



Q4 2016 | Industrial & Logistics

# Global Manufacturing Shifts: An EMEA Perspective

## Production in the Post-BRICs Era

## KEY TAKEAWAYS

Rising **LABOUR COSTS** in global manufacturing hot spots are redefining the map of global manufacturing, driving growth into the next group of low cost countries. This is forcing higher-cost countries such as China up the value chain.

Labour cost is not the only determinant of production/sourcing decisions. Even for cost-sensitive production such as fast fashion, **PROXIMITY TO CONSUMER MARKETS** is increasingly important. Regions/countries close to major consumer blocks that offer a good balance of cost/risk are those best placed to see more “near-shoring” investment. These regions include Central and Eastern Europe, some Mediterranean countries, South East Asia and Mexico.

Meanwhile, **TECHNOLOGICAL ADVANCES** are contributing to reducing the importance of labour costs and changing the dynamics of production location. Advanced economies and emerging ones alike are increasingly embracing “Industry 4.0”, the fourth industrial revolution, which combines production with the “Internet of Things” in order to increase productivity, efficiencies and flexibility. This type of production places greater emphasis on innovation and high-tech skills.

Manufacturing in **EUROPE** will follow different trajectories. In line with Industry 4.0, Western European supply chains are set to become increasingly automated and robot-operated factories the norm.

This may enable the return of some traditionally labour intensive production such as Adidas’ “Speed Factory” in Germany. While this will generate new real estate requirements, the overall impact on job markets is likely to be more muted.

In **CEE**, hierarchies are slowly shifting as tier 1 markets such as Poland and the Czech Republic become more expensive and increasingly saturated. This is likely to pave the way to greater investment, particularly by cost-sensitive industries, into “off-the-beaten-track” regions within these countries or deeper into South-eastern Europe and the Balkan region. This will be aided by ongoing infrastructure improvements (while appetite for further EU enlargement falters). Mediterranean countries such as Turkey and Morocco are likely to capture some investment thanks to their large, young, educated workforces and their location at the crossroads of Europe and other emerging regions such as Africa and the Middle East.

As **CHINA** continues its economic transformation, it will lose some of the low-value production behind its industrial boom. Nonetheless, a large and expanding consumer base, sound supply chain, robust R&D spending and signs of a shift in policy (e.g. China 2025) point to continuing foreign and domestic manufacturing investment.

This should help the country transition up the value chain. There will be a transformation of industrial real estate, with a greater focus on new warehouse formats, leasing and private development.

Other **EMERGING ASIAN ECONOMIES**, particularly in West and South East Asia, will continue to benefit from a global rebalancing of manufacturing as their middle class grows and business climate improves. India and Vietnam belong to this group. India’s recently launched “Make in India” programme in particular seems to be starting to bear fruit, with a recent increase in announced FDI. Textiles and electronics have been at the forefront of this shift, but other industries will follow.

Across the **AMERICAS**, Mexico will remain a major focus for regional/global manufacturing thanks to its large and relatively cheap workforce, multiple trade agreements and proximity to the US market. As with Europe, the future of US manufacturing is tied to the success of new forms of advanced manufacturing. The likelihood of a revival in US manufacturing depends on its closest rival Mexico, but recent manufacturing investment (particularly in the automotive and apparel industries) shows that US states that can offer economic incentives and tax breaks, along with an educated and affordable workforce, have their chances. These tend to be located in the midwest and south-east of the country.

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## SCOPE OF RESEARCH

Through a combination of hard data and case studies, this report – co-authored by Colliers International and Hickey & Associates – explores how global manufacturing companies from a mix of labour-intensive and high-value industries are responding to the challenges posed by an ever evolving market environment, including rising labour costs and geopolitical uncertainty.

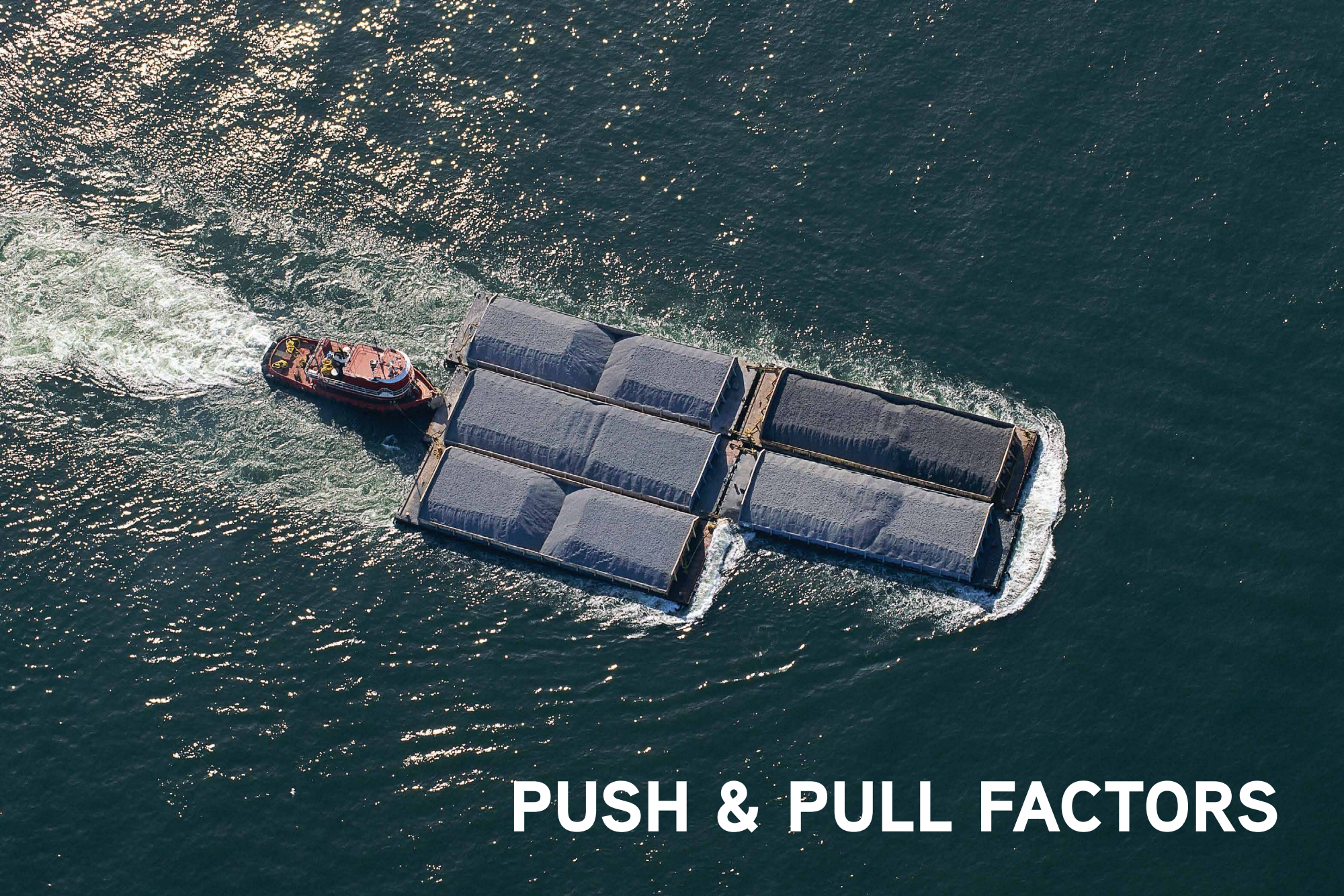
For each macro-region (Asia, Europe and the Americas), we've highlighted the latest trends in the manufacturing industry, and looked into what may lie ahead.

## INTRODUCTION

Now more than ever, global manufacturing and supply chains are confronted with multiple pressures. These stem from, among other things, rising labour costs in established global manufacturing hot spots, a spike in global economic and geopolitical uncertainty and weaker economic growth prospects in some countries/regions. These pressures combined are likely to have some temporary and more profound implications for the manufacturing landscape as organisations reassess risks/costs and adjust their strategies and production footprint. This also comes at a time when technological advances (software and hardware alike) are opening up new solutions for manufacturers and changing the dynamics of production location.

Before looking more in detail at companies' strategies and the manufacturing outlook for the various regions, we're going to review some of the push (and pull) factors

- › Shifts in economic power
- › Rising geopolitical uncertainty
- › Rising labour costs
- › Demographic pressures
- › Proximity
- › Technological advances and the Fourth Industrial Revolution



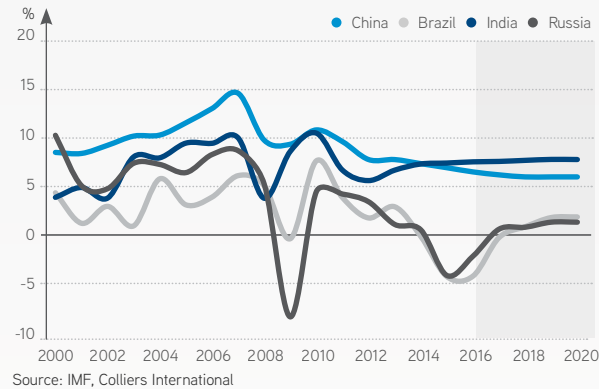
**PUSH & PULL FACTORS**

## BRICS CONUNDRUM

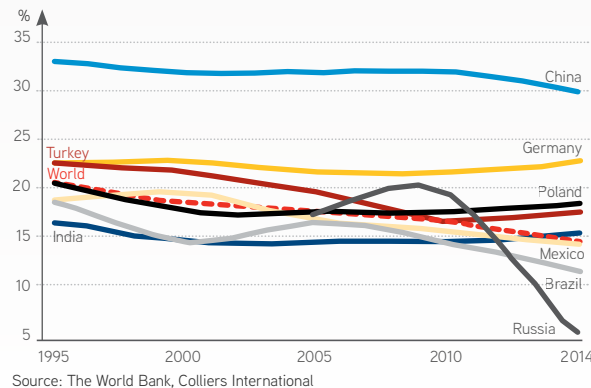
One of the headwinds faced by manufacturing companies is the prospect of slower economic growth, particularly in key emerging markets. In this regard, some of the so-called BRIC countries (Brazil, Russia, India and China) seem to have lost some of their shine of late. Economic and political turmoil in Russia and Brazil combined with falling commodity prices have seen both economies contracting in 2015, and GDP is forecast to remain in negative territory in 2016, to be followed by a period of moderate growth (compare Fig. 1). In China, the recent stock market turmoil only exposed/accelerated a structural economic slowdown after years of neck-breaking growth, particularly in the pre-financial crisis period. China is expected by the IMF to grow by 6-6.5% annually to 2020. India is perhaps the bright spot. Although it still faces various hurdles in promoting a business friendly environment, it has overtaken China as the fastest growing BRIC economy, with growth forecast at over 7% annually in the coming years.

As a percentage of GDP, Chinese manufacturing is still higher than the world average and nearly three times that of the US (compare Fig. 2). However, in 2010 following the global economic crisis, the stability of manufacturing began to decline slightly in relation to other economic sectors, including services. This is a trend mirrored across the other BRIC countries.

**Fig. 1: BRICS – GDP Growth Forecasts**



**Fig. 2: Manufacturing Value Added [% of GDP]**



## GEOPOLITICAL AND SUPPLY CHAIN RISK

Global manufacturing and supply chains are increasingly impacted by conflict, political instability and other disruptions. The Supply Chain Risk index (Fig. 3 & 4) illustrates that risk is close to record highs.

A recent McKinsey report found that 85% of business executives surveyed think geological instability will have an important impact on business in the next five years, up from 61% in 2013. Recent events show how quickly geopolitical risk can shift and that corporates have to adapt.

The recent Brexit vote, and uncertainty about future exit negotiations, is one of the major factors contributing to the recent increase in global supply chain risk.

The recently imposed trade restrictions between Russia and Western Europe have led some suppliers to look for ways around these barriers. US suppliers of chicken to Kazakhstan have begun shipping via the Black Sea and onward through Georgia, Azerbaijan and across the Caspian Sea to avoid going through Russia.

Yet it's not all bad news. The partial lifting of economic sanctions on Iran has already reinvigorated trade. In February, the first freight train from China arrived in Tehran. According to official sources, the transit of goods via Iran increased 90% from 2014 to 2015.

## RISING LABOUR COSTS

Fig. 3: CIPS Country Risk Map Q2 2016

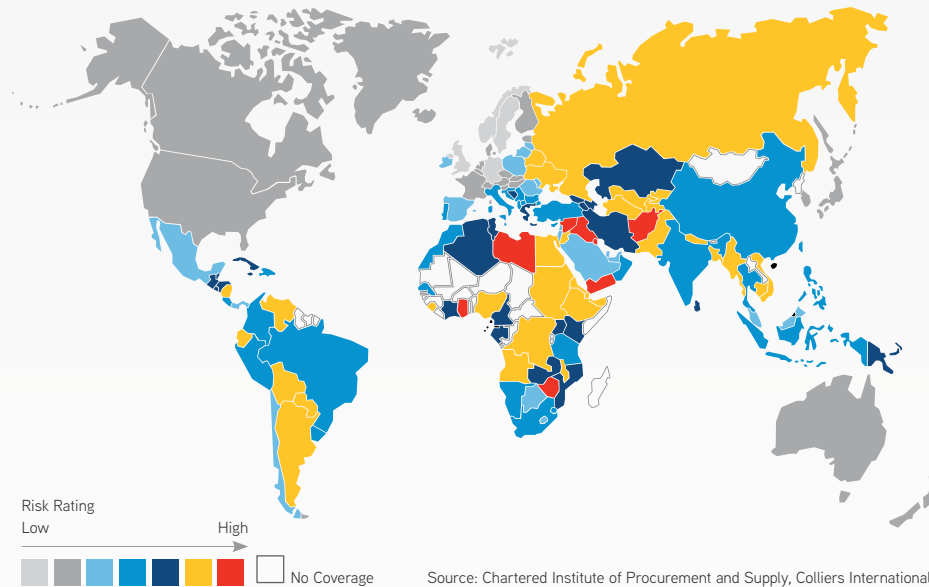
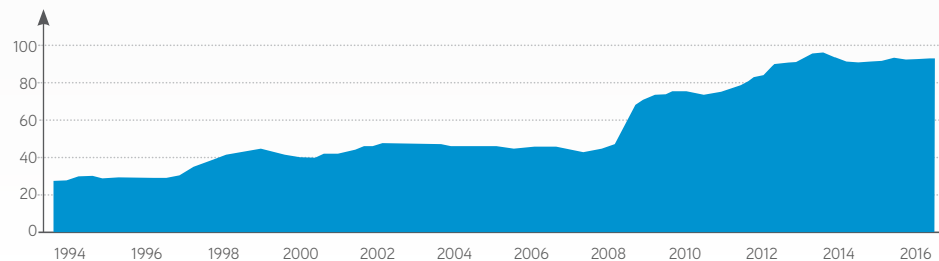


Fig. 4: CIPS Risk Index Score 1994 – 2016



Source: Chartered Institute of Procurement and Supply, Colliers International

Perhaps the mostly frequently cited challenge faced by the manufacturing community, particularly for cost-sensitive production, is rising labour costs in existing manufacturing hot spots. China is the country that first springs to mind, but other Asian economies have seen manufacturing wages increase significantly in the last few years (see Tab. 1), with wage growth outpacing GDP growth in most cases. The same can be said about other regional manufacturing powerhouses such as Poland and Turkey. This has diminished the appeal of some of these locations from a cost standpoint.

In more developed countries, the scarcity of labour and hence the higher manufacturing cost is also partly determined by the lower appeal of manufacturing jobs.

Tab. 1: Average Annual Manufacturing Wage & GDP Growth 2010-15

	Wages	GDP Growth
INDONESIA	13.9%	5.4%
VIETNAM	12.7%	6.0%
INDIA	11.5%	6.8%
TURKEY	11.0%	4.3%
CHINA	9.4%	7.6%
POLAND	5.4%	3.0%
THAILAND	5.2%	2.9%
PHILIPPINES	5.2%	5.9%
MEXICO	4.2%	2.8%

Source: Various, Colliers International

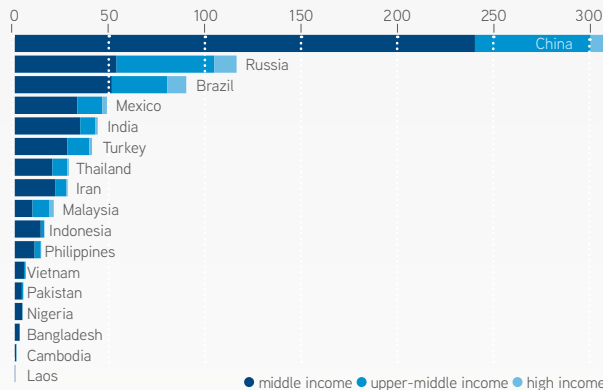
## PROXIMITY MATTERS

Another reason for rebalancing production is the fact that as a country's economy grows, so does its spending power, making it increasingly attractive as a consumer market. Likewise, as incomes grow and the population urbanises, consumers tend to become more sophisticated and responsive to trends.

This reinforces the rationale for having a domestic foothold in the market you sell products to, or at least being close to it. As our [previous research](#) has shown manufacturing companies consider that "proximity to new consumer markets" (46% of respondents) is a more important factor than "labour costs" (35% of respondents) when considering shifting production around the world.

Fig. 5 shows the estimated population by income bracket for a number of emerging economies. While China has by far the largest group, there is a cohort of countries which is seeing its consumer base expand fast. These include the so-called MINT countries: Mexico, Indonesia, Nigeria and Turkey. Although Mexico and Turkey have an established manufacturing tradition and boast higher income per capita, Indonesia and particularly Nigeria are starting from a low base but have huge potential due to their demographic scale and geographical position.

**Fig. 5: Population by Income Bracket [Million People]**

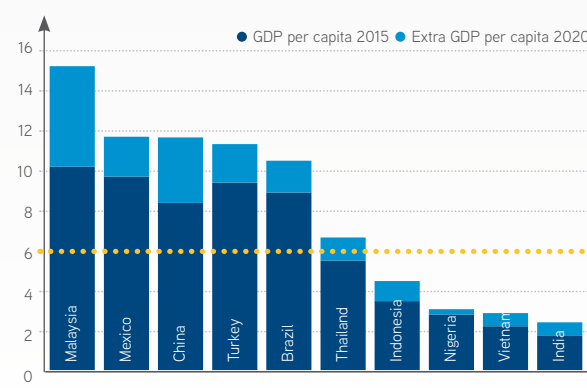


Source: UN, PewGlobal, Colliers International

A report by Ernst & Young (E&Y) found that GDP per capita of \$6,000/annum is typically seen as the threshold at which a sufficiently large share of the population enters the middle class, which kick starts a self-sustained circle of higher consumption income. Fig. 6 suggests that some countries have some way to go to get there.

Global export platforms are not going to disappear, but there is scope for some production to become more regional. Equally, re-shoring will continue to grow as multinationals start to produce/source products closer to their final consumer markets.

**Fig. 6: GDP Per Capita Projections [Thousand]**



Source: IMF, Colliers International

## DEMOGRAPHIC CHANGE

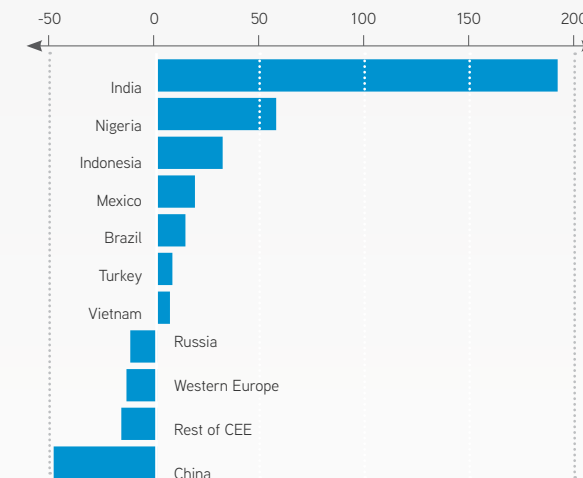
In the longer term, demographic change (population decline/ageing) will also start to bite. This impacts businesses in two ways: the consumer side (people you sell products to) and the workforce side (people employed to manufacture goods).

Generally, most emerging economies are still in an expansionary phase, with their working age population set to increase in the two coming decades. India leads the charge with an estimated 175 million additional people forecast to join these ranks between 2015 and 2030 (see Fig. 7). However, due to the ageing of the population, this growth will be almost universally led by growth of the middle age bracket rather than by growth in the number of young adults ([see our previous research](#)).

Other countries are more advanced in their demographic transition. Although China's population will continue to grow, its age pyramid is changing fast. The UN sees China's working age population shrinking by nearly 50 million in the next 15 years.

Then there are countries that are set to experience outright population decline. This includes Russia and most CEE countries. It's estimated that between now and 2030, the working age population across the CEE region (excluding Russia and the Baltics) will decline by some 15 million. This demographic pressure will be felt more in rural areas due to the continuing urbanisation trend.

Fig. 7: Working Age Population 2030 vs 2015 [Million]



Source: IMF, Colliers International

If we leave the consumer implications aside, this begs a question about the sustainability of local labour pools.

Europe ultimately needs additional workers to avoid significant labour shortages. EU states in the Organisation for Economic Cooperation and Development (OECD) are anticipating population declines by 2050 of approximately 10%, while the EU dependency ratio is expected to double, a measure used to understand the pressure on the productive population.

## THE FOURTH INDUSTRIAL REVOLUTION

Technological advances continue to re-write the rules of the game in manufacturing. Both advanced and emerging countries are exploring and pioneering new forms of “smart manufacturing” as a way to remain competitive in the global marketplace and future proof their manufacturing sector. This is part of what is termed as the “Fourth Industrial Revolution” or “Industry 4.0”, whereby production is combined with digital technology and the “Internet of Things” in order to increase productivity, efficiencies and the flexibility of production processes. In Germany this objective is pursued through the “Industrie 4.0” initiative, part of the government’s High-Tech Strategy 2020. China launched a similar initiative in 2015 dubbed as “China 2025” in an effort to transform its economy from a low-value production centre to a high-tech manufacturing nation (the key policy objectives will be analysed in more detail in this report).

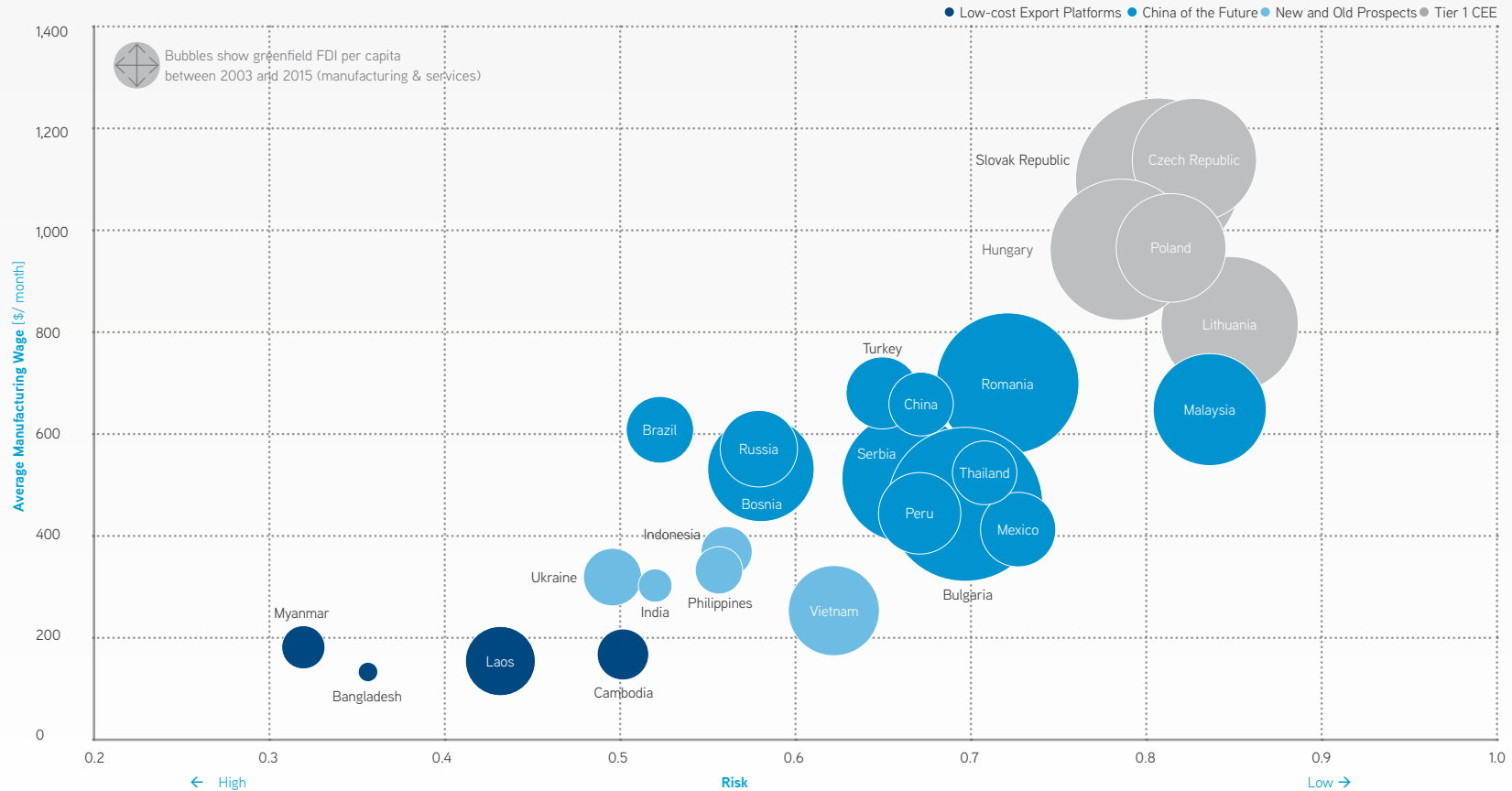
A greater focus on automation and digital technology will reduce the weight of labour costs and place more importance on the availability of a highly-skilled workforce to oversee more complex production processes. The countries that will emerge as manufacturing leaders will be those which continue to create innovative technologies in the most cost-effective manner, combined with competitive, yet affordable, wages.





# THE BIGGER PICTURE

Fig. 8: Cost, Risk, FDI and the Value Chain



Source: IMF, Colliers International

Figure 8 compares a number of emerging and more mature economies in terms of average manufacturing wages (vertical axis – employer’s contributions excluded) and a measure of the risk of running a business within each country (a higher score denotes a lower risk). The size of the bubble is proportional to the value of announced greenfield investment per capita into each country between 2003 and 2015. The scatter plot suggests a clear correlation between cost and risk. These two variables, alongside population size, also concur to determine the relative investment intensity into each country, with more mature/expensive markets featuring higher levels of FDI per capita.

Overall, the countries can be divided into four groups:

### LOW-COST EXPORT PLATFORMS

These are the countries lying closest to the origin of the axis (Myanmar, Bangladesh, Cambodia, and Laos). They are characterised by very low labour costs, which makes them particularly attractive for labour-intensive production such as garments/clothing.

They also have a higher risk profile due to their relatively underdeveloped infrastructure and challenging business environment.

### CHINA OF THE FUTURE

Ukraine aside, this group includes some of the most populated nations and fastest expanding consumer markets in Asia such as India, Indonesia, the Philippines and Vietnam.

The latter has the highest FDI per capita of all the Asian nations examined, bar Malaysia. Conversely, India has the second-lowest volume, but as we’ll see later in this report, the tide seems to have turned and recent reforms pushed through by the Indian government seem to be starting to bear fruit (see Asia’s highlights).

### NEW AND OLD PROSPECTS

This group comprises countries with higher manufacturing wages than emerging Asia, and very different risk profiles. Perhaps not so surprisingly, at the higher end of the risk spectrum lie two of the worst performing BRIC countries, Brazil and Russia, while Malaysia scores best in terms of risk within this group.

The cluster of countries between Brazil/Russia and Malaysia include China and several growth stories/ future prospects such as Bulgaria, Romania, Serbia, Turkey and Mexico.

### TIER 1 CEE

The countries in the top-right corner of the chart comprise the most established manufacturing locations within the CEE region in Europe, including Poland and the Czech Republic. They offer lower labour costs compared to peer countries in Western Europe, but are more expensive than most emerging nations globally.

Their industrialisation is closely correlated to the eastward shift of Western Europe’s supply chain, and the automotive and electronics industries in particular.

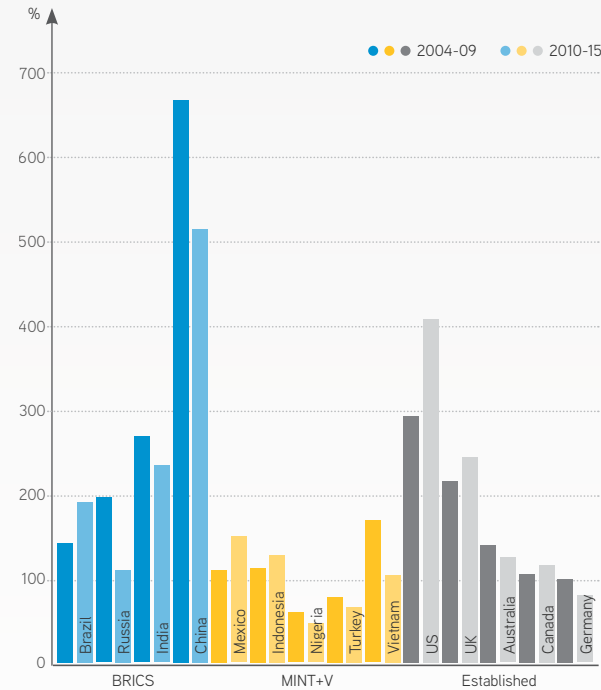
Some of these economies are increasingly confronted with labour market pressures in their key hubs. This is paving the way to new regional and local investment patterns.

## FDI: A DYNAMIC VIEW

When we compare and contrast some of the larger advanced and emerging economies (divided here into three groups: “BRICS”, “MINT + Vietnam” and “Established” - Fig. 9) in terms of Foreign Direct Investment (FDI) in the pre- and post-financial crisis era, some investment patterns are apparent:

1. Generally, FDI investment volumes are lower in the post-financial crisis era.
2. China has seen a relatively pronounced decline in both nominal and relative terms. India also saw an overall decline, but as we’ll see later, this conceals a recent increase.
3. A few emerging countries have bucked the trend. These include Brazil, Mexico and Indonesia. In the case of Brazil, investment was skewed toward the first half of the reference period and has tailed off since then. Of the previously mentioned countries, Mexico is the one that stands out.
4. Advanced economies such as the US and UK have bucked this trend, although this is likely to have been driven primarily by investment in services.

**Fig. 9: Announced FDI Greenfield Investment**



Source: UNCTAD, Colliers International

## INDUSTRY SPECIFIC CONSIDERATIONS

The determinants of location/sourcing decisions clearly vary between industries. Coming back to the cost-risk graph, for a labour intensive manufacturing, what one would expect over time is a redistribution/rebalancing of activity from the top-right quadrant towards the bottom-left quadrant. The textile/clothing industry is a case in point. A recent industry survey found that US fashion companies continue to diversify their sourcing base, sourcing products/supplies from a greater number of countries: 41% of larger companies (1,000+ employees) sourced products from more than 20 countries in 2016 compared to 22% last year. This is in line with the industry trend towards faster supply chains, and the need to strike the right balance between cost, speed and flexibility.

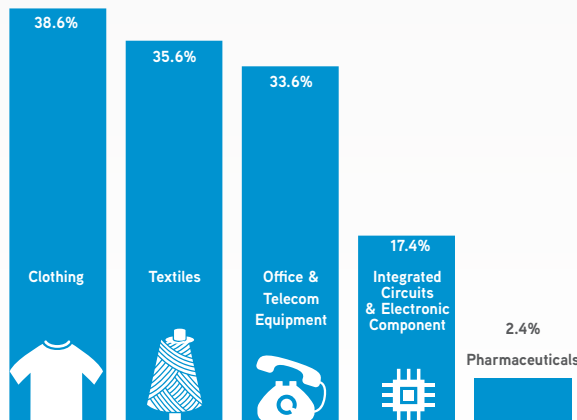
For higher value-added industries, the ability to switch locations is far less flexible. Firstly, any new investment made by higher value-added companies is typically driven by the ability to source, train and retain a highly-skilled and specialised workforce - resources which are far from ubiquitous. Secondly, the value of investments made tends to be very high, limiting the extent to which locations can be relocated, or new locations can be established. This results in lower supply-chain diversity, where operational certainty and continuity is of more importance.



**ASIA**

*Ongoing economic, social and demographic transformation in China is contributing to rebalancing production across the region and having knock-on effects on supply chains globally. These are some of the key trends we anticipate:*

**Fig. 10: China's Share of World Exports**



Source: WTO, Colliers International

## THE DAYS OF LOW-COST MANUFACTURING IN CHINA ARE OVER

China has developed a sheer industrial capacity over the last decades. This has largely been achieved by leveraging its low labour costs and by attracting cost-driven, labour-intensive manufacturing, such as clothing production and electronics assembly. Figures from the WTO give a sense of China's global weight in these industries: in 2014, the country accounted for nearly 39% of global clothing exports, 36% of total textile exports and 34% of office and telecom equipment. As seen in previous paragraphs, the rise in labour costs in the last years has led some organisations, particularly labour intensive ones, to rethink their presence in the country and to scout other destinations to source products/materials.

Perhaps not so surprisingly, the latest 2016 survey by the American Chamber of Commerce in China found that labour costs were the main challenge (59%) faced by the industry & resources sector in China, alongside inconsistent regulatory environment (58%).

The survey also found that 25% of respondents (including other non-manufacturing industries) were either moving or planning to move capacity outside of China, with half of respondents moving capacity to "Developing Asia," and 38% saying they are moving capacity to the US, Canada or Mexico.

## VIETNAM RAISES ITS GAME

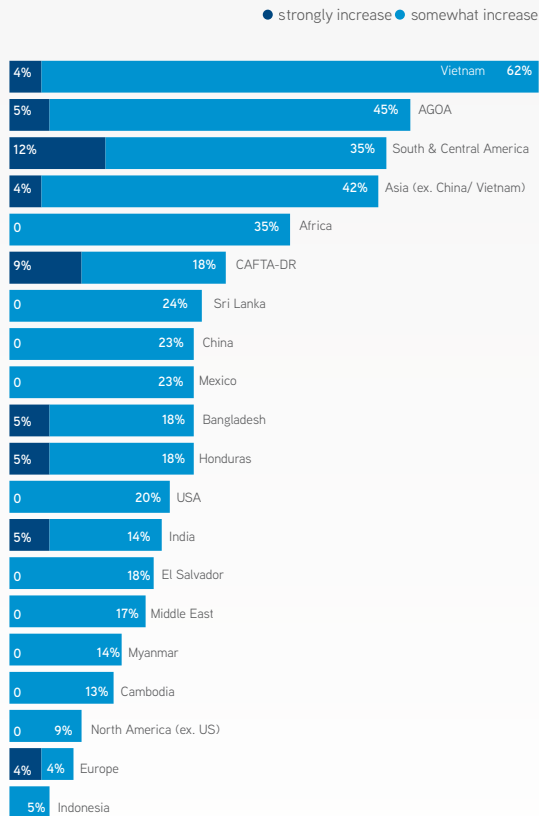
With a population of over 90 million and labour costs less than a third of nearly of those in China, Vietnam has been one of the primary beneficiaries of the rebalancing of production from China and new manufacturing investment in general.

The textile/garment industry has been at the forefront of this investment push. The latest annual benchmarking survey from the US fashion industry shows that as many as 93% of respondents source products from Vietnam (second only to China and before India) and 66% (Fig. 11) plan to increase sourcing in the next two years (the highest rate of increase, albeit at a slower rate than in previous years). In contrast, 62% expect to reduce their reliance on China for product/material sourcing.

Electronics companies and appliances makers have also followed in the clothing industry's footsteps and continue to make inroads into the country.

In early 2015, Samsung Electronics, one of Vietnam's foreign manufacturing investors, began building a consumer electronics production complex in the southern city Ho Chi Minh. LG Electronics Inc., South Korea's no. 2 tech giant, also opened a new 800,000 sq m production base in Haiphong, a northern port city of the country, which will manufacture the company's key products for export.

Fig. 11: Growth in Sourcing Volume in the Next Two Years



Source: USFIA 2016 Fashion Industry Benchmarking Study, Colliers International

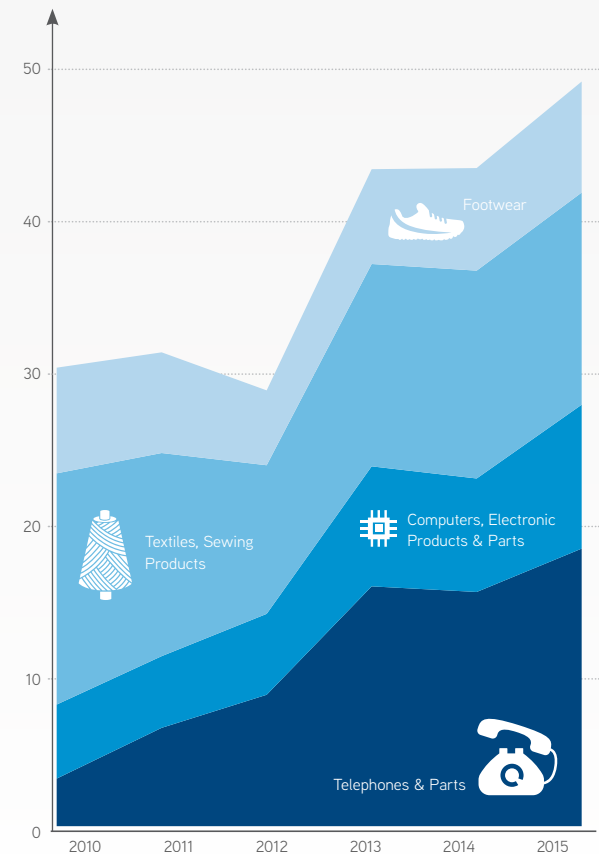
Other companies such as Dell and Intel have recently announced their intent to invest further in Vietnam.

Consistent with these announcements/investments, Fig. 12 above shows how the share of exports with higher technological content has increased sharply in the last five years, particularly phone devices.

Last but not least, Vietnam is one of the members of the **Trans-Pacific Partnership (TPP)** agreement, which was signed in February 2016 between the US and another eleven Asia-Pacific countries with the aim of fostering economic and trade relations between its members. The treaty has the potential to give a further boost to manufacturing investment into the country, particularly from its larger economic members, Japan and the US.

Infrastructure improvements should also enhance the appeal of the country, and the wider South-east Asia region, as a destination for manufacturing. Vietnam and other South-eastern Asian economies within the Greater Mekong sub-regions (Thailand, Malaysia, Cambodia, Myanmar and Laos) are part of so-called China's Indochina Peninsula Corridor, whose master plan contemplates upgrades and the creation of motorways and high-speed railways between China's Pearl River Delta Economic Circle (Hong Kong) down to Singapore through south-east Asia.

Fig. 12: Composition of Vietnamese Exports



Source: Vietnam National Statistical Office, Colliers International

## “MAKE IN INDIA”: INDIA ON TRACK TO BE THE NEW CHINA?

While India’s economic potential is unquestionable, the country has been keen to shake off its reputation as a difficult place to do business.

To do so, on 25 September 2014, India’s prime minister Narendra Modi officially launched “Make in India”, an initiative aimed at attracting manufacturing FDI and boosting India’s image as a global manufacturing hub.

The programme seeks to make it easier for international corporates to do business in India by removing investment/business barriers and simplifying processes. The government in particular has fully opened some sectors to FDI and relaxed FDI barriers for others such as defence. The programme focuses on 25 economic sectors.

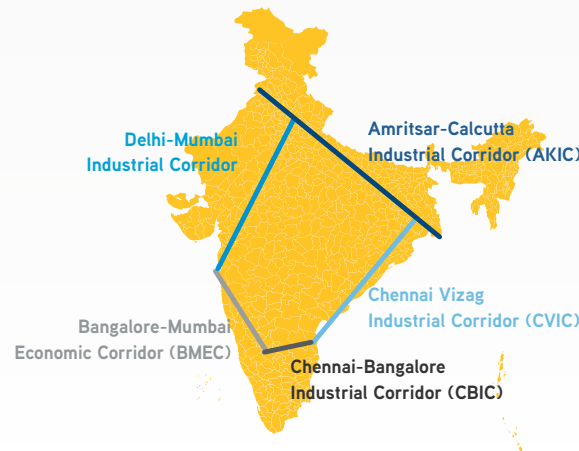
The government has identified five main industrial corridors (Fig. 13), which are designed to be the epicentre of the government’s industrialisation strategy. It envisages creating 100 so-called smart cities along these corridors to support industrial development and ensure that scarce resources are better managed. Conscious of the tall order of the task, to make this happen, the government is cooperating with other foreign governments keen to find their domestic private enterprises new avenues of investment. Japan, for example, is helping with the first phase of the Delhi-Mumbai Industrial Corridor (DMIC), while the UK is collaborating in developing the Bangalore-Mumbai Economic Corridor project.

Through these initiatives, the government hopes to raise the manufacturing share of India’s GDP from the current level of 15% to 25% by 2022. For comparison, the manufacturing share of German GDP is approximately 21%.

The government’s manufacturing push seems to be starting to bear fruit. In 2015, India overtook China in terms of the volume of announced greenfield investment for the first time since records began.

In particular, a number of technology/electronics companies have recently announced new productive investment in the country (Fig. 14).

**Fig. 13: India’s Industrial Corridors**

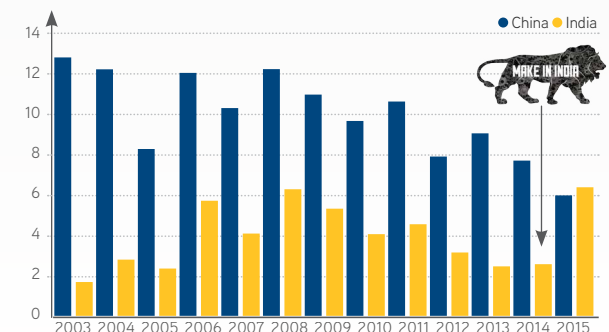


Source: Make in India, Colliers International

Reportedly, the Taiwanese manufacturing group Foxconn has plans to build 12 new factories in India and employ as many as 1 million workers by 2020. Last year, the Taiwan-based headphone maker HTC partnered with GDN Enterprises to set up a production and assembly unit in Noida from which it plans to assemble nearly 10% of its smartphones. Examples from other sectors include:

- » Luxury car manufacturers BMW and Mercedes-Benz have intensified efforts to source materials locally to reduce dependence on other regional geographies.
- » Sanofi SA’s Shantha Biotechnics Private Limited has started building a facility in Medak to manufacture Insuman, an insulin product to treat diabetes.
- » Samsung Electronics, Airbus, Pepsi and Siemens are also other known global players who have announced plans to firm up manufacturing in India in the future.

**Fig. 14: Value of Announced Greenfield FDI [\$Billion]**



Source: UNCTAD, Colliers International



## CHINA RESPONSE – CHINA 2025

While we expect countries such as Vietnam, India, the Philippines and Indonesia to capture a greater share of manufacturing investment into the region, it would be wrong to write China off.

For the rising labour cost argument, other factors will continue in favour of “Made in China”, including a robust supply chain, skilled labour base and well-developed logistics infrastructure (see Fig. 15).

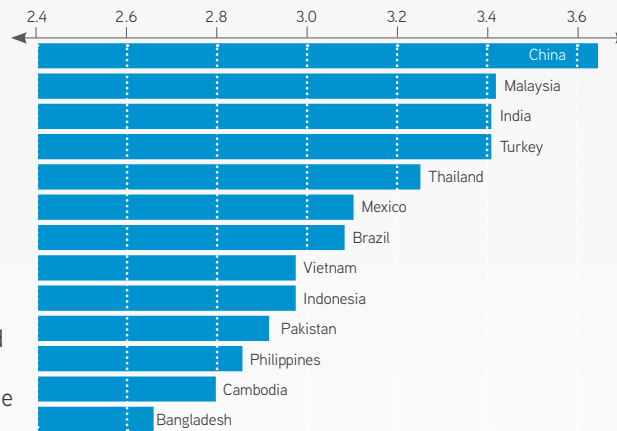
These supply chain advantages would partly offset higher labour costs thanks to lower input and transport costs and greater predictability of input and goods flows. Moreover, some sectors as diverse as FMCG and automotive continue to see strong foreign and domestic investment, lured by a burgeoning Chinese middle class.

For example, Colliers is working with a German automotive supplier looking to open its second Chinese plant. Moreover, in many cases labour-intensive production is expanding into other countries while continuing to operate in China.

That said, China needs to move up the value chain to remain competitive in global manufacturing. This has been achieved partly by opening up ownership of local companies to foreign investors.

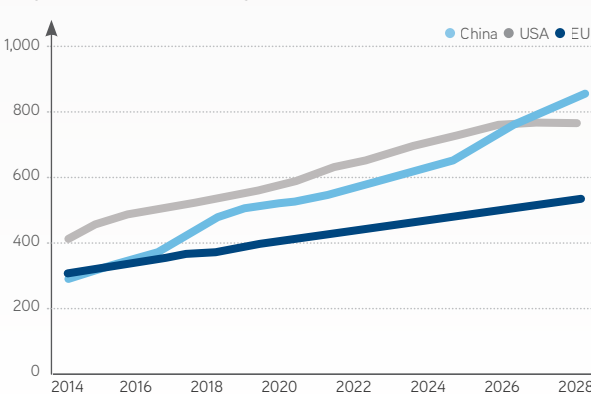
In May 2015, China’s State Council unveiled a 10-year plan to comprehensively upgrade Chinese industry. The programme promotes innovation-driven, high-end manufacturing and puts greater emphasis on quality over quantity and human capital.

**Fig. 15: Logistic Performance Index [Max. Score = 5]**



Source: World Bank, Colliers International

**Fig. 16: Annual R&D Budgets [\$Billion]**



Source: R&D Magazine, Colliers International

The plan identifies the goal of raising the domestic content of core components and materials to 40% by 2020 and 70% by 2025.

In major cities the local government has increased barriers to entry for land purchases and development for manufacturing. This has resulted in only high-tech and value-added manufacturers being able to acquire land. Restrictions include higher investment capital requirements, strict controls on incentives and shortened land usage rights tenure from 50 to 20-30 years.

China is well placed to successfully transition from low-cost to high-end manufacturing. It produces a wide array of high-tech products ranging from drones to high-speed trains and is the world’s second largest investor in R&D, with forecast spending of \$396.3 billion for 2016 (see Fig. 16).

If the country can keep down associated costs while continuing high productivity and incorporate advanced manufacturing, it will be guaranteed to retain the top spot in manufacturing for many years to come.

At the same time, it needs to tackle some long standing issues, including simplifying the regulatory environment and strengthening environmental and health policies to balance its economic progress with its social well-being.



**EUROPE**

## WESTERN EUROPE – JOBLESS RETURN?

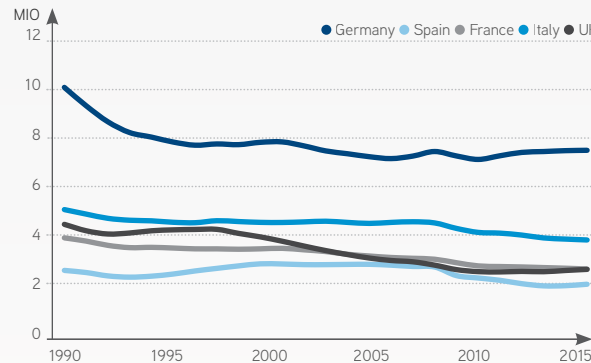
Western European countries and other advanced global economies are now largely service orientated. The population employed in manufacturing has declined in the last two decades in all major European economies (Fig. 17). Germany has 2.5 million fewer people working in manufacturing than in the early 90s. France and Italy lost 1.2 million manufacturing jobs and the UK 1.8 million in the same period.

In relative terms, manufacturing also lost importance as a share of GDP with, again, some country variations (Fig. 18). Of the five largest European economies, Germany is the most reliant on manufacturing, the UK the least (7%).

In recent research on the automotive sector, Colliers found that Germany is the only Western European nation to escape a structural decline in car production, although its supply chain continues to move toward Central and Eastern Europe. Mercedes recently announced they are to open a new engine factory in Jawor, Poland.

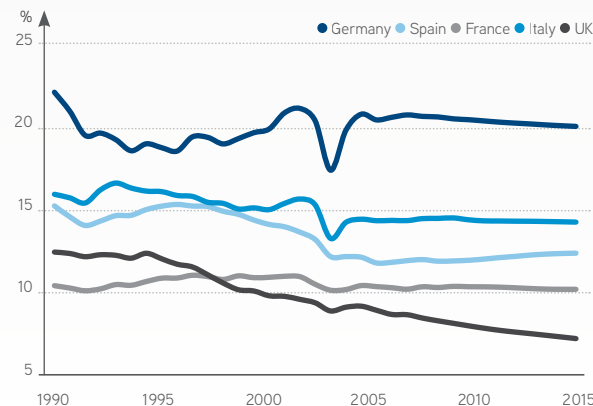
Bringing production/sourcing products closer to home markets has gained traction with many organisations, particularly those for which speed to market is essential, such as fast fashion. To date, intentions/interest have rarely been followed by action. However, when first movers demonstrate viability/success, others will likely follow.

**Fig. 17: Manufacturing Employment**



Source: Oxford Economics, Colliers International

**Fig. 18: Manufacturing GVA as % of GDP**



Source: Oxford Economics, Colliers International

Adidas, for example, is building a robot-operated 4,600 sq m “Speed Factory” in Ansbach, Germany, to produce trainers for the European markets and plans to do the same in the US.

Not only is manufacturing increasingly automated, but the consumer/distribution end of the supply chain is also following suit. Port operator APM Terminals recently announced the opening of the world’s first fully-automated container at Rotterdam Port. Likewise, a stroll around the latest generation fulfillment centres will reveal more machines than humans. Deutsche Bank estimates that by using its Kiva robots, Amazon has cut its operating expenses by about 20% and plans to roll out the same technology more extensively in Europe and Asia. Self-driving trucks are being tested on European roads to assess their technical feasibility.

This trend toward increasing automation/digitalised production is not solely a European trend, but pressures are stronger wherever labour costs are higher. From a jobs perspective, these trends are likely to have a negative impact on low-skilled workforces. Their overall impact is less clear. A recent study by Boston Consulting Group on German manufacturing suggests that it may be slightly positive due to the need for engineers and highly-skilled people to oversee increasingly complex production processes. BCG thinks that by 2025, manufacturing employment in Germany could grow by 6% compared to 2015.

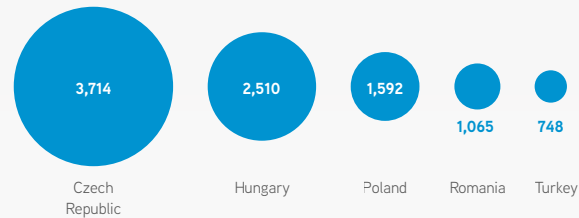
## SOME MANUFACTURING WILL PUSH DEEPER INTO CEE

CEE has been one of the main beneficiaries of new productive investment in Europe in the last few decades. This has been primarily focused on a group of so-called Tier 1 countries including the Czech Republic, Poland, Slovakia and Hungary. The Czech Republic has one of the highest stocks of manufacturing FDI per capita within CEE (Fig. 19). This investment has put local labour markets under pressure.

The Czech unemployment rate has fallen from a post-crisis peak of 7.3% in 2010 to 5.1% in 2015 and is expected to fall to just above 4% by the end of 2016, the lowest level in Europe. In Poland, another regional heavyweight, the unemployment rate is predicted to fall to an all-time low of 6.2% by the end of the year. Meanwhile, gross average manufacturing wages have increased by nearly 50% in the Czech Republic, 57% in Slovakia, 68% in Poland and 73% in Hungary in the space of less than 10 years (2005 to 2014) - see Fig. 20.

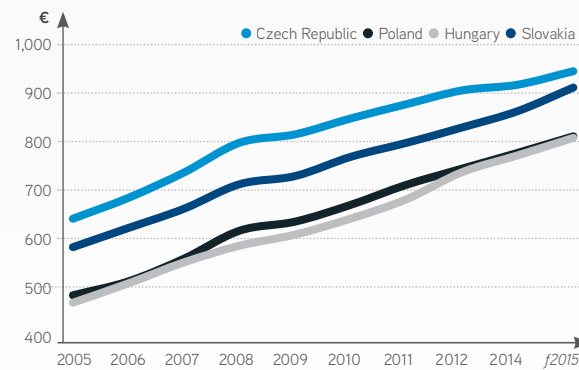
These cyclical and structural forces are slowly redrawing the manufacturing landscape across the CEE region as we know it, and are prompting some corporates to consider alternative territories to established manufacturing hot spots.

Fig. 19: Manufacturing FDI Stock Per Capita [\$]



Source: OECD, Colliers International

Fig. 20: Average Gross Monthly Wages – Manufacturing



Source: National Statistical Offices, Colliers International

## Finding Pockets of Labour Capacity

Instead of entering new markets outright, a common response is to widen the search area to less “crowded” geographies within Tier 1 markets or primary hubs in less mature, lower cost destinations such as Romania or Bulgaria. A healthcare product manufacturer, for example, is considering “off the beaten track” regions in eastern Poland, the Baltics and Bulgaria.

## The Need to Cluster

The decision to seek out alternative locations are not necessarily labour-led, but often driven by the extent to which a company needs to be close to its customers/suppliers. For example, within the automotive industry the just-in-time delivery model means that distance is key. That determines how far suppliers can go from their customers and limits flexibility in picking the location with the cheapest labour. Colliers has been working recently with automotive suppliers whose choice of location is restricted by the need to be close to their customers. Jaguar Land Rover’s decision to open a new European plant in Nitra, Slovakia, was driven by access to what is a key automotive industry hot spot.

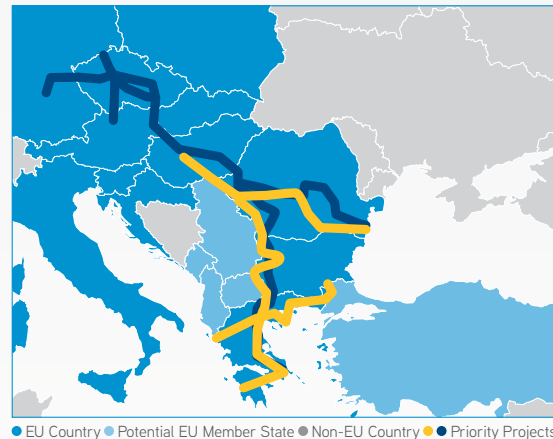
## New Frontiers: The South-eastern Block

Limited labour capacity in Tier 1 CEE markets is bringing new countries to the fore. In addition to Romania and Bulgaria, these include Serbia, Bosnia, Croatia, the Baltic states and Ukraine. While Croatia has wages comparable to Tier 1 markets, other countries appear more competitive from a cost point of view. Serbia for example appears well placed to accommodate new investment.

While EU enlargement as a driver of integration may lose some momentum following recent events (Brexit, political instability in Turkey and migration from war zones in the Middle East), other projects are progressing slowly but steadily. Infrastructure development/upgrades in particular will be crucial.

South-eastern Europe is crossed by two strategic transport corridors both backed by EU funding: the Rhine-Danube Corridor and the Orient-East Med Corridor. Both contain the three main transport modes: road, rail and waterways. The former has Germany as its starting point and Romania has its eastern terminal. The latter follows a slightly different trajectory, from the German ports down to Greece, through the Czech Republic, Slovakia, Hungary, Romania and Bulgaria. Ongoing projects are aimed at improving the current infrastructure or building new ones, to facilitate freight and passenger movement along the corridors. The corridors have 2030 as a timeframe for completion.

**Fig. 21: TEN-T Priority Projects in South-eastern Europe**



Source: EU, Colliers International

Two of the Priority Projects in the TEN-T framework (see Fig. 21) concern this area: Priority 7 (Igoumenitsa/Patra-Athens-Sofia-Budapest by road) and Priority 22 (Athens-Sofia-Budapest-Vienna-Prague-Nuremberg/Dresden) by rail.

## Chinese Engagement

These EU-funded projects complement/overlap other ongoing projects. China in particular is an increasingly prominent player in this field, and for a reason.

The Chinese government sees south-eastern Europe and particularly the Balkans countries as a strategic piece of the “One Belt, One Road” initiative aimed at reviving trade along the historic Silk Road linking China to Europe and supporting China’s outbound investment push. To do so, the Chinese government has recently strengthened cooperation with regional economies, led by Serbia, and engaged in some high-profile projects.

One of the most noteworthy projects is the upgrade of a section of the Belgrade-Budapest railway to high speed. This is part of the line that stretches from the Greek port Piraeus, a key entry point to Europe-bound Chinese-made goods and now fully controlled by China’s COSCO Shipping Corporation, to Central Europe.

It is noteworthy that Trainose, the Greek rail operator (recently acquired by Italy’s Ferrovie dello Stato) has a plan to boost rail services from Greek ports to the rest of CEE and targets an output volume of 10,000 trains a year by 2020 (which equates to 700,000 TEUs, compared to less than 100-150,000 TEUs at present). Chinese companies are also building new motorways in Macedonia.

As infrastructure is built and upgraded along the Balkan route, it should increase connectivity to key consumer markets and reduce supply chain costs, thereby increasing the appeal of the region as a manufacturing destination.

## OPPORTUNITIES FOR MED COUNTRIES

The European supply chain continues to make inroads to the east and south of the continent, albeit selectively depending on the industry. In the future, demographic (see Fig. 22) and cost pressures are likely to underpin this process. Europe's neighbouring countries are well placed to capture some of the so-called near-shoring investment in the future, particularly from Asia, as they combine geographical proximity (hence lower transport costs) and lower labour costs.

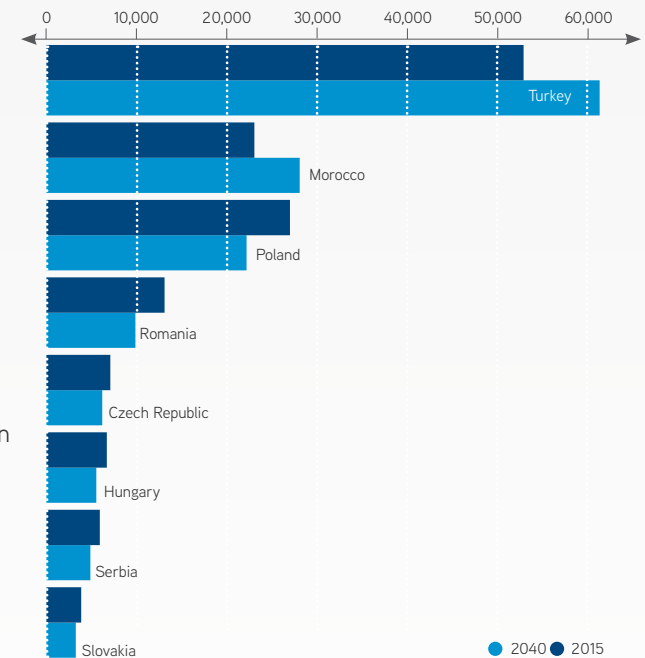
On the eastern front, Turkey already has a relatively long history as a manufacturing centre of the automotive and textile industries, among others.

Although at the time of the writing the political situation in Turkey remains fluid, on paper the country has all it takes to grow further as a manufacturing nation: competitive labour costs, a young and expanding workforce, a growing middle class, improving infrastructure and a strategic position as the European terminus of China's Silk Road (see following section).

On the southern front, political uncertainty and country risk continue to weigh negatively on northern Africa's appeal and economic outlook. Morocco is a positive exception, and thanks to its strategic location at the crossroads of Africa and Europe it can service both regions. The country is establishing automotive and aerospace clusters. In 2019, French car maker PSA will open a second plant in Kenitra in addition to the one it already operates in Tangier, from which it will supply the Middle Eastern and African markets. Similarly, Ford is looking to double the amount of parts it purchases from North Africa-based suppliers, primarily to support its Valencia plant in Spain. Likewise, Daher, a French aerospace company, will open its third Moroccan plant in Tangier in 2017.

Infrastructure is being upgraded to facilitate trade and investment. Tanger-Med port, a key gateway for Moroccan imports and exports, has recently added a direct link to the national Moroccan network, which should make shipments more efficient.

Fig. 22: Working Age Population in 2015 and 2040 [Thousand]



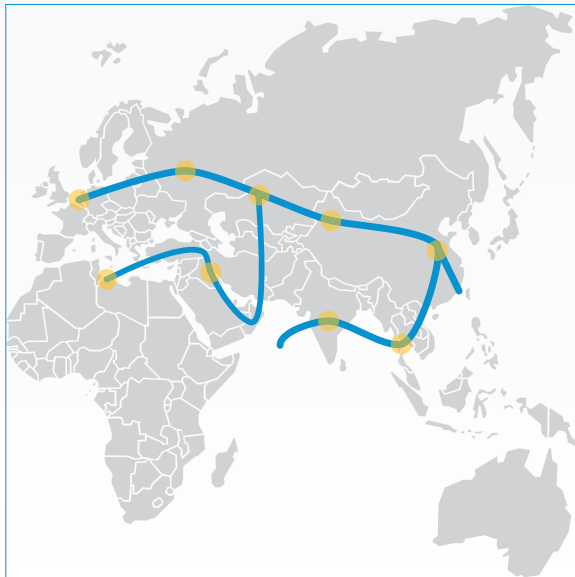
Source: United Nations, Colliers International



**SILK ROAD**

The “One Belt, One Road” (OBOR) initiative was launched by China’s President Xi Jinping in 2013 to create and strengthen trade links between China, Central Asia and Europe and support China’s outward investment drive. It comprises five main land corridors and one maritime corridor (pictured). The One Belt, One Road initiative partly dovetails with other infrastructure development programmes undertaken by other regional economies.

**Fig. 23: Map Silk Road**



Source: China-British Business Council Colliers International

Its main corridor, the northern route, runs between China and Europe through Kazakhstan, Russia and Belarus, and has seen remarkable growth in freight traffic in recent years, albeit from a relatively low base. More than 1,250 trains carrying 47,400 containers transited along the route in 2015 — a 40-fold increase from 2011 (source: FT). Trains along this route take on average 16 to 20 days to complete the journey, compared with up to 45 days by sea.

For now, the political significance of the Silk Road seems to outweigh the actual economic/trade benefits, with many projects still in an early phase or yet to be signed off. Also, several projects are energy-related (pipeline construction) rather than focused on the construction of manufacturing capacity.

However, as connections/infrastructure improve and trade barriers are removed, it’s easy to see how trade between the eastern-western blocks and regional economies could increase.

Furthermore, it could open up areas once seen as remote and geographically isolated, to new investment. Ultimately, the extent to which these improvements help keep Chinese exports competitive will extend China’s economic influence and manufacturing dominance.

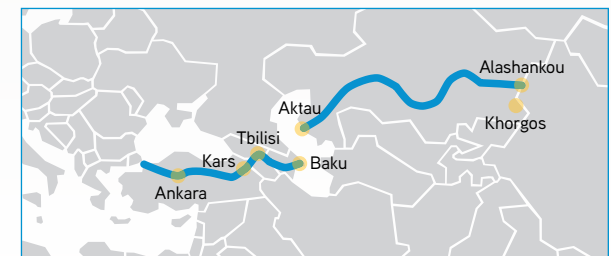
In this section of the report we’ve highlighted some of the key growth areas.

## TURKEY: THE SILK ROAD’S GATEWAY TO EUROPE

Turkey is strategically located at the western end of the Silk Road’s southern corridor. The completion of some strategic projects will enhance its appeal as a manufacturing and, increasingly, regional distribution hub. These include the Baku-Kars railway route (Fig. 24), which connects Turkey’s eastern borders to the Caspian Sea coast in Azerbaijan, where freight arrives by ferry from Kazakhstan. This is due to become fully operational from 2016. The line is expected to have an annual volume of 6.5 million tonnes at the beginning. The target is 17 million tonnes/year in the long term.

This, combined with various rail upgrade programmes in Turkey and better connections from deep-water sea ports to inland (the Ambarlı and Çandarlı ports will be connected to the main railway network by 2018), will integrate the country further into the regional and global supply chain. Leading Swiss multimodal operator HUPAC is reportedly targeting Turkey for expansion as part of its 2016-20 strategy.

**Fig. 24: Selected Projects on the Silk Road Route**



Source: FT, Colliers International



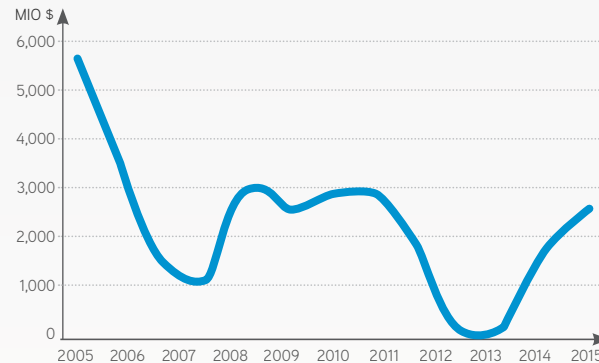
## IRAN: RE-ENTERING THE GLOBAL SUPPLY CHAIN?

With Turkey, Iran is one of the regional heavyweights (Table 4). Following the partial lifting of international sanctions, the country has attracted various expressions of interest from the global business community. While the energy sector has been the focus of recent talks (last but not least by Siemens and Rolls Royce), automotive is also a key area, accounting for 10% of the country's GDP.

Car maker Renault, for example, has recently said it will considerably intensify operations in Iran and prepare future model releases in association with its two local partners. Generally, if relations with economic partners normalise fully, a large middle class, educated workforce and the need to replace outdated infrastructure and product ranges all point to various opportunities for manufacturing businesses. Infrastructure development will be, once more, a key enabler.

The country wants to leverage its position at the crossroads of the Chinese Silk Road, namely on the International North-South Transport Corridor. This corridor runs from Mumbai to Moscow, and Iran has plans to extend its nationwide railway lines to 25,000km by 2025 (from less than 15,000km now) to cement its position. Some 7,500km of new tracks are already under construction. It has recently secured contracts with foreign railway companies including France's Alstom and SNCF, Italy's Ferrovie dello Stato and German multinational Siemens AG.

Fig. 25: Iran Announced FDI



Source: UNCTAD, IMF, Colliers International

Table 4: Turkey, Iran and the "Stans"

COUNTRY	POPULATION ['000]	GDP/ CAPITA [\$]
TURKEY	79,903	9,290
IRAN	79,476	5,074
KAZAKHSTAN	17,683	11,028
TURKMENISTAN	5,388	7,534
AZERBAIJAN	9,417	6,794
UZBEKISTAN	30,971	2,129
KYRGYZSTAN	5,976	1,197
TAJIKISTAN	8,477	950

Source: United Nations, IMF, Colliers International

## KAZAKHSTAN: LOGISTICS PLATFORM OF THE WORLD

Rather than aiming to be a production location, Kazakhstan is asserting itself as a new global logistics platform, thanks to its natural gateway position between the East and the West.

The country has an ambition to reach the 40th place among 155 countries in the World Bank Logistics Performance Index by 2020. It currently occupies 77th place.

Khorgos Gateway, a dry port on the China-Kazakhstan border, which is seen as a key cargo hub on the new Silk Road, began operations in August (Fig. 24). China's Jiangsu province has agreed to invest more than \$600m over five years to build logistics and industrial zones around Khorgos.

In 2015, 47,000 containers were transported through Khorgos on the China-EU route, which is twice more than in 2014. The Kazakhstan government expects Khorgos Gateway to reach 500,000 TEUs freight by 2020.

Also, in May last year, Kazakhstan announced a plan to build — with China — a railway from Khorgos on the Chinese border to the Caspian Sea port of Aktau. The project dovetails with a \$2.7bn Kazakh project to modernise its locomotives and freight and passenger cars and repair 720 km of rail. All of these projects will facilitate further trade between China and Europe and other regional economies.



**AMERICAS**

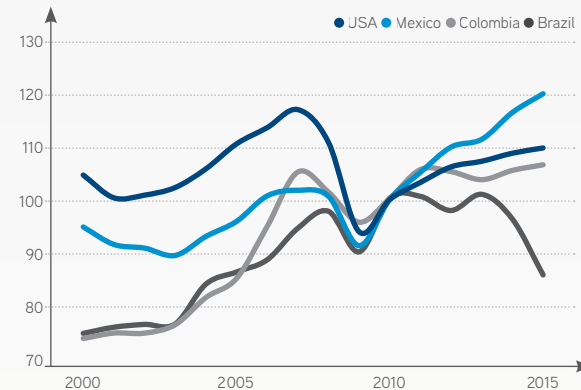
## MEXICO WILL LEAD MANUFACTURING GROWTH IN THE AMERICAS

Mexico is arguably one of the manufacturing industry's success stories within the Americas region. Fig. 26 compares industrial production volumes for some of the largest regional economies. It shows how Mexico's industrial output was the fastest to recover from the post-crisis slump and is now well above the pre-crisis peak. In contrast, the crisis turned Brazil's industrial production growth into stagnation and subsequent decline in recent years.

As seen in our [previous research](#), the automotive sector has been one of the driving forces behind this growth. Like other industries, the sector profits from Mexico's shared border with the US, one of the largest automotive markets in the world. Although Mexico's production of 3.5m vehicles in 2015 still amounts to only a third of US volumes, it has grown by 85% between 2000 and 2015, compared to 44% in Brazil (compare Fig. 28). Automotive production has rebounded in the US from its post-crisis trough, but it remains 5% lower than in 2000.

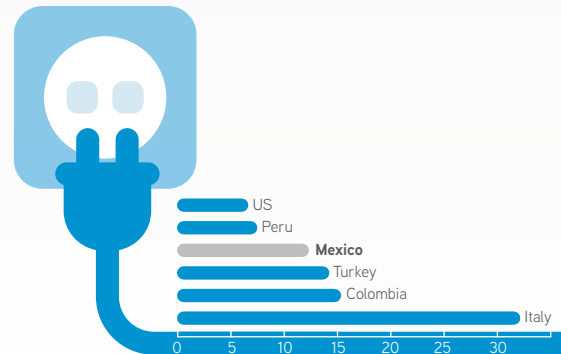
Several car-assembly plants are currently under construction across Mexico. Mercedes (Aguascalientes) and BMW's (San Luis Potosi) new factories are due to become operational from 2017 and 2019 respectively. Nissan recently announced that it will build a new crossover in an expansion of its plants.

**Fig. 26: Total Industrial Production Index [2010=100]**



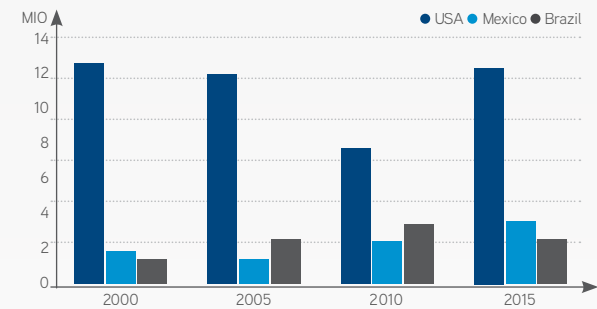
Source: OECD, Colliers International

**Fig. 27: Industrial Electricity Prices [2014, US\$ cents/kWh]**



Source: International Energy Agency, Colliers International

**Fig. 28: Vehicle Production**



Source: OICA, Colliers International

Last but not least, Audi will soon start production of the Audi Q5 range at its new site in San José Chiapa, where it will employ some 2,500 people. Suppliers are also following suit.

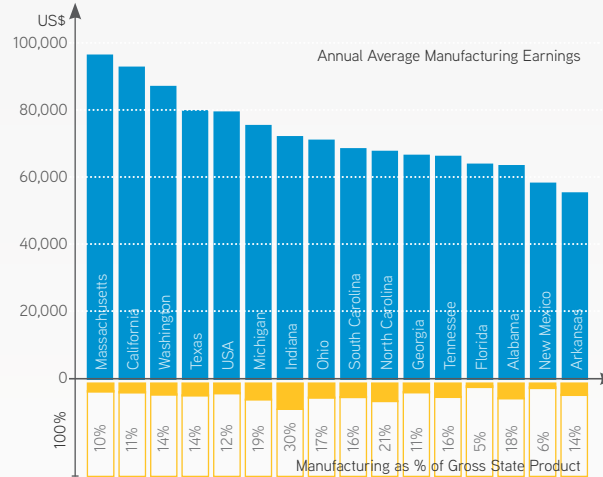
Going forward, manufacturing should benefit from an ambitious reform package being pushed through by the government, if successfully implemented. The government aims to reform areas such as competition, telecoms and the energy system, among others. The latter should help reduce energy costs and make electricity prices more competitive in a global context (see Fig. 27). Furthermore, plans exist to upgrade and create new infrastructure, including a new airport in Mexico City, a railway line that will connect Mexico City and Toluca (west of the Mexican capital) and 20 new highways across the country.

## US: HOPES FOR MIDWEST AND SOUTH-EAST

Short-term economic indicators point to muted growth in the US manufacturing sector in the near future. The culprits are to be found in the global economic slowdown, along with a strong dollar and generally weak capital spending. In August, factory activity decreased, after months of strong growth, with the Institute of Supply Management index falling to 49.4 (a score of 50 or higher means the industry is expanding). There are reasons for optimism, however. Job growth continues to be strong in the US. This growth will lead to robust levels of consumer spending, which can only help manufacturing activity in the coming year.

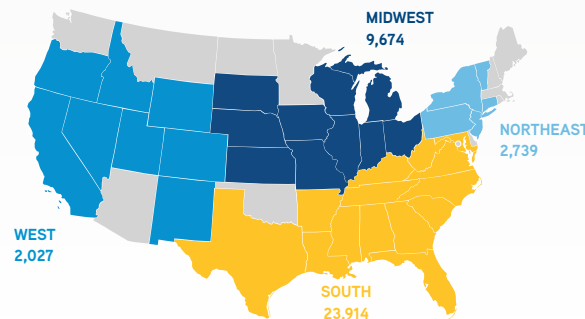
Despite a reduction in capital spending, there will be growing sentiment toward reshoring because of cost savings and the good press that goes along with it - Fig. 30 shows the regions that have benefited the most from reshoring to date. Reshoring in the coming year will come from companies looking to cut costs, increase their use of automation in manufacturing, and speed up their supply chain by having products closer to end consumers to quench the increasing demand brought on by e-commerce sales. The recent news that Hanjin, one of the world's largest shippers, filed for bankruptcy - thus significantly increasing freight costs in the US- will be a boon to reshoring demand, with the most interest coming from the automotive and apparel industries. In September 2015, Volvo began building its first US plant in Berkeley County, South Carolina.

**Fig. 29: Manufacturing Salaries & Manufacturing as % of Output**



Source: NAM, Colliers International

**Fig. 30: Number of Jobs Added Through Reshoring – 1997-2014**



Source: Reshoring Initiative, Colliers International

The site will be capable of producing up to 100,000 cars per year.

Similarly, BMW is completing a \$1 billion expansion of its factory in Spartanburg, in the same region, which will bring the annual capacity to 450,000 vehicles. Last year, it built a record 400,904 vehicles – topping that of any of its factories in Germany.

As exemplified by South Carolina, states that offer economic incentives and tax breaks, along with an educated and affordable workforce trained in automation robotics and engineering, will be the main beneficiaries of reshoring. These states tend to be in the south-east or midwest parts of the country and include North Carolina, Florida, Georgia, Arkansas, Texas, Indiana, Tennessee and Ohio - see Fig. 29.

Nonetheless, Mexico will be the United States' biggest competition for reshoring for the foreseeable future, and manufacturing investment in general. Locating in Mexico removes the higher shipping costs associated with manufacturing in Asia while keeping labour costs low. As seen before, Mexico also has a strong workforce and an educational system that concentrates on engineering that is geared towards manufacturing. If capital spending increases, companies will take a serious look at Mexico when deciding where to locate a manufacturing facility.



**CONCLUSION &  
REAL ESTATE IMPLICATIONS**

## Growth and Transformation in Emerging Markets

Through this report we've highlighted some of the countries/regions that we expect to take a great share of global manufacturing in the next years. These include parts of emerging Asia, particularly the "New China" countries, CEE and Europe's fringe and Mexico. Within these geographies, manufacturing investment will drive job growth and feed demand for production/distribution space and infrastructure to accommodate this growth. India, with its vision of developing new industrial corridors and smart cities around those, will see some of its landscapes change dramatically in the coming years.

Locally, this will also contribute to the transformation and growing sophistication of industrial real estate. China is a good example. The economic transition is driving a shift away from multi-storey factory buildings, typically used by low-value product manufacturers, to single-storey facilities best suited for high-tech and value-added products. A greater focus on labour and environment laws means companies have become more prudent in terms of production planning, with many now choosing to lease rather than buy.

Last but not least, there is an increasing number of professional developers entering the market for

standard factory development, catering to the increasing demand for lease factory space, in particular for single-storey factories.

## What Future for European Manufacturing?

Europe is a tale of two regions. Manufacturing employment in Western Europe appears to have stabilised or improved marginally from its post-financial crisis trough (although it is down in a long-term perspective). Future manufacturing growth will be driven by the ability of countries to implement new forms of smart manufacturing and remain competitive globally. Germany seems well placed. As "Old Europe" upgrades its industry, it's increasingly clear that new investment will be less about the quantity and more about the quality of jobs. "Reshoring" investment from Asia will remain limited, but may gather some traction if first movers succeed. Again, the job impact will be muted, but that will generate some real estate requirements. These are likely to materialise in places with the greatest population catchment, in an attempt to maximise speed to market.

Central and Eastern Europe, on the other hand, will continue to see headcount growth in manufacturing and new industrial development as suitable existing options thin out, particularly in and around current manufacturing hot spots.

Increasingly, the challenge will be for Tier 1 markets such as the Czech Republic to retain their appeal, particularly for low-cost/skill operations such as product packaging or basic product assembly, as labour costs rise and local labour pools deplete. This will affect the bottom line for real estate, too, if companies decide to downsize/shift capacity elsewhere.

On the supply side, European industrial real estate markets remain characterised by a shortage of readily available, modern industrial space. In our previous research, we've seen how urban/suburban industrial brown fields in Europe (and elsewhere) can provide that vital space for higher valued-added manufacturing and distribution businesses to expand and replace decaying industries. Logistics developer Montpark, for example, has acquired the former Ford Transit factory plant in Southampton (Ford moved production to Turkey in 2013), where it has plans to build a 42,000 sq m (450,000 sq ft) logistics park. Another example is the former FIAT plant in Termini Imerese (Sicily), which has been taken over by Bluetech, an automotive supplier which intends to use it to develop hybrid and electric automotive technologies, among others. Making the most of these spaces is essential in Western Europe's land- and supply-constrained industrial market.

**554** offices in  
**66** countries on  
**6** continents

United States: **140**  
Canada: **31**  
Latin America: **24**  
Asia Pacific: **199**  
EMEA: **108**

**\$2.3**  
billion in  
annual revenue\*

**1.85**  
billion square feet  
under management\*

**16,000**  
professionals  
and staff\*

\* All statistics are for 2015 and include affiliates.

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