPRT [Accessed 8 March 2016].

116 Data available for 36 ASEM countries only. Data on Bangladesh, Brunei Darussalam, Cyprus, Germany, the Lao PDR, Latvia, Luxembourg, Malaysia, Mongolia, Myanmar, Norway, Pakistan, the Philippines, Portugal and Viet Nam are not available.

## 2.26. International inbound tourists in ASEM countries (number of arrivals, 2013)




*Source: The World Bank (2016) International tourism, number of arrivals*[117]

117 The World Bank (2016) *International tourism, number of arrivals.* Available at: http://data.worldbank.org/indicator/ST.INT.ARVL [Accessed 8 March 2016].

The data presents the number of international inbound tourists in 47 ASEM countries.[118] International inbound tourists are the number of tourists who travel to a country outside of their residence for a period no longer than 12 months, with the main purpose of visiting. Sources and collection methods for arrivals differ across countries.[119] The data on inbound tourists measures the number of arrivals in 2013, not the number of people traveling. A tourist who enters the country several times during a given period is counted each time as a new arrival. Purpose for visits include business and trade, higher education (of less than 12 months), research and development, security, response to epidemics and medical treatment.

European countries saw strong performance in tourism from 2012, with a regional growth rate of 5%. Large Western European destinations, France, with 84,726,000 international inbound tourists, Spain (60,661,000) and Germany (31,545,000) dominate the list. While several countries saw flat, and even negative, growth, overall regional tourist arrivals remained high with strong rates of growth observed even in low-ranking countries. Lithuania, ranked 41 out of 47, experienced an 8% increase in international inbound tourists and Malta, ranked 42 out of 47, experienced an 8.7% increase.[120] This increase in tourism demand coincided with a pick-up in economic outlook in mid-2013 as the Eurozone economy emerged from the longest recession in three decades.

Tourist arrivals stem from intra-regional travel and long-haul travel. The high volume of inbound tourists in Croatia and Hungary, the top performing Eastern European countries, was in part driven by strong growth in tourist arrivals from western European countries such as the United Kingdom and France.[121] Tourist arrivals from Asian countries also contributed significantly to European tourism. Rising household incomes in emerging Asian economies, such as China, facilitated international travel to European destinations. Chinese travel has continued to grow strongly in most European destinations, with slowing economic growth impacting business trips more than leisure. Chinese arrivals into Europe reached eight million in 2013, accounting for 33.8% of all Chinese long haul flights. Strong growth in tourist arrivals to destinations such as Estonia (39% increase from 2012), Germany (19% increase from 2012) and the United Kingdom (15% increase from 2012) was observed.[122]

118 Data available for 47 ASEM countries only. Data on Finland, Norway, Pakistan and Slovakia are not available.
119 Some countries include arrivals of nationals residing abroad while others do not. Caution should be taken in comparing arrivals across the countries.
120 European Travel Commission (2013) *European Tourism 2013 – Trends & Prospects. Quarterly Report Q3/2013.* Available at: http://www.etoa.org/docs/default-source/Reports/other-reports/2013-q3-trends-and-prospects-by-etc.pdf?sfvrsn=2 [Accessed 29 February 2016].
121 Ibid.
122 Ibid.

## 2.27. Asia-Pacific's top 10 destination cities by international overnight visitors and cross-border spending (2015)

| 2015 rank (2014 rank) | Destination City | 2015 Overnight International Visitors (million) | | | | | Percentage of growth from 2014 and 2015 | 2015 Visitor Spending (USD billion) |
|---|---|---|---|---|---|---|---|---|
| | | 2011 | 2012 | 2013 | 2014 | 2015 | | |
| 1 (1) | Bangkok | 13.80 | 15.82 | 17.47 | 16.89 | **18.24** | 8.0% | 12.4 |
| 2 (2) | Singapore | 10.39 | 11.10 | 11.90 | 11.53 | **11.88** | 3.0% | 14.7 |
| 3 (3) | Kuala Lumpur | 9.48 | 9.63 | 9.89 | 10.53 | **11.12** | 5.6% | 12.0 |
| 4 (4) | Seoul | 6.56 | 7.51 | 8.03 | 9.84 | **10.35** | 5.2% | 15.2 |
| 5 (5) | Hong Kong | 8.43 | 8.37 | 8.26 | 8.37 | **8.66** | 3.5% | 7.4 |
| 6 (6) | Tokyo | 3.26 | 4.89 | 5.40 | 7.68 | **8.08** | 5.1% | 8.4 |
| 7 (7) | Taipei[123] | 3.96 | 4.70 | 5.83 | 6.38 | **6.55** | 2.5% | 9.3 |
| 8 (8) | Shanghai | 6.18 | 6.04 | 5.71 | 5.68 | **5.85** | 3.0% | 5.1 |
| 9 (9) | Mumbai | 4.82 | 2.65 | 4.16 | 4.45 | **4.75** | 6.6% | 3.3 |
| 10 (11) | Osaka | 1.81 | 2.41 | 3.32 | 4.22 | **4.58** | 8.5% | 2.7 |

**Asian ASEM Cities** **Other Cities**

*Source: Hedrick-Wong, Y. and Choong, D. (2015) MasterCard 2015 Global Destination Cities Index*[124]

The data ranks the top 10 destination cities in Asia-Pacific according to the number of international overnight visitors[125] and their level of expenditure[126] in the destination city for 2015.

Bangkok, the second most popular destination in the world behind London, tops the Asia-Pacific list in international overnight visitors at 18.24 million in 2015. Singapore (11.88 million) ranks second, followed by Kuala Lumpur (11.12 million), Seoul (10.35 million) and Hong Kong (8.66 million). Besides the vibrancy and attractiveness of these cities, the degree of air connectivity, such as the capacity of a city's airport and the frequency of flight connections between the city's airport and other destinations, are important factors for drawing international tourists.

Diversification is important for cities to retain their position as top destinations. While cities such as Istanbul, with 50% of its international visitors coming from 33 feeder cites, and London, with 26 feeder cities, have highly diversified sources of visitors, Asian cities tend to be less diversified and hence less resilient. Bangkok's international visitors come from only 13 feeder cities, accounting for 50% of its international visitors. While Asian cities are rapidly becoming top destination countries, it is important that they diversify their sources to maintain their robust growth rates.

Seoul ranks first in cross-border spending, with USD 15.2 billion in visitor expenditure, followed by Singapore at USD 14.7 billion. Bangkok (USD 12.4 billion) comes third in visitor expenditure, due to its much lower cost of living.

123 'Taipei' refers to the capital city of the Taiwan Province of China.

124 Hedrick-Wong, Y. and Choong, D. (2015) *MasterCard 2015 Global Destination Cities Index*. Available at: https://newsroom.mastercard.com/wp-content/uploads/2015/06/MasterCard-GDCI-2015-Final-Report1.pdf [Accessed 8 March 2016].

125 Compared to international inbound tourists, international overnight arrivals consider people who actually stay in the destination for at least one night. This is opposed to cases where the disembarkation city is merely a transit point while the destination city may be some other city in the same country.

126 Where possible, the estimated international overnight visitor expenditure in each city was sourced directly from official statistics or estimated using data from national international visitor surveys.

## 2.28. Europe's top 10 destination cities by international overnight visitors and cross-border spending (2015)

| 2015 rank (2014 rank) | Destination City | 2015 Overnight International Visitors (million) | | | | | Percentage of growth from 2014 and 2015 | 2015 Visitor Spending (USD billion) |
|---|---|---|---|---|---|---|---|---|
| | | 2011 | 2012 | 2013 | 2014 | **2015** | | |
| 1 (1) | **London** | 15.29 | 15.46 | 16.78 | 17.75 | **18.82** | 6.0% | 20.2 |
| 2 (2) | **Paris** | 14.02 | 14.29 | 15.52 | 15.56 | **16.06** | 3.2% | 16.6 |
| 3 (3) | **Istanbul** | 7.51 | 8.82 | 9.87 | 11.27 | **12.56** | 11.4% | 9.4 |
| 4 (4) | **Barcelona** | 6.89 | 6.91 | 7.18 | 7.42 | **7.63** | 2.9% | 13.9 |
| 5 (5) | **Amsterdam** | 6.07 | 6.10 | 6.65 | 7.29 | **7.44** | 2.1% | 3.7 |
| 6 (6) | **Rome** | 6.66 | 6.73 | 7.04 | 7.05 | **7.41** | 5.0% | 5.3 |
| 7 (7) | **Milan** | 6.59 | 6.88 | 6.99 | 7.01 | **7.17** | 2.3% | 4.9 |
| 8 (8) | **Vienna** | 5.08 | 5.38 | 5.55 | 5.66 | **5.81** | 2.6% | 4.6 |
| 9 (9) | **Prague** | 4.36 | 4.92 | 5.05 | 5.23 | **5.47** | 4.5% | 3.3 |
| 10 (10) | **Munich** | 4.01 | 4.38 | 4.58 | 4.79 | **4.86** | 1.3% | 5.6 |

**European ASEM Cities** **Other Cities**

*Source: Hedrick-Wong, Y. and Choong, D. (2015) MasterCard 2015 Global Destination Cities Index*[127]

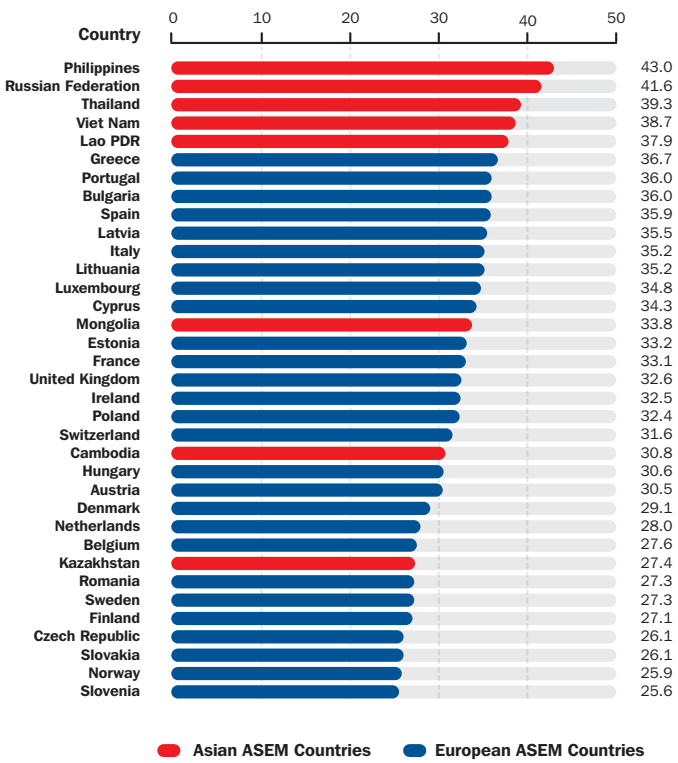
The data ranks the top 10 destination cities in Europe according to the number of international overnight visitors and their level of expenditure for 2015. London, the top destination city in the world according to international overnight visitors and their level of expenditure, naturally dominates the ranks on measures in Europe as well.

Looking at the ranking by international overnight visitors, Paris comes in second and Istanbul third. Between 2014 and 2015, Istanbul registered a much higher growth rate than Paris, at 11.40% with Paris at 3.2%. If its international visitor numbers continue to grow at these rates, in four years' time Istanbul will overtake Paris to become the second-ranked city in Europe.

127 Hedrick-Wong, Y. and Choong, D. (2015) *MasterCard 2015 Global Destination Cities Index*. Available at: https://newsroom.mastercard.com/wp-content/uploads/2015/06/MasterCard-GDCI-2015-Final-Report1.pdf [Accessed 8 March 2016].

# 3. Sustainable Development

## 3.1. Gini index in ASEM countries (2012)




*Source: The World Bank (2016) GINI index (World Bank estimate)*[128]

128 The World Bank (2016) *GINI index (World Bank estimate).* Available at: http://data.worldbank.org/indicator/SI.POV.GINI [Accessed 8 March 2016].

The data presents the Gini coefficient scores of 35 ASEM countries[129], attempting to reflect the degree of income inequality within each country. The Gini coefficient is a measure of statistical dispersion intended to represent the income distribution of a country's residents and measures the inequality among values of a frequency distribution.

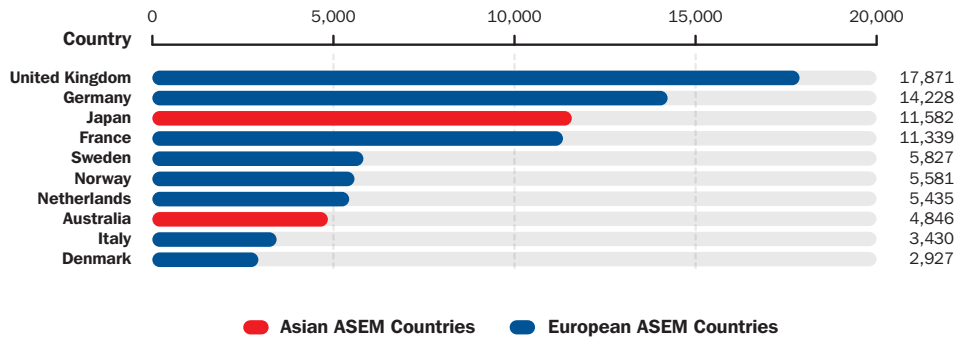
A Gini coefficient of 0 expresses perfect equality, where all values are the same, i.e. where everyone has the same income. A Gini coefficient of 1, or 100%, expresses maximal inequality among values, where only one person has all the income. However, a value greater than 1 may occur if some people represent a negative contribution to the total, i.e. have negative income or wealth. For larger groups, values close to, or above, 100% are very unlikely in practice.[130]

This measure is not without its disadvantages. The Gini coefficient tends to oversimplify the inequality situation within a country. It does not take different forms of inequality into account or consider the different inequalities between sub-groups within a population. For example, the measure gives different results when applied to individuals and when applied to households. In addition, when different populations are measured with inconsistent definitions, the comparisons tend to lose meaning.

129 Data available for 35 ASEM countries only.

130 Bellù, L.G. and Liberati, P. (2006) *Inequality Analysis: The GIni Index*. Food & Agricultural Organization of the United Nations, FAO. Available at http://www.fao.org/docs/up/easypol/329/gini_index_040en.pdf [Accessed 1 March 2016].

### 3.2. Top 10 official development assistance donors among ASEM countries (USD million, 2013)




*Source: OECD (2016) Aid statistics by donor, recipient and sector*[131]

The data presents the 10 ASEM countries that provided the most official development assistance (ODA) to recipient countries in 2013.

European Development Assistance Committee (DAC) members represent 8 of the top 10 donors, with the exception of Japan and Australia. The collective net ODA contribution by the EU, including contributions from EU institutions and EU member states, totalled USD 87.1 billion in 2013, with net ODA by the 28 EU member states totaling USD 71.2 billion and that of EU institutions totaling USD 15.9 billion.[132] EU DAC members' contributions made up 52% of total DAC ODA in this year.[133]

The United Kingdom was the top donor amongst ASEM countries, at USD 17,871 million, accounting for 13.3% of total DAC ODA, followed by Germany, Japan, France and Sweden. More than half of the top donors remain some way from reaching the UN's recommendation of 0.7 % ODA/GNI.[134] Among the top 10 donors, the United Kingdom (0.72%[135]), Sweden (1.01%), Norway (1.07%) and Denmark (0.85%) were the only donors to have reached the 0.7% ODA/GNI target.[136] Another country that has reached this target is Luxembourg.

131 OECD (2016) *Aid statistics by donor, recipient and sector.* Available at: http://www.compareyourcountry.org/aid-statistics?cr=613&cr1=oecd&lg=en&page=0 [Accessed 8 March 2016].

132 OECD (2014) *Aid to Developing Countries Rebounds in 2013 to Reach an All-Time High.* Available at: http://www.oecd.org/newsroom/aid-to-developing-countries-rebounds-in-2013-to-reach-an-all-time-high.htm [Accessed 5 March 2016].

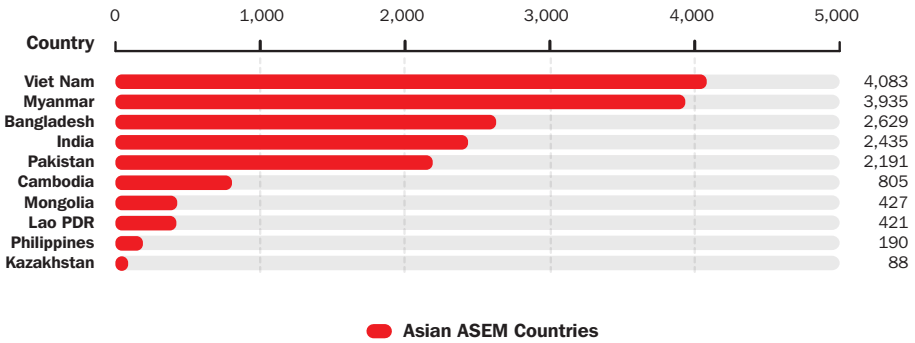
133 Ibid.

134 In 1970, the United Nations General Assembly endorsed a target stating that each donor should aim to spend 0.7% of its gross national income (GNI) as ODA.

135 Using the European System of Accounts 1995 (ESA95), a provisional estimate showed the ODA:GNI ratio in 2013 was 0.72%. This revised estimate of GNI (ESA95) produces a lower ODA:GNI ratio of 0.69%. Using the ESA2010 estimate for GNI produces an ODA:GNI ratio of 0.67% in 2013.

136 European Commission (2015) *European Commission Calls for Renewed Commitments to Reach Targets on Official Development Assistance.* Available at: http://europa.eu/rapid/press-release_IP-15-4747_en.htm [Accessed 5 March 2016].

### 3.3. Top 10 official development assistance recipients among ASEM countries (USD million, 2013)




*Source: OECD (2016) Aid statistics by donor, recipient and sector*[137]

The data presents the 10 ASEM countries that received the most official developmental assistance (ODA) in 2013.

Net ODA is the flow of resources, including loans and grants, to developing countries from donor countries, including members and non-members of the Developmental Assistance Committee (DAC), and multilateral institutions. It is administered according to the economic development and welfare of developing countries in the DAC list of ODA recipients.

Viet Nam received the greatest net volume of ODA in 2013 (USD 4,083 million), followed by Myanmar (USD 3,935 million), Bangladesh (USD 2,629 million), India (USD 2,435 million) and Pakistan (USD 2,191 million). Looking at bilateral ODA, Japan is a major donor, accounting for 43.6% of total net ODA in Viet Nam[138], 70.4% in Myanmar and 58.5% in India. Since Japan's adoption of its first ODA Charter in 1992, its focus has been on Asia, a natural outcome of its geographical, social and economic interest.[139] Bangladesh and Pakistan receive the greatest share of ODA from the multilateral channel of the International Development Association (IDA). Japan directs almost 60% of its ODA contributions to Asia[140] while the United Kingdom and Germany, who feature amongst the top European ODA donors, direct roughly 20% and 30% of their ODA contributions to this region respectively.

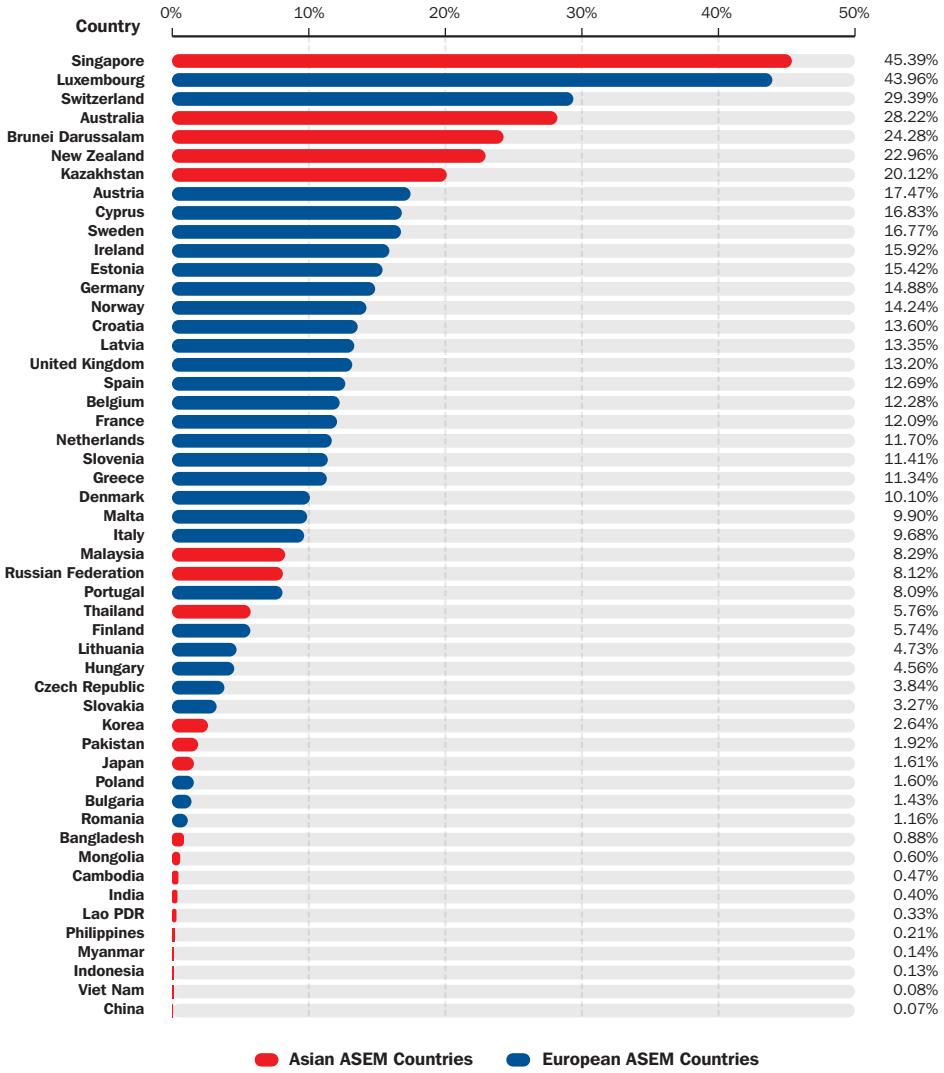
137 OECD (2016) *Aid statistics by donor, recipient and sector*. Available at: http://www.compareyourcountry.org/aid-statistics?cr=302&cr1=oecd&lg=en&page=1 [Accessed 8 March 2016].

138 Tableau (2016) *Top 10 Donors of Gross ODA for Viet Nam, 2013-2014 average, USD million.* Available at: https://public.tableau.com/views/OECDDACAidataglancebyrecipient_new/Recipients?:embed=y&:display_count=yes&:showTabs=y&:toolbar=no?&:showVizHome=no [Accessed 6 March 2016].

139 Pan, N. *'Japanese ODA to Asian Countries "An Empirical Study of Myanmar Compared with Cambodia, Laos, and Vietnam"'*, Visiting Scholar Program. Policy Research Institute. Available at: https://www.mof.go.jp/pri/international_exchange/visiting_scholar_program/ws2014_d.pdf [Accessed 5 March 2016].

140 Asia is categorised as South and Central Asia and Rest of Asia.

### 3.4. International migrant stock in ASEM countries (% of population, 2015)



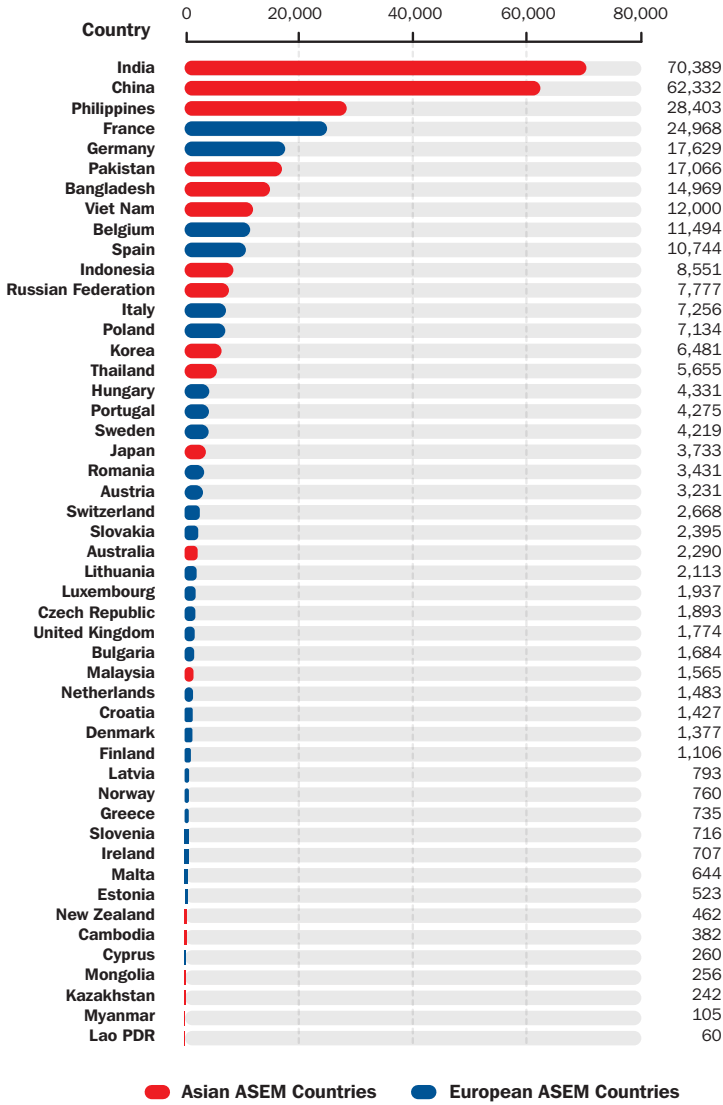

*Source: United Nations Department of Economic and Social Affairs (2015) International migrant stock 2015*[141]

141 United Nations Department of Economic and Social Affairs (2015) *International migrant stock 2015*. Available at: http://www.un.org/en/development/desa/population/migration/data/estimates2/estimates15.shtml [Accessed 8 March 2016].

International migrant stock represents the number of people born in a country other than that in which they live. It also includes refugees. The data presents the percentage of migrants within the populations of all ASEM countries in 2015.

Singapore tops the list, with migrants making up 45.39% of the total population. Close behind are Luxembourg and Switzerland, with migrants making up 43.96% and 29.39% respectively. The two factors that affect this ranking are size of population and level of development of the country. The smallest and richest countries, Singapore, Luxembourg and Switzerland, dominate the upper percentile; larger and developed countries are clustered in the middle, and large and mostly developing nations are concentrated at the lower end. China, with the biggest population, and one of the major countries of origin for migrants, sits well at the bottom of the list with 0.07% migrant concentration.

### 3.5. Migrant remittance inflows (USD million, 2014)




*Source: The World Bank (2016) Migration and Remittances Data*[142]

142 The World Bank (2016) *Migration and Remittances Data*. Available at: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:22759429~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html#Migration [Accessed 8 March 2016].

The data presents the value of remittances sent by nationals of 49 ASEM countries[143] working abroad in their respective countries in 2014. Migrant remittances to developing countries totalled USD 427 billion, an increase of 3.3% from 2013, while global remittances were estimated to reach USD 580 billion.[144] The top 3 receiving countries in 2014, as captured in the data, were India, home to the largest diaspora in the world according to the UN, with USD 70,389 million in remittances, China with USD 62,332 million and the Philippines with USD 28,403 million.

The major sending countries from which India, China and the Philippines received remittances in 2014 varied. Middle Eastern nations, the United Arab Emirates and Saudi Arabia, stood among the top sending countries to both India and the Philippines, while China received most of its remittances from Korea and Japan.

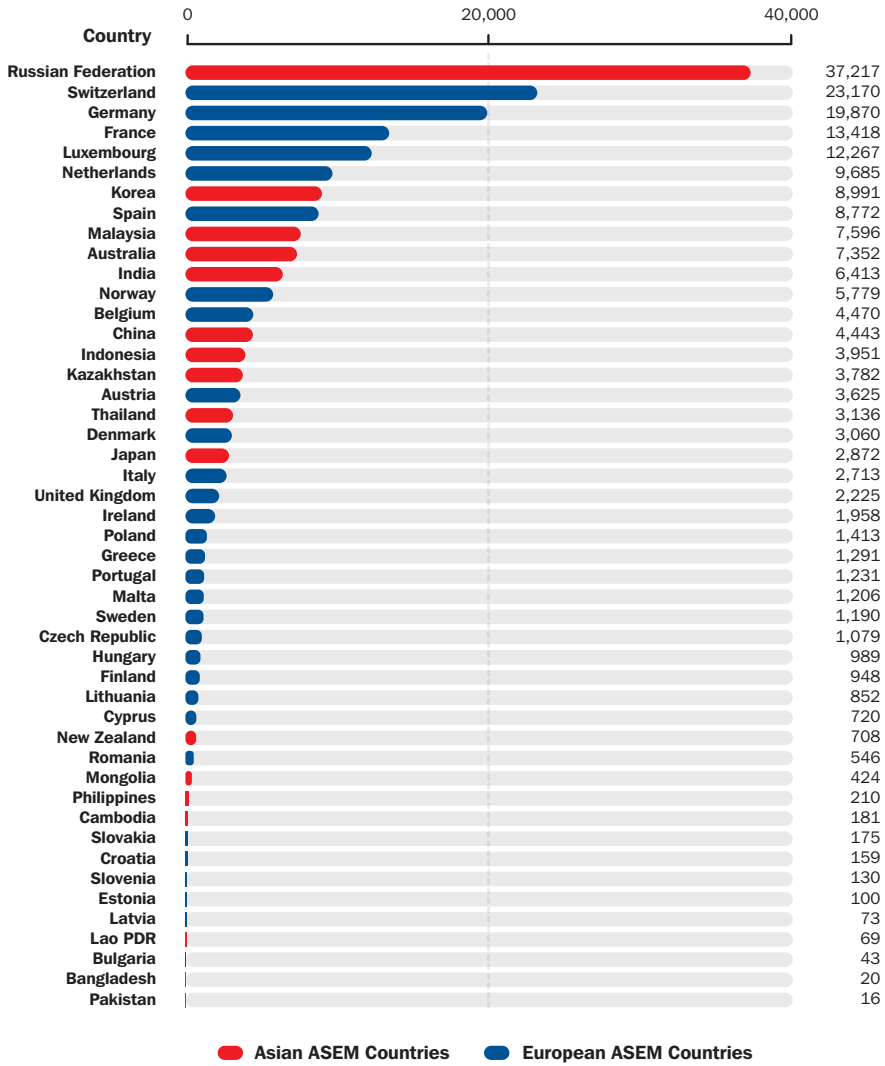
Amongst the top European receiving countries are France, with USD 24,968 million in migrant remittances, and Germany with USD 17,629 million. The main sending countries are neighbouring European nations including Belgium, the United Kingdom and Spain. Remittances from the USA make up the largest share in France (9.5%) and Germany (18.6%). In both top Asian and European receiving countries, the USA featured as one of the main sending countries.

Migrant flows between Asia and Europe are not well reflected in the migrant remittance data. Remittances from European countries made up less than 1% of total remittance inflows on average in the top receiving Asian nations, with the exception of the United Kingdom which sent 5.25% of remittances to India, and that from Asian countries constituted less than 1% of remittance inflows for top European nations.

143 Data available for 49 ASEM countries only. Data is not available for Brunei Darussalam and Singapore.

144 The World Bank (2015) *The World Bank*. Available at: http://www.worldbank.org/en/topic/migrationremittancesdiasporaissues/overview [Accessed 27 February 2016].

### 3.6. Migrant remittance outflows (USD million, 2013)




*Source: The World Bank (2016) Migration and Remittances Data*[145]

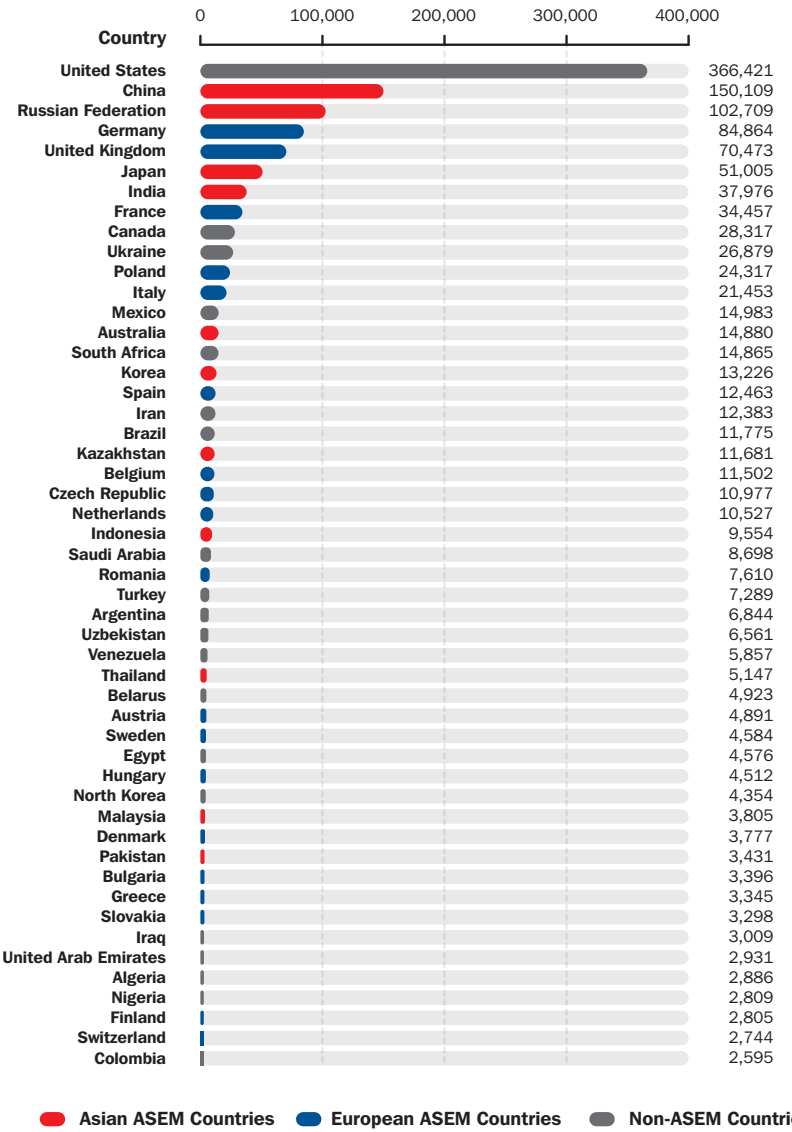
145 The World Bank (2016) *Migration and Remittances Data*. Available at: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTDECPROSPECTS/0,,contentMDK:22759429~pagePK:64165401~piPK:64165026~theSitePK:476883,00.html#Migration [Accessed 8 March 2016].

The data captures migrant remittance outflows in USD millions of 47 ASEM countries[146] in 2013.[147] Wealth and positive regulatory environments for foreign workers characterise the top countries for migrant remittance outflows. The top countries for remittance sending in 2013, include the Russian Federation, with USD 37,217 million, followed by Switzerland with USD 23,170 and Germany with USD 19,870 million.

146 Data available for 47 ASEM countries only. Data for Brunei Darussalam, Myanmar, Singapore and Viet Nam were not available.

147 Data for 2013 was used because too many countries were absent in the data set for 2014.

### 3.7. Historical cumulative $CO_2$ emissions, excluding land use change and forestry ($MtCO_2$, 1850-2012)




*Source: World Resources Institute (2016) '$CO_2$ Emissions Totals - Cumulative Total $CO_2$ Emissions Excluding Land-Use Change and Forestry from 1850 to selected years - 2012 ($MtCO_2$)'*[148]

148 World Resources Institute (2016) *'$CO_2$ Emissions Totals - Cumulative Total $CO_2$ Emissions Excluding Land-Use Change and Forestry from 1850 to selected years - 2012 ($MtCO_2$)'*. CAIT Climate Data Explorer. Available at: http://bit.ly/1UXX7Oi [Accessed 29 February 2016].

The data presents the cumulative $CO_2$ emissions of the top 50 countries worldwide from 1850 to 2012, excluding land use change and forestry (LUCF). $CO_2$ emissions, excluding LUCF trends, mainly reflect energy related human activities, including residential, commercial, industrial and transportation activities which are determined by economic growth and population size.

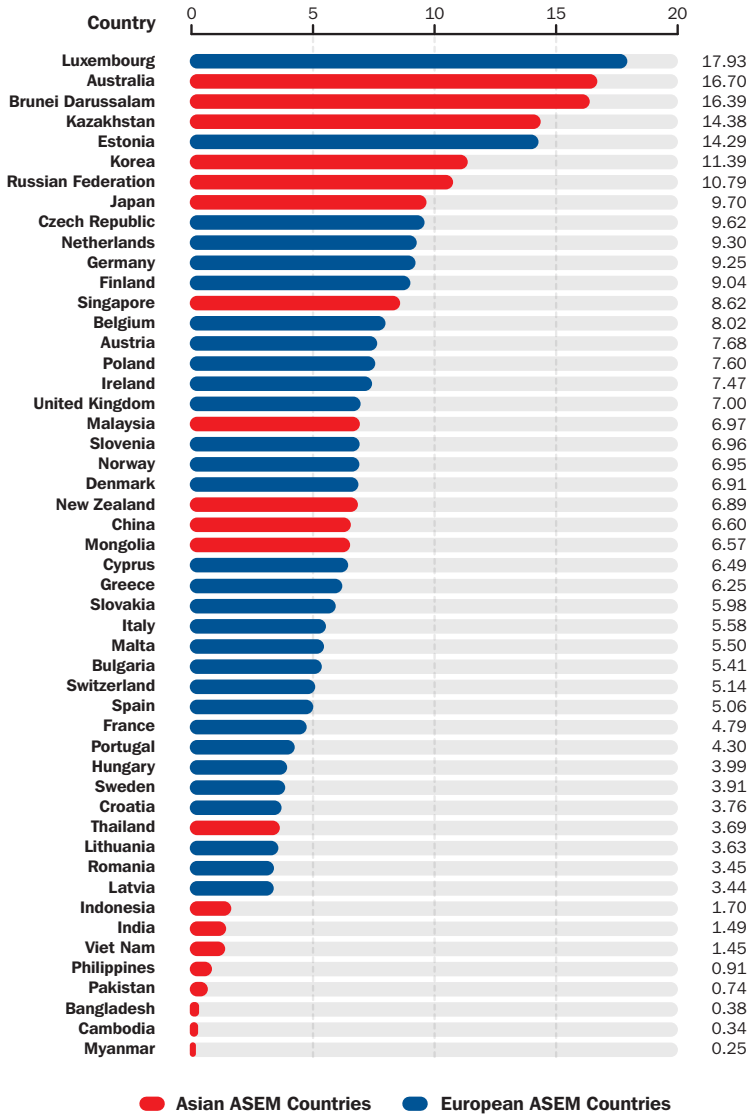
Since the Industrial Revolution, annual $CO_2$ emissions from fuel combustion have increased dramatically from nearly zero to over 32 $GtCO_2$ in 2013.[149] The 2014 concentration of $CO_2$ (397 parts per million (ppm)) was roughly 40% higher than in the mid-1800s, averaging a 2 ppm/year growth rate in the last 10 years.[150]

Increasing demand for energy comes from global economic growth and development. Population growth rates and rate of development explain a country's relative contribution to $CO_2$ emissions since the Industrial Revolution. The USA has emitted the greatest volume of $CO_2$ at 366,421 $MtCO_2$, between 1850 and 2012, followed by China (150,109 $MtCO_2$) and the Russian Federation (102,709 $MtCO_2$).

149 International Energy Agency (2015) *$CO_2$ Emissions From Fuel Combustion Highlights*. Available at: https://www.iea.org/publications/freepublications/publication/$CO_2$EmissionsFromFuelCombustionHighlights2015.pdf [Accessed 1 March 2016].

150 Ibid.

### 3.8. $CO_2$ emissions per capita in ASEM countries ($tCO_2$, 2013)




*Source: International Energy Agency (2015) $CO_2$ Emissions from Fuel Combustion: Highlights*[151]

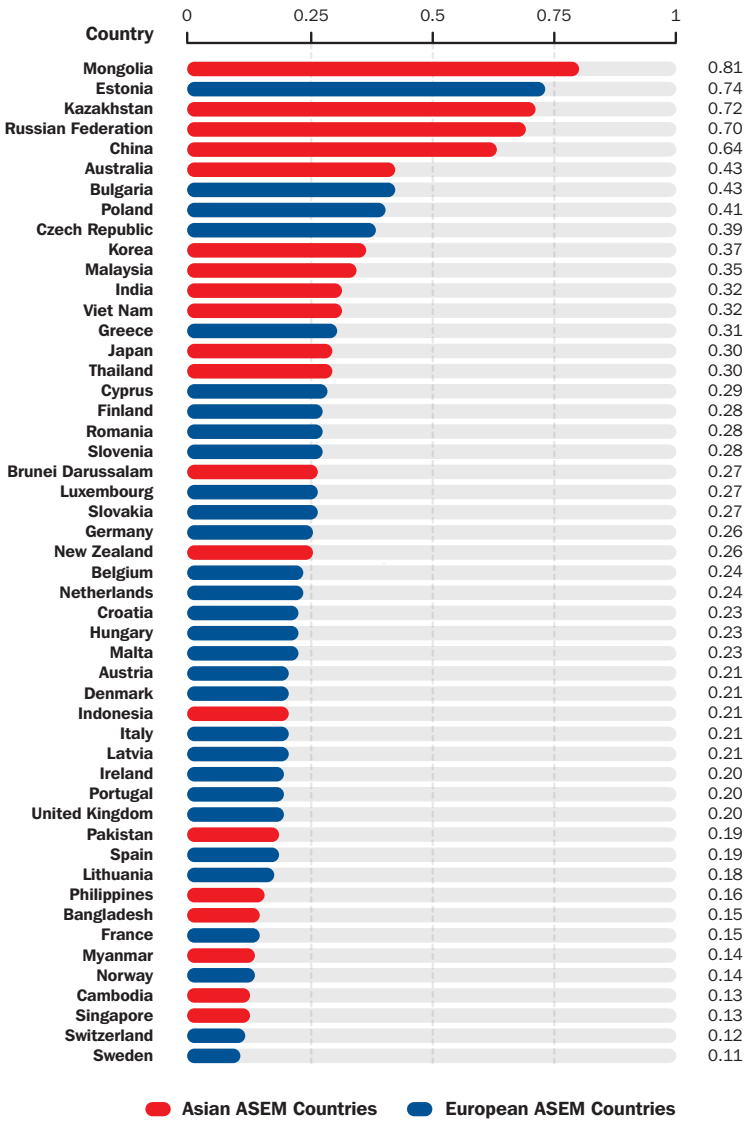
151 International Energy Agency (2015) *$CO_2$ Emissions from Fuel Combustion: Highlights*. Available at: http://www.iea.org/publications/freepublications/publication/$CO_2$EmissionsFromFuelCombustionHighlights2015.pdf [Accessed 6 February 2016].

The data presents the $CO_2$ emissions per capita of 50 ASEM countries.[152] This ratio is expressed in tonnes of $CO_2$ per capita and has been calculated using $CO_2$ fuel combustion emissions.

On average industrialised countries emit far greater volumes of $CO_2$ per capita than developing countries. The range of per capita emission levels across the ASEM countries is very large, spanning from 0.25 to 17.93 $tCO_2$. This highlights large divergences in the way different countries and regions use energy. For example, the top ASEM emitters in terms of gross $CO_2$ emissions include China, India, the Russian Federation, Japan, Germany and Korea, but the levels of per capita emissions amongst these top emitters were very diverse, ranging from 1.49 $tCO_2$ for India and 6.60 $tCO_2$ for China to 11.39 $tCO_2$ for Korea.

152 Data available for 50 ASEM countries only. Data on the Lao PDR is not available.

### 3.9. $CO_2$ emissions per unit of GDP, excluding international emissions ($kgCO_2$/2005 USD, 2013)




*Source: International Energy Agency (2015) $CO_2$ Emissions from Fuel Combustion: Highlights*[153]

153 International Energy Agency (2015) *$CO_2$ Emissions from Fuel Combustion: Highlights*. Available at: http://www.iea.org/publications/freepublications/publication/$CO_2$EmissionsFromFuelCombustionHighlights2015.pdf [Accessed 6 February 2016].

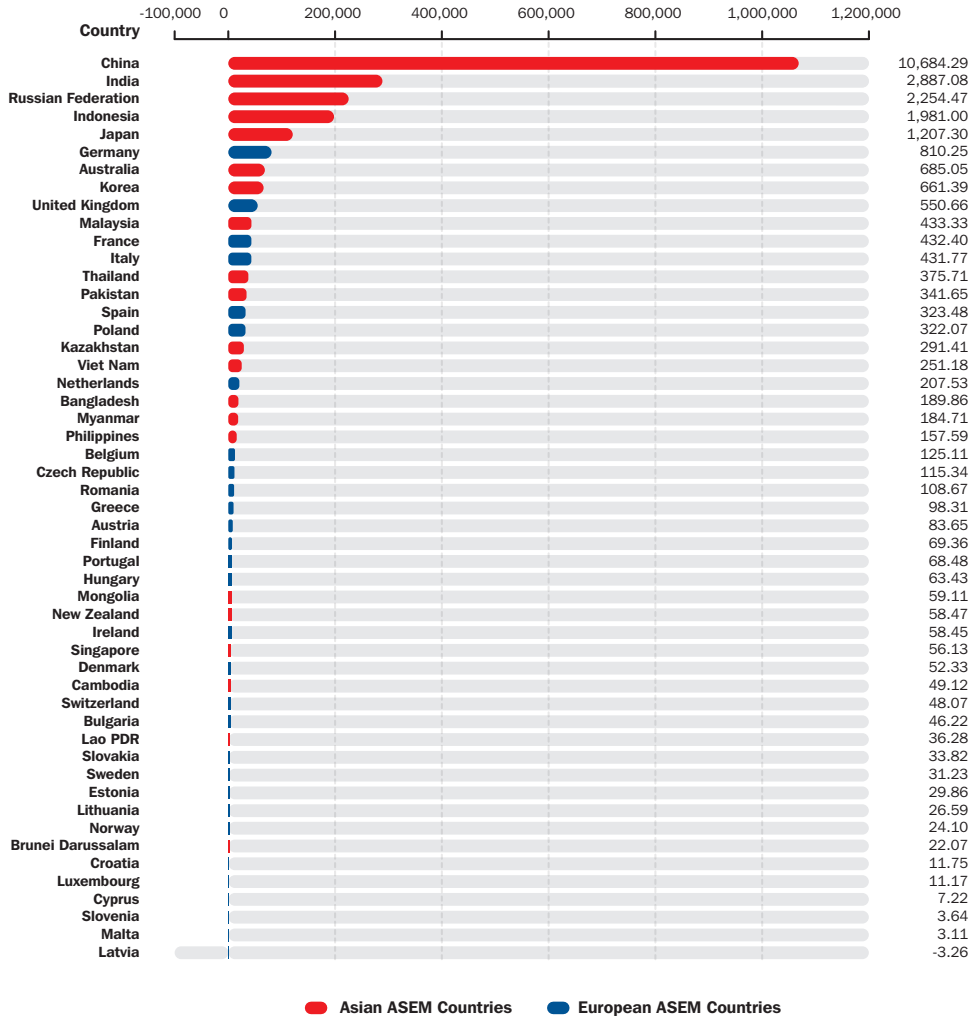
The data presents the $CO_2$ emissions per unit of GDP for 50 ASEM countries.[154] This ratio is expressed in kilogrammes of $CO_2$ per 2005 US dollar. It has been calculated using $CO_2$ fuel combustion emissions and is shown as $CO_2$/GDP using purchasing power parities. International marine and aviation emissions (bunker fuel[155]) were not included in the calculations.

Mongolia (0.81 $kgCO_2$/USD), Estonia (0.74 $kgCO_2$/USD) and Kazakhstan (0.72 $kgCO_2$/USD) rank among the top countries with the highest $CO_2$ emissions for every unit of their GDP, while Singapore (0.13 $kgCO_2$/USD), Switzerland (0.12 $kgCO_2$/USD) and Sweden (0.11 $kgCO_2$/USD) rank the lowest.

This measure is indicative of a country's potential to decouple $CO_2$ emissions from economic growth, switching from carbon intensive fuel to greener options. China, with 0.64 $kgCO_2$/USD, and the Russian Federation, with 0.70 $kgCO_2$/USD, have exhibited pronounced reductions of emissions per GDP over the last two decades in line with the average reduction of 28% observed globally.

154 Data available for 50 ASEM countries only. Data on the Lao PDR is not available.
155 Bunker fuel or bunker crude is technically any type of fuel oil used aboard vessels.

### 3.10. Greenhouse gas (GHG) emissions, including land use change and forestry ($MtCO_2e$, 2012)




*Source: World Resources Institute (2016) 'Total GHG Emissions Including Land-Use Change and Forestry ($MtCO_2e$)'*[156]

156 World Resources Institute (2016) *'Total GHG Emissions Including Land-Use Change and Forestry ($MtCO_2e$)'*. CAIT Climate Data Explorer. Available at: http://bit.ly/22U8RWT [Accessed 29 February 2016].

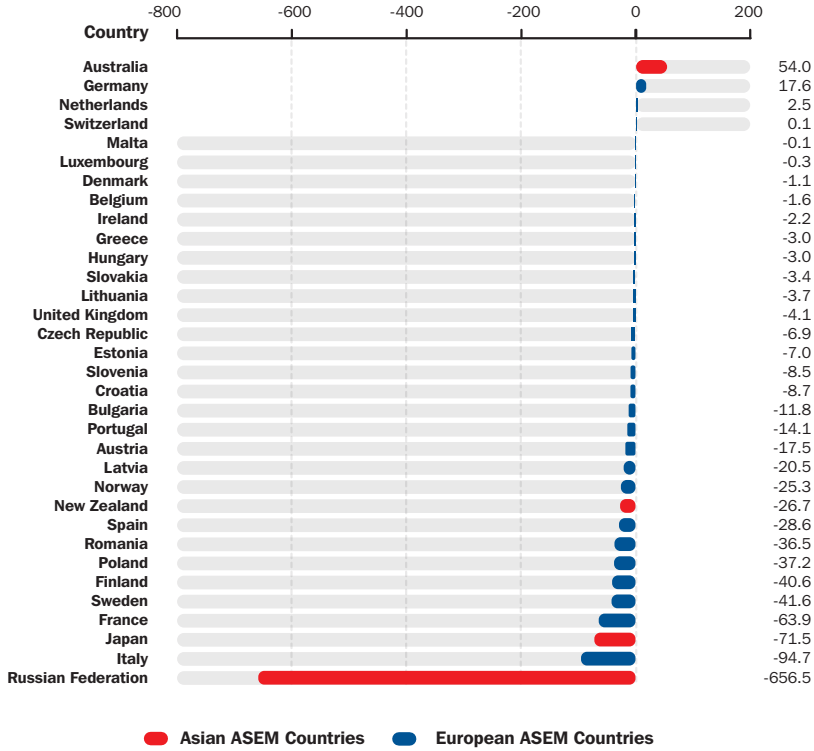
Data includes emissions from all greenhouse gases and major emission sources for each country, covering $CO_2$ emissions from energy, cement manufacture and land use changes, as well as from non-$CO_2$ gases. For any given country, as many as 5 GHG data sources, including sector level data, may be used.

Industrialised countries have traditionally emitted the majority of anthropogenic GHGs. However, more recently, shares of developing country emissions have surpassed those of industrialised countries and are continuing to rise very rapidly. China produced the greatest volume of GHG in 2012 by far at 10,684.29 $MtCO_2e$, followed by India at 2,887.08 $MtCO_2e$.

To move towards a low carbon world, mitigation efforts should be taken across all countries, decarbonising the energy supplies of industrialised countries and shifting developing countries into low carbon development.[157]

157 International Energy Agency (2015) *$CO_2$ Emissions From Fuel Combustion Highlights*. Available at: https://www.iea.org/publications/freepublications/publication/$CO_2$EmissionsFromFuelCombustionHighlights2015.pdf [Accessed 1 March 2016].

### 3.11. Greenhouse gas net emissions/removals by land use change and forestry ($MtCO_2e$, 2009)




*Source: The World Bank (2016) GHG net emissions/removals by LUCF (Mt of $CO_2$ equivalent)*[158]

GHG net emissions/removals by land use change and forestry (LUCF) refer to changes in atmospheric levels of all greenhouse gases attributable to forest and land use change activities.[159] Data is recorded in million metric tons.[160]

The majority of the countries listed saw a decrease in atmospheric levels of all GHG by LUCF, with the exception of Australia, Germany, the Netherlands and Switzerland. Australia experienced the largest increase in atmospheric levels, with a change of 54 $MtCO_2e$ while the Russian Federation saw the largest decrease in atmospheric levels, with a change of –656.5 $MtCO_2e$.

158 The World Bank (2016) *GHG net emissions/removals by LUCF (Mt of $CO_2$ equivalent)*. Available at: http://data.worldbank.org/indicator/EN.CLC.GHGR.MT.CE [Accessed 8 March 2016].

159 It includes emissions and removals of $CO_2$ from changes in biomass stocks due to forest management, logging and the like; conversion of existing forests and grasslands to other land uses; removal of $CO_2$ from the abandonment of formerly managed lands (e.g. croplands and pastures); and emissions and removals of $CO_2$ in soil associated with land-use change and management.

160 Data is available for 33 countries only. Because of differences in reporting years and methodologies, these data are not generally considered comparable across countries.

# 4. Connectivity in Culture and Media

## 4.1. Distribution of world languages by area of origin (2015)

| Area | Number of living languages that originate in area | Living languages that originate in area as a % of all living languages worldwide |
|---|---|---|
| Asia | 2,301 | 32.4% |
| Africa | 2,138 | 30.1% |
| Pacific | 1,313 | 18.5% |
| Americas | 1,064 | 15.0% |
| Europe | 286 | 4.0% |
| Total | 7,102 | 100.0% |

*Source: Ethnologue (2016) Ethnologue*[161]

The data captures the distribution of languages and their populations by areas of origin in 2015. It is a measure of the degree of cultural diversity across areas in the world as represented through languages. A living language is defined as one that has at least one speaker for whom it is their first language, measured on a scale of vitality.[162] Extinct languages, i.e. languages that are no longer used or associated with a sense of ethnic identity, and languages that are used only as a second language, are excluded from these counts. Each language spoken as a first language is tabulated only once, and the same language spoken in different countries is counted once in the country in which it originated.

161 Ethnologue (2016) *Ethnologue.* Available at: http://www.ethnologue.com/ [Accessed 8 March 2016].
162 Overall development versus endangerment of the language using the EGIDS scale. The EGIDS consists of 13 levels with each higher number on the scale representing a greater level of disruption to the intergenerational transmission of the language.

The greatest number of living languages originates in Asia, with these languages making up 32.4% of all living languages in the world. These languages are also spoken, as a first language, by 3.8 billion people across the world, accounting for 60.1% of the global population. The region with the fewest living languages by origin is Europe (286), representing just 4% of all the world's living languages. Globally, 1.6 billion people speak these languages, making up 26% of the global population. This group adds up to nearly twice the actual population of Europe, due to colonial expansion in the last few centuries.

The decline in living languages signals a need to direct greater attention towards the sustainability of cultural expression through languages. Minority languages, particularly indigenous languages, face an increasing threat of extinction due to globalisation. Connectivity between countries should, instead, be utilised to facilitate the promotion of cultural diversity and the preservation of cultural roots.

## 4.2. Living languages used as a first language (2015)

| Country | Total number of living languages used as a first language | Living languages used as a first language (% of all living languages worldwide) | Total number of first-language speakers in country for all languages |
|---|---|---|---|
| Indonesia | 707 | 9.95% | 221,398,286 |
| India | 454 | 6.39% | 1,078,151,321 |
| China | 300 | 4.22% | 1,214,365,238 |
| Australia | 245 | 3.45% | 17,573,909 |
| Philippines | 193 | 2.72% | 72,208,122 |
| Malaysia | 146 | 2.06% | 24,355,505 |
| Russian Federation | 140 | 1.97% | 158,381,420 |
| Myanmar | 117 | 1.65% | 46,528,905 |
| Viet Nam | 111 | 1.56% | 76,935,370 |
| Lao PDR | 91 | 1.28% | 5,690,594 |
| Thailand | 86 | 1.21% | 51,695,583 |
| Pakistan | 77 | 1.08% | 158,471,460 |
| Germany | 66 | 0.93% | 89,137,250 |
| France | 62 | 0.87% | 67,045,405 |
| United Kingdom | 56 | 0.79% | 60,251,900 |
| Bangladesh | 45 | 0.63% | 138,218,220 |
| Kazakhstan | 44 | 0.62% | 16,370,230 |
| Italy | 43 | 0.61% | 80,377,730 |
| Netherlands | 41 | 0.58% | 18,847,620 |
| Singapore | 31 | 0.44% | 3,502,170 |
| Belgium | 30 | 0.42% | 12,754,700 |
| Cambodia | 28 | 0.39% | 13,728,360 |
| Romania | 25 | 0.35% | 21,863,000 |
| Greece | 25 | 0.35% | 11,474,080 |
| New Zealand | 25 | 0.35% | 4,508,030 |
| Sweden | 24 | 0.34% | 9,621,890 |
| Switzerland | 23 | 0.32% | 8,473,230 |
| Spain | 22 | 0.31% | 45,419,410 |
| Poland | 22 | 0.31% | 37,852,910 |
| Croatia | 22 | 0.31% | 4,718,680 |
| Austria | 21 | 0.30% | 8,372,070 |
| Denmark | 21 | 0.30% | 5,658,900 |
| Finland | 20 | 0.28% | 5,473,910 |
| Japan | 18 | 0.25% | 129,309,863 |
| Czech Republic | 18 | 0.25% | 10,938,700 |
| Hungary | 18 | 0.25% | 10,007,110 |
| Bulgaria | 18 | 0.25% | 8,007,840 |
| Brunei Darussalam | 17 | 0.24% | 345,195 |
| Norway | 16 | 0.23% | 4,805,660 |
| Lithuania | 14 | 0.20% | 3,532,660 |
| Latvia | 14 | 0.20% | 2,826,701 |
| Mongolia | 14 | 0.20% | 2,613,100 |
| Slovakia | 13 | 0.18% | 5,466,080 |
| Portugal | 11 | 0.15% | 10,309,140 |
| Estonia | 11 | 0.15% | 1,517,830 |
| Slovenia | 10 | 0.14% | 2,091,720 |
| Ireland | 6 | 0.08% | 4,445,000 |
| Cyprus | 6 | 0.08% | 1,281,040 |
| Luxembourg | 6 | 0.08% | 447,600 |
| Malta | 5 | 0.07% | 418,310 |
| Korea | 4 | 0.06% | 48,586,000 |

**Asian ASEM Countries** **European ASEM Countries**

*Source: Ethnologue (2016) Ethnologue*[163]

163 Ethnologue (2016) *Ethnologue*. Available at: http://www.ethnologue.com/ [Accessed 8 March 2016].

The data presents the number of living languages spoken as a first language and its population in 51 ASEM countries. It is a measure of the degree of natural linguistic diversity in a country and the diversity of immigrants within a country.

Indonesia leads with 707 languages spoken as a first language, the most diverse range of first languages spoken in one country. This number makes up 9.95% of all languages in the world. India follows with 454 languages, accounting for 6.39% of all living languages, then China (300, 4.22%), Australia (245, 3.45%) and the Philippines (193, 2.72%). These top countries appear to have the highest degree of natural linguistic diversity. Immigrant languages in Indonesia make up only 0.28% of all first languages spoken in the country, 1.32% in India, 0.99% in China and 4.7% in the Philippines.

Europe, which as a continent sees the lowest diversity of living languages originating in the area, registers a wider range of first languages spoken in individual countries. The greater diversity in first languages is due to the high contribution by immigrant languages to the total living languages count. For example, immigrant languages in the United Kingdom, a top immigrant destination, account for 86.0% of all first languages spoken in the country. Belgium, Germany and the Netherlands have high shares of immigrant languages as well, 65.6%, 64% and 65.9% respectively.

## 4.3. Number of feature films produced in respective languages (2013)

| Country / Language | Unit of Film Produced |
|---|---|
| India | 1725 |
| Tamil | 292 |
| Telugu | 280 |
| Hindi | 255 |
| Malayalam | 195 |
| Kannada | 133 |
| Kashmiri / Dogri | 1 |
| Pahari / Punjabi | 1 |
| Other Languages | 568 |
| France | 270 |
| French | 209 |
| Other Languages | 61 |
| United Kingdom | 235 |
| English | 223 |
| Arabic | 2 |
| Hindi | 1 |
| Italian | 1 |
| Maori | 1 |
| English / Danish | 1 |
| English / Finnish | 1 |
| English / French / German | 1 |
| English / French / Swahili | 1 |
| English / Kurdish | 1 |
| Other Languages | 2 |
| Spain | 231 |
| Spanish | 170 |
| Catalan | 18 |
| English | 16 |
| Galician | 8 |
| Basque | 5 |
| Other Languages | 14 |
| Switzerland | 103 |
| Swiss German | 31 |
| French | 24 |
| German | 20 |
| English | 9 |
| Italian | 6 |
| Other Languages | 13 |
| Belgium | 70 |
| French | 44 |
| Other Languages | 26 |
| Sweden | 61 |
| Swedish | 46 |
| English | 5 |
| Norwegian | 3 |
| Danish | 2 |
| Dari | 1 |
| Other Languages | 4 |
| Philippines | 53 |
| Tagalog | 52 |
| Hiligaynon | 1 |
| Finland | 49 |
| Finnish | 27 |
| Swedish | 5 |
| Estonian | 4 |
| Finnish / English | 4 |
| Danish | 2 |
| English | 2 |
| Finnish / Swedish | 1 |
| Portuguese / English / German | 1 |
| Latvian / Finnish / English | 1 |
| Other Languages | 2 |

**Asian Languages** **European Languages** **Asian & European Languages** **Other Languages**

| Country | Language | Unit of Film Produced |
|---|---|---|
| Czech Republic | | 45 |
| | Czech | 43 |
| | Slovak | 2 |
| Austria | | 42 |
| | German | 41 |
| | English | 1 |
| Kazakhstan | | 35 |
| | Kazakh | 34 |
| | Russian | 1 |
| Ireland | | 34 |
| | English | 28 |
| | Irish / English | 2 |
| | Persian | 1 |
| | Russian | 1 |
| | Spanish / English | 1 |
| | German / English | 1 |
| Australia | | 26 |
| | English | 24 |
| | Lao | 1 |
| | English / Italian | 1 |
| New Zealand | | 25 |
| | English | 23 |
| | Maori | 1 |
| | English / Pashto | 1 |
| Slovakia | | 22 |
| | Slovak | 9 |
| | Czech | 7 |
| | Slovak / Hungarian | 3 |
| | Slovak / Romani | 2 |
| | Slovak / Czech | 1 |
| Mongolia | | 21 |
| | Mongolian | 21 |
| Lithuania | | 15 |
| | Lithuanian | 9 |
| | English | 1 |
| | German | 1 |
| | Lithuanian / English | 1 |
| | Lithuanian / Russian | 1 |
| | Lithuanian / Russian / Polish | 1 |
| | Lithuanian / Polish / German | 1 |
| Portugal | | 13 |
| | Portuguese | 6 |
| | English | 2 |
| | Spanish | 1 |
| | Portuguese / Creole | 1 |
| | Portuguese / Spanish | 1 |
| | Portuguese / English / French / German | 1 |
| | Portuguese / English / French / Spanish / Catalan / Italian | 1 |
| Slovenia | | 13 |
| | Slovenian | 5 |
| | Slovenian / Bosnian | 2 |
| | Croatian | 1 |
| | Slovenian / German | 1 |
| | Slovenian / Danish | 1 |
| | Italian / Slovenian | 1 |
| | English / Slovenian | 1 |
| | Other Languages | 1 |
| Latvia | | 10 |
| | Latvian | 8 |
| | Lithuanian | 1 |
| | Russian | 1 |
| China, Macao Special Administrative Region | | 4 |
| | Cantonese | 2 |
| | Cantonese / Japanese | 1 |
| | Portuguese / English | 1 |
| Cyprus | | 2 |
| | Greek | 1 |
| | Greek / English / Bulgarian | 1 |
| Lao PDR | | 2 |
| | Lao | 2 |
| Malta | | 2 |
| | English | 1 |
| | Maltese | 1 |

**Asian Languages** **European Languages** **Asian & European Languages** **Other Languages**

*Source: UNESCO Institute for Statistics (2016) Language of production*[164]

164 UNESCO Institute for Statistics (2016) *Language of production*. Available at: http://data.uis.unesco.org/index.aspx?queryid=55&lang=en [Accessed 8 March 2016].

The data captures the number of feature films produced in 25 ASEM countries[165] in 2013 and the linguistic diversity in film production of each country. This reflects the extent of the diversity of cultural expression in ASEM countries. In some countries, this correlates with the number of official languages. Linguistic diversity in film production can be viewed in terms of internal and external diversity. Internal diversity means the languages of domestic film production mirror the linguistic characteristics of the country, while external diversity looks at the use of foreign languages in domestic film production.[166]

India tops the list of most feature films at 1,725 in 2013, followed by France with 270, the United Kingdom with 235, and Spain with 231. India showed great internal linguistic diversity with films produced in the seven major national languages, reflecting the wide range of national languages in the country (22 excluding English). The data shows 16.9% of India's films were produced in Tamil, 16.2% in Telugu, 14.7% in Hindi, 11.3% in Malayalam and 7.7% in Kannada, with one film in Pahari/Punjabi and one in Kashmiri/Dogri.

For the majority of European countries, the variety of languages used in film production exceeds the scope of their national languages. This points to a high external diversity in European film production. This may be explained by the high level of co-production within Europe. The United Kingdom leads in external linguistic diversity, with films produced in eleven languages, including six non-European languages. Arabic is the second most popular language of film production in the United Kingdom, despite having just one official language. This could be due to the ethnic diversity that characterises the United Kingdom population, although the languages of these groups are not formally recognised. The distribution of films in the various languages varies across the European ASEM countries, e.g. the United Kingdom, with high external diversity, sees a skewed distribution with English accounting for 95% of all films produced, while European countries with high internal diversity, such as Switzerland and Spain, see a more even distribution of films across languages.

165 Data available for 25 ASEM Countries only.

166 UNESCO Institute for Statistics (2013) *Feature Film Diversity UIS Fact Sheet No.24*. Available at: http://www.uis.unesco.org/culture/Documents/fs24-feature-film-diversity-en.pdf [Accessed 12 February 2016].

## 4.4. Origin of top 5 countries of all feature films exhibited, ranked by admissions (2013)

| Country of origin of feature films exhibited | | Number of admissions | Market share (%) |
|---|---|---|---|
| **Australia** | | | |
| 1 | United States of America | 72,200,000 | 88.0% |
| 2 | United Kingdom | 3,600,000 | 4.4% |
| **3** | **Australia** | **2,900,000** | **3.5%** |
| 4 | India | 700,000 | 0.9% |
| 5 | France | 700,000 | 0.9% |
| | All other countries | 1,900,000 | 2.3% |
| | **Total** | **82,000,000** | |
| **Austria** | | | |
| 1 | United States of America | 11,119,103 | 73.3% |
| 2 | Germany | 2,000,079 | 13.2% |
| 3 | United Kingdom | 740,517 | 4.9% |
| **4** | **Austria** | **507,318** | **3.3%** |
| 5 | France | 332,286 | 2.2% |
| | All other countries | 477,278 | 3.1% |
| | **Total** | **15,176,581** | |
| **Belgium** | | | |
| 1 | United States of America | 16,464,976 | 78.2% |
| **2** | **Belgium** | **2,018,799** | **9.6%** |
| 3 | France | 1,296,676 | 6.2% |
| 4 | Spain | 566,775 | 2.7% |
| 5 | United Kingdom | 258,310 | 1.2% |
| | All other countries | 450,653 | 2.1% |
| | **Total** | **21,056,189** | |
| **Finland** | | | |
| 1 | United States of America | 5,075,982 | 65.7% |
| **2** | **Finland** | **1,819,343** | **23.6%** |
| 3 | United Kingdom | 288,770 | 3.7% |
| 4 | France | 140,107 | 1.8% |
| 5 | Australia | 89,750 | 1.2% |
| | All other countries | 308,984 | 4.0% |
| | **Total** | **7,722,936** | |
| **France** | | | |
| 1 | United States of America | 103,563,373 | 54.2% |
| **2** | **France** | **64,518,871** | **33.8%** |
| 3 | United Kingdom | 8,428,471 | 4.4% |
| 4 | Canada | 2,455,099 | 1.3% |
| 5 | Australia | 1,581,773 | 0.8% |
| | All other countries | 10,372,376 | 5.4% |
| | **Total** | **190,919,963** | |
| **Italy** | | | |
| 1 | United States of America | 51,635,405 | 53.0% |
| **2** | **Italy** | **29,243,720** | **30.0%** |
| 3 | United Kingdom | 4,629,014 | 4.8% |
| 4 | France | 3,165,114 | 3.3% |
| 5 | Spain | 1,594,312 | 1.6% |
| | All other countries | 7,113,007 | 7.3% |
| | **Total** | **97,380,572** | |
| **Japan** | | | |
| **1** | **Japan** | **117,685,000,000** | **60.6%** |
| | All other countries | 76,552,000,000 | 39.4% |
| | **Total** | **194,237,000,000** | |
| **Malaysia** | | | |
| 1 | China | 8,230,000 | 13.5% |
| **2** | **Malaysia** | **8,080,000** | **13.2%** |
| 3 | India | 2,150,000 | 3.5% |
| 4 | Indonesia | 1,000 | 0.0% |
| | All other countries | 42,559,000 | 69.7% |
| | **Total** | **61,020,000** | |

| Country of origin of feature films exhibited | | Number of admissions | Market share (%) |
|---|---|---|---|
| **Malta** | | | |
| 1 | United States of America | 614,877 | 87.6% |
| 2 | United Kingdom | 28,970 | 4.1% |
| **3** | **Malta** | **25,249** | **3.6%** |
| 4 | Spain | 9,361 | 1.3% |
| 5 | Australia | 7,435 | 1.1% |
| | All other countries | 16,193 | 2.3% |
| | **Total** | **702,085** | |
| **Philippines** | | | |
| 1 | United States of America | 25,550,000 | 65.8% |
| **2** | **Philippines** | **11,820,000** | **30.4%** |
| 3 | New Zealand | 710,000 | 1.8% |
| 4 | Canada | 640,000 | 1.6% |
| 5 | Japan | 50,000 | 0.1% |
| | All other countries | 50,000 | 0.1% |
| | **Total** | **38,820,000** | |
| **Poland** | | | |
| 1 | United States of America | 21,762,572 | 58.9% |
| **2** | **Poland** | **7,107,711** | **19.2%** |
| 3 | France | 1,130,789 | 3.1% |
| 4 | Spain | 1,027,481 | 2.8% |
| 5 | United Kingdom | 1,024,810 | 2.8% |
| | All other countries | 4,921,309 | 13.3% |
| | **Total** | **36,974,672** | |
| **Korea** | | | |
| **1** | **Korea** | **127,108,547** | **59.6%** |
| 2 | United States of America | 75,295,539 | 35.3% |
| 3 | Japan | 1,796,488 | 0.8% |
| 4 | China | 675,799 | 0.3% |
| | All other countries | 8,447,850 | 4.0% |
| | **Total** | **213,324,223** | |
| **Spain** | | | |
| 1 | United States of America | 54,795,336 | 69.6% |
| **2** | **Spain** | **11,013,096** | **14.0%** |
| 3 | United Kingdom | 4,631,815 | 5.9% |
| 4 | Germany | 979,530 | 1.2% |
| 5 | France | 969,985 | 1.2% |
| | All other countries | 6,300,745 | 8.0% |
| | **Total** | **78,690,507** | |
| **Sweden** | | | |
| 1 | United States of America | 10,718,592 | 64.6% |
| **2** | **Sweden** | **4,113,969** | **24.8%** |
| 3 | United Kingdom | 597,483 | 3.6% |
| 4 | France | 339,802 | 2.0% |
| 5 | Australia | 199,426 | 1.2% |
| | All other countries | 616,807 | 3.7% |
| | **Total** | **16,586,079** | |
| **United Kingdom** | | | |
| 1 | United States of America | 839,200,000 | 72.7% |
| **2** | **United Kingdom** | **255,600,000** | **22.2%** |
| 3 | Spain | 23,000,000 | 2.0% |
| 4 | India | 16,100,000 | 1.4% |
| 5 | France | 4,000,000 | 0.3% |
| | All other countries | 15,800,000 | 1.4% |
| | **Total** | **1,153,700,000** | |

**Asian ASEM Countries** **European ASEM Countries**

*Source: UNESCO Institute for Statistics (2016) Origin of Top 5 Countries of all Feature Films Exhibited Ranked by Admissions*[167]

167 UNESCO Institute for Statistics (2016) *Origin of Top 5 Countries of all Feature Films Exhibited Ranked by Admissions.* Available at: http://data.uis.unesco.org/index.aspx?queryid=60&lang=en [Accessed 8 March 2016]

The data presents the top 5 countries of origin for all feature films exhibited in 15 ASEM countries[168], ranked by admission. This reflects the cultural content available to, and consumed by, audiences.

In all European countries feature films from the USA dominated the market share, accounting for admission rates of more than 50% of all feature films shown. The most popular feature films in European ASEM countries originate mainly from neighbouring countries. Australia features as the most prominent ASEM Asian country accounting for popular films in 4 out of the 10 European countries presented in the list, while India represents one of the top countries of origin for popular feature films in the United Kingdom.

Popular feature films in Asian ASEM countries originate mainly from Asian neighbouring countries. Japan sees extremely low diversity in cultural expression, with locally produced films accounting for 60% of all films featured by admission, and the Philippines has the greatest range of countries of origin, with audiences watching films from the USA, locally produced films, New Zealand, Canada and Japan.

168 Data available for 15 ASEM countries only.

## 4.5. Origin of the top 10 co-producing countries ranked by number of feature films (2013)

| Country | Rank | Origin of co-producing countries | Number of films |
|---|---|---|---|
| **Australia** | | | |
| | 1 | United Kingdom | 1 |
| | 2 | France | 1 |
| *Total Co-production*** | | | *2* |
| *% Co-production* | | | *7.7%* |
| *Total Production* | | | *26* |
| **Belgium** | | | |
| | 1 | France | 32 a |
| | 2 | Luxembourg | 10 a |
| | 3 | Germany | 4 a |
| | 4 | Canada | 3 a |
| | 5 | Morocco | 3 a |
| | 6 | Netherlands | 1 a |
| | 7 | Italy | 1 a |
| | 8 | Ireland | 1 a |
| | 9 | Slovenia | 1 a |
| | 10 | The former Yugoslav Republic of Macedonia | 1 a |
| *Total Co-production*** | | | *53* * |
| *% Co-production* | | | *75.7%* |
| *Total Production* | | | *70* * |
| **China, Macao SAR** | | | |
| | 1 | China, Hong Kong SAR | 2 |
| *Total Co-production*** | | | *2* |
| *% Co-production* | | | *50.0%* |
| *Total Production* | | | *4* |
| **France** | | | |
| | 1 | Belgium | 38 |
| | 2 | Germany | 22 |
| | 3 | Italy | 9 |
| | 4 | Israel | 7 |
| | 5 | Switzerland | 7 |
| | 6 | Spain | 6 |
| | 7 | Canada | 6 |
| | 8 | Luxembourg | 6 |
| | 9 | United Kingdom | 5 |
| | 10 | Russian Federation | 5 |
| *Total Co-production*** | | | *116* |
| *% Co-production* | | | *43.0%* |
| *Total Production* | | | *270* |
| **Germany** | | | |
| | 1 | France | 31 |
| | 2 | Austria | 13 |
| | 3 | Switzerland | 13 |
| | 4 | United Kingdom | 6 |
| | 5 | Belgium | 6 |
| | 6 | Luxembourg | 5 |
| | 7 | Netherlands | 4 |
| | 8 | United States of America | 4 |
| | 9 | Norway | 4 |
| | 10 | Poland | 4 |
| *Total Co-production*** | | | *88* |
| *% Co-production* | | | *39.5%* |
| *Total Production* | | | *223* |
| **Italy** | | | |
| | 1 | France | 15 |
| | 2 | Switzerland | 5 |
| | 3 | Belgium | 3 |
| | 4 | Germany | 3 |
| | 5 | Spain | 2 |
| | 6 | United States of America | 2 |
| | 7 | Argentina | 1 |
| | 8 | Austria | 1 |
| | 9 | Brazil | 1 |
| | 10 | Canada | 1 |
| *Total Co-production*** | | | *29* |
| *% Co-production* | | | *17.4%* |
| *Total Production* | | | *167* |

| Country | Rank | Origin of co-producing countries | Number of films |
|---|---|---|---|
| **New Zealand** | | | |
| | 1 | United Kingdom | 4 |
| | 2 | United States of America | 4 |
| *Total Co-production*** | | | **8** |
| *% Co-production* | | | **32.0%** |
| *Total Production* | | | **25** |
| **Poland** | | | |
| | 1 | France | 2 b |
| | 2 | Belgium | 1 b |
| | 3 | Denmark | 1 b |
| | 4 | Lithuania | 1 b |
| | 5 | Luxembourg | 1 b |
| | 6 | Germany | 1 b |
| | 7 | Romania | 1 b |
| | 8 | Ukraine | 1 b |
| | 9 | Italy | 1 b |
| *Total Co-production*** | | | **6** |
| *% Co-production* | | | **19.4%** |
| *Total Production* | | | **31** |
| **United Kingdom** | | | |
| | 1 | United States of America | 36 |
| | 2 | France | 9 |
| | 3 | Germany | 7 |
| | 4 | Ireland | 7 |
| | 5 | India | 5 |
| | 6 | Netherlands | 5 |
| | 7 | Spain | 3 |
| | 8 | Hungary | 3 |
| | 9 | Italy | 3 |
| | 10 | Australia | 2 |
| *Total Co-production*** | | | **74** |
| *% Co-production* | | | **30.7%** |
| *Total Production* | | | **241** |

**Asian ASEM Countries** **European ASEM Countries** **Non-ASEM Countries**

**Note**

* UNESCO Institute for Statistics (UIS) estimation

** Total co-production can be smaller than the sum of co-produced feature films by country. A coproduced feature film can involve more than 2 foreign countries

a Partial data

b Only include films with 70 minutes or longer

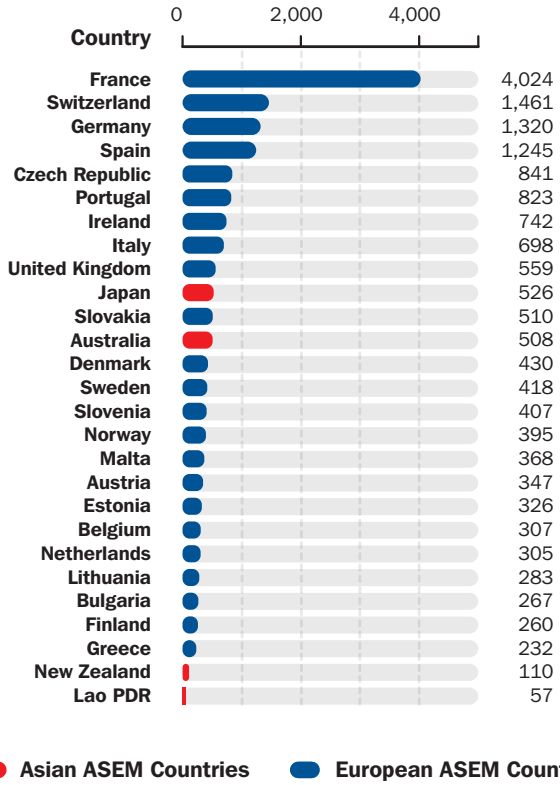
*Source: UNESCO Institute for Statistics (2016) Origin of 10 coproducing countries*[169]

The data presents the top 10 countries of origin of co-productions in 9 ASEM countries.[170] Co-productions refer to films whose production companies are from at least 2 different countries. In recent years, it has become a tool for promoting exchange between developed and developing countries, helping developing countries reach audiences outside their national borders and find new markets for their cultural products. However, the majority of co-producing countries remain intra-regional and stay within the tier of either developed, or developing, countries. Germany, for example, conducted most of its co-production activities with neighbouring European countries, with the USA featuring as the exception.

169 UNESCO Institute for Statistics (2016) *Origin of 10 coproducing countries.* Available at: http://data.uis.unesco.org/index.aspx?queryid=60&lang=en [Accessed 8 March 2016].

170 Data available for 9 ASEM countries only.

### 4.6. Foreign feature films exhibited in ASEM countries (2013)




*Source: UNESCO Institute for Statistics (2016) Number of all foreign feature films exhibited*[171]

The data set presents the number of feature films produced abroad exhibited in 27 ASEM countries[172] in 2013. The data is reflective of the degree of openness of cultural expression within a country, as well as the level of capacity of their film industry. There appears to be little rivalry between dominant foreign films and local production within film industries. France, which has a strong local production scene (ranked second in the list of *Number of feature films produced in respective languages*) also exhibits the highest number of foreign feature films (4,024) amongst ASEM countries. On the other hand, the Lao PDR, with an overall weak film industry, ranked among the lowest in the list of *Number of feature films produced in respective languages*, with only 2 local feature films, as well as the lowest for foreign feature films at 57.

171 UNESCO Institute for Statistics (2016) *Number of all foreign feature films exhibited.* Available at: http://data.uis.unesco.org/index.aspx?queryid=60&lang=en [Accessed 8 March 2016].
172 Data available for 27 ASEM countries only.

### 4.7. Exports of cultural goods by region (USD million, 2004-2013)

| | Exports (in USD million) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Region | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Arab States | 642.1 | 1,368.7 | 889.0 | 2,990.5 | 5,046.6 | 1,192.5 | 1,115.7 | 1,307.5 | 1,413.1 | 1,651.2 |
| Caribbean | 13.6 | 32.1 | 65.9 | 38.4 | 53.0 | 41.5 | 32.2 | 28.0 | 55.4 | 39.9 |
| Central Asia and Eastern Europe | 1,684.8 | 2,059.8 | 2,257.6 | 2,894.5 | 3,200.8 | 2,337.5 | 2,702.4 | 3,328.7 | 4,266.9 | 5,725.7 |
| Latin America | 2,222.1 | 2,356.9 | 3,335.8 | 4,378.8 | 5,025.2 | 3,870.0 | 3,247.8 | 3,239.5 | 2,397.1 | 2,644.4 |
| North America and Europe | 74,838.4 | 81,490.9 | 89,551.4 | 100,412.6 | 109,520.3 | 88,979.3 | 95,949.5 | 106,154.7 | 103,516.9 | 104,438.2 |
| Pacific | 667.3 | 673.4 | 781.7 | 837.3 | 851.5 | 714.1 | 791.1 | 1,230.2 | 1,085.8 | 961.5 |
| South and East Asia | 28,095.4 | 31,672.1 | 37,212.9 | 42,213.1 | 48,302.0 | 51,826.3 | 61,450.3 | 84,454.2 | 100,931.0 | 96,762.0 |
| Sub-Saharan Africa | 279.2 | 326.6 | 424.4 | 634.5 | 582.5 | 281.8 | 384.2 | 422.3 | 426.6 | 574.7 |
| World | 108,443 | 119,980 | 134,519 | 154,400 | 172,582 | 149,243 | 165,673 | 200,165 | 214,093 | 212,798 |

*Source: UNESCO Institute for Statistics (2016) The Globalisation of Cultural Trade: A Shift in Consumption*[173]

The data captures exports of cultural goods in 8 regions for the period 2004-2013. Cultural goods are defined as goods "conveying ideas, symbols and ways of life, some of which may be subject to copyrights".[174] Together with imports of cultural goods, they highlight the international trade in cultural goods, providing insights into the dynamism of cultural industries and the interest for such goods. All figures are illustrated in millions of USD.

The export of cultural goods in 2004-2013 was largely driven by developed countries, primarily from North America and Europe. Low income economies in regions such as the Caribbean, sub-Saharan Africa and the Pacific States played a marginal role, making up the bottom half of the spectrum. By 2013, exports of cultural goods amounted to USD 212,798 million, which was almost double compared to 2004 (USD 108,443 million).

The data also reflects the impact of the economic and financial crisis of 2008 on the global economy, including the international trade of cultural goods. In seven regions, exports declined in 2009, experiencing a decrease of 13.5% from 2008 to 2009, but started to recover in 2010. The only region that remained unaffected by the crisis was South and East Asia, which experienced an increase in exports from USD 48,302 million in 2008, to USD 51,826.30 million in 2009, and continued to grow in the following years. In 2010 China surpassed the USA as lead exporter of cultural goods.[175]

173 UNESCO Institute for Statistics (2016) *The Globalisation of Cultural Trade: A Shift in Consumption.* Available at: http://www.uis.unesco.org/culture/Documents/international-flows-cultural-goods-report-en.pdf [Accessed 10 March 2016].

174 UNESCO Institute for Statistics (2009) *The 2009 UNESCO Framework For Cultural Statistics (FCS)* [online] UNESCO Institute for Statistics. Available at: http://www.uis.unesco.org/culture/Documents/framework-cultural-statistics-culture-2009-en.pdf [Accessed 14 March 2016], p.23

175 UNESCO Institute for Statistics (2016) *The Globalisation of Cultural Trade: A Shift in Consumption.* Available at: http://www.uis.unesco.org/culture/Documents/international-flows-cultural-goods-report-en.pdf [Accessed 10 March 2016].

### 4.8. Imports of cultural goods by region (USD million, 2004-2013)

| | Imports (in USD million) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Region | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Arab States | 1,221.9 | 5,359.7 | 2,075.0 | 7,627.3 | 9,133.0 | 1,630.0 | 2,600.9 | 2,452.8 | 2,602.9 | 5,056.2 |
| Caribbean | 152.3 | 297.8 | 309.2 | 290.9 | 389.7 | 276.5 | 310.6 | 280.3 | 257.0 | 252.2 |
| Central Asia and Eastern Europe | 1,549.6 | 1,880.3 | 2,170.6 | 3,037.6 | 3,854.9 | 3,030.0 | 3,306.1 | 3,801.4 | 3,923.4 | 4,590.5 |
| Latin America | 2,962.1 | 3,476.6 | 4,766.4 | 6,272.1 | 7,583.7 | 6,493.9 | 6,441.9 | 6,927.2 | 5,876.5 | 5,790.2 |
| North America and Europe | 81,978.3 | 88,202.6 | 96,111.5 | 115,566.5 | 120,869.8 | 96,738.7 | 106,233.8 | 112,526.0 | 105,489.7 | 103,876.5 |
| Pacific | 2,700.1 | 2,772.0 | 2,861.8 | 3,505.5 | 4,003.1 | 3,635.6 | 3,794.9 | 4,088.1 | 3,737.5 | 3,402.5 |
| South and East Asia | 19,322.4 | 21,918.2 | 25,324.1 | 31,731.9 | 34,464.3 | 28,386.8 | 34,080.4 | 41,377.4 | 49,470.1 | 43,881.2 |
| Sub-Saharan Africa | 876.7 | 1,129.2 | 1,542.6 | 1,491.1 | 1,579.0 | 1,439.6 | 1,646.2 | 1,772.6 | 1,502.5 | 1,467.5 |
| World | 110,763.5 | 125,036.5 | 135,161.3 | 169,522.9 | 181,877.7 | 141,631.3 | 158,414.8 | 173,225.7 | 172,859.7 | 168,316.9 |

*Source: UNESCO Institute for Statistics (2016) The Globalisation of Cultural Trade: A Shift in Consumption*[176]

The data represents imports of cultural goods in 8 regions for the period 2004-2013. Cultural goods are defined as goods "conveying ideas, symbols and ways of life, some of which may be subject to copyrights".[177] All figures are illustrated in millions of USD.

Overall, imports of cultural goods worldwide amounted to USD 168,316.90 million in 2013, an increase of approximately 65% compared to 2004 (USD 110,763.50 million).[178] Similar to exports of cultural goods, the global demand for cultural goods from 2004 to 2013 was mainly driven by North America and Europe, followed by South and East Asia in second place. Low income economies in regions such as the Caribbean, sub-Saharan Africa and the Arab States represent the bottom three regions with the lowest imports of cultural goods throughout 2004-2013.

Furthermore, imports of cultural goods were more impacted by the economic and financial crises in 2008 compared to exports of cultural goods, experiencing a drastic decline of 22% from 2008 to 2009.

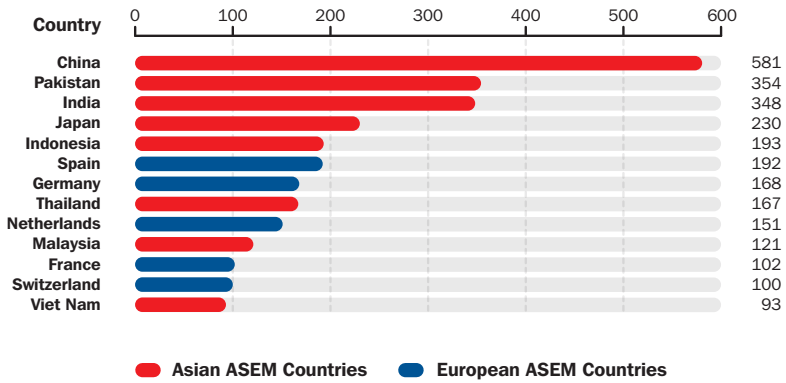
176 UNESCO Institute for Statistics (2016) *The Globalisation of Cultural Trade: A Shift in Consumption*. Available at: http://www.uis.unesco.org/culture/Documents/international-flows-cultural-goods-report-en.pdf [Accessed 10 March 2016].

177 UNESCO Institute for Statistics (2009) The 2009 UNESCO Framework For Cultural Statistics (FCS). Available at: http://www.uis.unesco.org/culture/Documents/framework-cultural-statistics-culture-2009-en.pdf [Accessed 14 March 2016], p.23

178 Divergences between exports and imports of cultural goods can be explained by the difference in imports and exports valuation, difference in imports and exports value as well as the different classification of cultural goods at national levels, among others. For more information on cross-country comparability, see United Nations, Department of Economic and Social Affairs (2011) *International Merchandise Trade Statistics: Concepts and Definitions 2010.* United Nations. Available at: http://unstats.un.org/unsd/trade/eg-imts/IMTS2010-final-22March2011.pdf [Accessed 18 March 2016].

# 5. Connectivity in Education

## 5.1. International schools in ASEM countries (2013)




*Source: Clark, N. (2014) The Booming International Schools Sector*[179]

Wealthy families account for 80% of all enrolments in international schools.[180] Tying in with the increased academic mobility trend at the tertiary level, more wealthy families in fast growing economies are driving the growth of the sector. Demand stems from the perception of international schools being the gateway to placements at top-ranking universities and ultimately, good career opportunities.

179 Clark, N. (2014) *The Booming International Schools Sector.* Available at: http://wenr.wes.org/2014/07/the-booming-international-schools-sector/ [Accessed 12 February 2016].

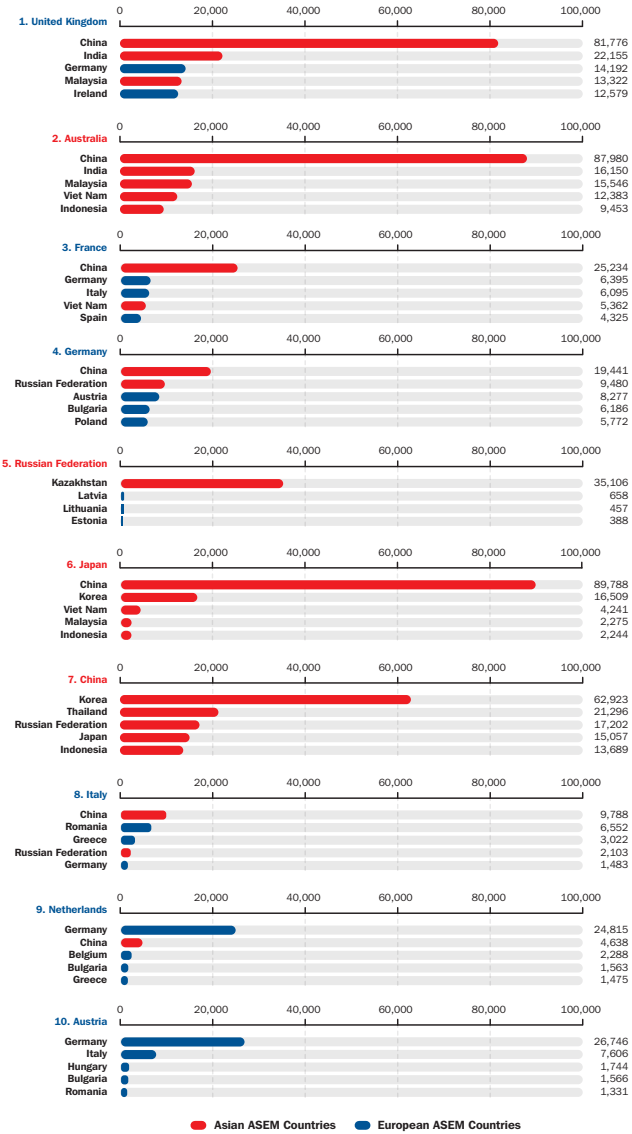
180 ICEF Monitor (2014) *New data on international schools suggests continued strong growth*. Available at: http://monitor.icef.com/2014/03/new-data-on-international-schools-suggests-continued-strong-growth-2/ [Accessed 12 February 2016].

The data set captures the number of international schools in selected ASEM countries[181] in 2013. International schools are defined as schools, either with classes conducted in English in a non-English speaking host country, or with an international curriculum in an English speaking host country.[182] Some consider the integration of international themes and global citizenship/ multinational make-up of the student and faculty body. The top 5 host countries of international schools are noticeably Asian countries, most of which are fast growing economies such as China, Pakistan, India and Indonesia. An interesting point to note might be the number of schools relative to the size of the student population. While China tops the list at 581 international schools, the options available to the student body pales in comparison to Pakistan or Japan with a fraction of its population. This may be explained by China's strict regulations regarding eligibility for enrolment; only foreign students or Chinese children with one foreign born parent may attend international schools.[183] This limits the students attending international schools to the expatriate community, delineating the student population within the country.

International schools offer a positive channel for connectivity by: providing opportunities for cultural exchanges with the integration of international curriculum and local culture; the sharing of soft and hard educational capital; and serving as a platform for new and long-term partnerships between ASEM countries. However, not all countries have regulations conducive to hosting international schools.

181 Data available for 13 ASEM countries only.
182 Clark, N. (2014) *The Booming International Schools Sector*. Available at: http://wenr.wes.org/2014/07/the-booming-international-schools-sector/ [Accessed 12 February 2016].
183 Ibid.

## 5.2. International students enrolled in selected ASEM countries by country of origin (2014/2015)




*Source: UNESCO Institute for Statistics (2016) Global Flow of Tertiary-Level Students. Data on China is based on Institute of International Education (2016) International Students in China*[184]

184 UNESCO Institute for Statistics (2016) *Global Flow of Tertiary-Level Students*. Available at: http://www.uis.unesco.org/Education/Pages/international-student-flow-viz.aspx [Accessed 8 March 2016].
Data on China is based on Institute of International Education (2016) *International Students in China*. Available at: http://www.iie.org/Services/Project-Atlas/China/International-Students-In-China [Accessed 8 March 2016].

The data set presents the top 10 ASEM destination countries for international university students. For each country, the top 5 countries of origin of its international student body are presented, with the exception of the Russian Federation.[185]

Asia has experienced a steady rise in the number of students studying abroad. This group grew from 67,300 in 2003 to 165,542 in 2013, with the outbound mobility ratio[186] more than doubling from 3.5% to 7.6%.[187] This could be due to the much larger young population in Asia, on top of the fast developing nature of the Asian economies. China tops the list, representing an overwhelming proportion of the international student population in every Asian and European destination country, with the exception of the Russian Federation, the Netherlands and Austria.

Meanwhile ASEM European countries do not feature as a major country of origin in any of the Asian destination countries, except for the Russian Federation, with European international students preferring instead to study within the region. This could be due to the perception of Asian universities being of inferior standards to European ones.

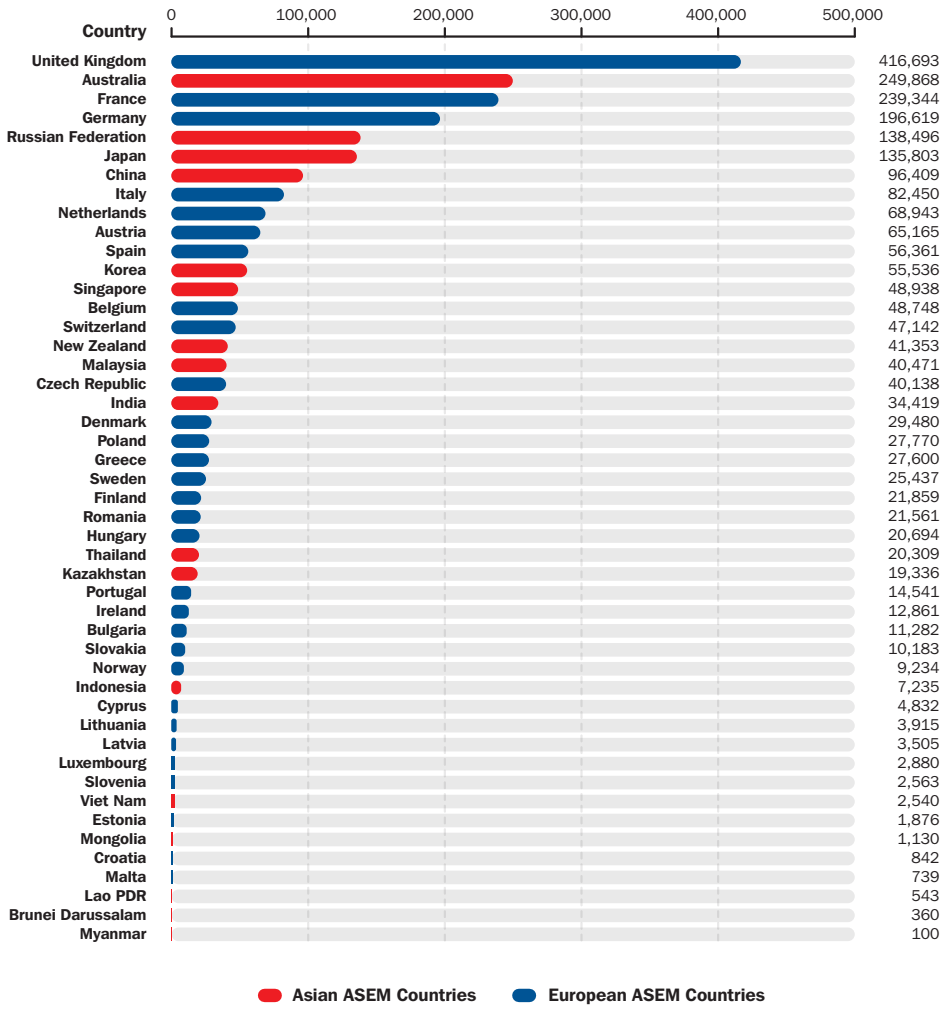
However, ASEM partners are directing resources to draw more European students to Asian universities, with scholarships such as Erasmus+ and Marie Skłodowska-Curie, as well as efforts to ensure quality assurance of Asian universities. This is complemented by the emerging academic market in Singapore, Malaysia, Korea and Japan.

185 For the Russian Federation, only the top 4 countries of origin of its international student body are presented due to lack of data.

186 Outbound Mobility Ratio refers to the total number of students from a given country studying abroad, expressed as a percentage of total tertiary enrolment in that country.

187 UNESCO Institute for Statistics (2016) *Global Flow of Tertiary-Level Students*. Available at: http://www.uis.unesco.org/Education/Pages/international-student-flow-viz.aspx [Accessed 12 February 2016].

## 5.3. Students from abroad studying in ASEM countries (2015)




*Source: UNESCO Institute for Statistics (2016) Global Flow of Tertiary-Level Students*[188]

188 UNESCO Institute for Statistics (2016) *Global Flow of Tertiary-Level Students*. Available at: http://www.uis.unesco.org/Education/Pages/international-student-flow-viz.aspx [Accessed 8 March 2016].

The data captures the number of university students from abroad received in 47 ASEM countries[189] in 2015. The traditional destination countries for education - the United Kingdom, France and Germany in Europe, and Australia and Japan in Asia - remain the top choices among international students in 2015, with the UK keeping a strong lead, at least 150,000 over Australia. However, we see growing competition from China, Singapore and Korea as they vie for a share of the revenue and intellectual capital of internationally mobile students. This is in line with a growing preference to study within the region that sees regional hubs become a popular destination because of lower travel costs and cultural familiarity.

189 Data available for 47 ASEM countries only. Data for Bangladesh, Cambodia, Pakistan and the Philippines are not available.

### 5.4. Massive Online Open Courses (MOOCs) offered in ASEM countries (as of October 2015)

| Country | Number of education institutions offering MOOCs in country | Total number of MOOCs in country |
|---|---|---|
| United Kingdom | 46 | 245 |
| Spain | 32 | 172 |
| China | 13 | 159 |
| Australia | 27 | 107 |
| France | 26 | 73 |
| Switzerland | 8 | 72 |
| Netherlands | 11 | 64 |
| Russian Federation | 6 | 50 |
| India | 8 | 49 |
| Germany | 21 | 47 |
| Japan | 22 | 43 |
| Italy | 7 | 23 |
| Denmark | 4 | 20 |
| Korea | 4 | 20 |
| Belgium | 3 | 19 |
| Singapore | 3 | 15 |
| Sweden | 5 | 15 |
| Malaysia | 1 | 12 |
| New Zealand | 3 | 6 |
| Ireland | 5 | 5 |
| Norway | 3 | 3 |
| Estonia | 1 | 2 |
| Portugal | 1 | 2 |
| **Sum** | **260** | **1223** |

**Asian ASEM Countries** **European ASEM Countries**

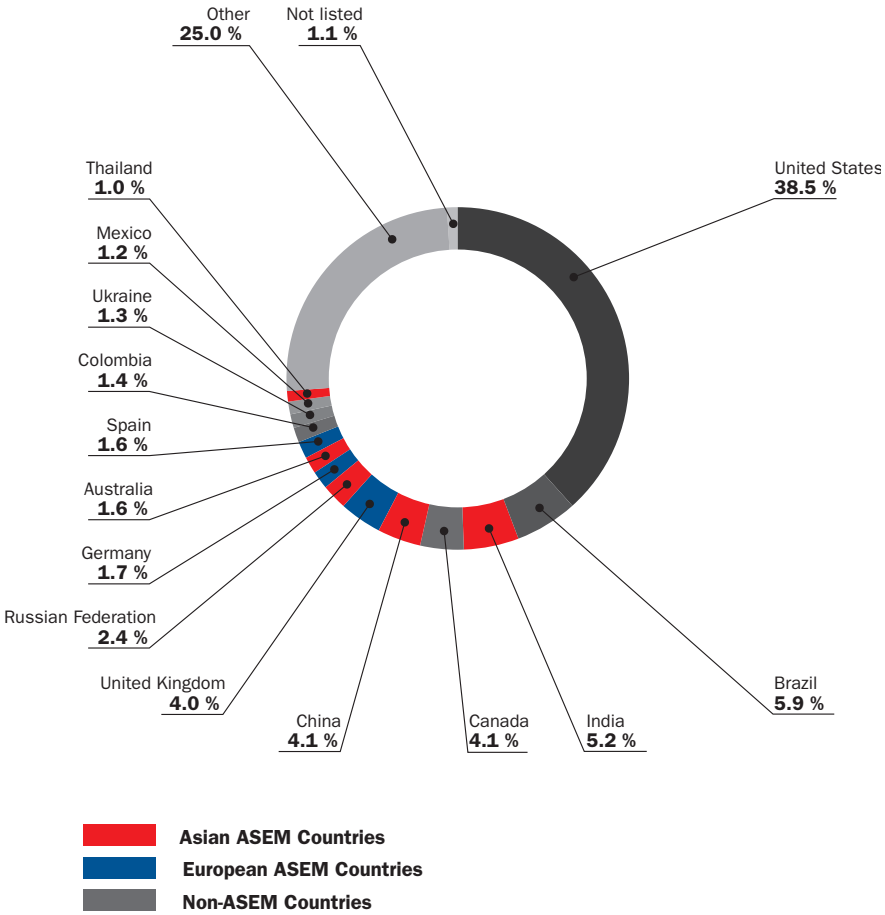
*Source: Class Central (2015) Universities*[190]

Massive Open Online Courses (MOOCs) represent the latest technological development in higher learning. Building upon Information and Communications Technology (ICT) and Office Web Components (OWC), MOOCs bring education to all corners of the world, with the added element of interactive pedagogy such as teacher-student discussions, peer discussions and question and answer activities.

The data captures the total number of MOOCs in 23 ASEM countries.[191] The UK offers the greatest total number of MOOCs, as well as the greatest number offered by institutions. Spain beats China with 172 MOOCs as of October 2015. Where previously Asian countries had been slow to receiving MOOCs, the equal presence of Asian countries in the list indicates that Asian countries are increasing their participation. This follows the greater focus on credentials and quality assurance.[192]

190 Class Central (2015) *Universities*. Class Central. Available at: https://www.class-central.com/universities [Accessed 28 October 2015].
191 Data available for 23 ASEM countries only.
192 ICEF Monitor (2015) *Global Review Maps the State of MOOCs in 2014*. Available at: http://monitor.icef.com/2015/01/global-review-maps-state-moocs-2014/ [Accessed 12 February 2016].

## 5.5. Students using Massive Online Open Courses (MOOCs) by country of origin (% of total students using MOOCs, as of August 2012)




*Source: Ha, T. (2014) MOOCs by the numbers: Where are we now?*[193]

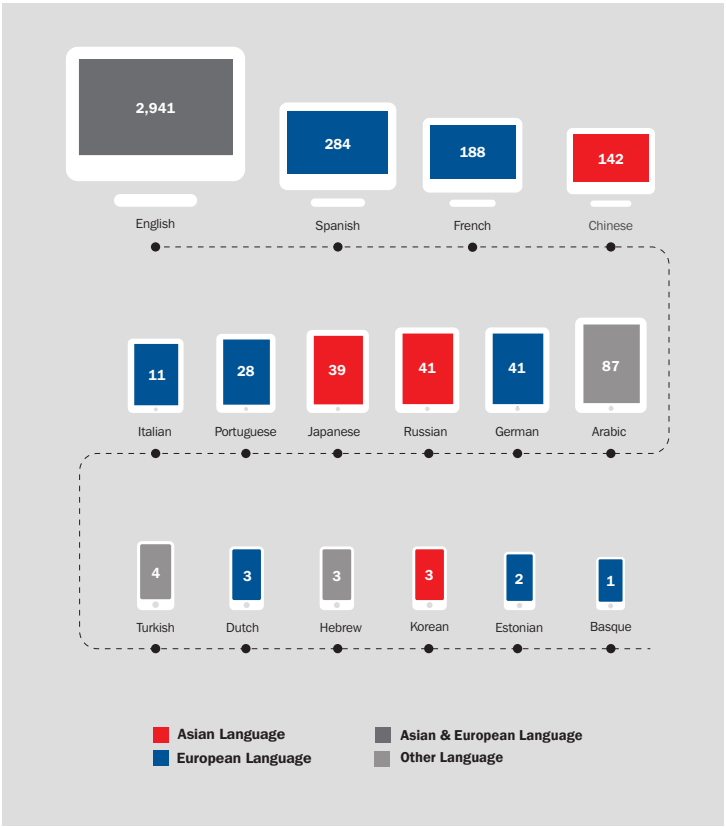
193 Ha, T. (2014) *MOOCs by the numbers: Where are we now?* Available at: http://ideas.ted.com/moocs-by-the-numbers-where-are-we-now/ [Accessed 8 March 2016].

The geographic distribution of students using MOOCs in 2012 is represented in the infographic. Countries from all continents, with the exception of Africa and Antarctica, are represented in the top countries of origin in the data set, reflecting the widespread adoption of MOOCs. The largest proportion of students using MOOCs reside in North America, with the USA making up 38.5% and Canada 4.1% of all MOOC users. India (5.2%) and China (4.1%) stand as the countries with the third and fifth largest MOOC user bodies. However, although MOOCs have a global reach, they are far from attaining their social goal of bringing higher education to those unable to afford it.

For example, although India and China account for roughly 9% of all MOOC users, the penetration of MOOCs as a platform for higher learning in these countries is still limited, considering the percentage of MOOC users as a fraction of their population. Studies have found that an overwhelming proportion of MOOC users across the dominant platforms are highly educated and from developed countries.[194]

194 Chen, Z., Alcorn, B., Christensen, G., Eriksson, N., Koller, D. and Emanuel, E. J. (2015) *Who's Benefitting From MOOCs and Why*. Harvard Business Review. Available at: https://hbr.org/2015/09/whos-benefiting-from-moocs-and-why [Accessed 12 February 2016].

### 5.6. Number of Massive Online Open Courses (MOOCs) offered in respective languages (as of October 2015)




*Source: Class Central (2015) Languages*[195]

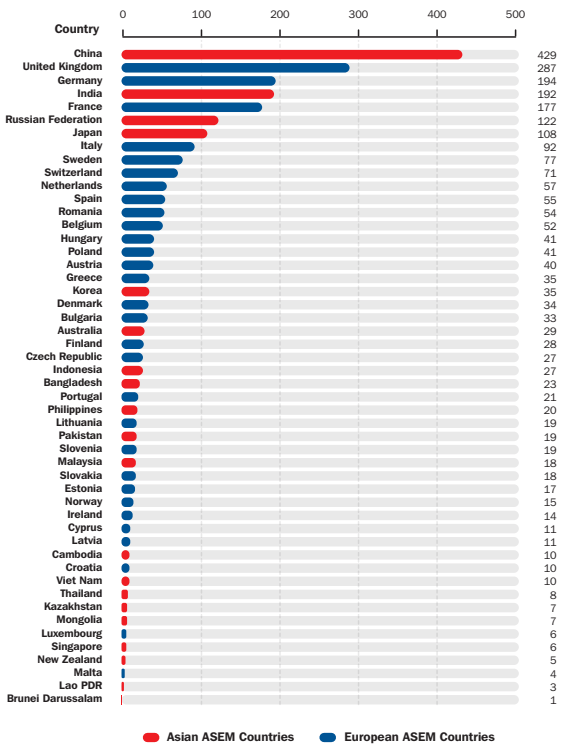
The data captures the number of MOOCs offered worldwide in 2015 in each of the 16 languages presented above. English features as the most widely offered language of MOOCs with 2,941 courses, accounting for almost 80% of all MOOCs offered. This corresponds with the United Kingdom and the USA leading in the number of MOOCs they offer. Spanish is the 2nd most widely offered language for MOOCs, accounting for 7.4% of all MOOCs. The large volume of Spanish courses was mainly driven by the entry of MiriadaX, the first MOOC provider catering to the large Spanish-speaking market, registering more than 1 million users with nearly 30 universities in Spain and Latin America.[196]

195 Class Central (2015) *Languages*. Class Central. Available at: https://www.class-central.com/languages [Accessed 28 October 2015].

196 Shah, D. (2014) *MOOCs in 2014: Breaking Down the Numbers*. Available at: http://www.edsurge.com/news/2014-12-26-moocs-in-2014-breaking-down-the-numbers [Accessed 8 March 2016].

# 6. Connectivity in Governance

## 6.1. Global distribution of think tanks among ASEM countries (2014)




*Source: McGann, J. (2015) 2014 Global Go To Think Tank Index Report*[197]

197 McGann, J. (2015) *2014 Global Go To Think Tank Index Report*. Think Tanks and Civil Societies Program, University of Pennsylvania. Available at: http://repository.upenn.edu/cgi/viewcontent.cgi?article=1008&context=think_tanks [Accessed 8 March 2016].

The data captures the number of think tanks in 50 ASEM countries[198] in 2014. China ranks first, housing 429, followed by the United Kingdom (287), Germany (194), India (192), France (177), the Russian Federation (122) and Japan (108).

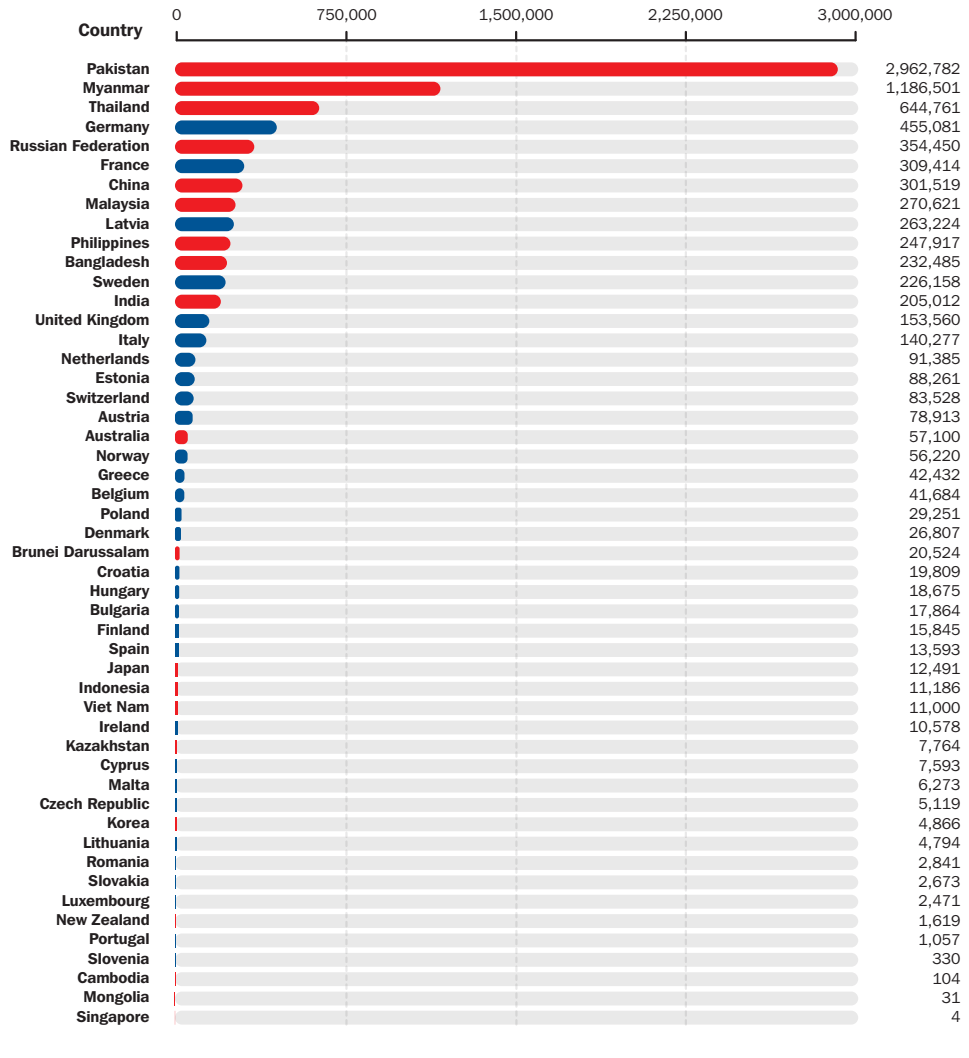
Developed countries typically have larger networks of think tanks because of advances in technology and information, as well as a positive regulatory environment to facilitate research and policy analysis on domestic, regional and global issues. European countries also feature prominently at the top of the list because of the openness of European governments, nurturing the growth of non-state actors to support policy making. Exceptions include China and India, whose high volume of think tanks signals their commitment to improving policy decisions and becoming world leaders.

Singapore, with 6 think tanks, and Brunei Darussalam with 1, rank last among developed countries. However, this is not indicative of the quality of work produced by the think tanks in these countries. Of the 6 think tanks in Singapore, 1 was featured on the list of top 50 think tanks in the world, and 4 in the top 25 in Asia.[199]

198 Data available for 50 countries only. Data on Myanmar is not available.

199 Ministry of Foreign Affairs Singapore. *Straits Times: Singapore think-tank among world's top 50*. Available at: http://www.mfa.gov.sg/content/mfa/media_centre/singapore_headlines/2012/201201/news_20120121.html [Accessed 3 March 2016].

## 6.2. Population of concern to the United Nations High Commissioner for Refugees (UNHCR) by country/territory of asylum (2014)




*Source: UNHCR (2015) UNHCR Global Trends: Forced Displacement in 2014*[200]

200 UNHCR (2015) *UNHCR Global Trends: Forced Displacement in 2014*. Available at: http://unhcr.org/556725e69.html [Accessed 8 March 2016].

The data captures the total population of concern to UNHCR, by country of asylum in 2014 among 50 ASEM countries.[201] The term population of concern includes refugees, asylum seekers, internally displaced persons (IDPs), returnees, stateless persons, and "others of concern", i.e. individuals who do not necessarily fall directly into any of the other groups, but to whom UNHCR may extend its protection and/or assistance service. The global population of concern to UNHCR, as of 2014, is 54,945,467.

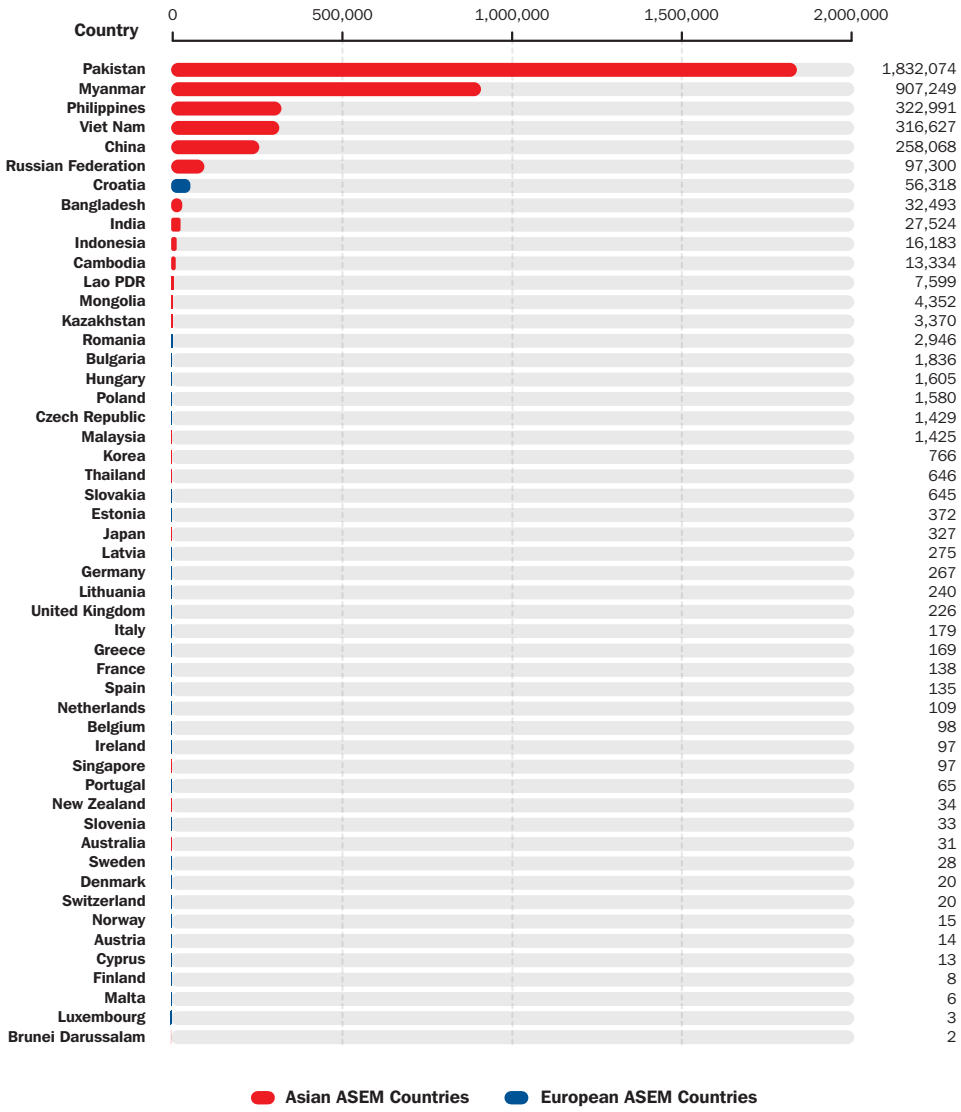
The countries that housed the largest proportion of the global total population of concern in 2014 are: Pakistan with a population of concern of 2,962,782 (5.4% of global figure); Myanmar with a population of concern of 1,186,501 (2.1% of global figure); and Thailand with a population of 644,761 (1.2% of global figure). IDPs account for a significant portion of the population of concern in these Asian countries. For example, Pakistan's population of concern constitutes almost entirely of refugees (51%) and IDPs (48.4%), and Myanmar's population of concern constitutes mainly of IDPs (31%) and stateless persons (68.3%).

European top countries of asylum include Germany, with the greatest population of concern amongst European nations in 2014, followed by France. Refugees and asylum seekers account mostly for the population of concern in these countries. For example, 81.5% of France's population of concern was made up of refugees, with 18% asylum seekers, while 47.9% of Germany's population of concern was made up of refugees, and 49.7% of asylum seekers. Italy and Greece rank 15th and 22nd respectively in the list of 50. Difficulty in collecting information as a result of the strained registration system and heavy inflow of people in these countries, as compared to Germany and France, may explain their lower ranking.

On the whole, Asia houses almost half of the global population of concern (47%), although it also contributes heavily to the population of concern, as is the case for Pakistan and Myanmar. Europe, which serves mainly as a safe haven, houses about 7% of the total population of concern.

201 Data available for 50 ASEM countries only. Data on the Lao PDR is not available.

## 6.3. Population of concern to the United Nations High Commissioner for Refugees (UNHCR) by origin (2014)




*Source: UNHCR (2015) UNHCR Global Trends: Forced Displacement in 2014*[202]

202 UNHCR (2015) *UNHCR Global Trends: Forced Displacement in 2014*. Available at: http://unhcr.org/556725e69.html [Accessed 8 March 2016]

The data presents the total population of concern to UNHCR originating from each ASEM country.[203]

Pakistan, Myanmar and the Philippines rank among the top 3 countries of origin for this group among ASEM countries. Pakistan, with 1,832,074 asylum-seekers, internally displaced persons, returnees, stateless persons and "others of concern" to UNHCR, is the top ASEM country of origin, making up 8.9% of the global population of concern. Myanmar, with 907,249 asylum-seekers, internally displaced persons, returnees, stateless persons and "others of concern" to UNHCR, comes in 2nd, accounting for 1.65% of the global population of concern. Developing Asian countries and Eastern European countries concentrate among the top 50% of countries of origin, while high income European and Asian countries mostly account for the bottom half of the list.

203 Data available for all 51 ASEM countries.

## 6.4. Global Diplomacy Index (2016)

| Country | Total Posts | Embassy/High Commission | Consulate/ Consulate -General | Permanent Mission | Other Representation | Overall Rank |
|---|---|---|---|---|---|---|
| United States | 270 | 166 | 83 | 10 | 11 | 1 |
| France | 267 | 160 | 89 | 16 | 2 | 2 |
| China | 257 | 162 | 86 | 8 | 1 | 3 |
| Russian Federation | 243 | 142 | 89 | 11 | 1 | 4 |
| United Kingdom | 231 | 148 | 60 | 9 | 14 | 5 |
| Brazil | 221 | 137 | 70 | 12 | 2 | 6 |
| Germany | 218 | 147 | 58 | 11 | 2 | 7 |
| Turkey | 215 | 125 | 78 | 11 | 1 | 8 |
| Japan | 214 | 142 | 61 | 9 | 2 | 9 |
| Spain | 212 | 114 | 88 | 10 | 0 | 10 |
| Italy | 202 | 119 | 75 | 5 | 3 | 11 |
| India | 172 | 119 | 47 | 3 | 3 | 12 |
| Korea | 170 | 116 | 47 | 5 | 2 | 13 |
| Mexico | 157 | 80 | 67 | 7 | 3 | 14 |
| Argentina | 153 | 84 | 61 | 7 | 1 | 15 |
| Switzerland | 148 | 103 | 29 | 12 | 4 | 16 |
| Canada | 141 | 97 | 33 | 9 | 2 | 17 |
| Netherlands | 141 | 104 | 25 | 10 | 2 | 17 |
| Greece | 138 | 81 | 46 | 9 | 2 | 19 |
| Indonesia | 133 | 95 | 34 | 3 | 1 | 20 |
| Poland | 131 | 86 | 36 | 7 | 2 | 21 |
| Chile | 126 | 69 | 49 | 7 | 1 | 22 |
| South Africa | 124 | 106 | 14 | 2 | 2 | 23 |
| Portugal | 122 | 71 | 42 | 8 | 1 | 24 |
| Belgium | 117 | 78 | 25 | 10 | 4 | 25 |
| Czech Republic | 114 | 90 | 17 | 5 | 2 | 26 |
| Saudi Arabia | 110 | 91 | 16 | 2 | 1 | 27 |
| Australia | 110 | 77 | 28 | 3 | 2 | 27 |
| Sweden | 104 | 88 | 7 | 7 | 2 | 29 |
| Hungary | 104 | 74 | 20 | 7 | 3 | 29 |
| Israel | 105 | 78 | 21 | 5 | 1 | 29 |
| Norway | 99 | 83 | 8 | 7 | 1 | 32 |
| Austria | 97 | 80 | 8 | 7 | 2 | 33 |
| Denmark | 93 | 70 | 14 | 6 | 3 | 34 |
| Finland | 84 | 68 | 5 | 6 | 5 | 35 |
| Ireland | 80 | 61 | 11 | 7 | 1 | 36 |
| Slovakia | 80 | 63 | 8 | 7 | 2 | 36 |
| New Zealand | 60 | 47 | 8 | 4 | 1 | 38 |
| Slovenia | 47 | 36 | 4 | 6 | 1 | 39 |
| Estonia | 44 | 34 | 4 | 6 | 0 | 40 |
| Luxembourg | 32 | 22 | 6 | 3 | 1 | 41 |
| Iceland | 22 | 15 | 4 | 3 | 0 | 42 |

Asian ASEM Countries  European ASEM Countries  Non-ASEM Countries

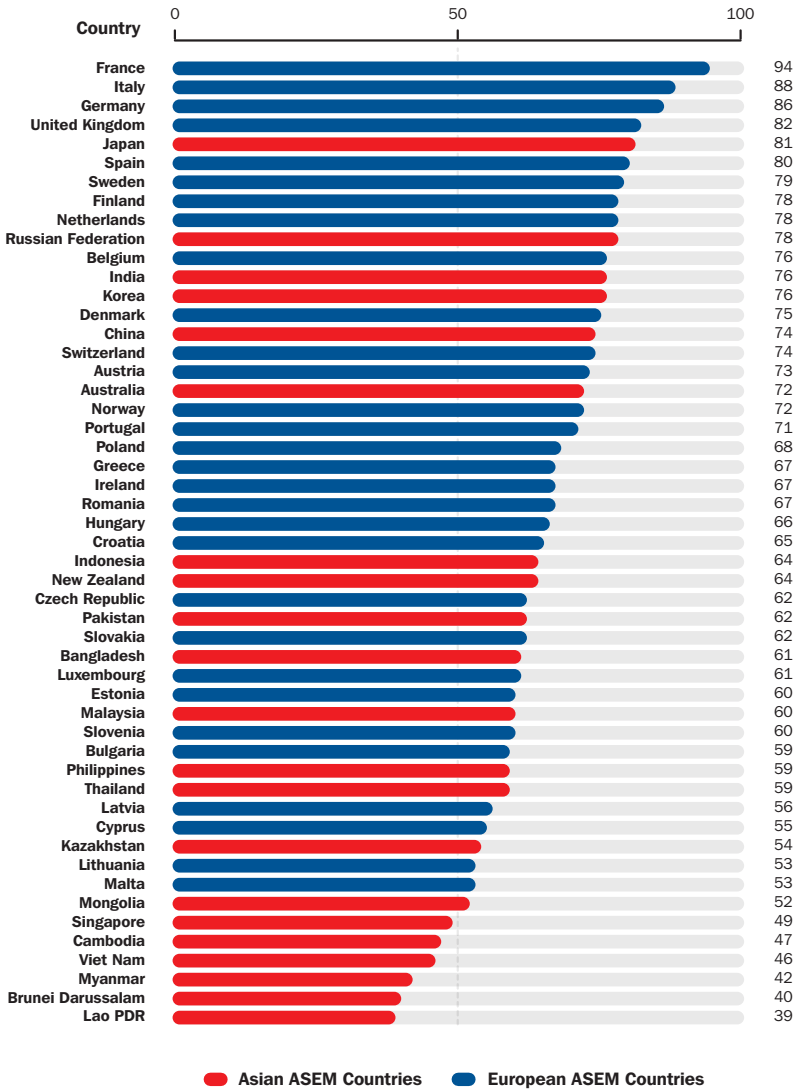
*Source: Lowy Institute for International Policy (2016) Global Diplomacy Index 2016*[204]

The *Global Diplomacy Index*, created by the Lowy Institute for International Policy, ranks the diplomatic networks of 42 countries of all G20 and OECD nations.[205] Embassies, high commissions, consulates, permanent missions and other representations, come under the definition of diplomatic networks. While diplomatic networks provide an indication of the degree of political cooperation among countries, they also signify a long term commitment by the respective countries to deepen bilateral relations.

Among the 42 countries, the USA boasts the widest diplomatic network with 270 diplomatic posts, followed by France (267), China (257), the Russian Federation (243) and the United Kingdom (231). In fact, all 5 permanent members of the United Nations Security Council are ranked in the top 5 countries with the highest number of diplomatic posts abroad.

204 Lowy Institute for International Policy (2016) *Global Diplomacy Index 2016*. Available at: http://www.lowyinstitute.org/global-diplomacy-index/ [Accessed 10 March 2016].
205 Ibid.

## 6.5. Membership in international organisations (2015)




*Source: Central Intelligence Agency (2015) 'International Organization Participation' The World Factbook*[206]

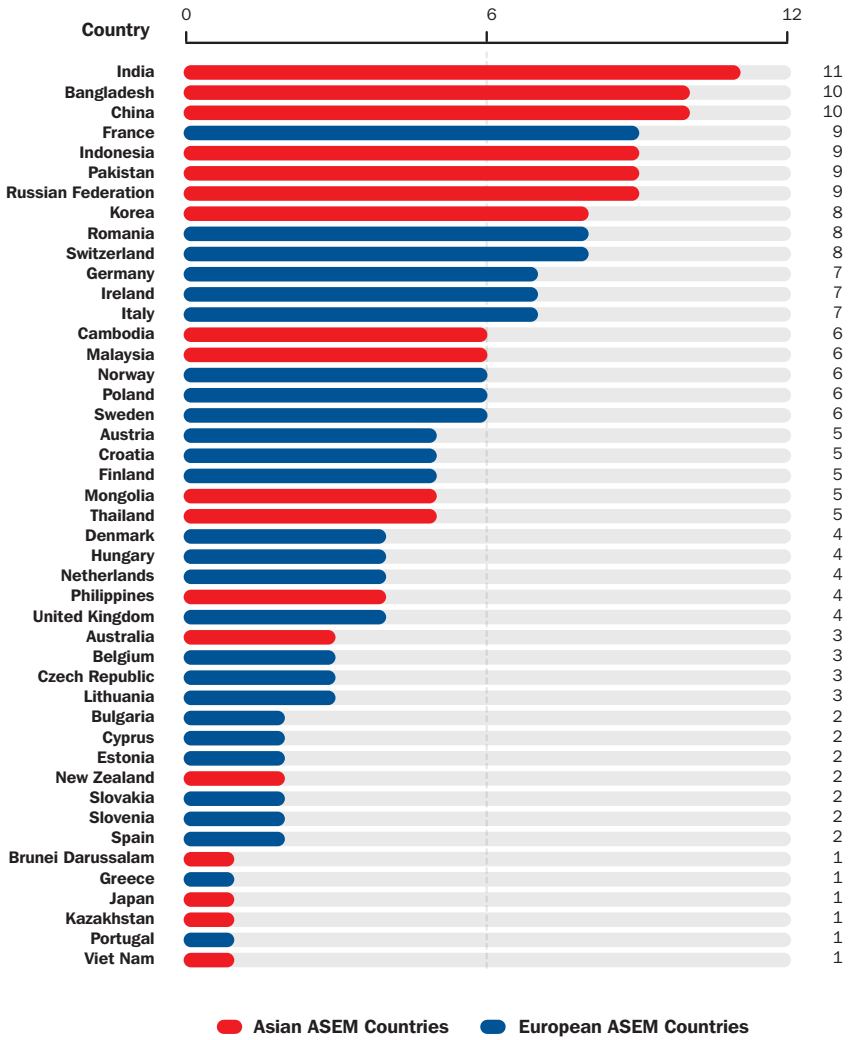
206 Central Intelligence Agency (2015) '*International Organization Participation' The World Factbook*. Available at: https://www.cia.gov/library/publications/the-world-factbook/fields/2107.html [Accessed 28 October 2015].

The data presents the number of memberships in international organisations for all ASEM countries in 2015. An international organisation consists of at least 2 members of the international system, bound by a formal instrument of agreement (charter) between the governments of national states, usually with the purpose of promoting voluntary cooperation and coordination between, or among, its members.[207]

France tops the list with 94 memberships, followed by Italy (88), Germany (86), the United Kingdom (82) and Japan (81). Developed countries feature prominently in the top 20 countries with India (76) and China (74), presenting exceptions to this trend. China and India are playing an increasingly important role, both increasing the number of international organisations of which they are members, and their degree of participation within these organisations.

207 McCormick, J. (1999) *European Union: Politics and Policies*. Boulder, CO: Westview Press.

## 6.6. Participation of ASEM countries in UN peacekeeping operations (as of June 2015)




*Source: United Nations (2015) Peacekeeping Fact Sheet*[208]

208 United Nations (2015) *Peacekeeping Fact Sheet*. Available at: http://www.un.org/en/peacekeeping/resources/statistics/factsheet.shtml [Accessed 28 June 2015].

The data captures the number of UN peacekeeping operations undertaken by ASEM countries[209] as of June 2015.

India ranks 1st, having sent their troops on 11 UN peacekeeping operations. Bangladesh and China tie for 2nd place with participation in 10 operations and France, Indonesia, Pakistan and the Russian Federation come in 3rd, each participating in 9 peacekeeping operations.

Interestingly, the Russian Federation, which ranked 26th in terms of personnel contribution, ranks 3rd in participation. Other anomalies include Romania and Switzerland, who ranked 23rd and 31st in terms of contribution, tying for 4th top participating country with participation in 8 operations.

209 Data available for 45 ASEM countries. Data on the Lao PDR, Latvia, Luxembourg, Malta, Myanmar and Singapore are not available.

## 6.7. Police, military experts and troops participating in UN peacekeeping operations (as of June 2015)

| Country | Police | Military Experts | Troops | **Total** |
|---|---|---|---|---|
| Bangladesh | 1,237 | 70 | 8,127 | **9,434** |
| Pakistan | 469 | 92 | 7,895 | **8,456** |
| India | 991 | 55 | 6,962 | **8,008** |
| China | 176 | 23 | 2,883 | **3,082** |
| Indonesia | 178 | 36 | 2,521 | **2,735** |
| Italy | 1 | 0 | 1,105 | **1,106** |
| Mongolia | 0 | 14 | 930 | **944** |
| France | 39 | 8 | 871 | **918** |
| Malaysia | 15 | 21 | 842 | **878** |
| Cambodia | 0 | 13 | 833 | **846** |
| Spain | 6 | 0 | 618 | **624** |
| Korea | 3 | 16 | 597 | **616** |
| Netherlands | 40 | 14 | 466 | **520** |
| Ireland | 12 | 17 | 340 | **369** |
| Finland | 1 | 23 | 316 | **340** |
| United Kingdom | 4 | 0 | 285 | **289** |
| Sweden | 36 | 20 | 229 | **285** |
| Japan | 0 | 0 | 272 | **272** |
| Germany | 21 | 18 | 147 | **186** |
| Philippines | 24 | 5 | 157 | **186** |
| Austria | 1 | 9 | 174 | **184** |
| Slovakia | 8 | 2 | 159 | **169** |
| Romania | 58 | 34 | 3 | **95** |
| Hungary | 1 | 9 | 81 | **91** |
| Norway | 37 | 18 | 32 | **87** |
| Russian Federation | 18 | 53 | 4 | **75** |
| Denmark | 0 | 15 | 33 | **48** |
| Australia | 15 | 14 | 15 | **44** |
| Estonia | 0 | 4 | 39 | **43** |
| Brunei Darussalam | 0 | 0 | 30 | **30** |
| Switzerland | 3 | 19 | 6 | **28** |
| Thailand | 9 | 6 | 7 | **22** |
| Croatia | 0 | 15 | 1 | **16** |
| Slovenia | 0 | 1 | 14 | **15** |
| Poland | 3 | 10 | 0 | **13** |
| New Zealand | 0 | 10 | 1 | **11** |
| Czech Republic | 0 | 10 | 0 | **10** |
| Kazakhstan | 0 | 7 | 0 | **7** |
| Viet Nam | 0 | 2 | 3 | **5** |
| Belgium | 0 | 2 | 2 | **4** |
| Bulgaria | 1 | 2 | 0 | **3** |
| Lithuania | 2 | 1 | 0 | **3** |
| Portugal | 1 | 0 | 2 | **3** |
| Cyprus | 0 | 0 | 2 | **2** |
| Greece | 0 | 0 | 1 | **1** |

**Asian ASEM Countries** **European ASEM Countries**

*Source: United Nations (2015) Troop and police contributors*[210]

210 United Nations (2015) *Troop and police contributors. United Nations Peacekeeping*. Available at: http://www.un.org/en/peacekeeping/resources/statistics/contributors.shtml [Accessed 28 June 2015].

The data captures the number of police, military experts, troops and total personnel contributed by 45 ASEM countries[211] for UN peacekeeping operations as of June 2015.

Bangladesh, with 9,434 personnel, ranks 1st, followed by Pakistan (8,456), India (8,008), China (3,082) and Indonesia (2,735). As the total number of UN peacekeeping personnel in 2015 stood at 106, 506[212], Bangladesh makes up 8.8% of the total peacekeeping force, Pakistan 7.9%, India 7.5%, China 2.8% and Indonesia 2.5%. The top contributing countries are developing Asian countries with an abundance of human resources, their contributions driven by higher salaries and remittances, and political clout. UN-funded training for a country's military troops, in the interest of enhancing one's own capabilities, also explains the concentration of South Asian countries at the top of the list.[213]

Amongst the 4 ASEM permanent members of the United Nations Security Council, China is a top contributor to the peacekeeping force, while personnel contributions from France, the United Kingdom and the Russian Federation make up less than 1% together.[214] Instead their contributions tend to be financial. The lack of direct financial incentive for richer countries to deploy peacekeepers, a lack of domestic support in Western countries and a negative perception of UN command, may explain the discrepancy between the overall contribution of developing and developed countries.[215]

211 Data available for 45 ASEM countries only. Data on the Lao PDR, Latvia, Luxembourg, Malta, Myanmar and Singapore are not available.

212 Kirk, A. (2015) *UN Peacekeepers: How Many Personnel Does Each Country Contribute?* Available at: http://www.telegraph.co.uk/news/worldnews/asia/china/11898603/UN-peacekeepers-How-many-personnel-does-each-country-contribute.html [Accessed 4 March 2016].

213 Axe, D. (2010) *Why South Asia Loves Peacekeeping*. Available at: http://thediplomat.com/2010/12/why-south-asia-loves-peacekeeping/ [Accessed 4 March 2016].

214 Kirk, A. (2015) *UN Peacekeepers: How Many Personnel Does Each Country Contribute?* Available at: http://www.telegraph.co.uk/news/worldnews/asia/china/11898603/UN-peacekeepers-How-many-personnel-does-each-country-contribute.html [Accessed 4 March 2016].

215 *Dominguez, G. (2016) What Drives South Asians to Peacekeeping? Available at: http://peaceoperationsreview.org/article/what-drives-south-asians-to-peacekeeping/ [Accessed 4 March 2016]*

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