Global Location Trends

2017 Annual Report

IBM Institute for Business Value

Executive Report

Operations and Supply Chain

IBM-Plant Location International

IBM-Plant Location International (PLI) is a global service of IBM Global Business Services, specializing in corporate location and economic development strategies. With a global center of excellence in Brussels-Belgium, IBM-PLI provides location strategy and site selection services to corporate clients, analyzing international business locations for expanding or consolidating companies to select the optimal location (country/city). IBM-PLI also advises economic development organizations on improving their areas' competitiveness, strategic marketing, developing value propositions and marketing tools.

IBM-PLI maintains a proprietary Global Location Trends database, which tracks cross-border "greenfield" and expansion investments around the world. Every year, the data are used to produce the Global Location Trends annual report, a detailed Global Location Trends, Facts & Figures report, as well as multiple country reports. For more information, visit **ibm.com**/gbs/pli.

Growth, disruption and opportunities

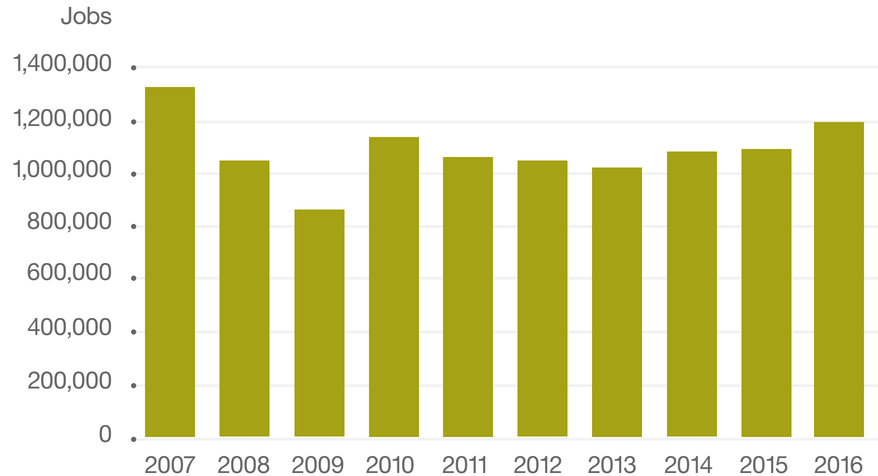
As the global economy grows stronger, clouds of uncertainty shroud future prospects of global investment flows. The political rhetoric on trade is changing, and disruptive technologies are reconfiguring how and where value is created. Together, these forces create a powerful alteration of globalization in which international flows of data and information become more prominent, while the internationalization of goods, services and capital may have to adapt to changing opportunities for trade. Although this brings disruption and uncertainty for companies, the opportunities for accessing international markets and leveraging global supply chains are expected to continue to drive foreign investment activity in the future.

For more detail on the findings in this report, see "The IBM Global Location Trends database monitors global location trends through new foreign investment" on page 21.

Foreign direct investment continues to grow

With economic prospects improving in many parts of the world in 2016, global foreign direct investment (FDI) levels increased significantly, by approximately 10 percent measured by the number of jobs created (see Figure 1). To a large extent, this was driven by strong inward investment performance among many emerging economies, as well as multiple mature markets.

Figure 1
New foreign investment activity 2007-2016



From the big three to the big four

Job creation through FDI increased 10 percent, reaching its strongest performance in the past 10 years.

India took the #1 spot for foreign investment attraction and replaced the United States (US), which had led for the past four years. Mexico joined the leading global FDI destinations.

Chinese companies showed a strong increase in global investment activity, making a major impact on job creation in Africa.

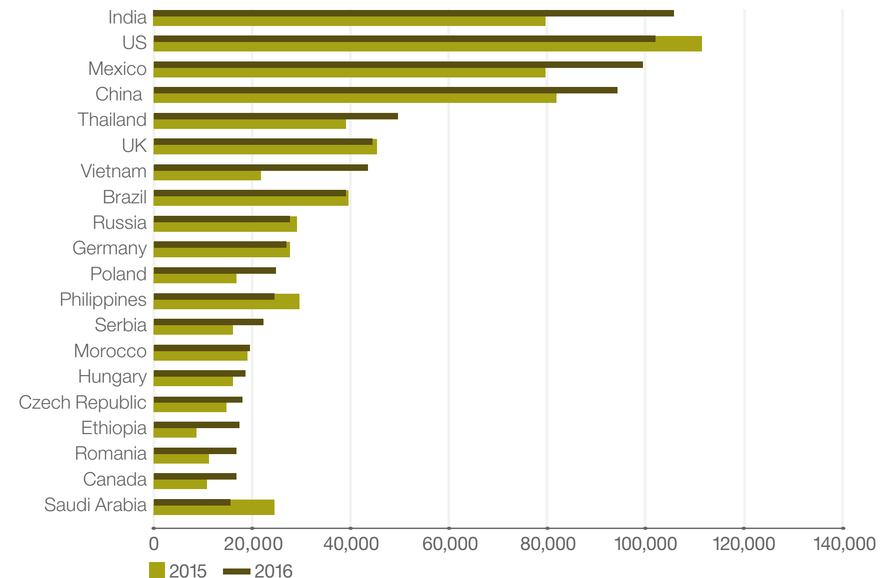
The Brexit decision began to impact investment activity into and out of the United Kingdom (UK), particularly affecting London.

Technology jobs showed the fastest increase across many industries.

India experienced significant growth in inward investment and is now the top-ranking destination country in the world measured by jobs created (see Figure 2). Building on the momentum generated in 2015, the country continued to see increasing investment activity by foreign companies. While India's growth in previous years was associated with a diversification of investment into sectors like manufacturing, the increase in 2016 was mostly driven by India's strengths in core activities, such as business services, and information and communications technologies (ICT). Tourism was an additional growth sector in 2016.

Figure 2

Top-ranking destination countries by estimated jobs



FDI to Mexico grew by almost 25 percent, with the country now ranking second for inward investment measured by the number of jobs created (see sidebar, “The future of Mexico”). It has reached a historic record performance with 100,000 new jobs created by foreign investment. These results place Mexico firmly within the group of most significant destination countries for FDI, joining India, China and the US. Investment into Mexico remains highly concentrated in the automotive sector, but the country has also increased inward investment in sectors such as chemicals, electronics, textiles, and industrial machinery and equipment.

China continues to redefine its role in the global economy, and has seen growth in FDI of 15 percent measured by the number of jobs created, placing it again ahead of the US in the global ranking, as had been the case consistently before the global financial crisis. Interestingly, much of this growth was in manufacturing activities in sectors such as transport equipment, chemicals, electronics and electrical equipment. The key beneficiaries of this growth in inward investment have been the regions of Tianjin, Hunan and Hubei, while investment into the large tier-one cities, notably Shanghai, Beijing and Shenzhen, has remained stable or declined. Accordingly, as investors regain their interest in China as an investment destination, they are looking for alternative locations to the traditional hotspots in China, which now have higher operating costs and tighter labor markets.

The future of Mexico

Mexico has become one of the world’s top destination countries for FDI, notably as a manufacturing hub for the automotive industry. While some of this growth in inward investment is driven by the growing local economy, a large proportion of it is a result of the access the country offers to the large North American market. As questions are now being raised by the new US administration about the future trading relationship with Mexico, uncertainty around future access to the US market could have potentially significant detrimental impacts on foreign investment into Mexico. Indeed, although any actual changes to the trade relationship may not happen or may be some years away, the fact that uncertainty has been created is expected to negatively influence investor sentiment about Mexico in the immediate future. To counter this, it is important that Mexico looks to diversify its economy and role in global value chains, moving away from such a heavy reliance on the automotive industry, and developing other strengths and opportunities.

Regional differences

Several countries in *Asia* continue to see strong growth as they take advantage of the new opportunities associated with China's changing role in global value chains. For example, Thailand and Vietnam have emerged in recent years as favored locations for manufacturing, in some cases replacing China as global export platforms. In contrast, the Philippines has seen a considerable decline, as the global decline in large contact centers and business process outsourcing activities has had a significant detrimental impact on the country's inward investment. Coupled with increased perceived political risks and uncertainty, the country's role in global value chains has come into question.

In *North America*, the US experienced a decrease of 8 percent of foreign investment in 2016, after a few years of sustained growth (see sidebar, "The state of US states"). This decline was compensated by strong growth in domestic investment leading to an overall 11 percent increase. The growing US economy remains a major attraction for companies, and foreign investors continue to establish or expand operations in the country in order to serve this major market. Meanwhile, Canada saw inward investment grow by more than 50 percent after a decrease in 2015 and is now benefiting from job creation by foreign investors at roughly the same levels as those prior to the economic crisis. As noted above, Mexico is now the top destination country in North America for foreign investment, after growth of approximately 25 percent in 2016.

The state of US states

Within the US, Texas is the top-ranking state for all new cross-border investments (domestic and foreign investment originating from out of the state), followed by Illinois and Georgia. While new job creation in Texas is generated mostly (78 percent) by domestic US companies, Illinois and Georgia have seen strong growth in job creation by foreign investors. These states rank first and second respectively in the foreign investment US state ranking, whereas Texas is third.

Last year's top performer Tennessee saw a strong decrease in foreign investment job creation, but overall experienced 2 percent growth due to a large increase of domestic investment.

Detailed rankings and performance profiles for US states can be found in the "2017 Global Location Trends. Facts & Figures" report.[1]

In *Europe*, the UK experienced a deterioration of its inward investment performance, with a small decline of 2 percent measured by the number of jobs created. The number of investment projects decreased by 13 percent. This is likely to be the result of uncertainty associated with the Brexit decision in 2016, causing companies to put plans to invest in the UK on hold. We are continuing to see this trend in 2017. Interestingly, the impact of Brexit is also evident in outward investment by British companies, as greater uncertainty and a less favorable economic outlook cause these companies to rethink their international expansion plans.

In contrast, many other European countries, notably in Eastern Europe, experienced strong growth in inward investment. Poland and Serbia showed gains of more than 25 percent, and the Czech Republic saw growth of more than 20 percent. In Western Europe, the Netherlands had a record year for inward investment with an increase of approximately 10 percent, building on the significant momentum and growth seen in the previous three years.

Notwithstanding a general positive trend and growth in FDI in Europe, countries with more fundamental structural weaknesses in their competitive position saw deteriorating performance. For example, Belgium and France, which both struggle with high labor costs and rigidities in their labor markets, experienced declines in job creation through inward investment of more than 20 percent and 15 percent respectively.

Into Africa

Overall inward investment into Africa was at record levels in 2016, largely as a result of growing interest from Chinese investors, although companies from other countries, such as the US, also increased investment. While investment performance on the continent remains varied, and several countries continue to have highly volatile investment patterns, the strong performance in 2016 is also indicative of more fundamental improvements in several African countries. For example, Ethiopia has made concerted efforts to improve its business environment in recent years and is actively trying to position itself as a leading manufacturing hub for the continent, with significant improvements in education and infrastructure development. These efforts are now beginning to generate results, with investors taking note and investing in the country. In addition, investors have regained confidence in the opportunities offered by several of the North African countries, which had previously seen investment decline as a result of instability and uncertainty.

Several countries in *South America* benefited greatly from the global growth in FDI investment. In particular, Costa Rica almost tripled its inward investment in 2016, with the overall number of jobs created at the highest level on record. This was primarily the result of significant investment activity in shared services centers, but also growth in production and more market-driven sales and services operations. Cuba showed an expected strong increase of inward investment after the embargo was lifted, which was mostly concentrated in the hotel industry. Chile also managed to almost triple inward investment, albeit from a much lower base. Meanwhile, Colombia experienced growth of 20 percent.

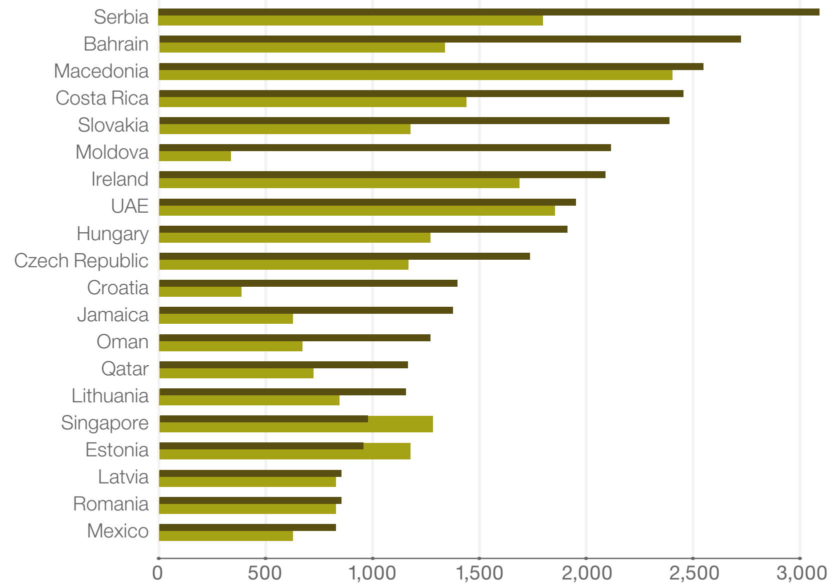
Brazil only managed to keep a stable level of inward investment after several years of considerable declines. The country continues to struggle with several structural competitive weaknesses, such as high operating costs, a complex regulatory environment and rigid labor-market legislation. More recently, these issues have been compounded by political instability, which has brought the country's future economic prospects into question.

Overall levels of foreign investment to *Africa* increased by 15 percent (see sidebar, "Into Africa"). However, this growth was concentrated among a few destination countries rather than evenly distributed across the continent. Ethiopia managed to become one of Africa's top destination countries in 2016 after almost doubling the number of jobs created by foreign companies. This is largely explained by significantly increased investments from Chinese companies, among others, in the textile sector, which is by far the most important sector for foreign investment in the country. The traditional strong performers in Northern and Southern Africa also benefited from increased interest by foreign investors in Africa, as Morocco (leader in Africa), Egypt, Algeria and South Africa experienced significant growth in inward investment.

Small countries keeping up momentum

When looking at the number of jobs created relative to population size, the countries of the Western Balkans again had an impressive performance in 2016 (see Figure 3). Serbia and Macedonia are ranked first and third in the world on this measure, with both countries continuing to build on the strong momentum they have developed in the last three-to-four years. These results show that the Western Balkans are now firmly on the radar of foreign investors, with companies increasingly viewing some of the countries in the region as attractive locations for their expansions in Europe. Interestingly, 11 countries of the global top 20 are from Eastern Europe, illustrating the strong performance of this region in 2016. Moldova is the newest emerging investment destination. Other countries that perform well on this measure are in Latin America and the Middle East, with Bahrain, Costa Rica, United Arab Emirates (UAE), Oman, Qatar and Mexico all featured in the global top 20.

Figure 3
Top-ranking destination countries by estimated jobs per million inhabitants



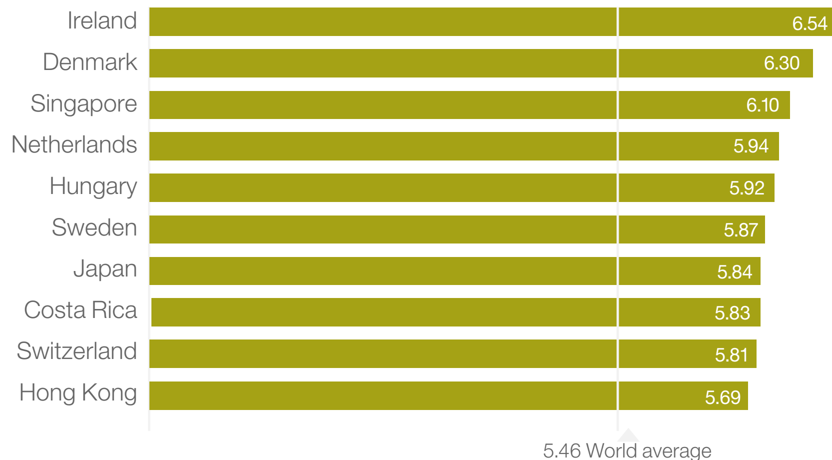
Note: This analysis excludes countries with a population of less than one million.

Ireland continues to lead on value

When looking at the average value of investment projects compared to that based on the volume of job creation, a very different picture emerges (see Figure 4). For the sixth year in a row, Ireland tops the world's ranking in attracting high-value projects. Denmark ranks second and Singapore is third. While this ranking continues to be dominated by mature economies, it is of interest to note the presence of Hungary and Costa Rica in the top 10. These countries have successfully transitioned toward higher-value investment in recent years. It is particularly impressive that both countries have managed to achieve a significant increase in the volume of investment as measured by the number of jobs created combined with an increase in the average value of projects.

Figure 4

Top-ranking destination countries by average job value of investment projects – 2016



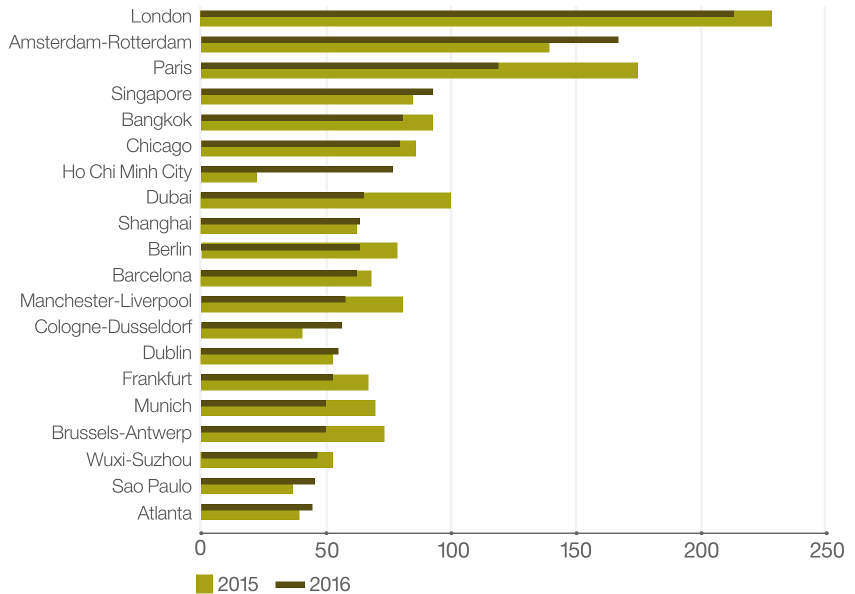
Note: Countries with fewer than 30 projects were not assessed because of sample size.

London calling

London continues to be the dominant metropolitan area for foreign investment measured by the number of projects attracted (see Figure 5). However, since the Brexit announcement, many companies have started reviewing the proposition of the UK, and London in particular, within their international footprints. As a result, companies have started delaying expansion and relocation decisions, resulting in a decrease of new investment projects in 2016. The trend is likely to continue in 2017, as multiple companies have already announced concrete plans to shift some of their current activity in London to other European cities. London's top position is being challenged mostly by the Amsterdam-Rotterdam metropolitan area, which has shown consistent growth and become a global top destination for foreign investors, in particular ICT companies. Paris has also witnessed a decrease in inward investment projects. This may be the result of hesitation by companies after various recent terrorist attacks in the city. However, such perceptions of a city's safety are often short-lived.

Figure 5

Top-ranking metropolitan areas by number of projects



Note: Projects of fewer than 10 jobs were not included.

The US and Germany drive growth in global foreign investment

The vast majority of the growth in global FDI is driven by companies from the US and Germany, emphasizing the importance of these two large economies for global investment activity (see Figure 6). Both countries have seen solid economic growth in the last couple of years, with companies within the countries seeking to expand capacity and activities around the world as a result. Furthermore, companies from China and South Korea significantly increased their foreign investment activity, and China is now ranked as the fourth most significant source of foreign investment in the world, ahead of France and the UK (see sidebar, “Here comes China”).

In contrast, Japanese companies reduced their internationalization efforts and continued the trend that started in 2012 of gradually lowering outward investment. This four-year period of declining foreign investment follows a period of significant growth in previous years, and is largely driven by dynamics in key sectors such as automotive and electronics. These industries have experienced some volatility in Japan over this period with, for example, overall motor-vehicle production in the country being highly irregular and remaining below the levels recorded in 2008 prior to the global financial crisis. In addition, some key Japanese companies in these industries have been struggling to deliver profitable growth in recent years.

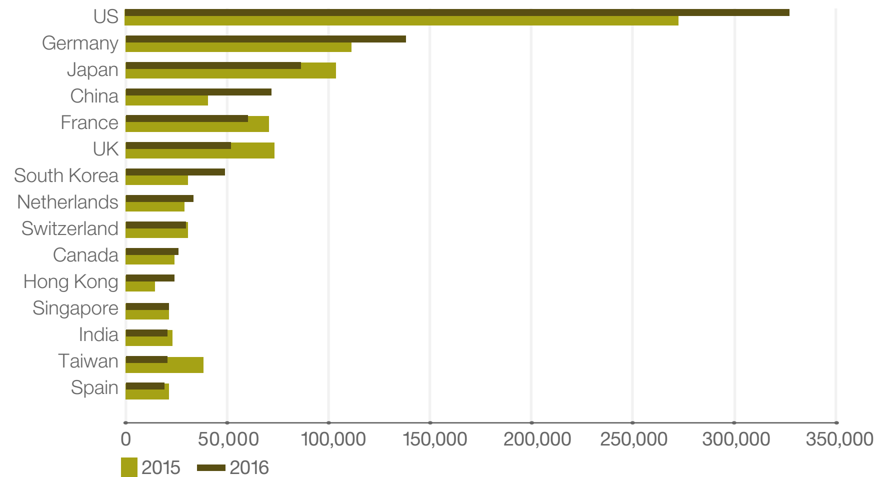
Here comes China

Outward investment by Chinese companies grew significantly in 2016 and is now at a record high. This is driven by growth across a wide variety of sectors, such as textiles, transport equipment, chemicals and ICT. This varied sectoral mix of outward investment also results in a wide geographic dispersion of destination countries for Chinese investment. Hence, Chinese companies have been expanding their footprint in a variety of countries in Africa, Asia, and North and South America in recent years. These countries have received a growing amount of investment in production activities, as Chinese companies are seeking to serve their growing international markets and diversifying their manufacturing footprints away from a reliance on China as a manufacturing base.

With the exception of a few countries, such as Russia, Germany, Hungary and Poland, Chinese investment to European countries remains fairly modest. This relative concentration of Chinese investment within Europe may be due to the market opportunities and sectoral alignment these destination countries offer to Chinese companies.

Figure 6

Top-ranking origin countries by estimated jobs

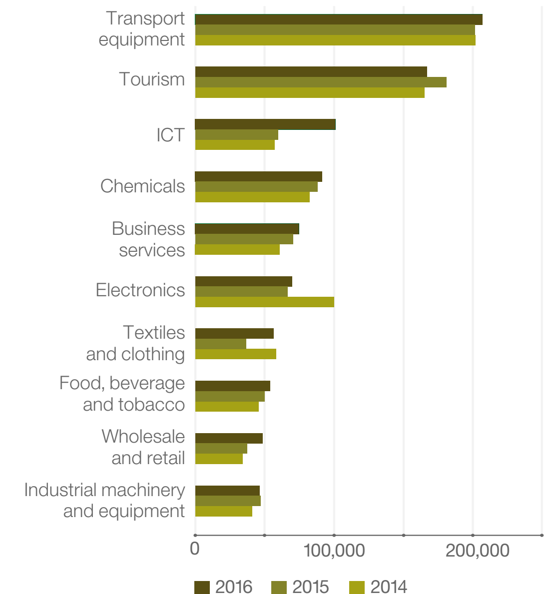


Manufacturing, logistics and ICT drive growth in FDI

Transport equipment (dominated largely by automotive) continues to be the number one sector for global FDI, with tourism number two (see Figure 7). The role of technology in global FDI is becoming more significant, with the ICT sector seeing significant growth. Other sectors have remained fairly stable. The ICT industry is becoming increasingly important as a driver of transformation across the economy, with numerous new sub-sectors and segments gaining prominence. For example, the last couple of years have seen the emergence of sub-sectors such as financial technology (or fintech) and cybersecurity software, which are now generating an increasing amount of FDI around the world.

Functionally, FDI in production activities grew by approximately 10 percent. Similarly, distribution and logistics activities saw growth of more than 20 percent, while investment in R&D centers increased by almost 30 percent. In contrast, investment in shared services centers declined by more than 20 percent, and overall job creation for this activity is now less than one-third of the total level in 2006. This continued decline in jobs created from shared services centers is evidence of the transformation of service delivery operating models across industries, as companies seek to balance delivery capabilities and move key functions closer to other operations and customers.

Figure 7
Top-ranking sectors by estimated jobs



Transforming globalization

It is evident from the above analysis that FDI patterns are changing as companies adapt their internationalization strategies to new circumstances and opportunities for growth. Going forward, corporate efforts to capitalize on global economic opportunities could be transformed by growing uncertainty about future global trade and rapid technological developments. Together, these two forces are expected to usher in a new form of globalization in which international flows of data and information could become more prominent, while the internationalization of goods, services and capital may have to adapt to changing opportunities for trade.

Toward a new age of uncertainty
The internationalization efforts of companies are shaped by the prevailing global and regional trade regimes. In the last 30 years, the trend has been toward more open trading relationships, with barriers to trade and international investment gradually being lowered or removed as countries sought to integrate their economies further. This has increased the opportunities for companies to access markets and leverage global supply chains. For example, many companies have moved toward just-in-time supply chains with limited inventories, enabled by trade without duties or customs delays. More fundamentally, corporate location and investment strategies are based on current and expected trade agreements and relationships between countries.

The assumptions about trade that have underpinned corporate investment decisions are now being challenged as global trade looks to become disrupted and more complex. In Europe, the UK's decision to leave the European Union (EU) creates uncertainty about the future opportunities for goods, services, capital and labor to move freely between the

two entities. This could have substantial implications for how companies approach their operating footprints in the EU and the UK, as is already apparent in the lower inward investment to the UK and reluctance by companies from the UK to invest abroad. These results are mainly due to uncertainty rather than an assessment of the future relationship between the EU and the UK, which remains unclear.

Notwithstanding this uncertainty, companies are beginning to make plans for a post-Brexit future and are reviewing options and operating models. An immediate impact is already being seen within some industries, with several financial institutions deciding to relocate some operations from the UK to other European countries. Moreover, the impact is seen in British outward investment, with uncertainty causing British companies to put investment projects on hold. Going forward, the outcomes of the Brexit negotiations could significantly impact corporate investment activity on the continent, as companies seek to adapt their European operating models.

However, global trade is also being disrupted or challenged in other parts of the world. Most notably, the new administration in the US has indicated a desire to renegotiate existing trading relationships, such as the North American Free Trade Agreement (NAFTA) with Canada and Mexico. In addition, the US has withdrawn from the Trans-Pacific Partnership (TPP) and made it clear that progress with the Transatlantic Trade and Investment Partnership (TTIP) is not a priority. This shift in tone and rhetoric on trade is contributing to a sense of uncertainty about the future of global trade. If such uncertainty persists or is furthered, international investment activity will likely be detrimentally affected.

Nevertheless, it is important to maintain perspective and appreciate that the global economy continues to become more integrated in many parts of the world. For example, several Asian countries have indicated that they wish to continue with TPP, while the EU has recently completed trade agreements with Canada and Japan. Moreover, recent years have seen efforts at furthering economic integration within and between regions as is seen, for example, between the Southern Common Market (Mercosur) and the Southern African Customs Union (SACU) and the establishment of the Eurasian Economic Union (EAEU). Accordingly, while potential changes to trading relationships could entail an element of disruption for companies, the opportunities for accessing international markets and leveraging global supply chains could continue to drive FDI activity in the future.

Digital disruption and FDI

Future global investment activity is expected to be transformed as a result of digital disruption.[2] We are currently witnessing a new wave of technological advancement that promises to radically transform how work gets done in global value chains and to unleash new opportunities for value creation. The convergence of technologies, such as the Internet of Things, big data, analytics, mobile and social collaboration, is sometimes called "The fourth industrial revolution." This revolution is credited with enabling organizations to be more intelligent, more agile, and better able to scale their operations, optimize supply chains and shift to new business models with unprecedented speed. As a result, we are likely to see significant changes to global operating footprints.

In manufacturing, digital disruption is expected to alter the principles of value creation in a wide range of industries. With greater automation and opportunities for tailoring production to local market needs, manufacturing footprints are likely to be more decentralized, moving away from earlier efforts at consolidation and maximization of economies of scale. This transformation could potentially place less emphasis on low labor costs as a location driver, which would have implications for many emerging economies where it's currently a key competitive advantage.

Services functions are also expected to be transformed by digital disruption and opportunities for automation. The emergence of artificial intelligence and cognitive computing is likely to transform services and outsourcing, creating new opportunities for automating service delivery, increasing efficiency and decreasing the amount of manual (human) activity involved. This enables possibilities for further cost reduction, as well as greater visibility and insights into processes and performance. As a result, the nature, scale and requirements of future services centers could be very different from what they have been to date. Competitive advantage for these future services functions is likely to be shaped by a different set of skills and digital infrastructure requirements, while the role of labor cost arbitrage is likely to become less important.

Navigating through immediate uncertainty and preparing for the future

A key difficulty for companies attempting to respond to changes in global trade is the lack of clarity on what future relationships will look like. This uncertainty is a problem and could cause companies to think twice about any immediate plans to invest or expand. However, as the coming months and years will hopefully bring greater clarity on the future of global trade, notably the relationship between the UK and the EU, companies should now be thinking about the appropriate strategic options available to them. This involves identifying possible scenarios and specifying potential challenges or opportunities posed by Brexit, and other changes to global trade for particular functions or components of a company's operations.

In so doing, companies can look to their current footprints and level of integration across operations as a starting point, and seek to define the optimal future state in response to different scenarios. Moreover, they can focus on developing contingency plans and incorporate operational agility to be able to respond to unforeseen disruptions. This should include greater operational and supply-chain visibility in order to expose risks from changes in suppliers, trade or market conditions. It should also include a review of implications for staffing and resource planning, and preliminary preparations of systems, processes and capabilities to accommodate future changes to global trade.

Meanwhile, companies should also assess the implications of digital disruption and prepare their operating footprints for the future. In particular, they should ascertain how digital disruption will affect different functions and parts of their overall operating model, and establish a roadmap for transformation. Companies that do not seek to leverage the potential of digital technologies could be at a competitive disadvantage in the future.

For governments and policy makers seeking to attract investment and create jobs in their locations, it is important to understand how changes in trade and digital disruption will affect their location's value proposition in the future. It is critical that government leaders at all levels understand how their location can be part of a company's solution and provide the right conditions, skills and capabilities that new corporate strategies demand.

Indeed, as the global economy is transformed by digital technologies in the coming years, it is crucial that skills provisioning is aligned to help people meet the requirements of a rapidly changing labor market. Ensuring that people have the skills to benefit from the opportunities offered by new technological developments is a must. This could involve not just more education, but a transformation in the types of skills that are developed and how they are provided. Rather than merely thinking in terms of education systems and institutions, government and public sector leaders need to embrace the idea of a learning ecosystem encompassing public, private and non-government actors. Within these ecosystems, partners collaborate and share information to achieve mutually beneficial outcomes for learners and themselves. Successfully orchestrating learning ecosystems could be the critical skills policy challenge in the era of digital disruption.

For more information

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The IBM Global Location Trends database monitors global location trends through new foreign investment

The main available data for analyzing *foreign direct investment (FDI)* trends around the world has been the capital flows data as published by the United Nations. However, a significant share of these flows is generated from mergers and acquisitions (M&As) and portfolio investments where the business location is typically not a main consideration. This data is therefore misleading for the purposes of measuring the success of geographical entities (countries, states and even cities) in attracting investment by foreign companies.

Rather, the *investment projects* where a clear decision on the investment location has been made are better for measuring the success of individual countries in attracting foreign investment. For this reason, IBM's *Global Location Trends* database tracks announced decisions of companies to locate new operations in regions outside of their headquarters region and country.

In addition to the annual Global Location Trends report, data from the Global Location Trends database are used for individual *country or state reports* (on request), and a detailed *Facts & Figures report*, which includes a wider variety of international rankings based on investment activity, as well as many country and state/province profiles. For more information on how to access these reports, please contact Roel Spee at roel.spee@be.ibm.com or visit the IBM-PLI website at www.ibm.com/gbs/pli

Notes and sources

1 IBM Global Location Trends. Facts & Figures report 2017 includes a wide variety of international rankings based on investment activity, as well as many country and state/province profiles. For more information, visit www.ibm.com/gbs/pli.

2 Butner, Karen and Dave Lubowe. "The digital overhaul: Rethinking manufacturing in the digital age." IBM Institute for Business Value. May 2015. https://www.ibm.com/services/us/gbs/thoughtleadership/digitalmanufacturing/

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