CUSHMAN & WAKEFIELD

MANUFACTURING RISK INDEX

2017

EXECUTIVE SUMMARY

THE MANUFACTURING SECTOR IS AT THE CENTER OF A PERIOD OF GREAT CHANGE WITH FAR-REACHING IMPLICATIONS FOR BUSINESSES ACROSS THE GLOBAL INDUSTRIAL LANDSCAPE.

The integration of value-enhancing technology and service provision through apps and Internet of Things (IoT) sensors in to every day products is resulting in more complex business value chains. What were vertically integrated production lines, with a focus on lean and simple initiatives, are now being challenged by mass customization and integration of shorter lifecycle apps, with more emphasis on customer service. In the same way as software has become a service so will many products – cars, ventilation systems, wind turbines - to name a few.

In the short term, manufacturing remains partly constrained by a lack of capital investment in plants, reducing near-term radical shifts in location decisions. But, in the medium term, many questions will be raised about locations that fundamentally serviced a different era as we migrate into what management consultant, McKinsey, call Industry 4.0 (or the 4th industrial revolution). In the current environment, cost remains the most significant location criteria for many companies, however, the Manufacturing Risk Index assesses other fundamentals such as operating conditions and country risk profiles. We anticipate these, and other criteria, becoming more important contributors to future decision making.

The index can be re-weighted, and therefore re-ranked, depending on varying scenarios. We consider three within this report:

> The primary scenario - A highly automated scenario (balancing cost and operating conditions as main drivers for doing business)

> A more cost sensitive environment

> A manufacturer concerned more about local operating conditions

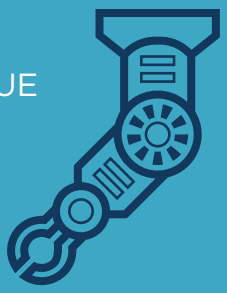
"Cost carries most emphasis in the site selection process, but conditions & risks have the potential to 'red flag' a location."

"CEOs and senior management required to think more holistically about innovation, potential operating models, and how their products or services satisfy the needs of their consumer base."

MALAYSIA RETAINS POLE POSITION AS MOST ATTRACTIVE MANUFACTURING MARKET OF CHOICE FOR FUTURE RELOCATIONS

COSTA RICA NO.1 PINONEERING MANUFACTURING DESTINATION OF CHOICE FOR THOSE CONSIDERING LESS MATURE MARKETS

AUTOMATION WILL CONTINUE TO CHALLENGE GLOBAL HIRING INTENTIONS



BREXIT YET TO DELIVER MATERIAL IMPACT TO EUROPEAN MANUFACTURER RE-LOCATION DECISIONS BUT A LOT REMAINS UNCERTAIN

PHYSICAL AND DIGITAL CONNECTIVITY – FINDING THE OPTIMUM BALANCE IS CRITICAL

While macro events such as Brexit and President-elect Trump carry risk implications to regulation, market access and the movement of goods and individuals, disruptive technologies such as additive manufacturing and Robotic Process Automation (RPA) also continue to transform the manufacturing world by reshaping the production cycle. Businesses are being impacted by digital disruption as new entrants and competitors invest in technology to enable mass customization.

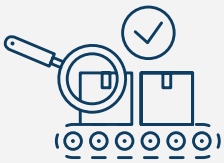
The automotive industry is a good example of an industry undergoing undisputed disruption. Through the advent of electrification and driverless vehicles, diverse mobility and connectivity the vertically integrated automotive value chain will evolve. The software and service now supporting the automotive industry is exemplary of this shift with manufacturers now offering a more proactive rather than reactive service offering in pre-empting product care. The new norm being a complex, horizontally structured ecosystem of design, technology, production and service, which will then redefine how those products and services are created and delivered - and by whom.

In this period of accelerating change and digital transformation, pure cost reduction strategies are being challenged. Companies are increasingly honing in on those activities with the greatest potential for creating value and identifying the talent that will enable them to create and deliver this value successfully. There is likely to be a polarization in the production process between innovation, design and development - on the one hand locating to high cost locations, while on the other pure production and assembly remaining more cost sensitive.

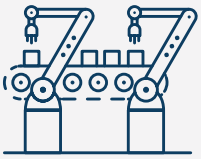
In a period when new innovations are coming to market at breakneck pace, failure to recognize and embrace the advent of such technologies carries significant risk to an organizations' competitive advantage. GE's relocation of its headquarters to Boston so it is closer to MIT is perhaps one of the clearest statement of intent in the changing landscape of manufacturing. With the relocation, GE is embracing Boston's special environment for software development and identifies a clear intention to become a "digital industrial" business supported by the move to one of America's premier technology centers. As such manufacturers are reassessing business models in the need to adapt to a new environment and find the optimal balance between physical production and digital design and development, and the right locations for carrying out their business practices competitively.

"The breadth of the manufacturing sector continues to expand beyond the physical production of goods to incorporate research & development, supply chain management, distribution and service provision throughout a product's lifecycle."

"Getting to grips with the new norm - complex, horizontally structured ecosystem of design, technology, production and service."



MANUFACTURERS ASSESS VALUE OF PRODUCTION CYCLE



SMARTER PRODUCTS / SMARTER PRODUCTION / SMARTER SUPPLY CHAINS

WHERE IS THE TALENT OF TOMORROW TO DELIVER THESE VALUE ADD ACTIVITIES?

TIMES ARE CHANGING – KEY CONSIDERATIONS AND QUESTIONS MUST BE ADDRESSED

MANAGING CHANGE POSES A NUMBER OF CHALLENGES AND QUESTIONS

SUSTAINED PRESSURES ON OPERATING COSTS AND A SHIFT IN END-MARKET DEMAND

Continues to drive a relentless need for manufacturers to increase labor and capital productivity

But what type of labor is required, and how do you attract and retain the up-skilled workers able to drive efficiencies from the production line of tomorrow?

TRADITIONAL SUPPLY CHAINS AND BUSINESS MODELS CONTINUE TO BE DISRUPTED

New competitors leverage emerging technologies and embrace digital capabilities in order to identify new ways of increasing profitability to generate growth.

But in which markets are the cost advantages of a more productive, automated plant likely to increase a locations ability to drive on-shore or re-shore initiatives alongside acting as a global manufacturing hotspot?

A NECESSITY FOR SMARTER PRODUCTS, SMARTER PRODUCTION AND SMARTER SUPPLY CHAINS

Further changes anticipated with **Industry 4.0**

But how can the blend between the physical and digital world be leveraged? How do businesses position themselves to match the increasing demands of consumer markets?

"A necessity for smarter products, production and supply chain management continues to challenge manufacturers and their decisions of where to locate."

COMPANIES ARE SIMPLIFYING THEIR ORGANIZATIONAL STRUCTURES AND RE-POSITIONING AS MORE AGILE BUSINESSES

The ability to respond quickly in an ever-changing environment remains a key to success.

But in a sector reliant on heavy capital investment in plant and facilities how do you retain flexibility?

LOOMING TALENT SHORTAGES ARE DRIVING BUSINESSES TO REPOSITION THEIR BRANDS

Brand reputation is often critical in talent attraction and retention

But where are the next generation of workers with the right skills?

Brand risk and reputation – What other criteria is being considered

Brand image and corporate reputation continues to be an important contributor to business strategies. While a brand's image has a more specific influence on the customers' perceptions of product and/or service quality, the company's reputation has a broader influence on perceptions of customer value and customer loyalty. While our Manufacturing Index covers a number of macro risk factors, it is possible and indeed necessary to asses a number of other local factors for manufacturers seeking to acquire space - such as those surrounding quality control, regulation, certification and inspection of the assets occupiers operate from within. The Manufacturing Index can be expanded to include such analysis on a business by business basis.

ESTABLISHED INDEX FINDINGS

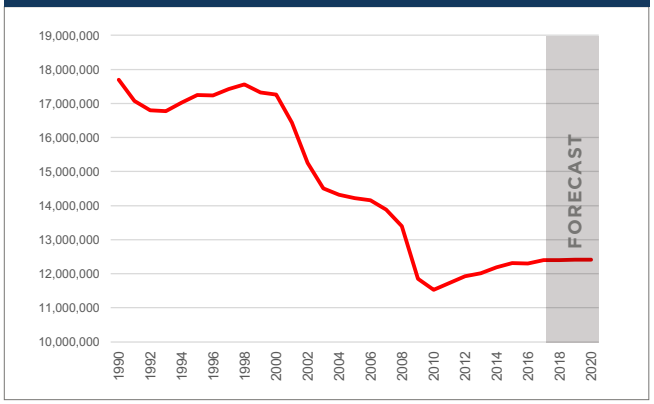
ASIA PACIFIC CONTINUES TO DOMINATE TOP 10

- For consecutive years Malaysia tops our Established Index ranking as an attractive market for locating manufacturing facilities
- Asia Pacific countries occupy seven places within the top half of our Established Index
- In China, policies either encouraging or directly funding investments in science and technology, technology transfer, sustainability, and infrastructure development appear to be helping Chinese-based companies to create a significant competitive advantage through critical mass, although the region does face some competition from neighboring markets
- India rises five places on last year - Given the present Government's focus on 'Make in India' India is witnessing increasing investments by global manufacturers. It is anticipated that this increase in investment will further support infrastructure improvement projects, especially as further policies and regulations actually take shape

UNITED STATES AND CANADA SECURE POSITION IN TOP 10

- Both The United States of America and Canada secure placement within the top 10
- Strong and supportive policies and investment surrounding research & development and innovation reinforce the attraction of the US - offsetting the higher costs
- Even prior to the 2016 election of President Elect Trump, figure 1 identifies the start of a resurgence in manufacturing in the US – in part due to some re-shoring initiatives but also via a shift in focus to the higher value end of the production process. While the new president is committed to bringing manufacturing jobs back to the US, how this can be managed on any significant scale without increasing the costs of production and as such negatively impacting the competitiveness of the US manufacturers is yet to be seen
- Canada retains a low-risk profile despite heightened risk exposure surrounding President Elect Trump's decisions surrounding the North American Free Trade Agreement (NAFTA)

Figure 1: US MANUFACTURING JOBS AND FORECAST



Source: Oxford Economics

UNITED KINGDOM – BREXIT IMPACT YET TO MATERIALISE BUT UNCERTAINTIES REMAIN

UK REMAINS A GLOBAL LEADER IN TERMS OF MANUFACTURING DESIGN AND INNOVATION

- UK remains a leader in research & development and innovative design and as such a number of manufacturers have opted to on / re-shore facilities, attracted by the higher-end manufacturing capabilities, science and design skills available. Design and automation is critical to future production and the UK is in strong position with many of Europe's largest design centers located on home shores
- The location of the top global education practices and Universities is critical in a number of sectors requiring production / manufacturing – both as a collaborative partner and a source of future talent. The UK continues to offer a number of world leading education facilities
- Near-term currency fluctuations as a result of the UKs decision to leave the EU has seen a devaluation of the pound and, subsequently, led to an increased demand for exports
- Location decisions in the manufacturing sector are significant investments, largely due to the capital investment in the plant. Therefore there is no prospect of modern production facilities being relocated or closed purely because of Brexit at this stage, but negotiations surrounding trade tariffs and free movement of goods and people will be monitored carefully

UK – RANK 16TH

- Risk profile impacted by EU referendum decision and uncertainty surrounding Brexit
- Little by way of material impact to-date with Brexit yet to prompt corporate relocations of global occupiers, but business decisions still need to be made
- Adoption of automated processes benefitting re-shoring trends for those seeking cost competitive production continues

ESTABLISHED LOCATIONS INDEX

HIGHLY AUTOMATED SCENARIO						ALTERNATIVE SCENARIOS	
REGION	RANK 2016*	CONDITIONS (40%)	RISK (20%)	COST (40%)	CHANGE vs 2015	COST SENSITIVE RANK (CONDITIONS 20% / RISK 20% / COST 60%)	CONDITION SENSITIVE RANK (CONDITIONS 60% / RISK 20% / COST 20%)
Malaysia	1	13	16	1	0	1 ●	7 ▼
China, Taiwan Province of	2	5	20	7	0	2 ●	5 ▼
China	3	12	23	8	0	4 ▼	16 ▼
United States	4	15	7	18	0	5 ▼	6 ▼
Korea, Republic of	5	7	19	15	0	13 ▼	12 ▼
Canada	6	19	3	17	0	3 ▲	8 ▼
Hungary	7	17	15	14	New Entrant	9 ▼	15 ▼
Sweden	8	3	1	23	11	22 ▼	2 ▲
Czech Republic	9	22	11	16	New Entrant	7 ▲	18 ▼
Netherlands	10	2	6	22	7	23 ▼	3 ▲
Switzerland	11	4	2	27	7	24 ▼	4 ▲
Singapore	12	1	5	30	-5	27 ▼	1 ▲
Poland	13	21	21	10	-1	6 ▲	20 ▼
Thailand	14	14	30	5	-5	10 ▲	19 ▼
Japan	15	10	17	19	-4	18 ▼	13 ▲
United Kingdom	16	9	12	20	-1	20 ▼	11 ▲
Austria	17	11	8	21	4	21 ▼	10 ▲
Turkey	18	18	28	11	-10	15 ▲	21 ▼
Philippines	19	24	25	4	-6	8 ▲	24 ▼
Indonesia	20	25	22	9	-10	12 ▲	23 ▼
Germany	21	8	4	28	4	26 ▼	9 ▲
India	22	28	26	3	5	11 ▲	27 ▼
Russian Federation	23	27	18	12	-7	16 ▲	26 ▼
France	24	16	9	25	-1	25 ▼	17 ▲
Spain	25	6	13	26	1	28 ▼	14 ▲
Brazil	26	29	27	6	-6	17 ▲	29 ▼
Mexico	27	26	24	13	-13	19 ▲	28 ▼
Venezuela (Bolivarian Republic of)	28	30	29	2	-4	14 ▲	30 ▼
Australia	29	20	10	29	-1	30 ▼	22 ▲
Italy	30	23	14	24	-1	29 ▲	25 ▲

** Data collated Q4 2016*

ONE SIZE DOES NOT FIT ALL - RE-WEIGHT & RE-RANK – THE IMPACT OF ALTERNATIVE SCENARIOS

- A manufacturer seeking lower operating costs *(Conditions: 20% / Risks: 20% / Costs: 60%)*
- A manufacturer exposed more to market operating conditions *(Conditions: 60% / Risks: 20% / Costs: 20%)*

INDIVIDUAL MARKETS - THE DETAIL

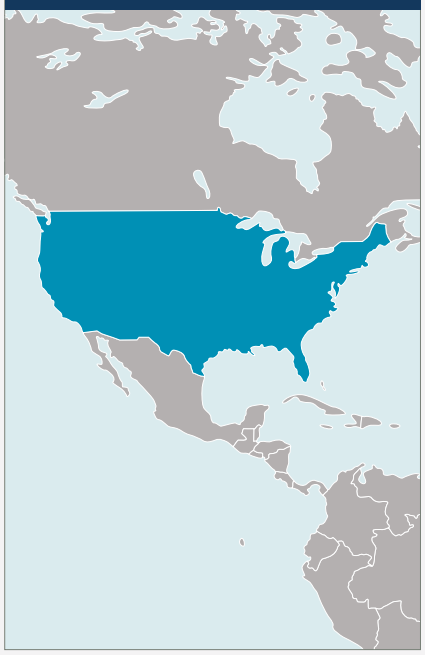
ASIA PACIFIC

Asia Pacific continues to demonstrate its diversity as a location of choice for manufacturers, occupying almost half of the positions within the top 15 of or Established Manufacturing Index. Given the varying maturity level of technology adoption and priorities across Asia Pacific, each country in the region has a specific focus on areas of innovation to promote sector growth – such as smart manufacturing in the form of automation in China due to wage inflation or the offer of a connected society and strong conditions for doing business in Singapore, despite a higher cost profile.

Index leader Malaysia has retained its first placed ranking. Malaysia's infrastructure services are conducive to productivity with the quality of infrastructure relatively high, despite some concerns surrounding water availability and power outages of late. While other middle-income countries may be catching up with Malaysia in terms of infrastructure standards, a recent report by the World Bank* indicated that Malaysia still has a higher rank than many of these peers in terms of overall logistics performance in relation to quality of trade and transport infrastructure.

** The World Bank's 15th Malaysia Economic Monitor report titled "The Quest for Productivity"*

UNITED STATES



Manufacturing continues to be one of the most important bellwethers of US economic health. While certain factors have hampered manufacturing growth over the past two years - including a strong U.S. dollar, low commodity prices and economic and political uncertainties – the longer term prospects for manufacturing in the US are bright.

According to the National Association of Manufacturers (NAM) The United States is seen increasingly as a viable location for global manufacturers, with foreign direct investment in the sector exceeding $1.2 trillion in 2015, an all-time high. And, in recent announcements the US may also become a beneficiary of South Korean organizations wishing to invest in the US and reduce its large scale dependency on China.

In addition, new technologies have the ability to radically alter the way manufacturers innovate, produce, market and distribute their products, improving efficiency and competitiveness. Over the past 25 years, American-made exports have quadrupled as a result. Unfortunately for the US labor force, modern day production doesn't require quite as many workers as it used to.

Technological advancements do carry other implications for US employment prospects, a market already having lost nearly 5 million manufacturing jobs in the last two decades. According to National Association of Manufacturers (NAM), of the more than three million manufacturing jobs that will open up over the next decade, about two million are expected to go unfilled because not enough workers are trained for these highly skilled, technical roles.

MEXICO

In the years since the introduction of the North American Free Trade Agreement (NAFTA), manufacturers have redesigned their production systems to spread operations throughout The United States, Canada and Mexico. However, the announcement of President Elect Trump has led to significant uncertainty for Mexican manufacturing with the market exposed to greater risk and subsequently falling to 27th in our index. The announcement in early 2017 that Ford is to cancel a $1.6 billion new plant in Mexico and instead invest $700 million in Michigan to create 700 new U.S. jobs is indicative of the scale of uncertainty currently at play.

EUROPE

So far the Brexit story for manufacturing has been positive. The prospects for 2016 were looking relatively subdued with sluggish growth in key European markets, weak commodity prices and emerging market wobbles. However, the post-Brexit decline in the pound has helped the sector in the UK and the prospects for 2017 look better. Location decisions in this sector are significant investments, largely due to the capital investment in the plant. There is no prospect of modern production facilities being relocated or closed purely because of Brexit, but future investment decisions could well be impacted.

The implications on tariffs and trade are of course important for the sector, both for those exporting into the UK as well those exporting into Europe. Underlying decisions continue to be influenced by the integrated production process across Europe, leveraging different talent and capabilities in different countries. While Germany is famed for its engineering, the UK is strong in design and top-end innovation, and elsewhere a number of central and eastern European countries are producing many manufacturing components and providing cheaper alternative assembly operations.

SPOTLIGHT ON UK

by Lee Hopley, Chief Economist, EEF

Expect the unexpected. Known Unknowns. Seismic shifts. Any one of these feels like a suitable epitaph for 2016. But it has been politics rather than economic data that has been driving the surprises. As the fortunes of UK manufacturing unfolded over the past 12 months, we haven't seen trends and developments significantly out of line with expectations at the start of the 2016.

Overall, 2016 predictions for manufacturing and the global outlook were on the cautious side. There were worries about another year of sub-par world trade growth, risks from exchange rate volatility and only modest gains in new orders and output were Penciled in for the year.

And these were essentially the trading conditions that prevailed. The global economy had been fairly subdued, but some of the bigger headwinds for UK manufacturing – sluggish growth in key European markets, weak commodity prices and emerging market wobbles – subsided, supporting a marginal increase in output over 2016 as a whole.

THE CONFIDENCE ROLLER COASTER

Underlying this steady-as-she-goes picture, however, was some fairly large swings in confidence immediately after the shock EU referendum result in June 2016. The collapse in a whole range of business survey indicators in July 2016 has since corrected and with no significant damage to investment plans or recruitment activity – at least in the short term.

As we enter 2017, there is some optimism about the prospects for manufacturing. Further gradual improvements in the global economy will undoubtedly be a welcome support, and for some a weaker exchange rate will offer a further competitive boost. But, discussions with manufacturers reveal that many of their strategies and actions in recent years are a more important component of the sector's resilience.

STRATEGIES FOR GROWTH

EEF research has shown that despite the environment of heightened political uncertainty, manufacturers are maintaining ambitions to grow. Companies have longer term goals to improve profit margins, raise their productivity performance and increase sales. Underpinning these goals are significant efforts on three important fronts – innovating and developing new business models, enhanced cooperation with their supply chain and investment in new technologies.

While there is no one-size-fits-all strategy for success across manufacturing, we know that the importance of innovation across products, process and new services is exceptionally high. A large majority of manufacturers are seeking to drive their own success by offering greater value to customers – new and old – and locking in efficiency gains.

Complementary investments to support manufacturers on their journey to the fourth industrial revolution are also planned for or in progress. The opportunities from new technologies to optimise existing processes and link up supply chains are increasingly being identified and enacted.

..AND BREXIT

There are many reasons why a glass-half-full view of manufacturing seems justified. And in normal political times, we might even be confident about future recovery prospects. However, elevated uncertainty as Brexit negotiations progress over the next couple of years could be the new normal for UK-based manufacturers.

While industry will adopt a business-as-usual approach until the negotiation outcomes become clearer, economic volatility stemming from uncertainty about the UK's future relationship with the EU is a key risk. An industrial strategy from government, to match the strategies of manufacturers, would also help to keep investment on track even through Brexit.

ABOUT EEF

EEF is dedicated to the future of manufacturing. Everything we do, from business support to championing manufacturing and engineering, is designed to help our industry thrive, innovate and compete locally and globally.

In an increasingly uncertain business environment, where the UK is now on a path to leave the European Union, we recognize that manufacturers face significant challenges and opportunities. We will work with you throughout this period of uncertainty to ensure that you are on top of any legislative changes and their implications for your business.

Furthermore, as the collective voice of UK manufacturing, we will work tirelessly to ensure that our members' voices are heard during the forthcoming negotiations and will give unique insight into the way changing legislation will affect their business.

Our policy, employment law, health, safety and sustainability and productivity experts are onhand to steer you through Brexit with rational, practical advice for your business.

www.eef.org.uk

eef The manufacturers' organisation

PIONEERING LOCATIONS INDEX

HIGHLY AUTOMATED SCENARIO						HIGHLY AUTOMATED SCENARIO	
REGION	RANK 2016*	CONDITIONS (40%)	RISK (20%)	COST (40%)	CHANGE vs 2015	COST SENSITIVE RANK (CONDITIONS 20% / RISK 20% / COST 60%)	CONDITION SENSITIVE RANK (CONDITIONS 60% / RISK 20% / COST 20%)
Costa Rica	1	4	1	4	4	3 ▼	2 ▼
Vietnam	2	5	10	1	-1	1 ▲	3 ▼
Sri Lanka	3	10	8	2	4	2 ▲	7 ▼
Lithuania	4	1	2	7	0	7 ▼	1 ▲
Tunisia	5	8	6	3	-3	4 ▲	6 ▼
Morocco	6	7	4	5	3	5 ▲	5 ▲
Bulgaria	7	6	3	6	-4	6 ▲	4 ▲
Colombia	8	3	9	9	0	9 ▼	8 ●
Peru	9	9	7	8	-3	8 ▲	10 ▼
Slovakia	10	2	5	10	0	10 ●	9 ▲

** Data collated Q4 2016*

ONE SIZE DOES NOT FIT ALL - RE-WEIGHT & RE-RANK – THE IMPACT OF ALTERNATIVE SCENARIOS

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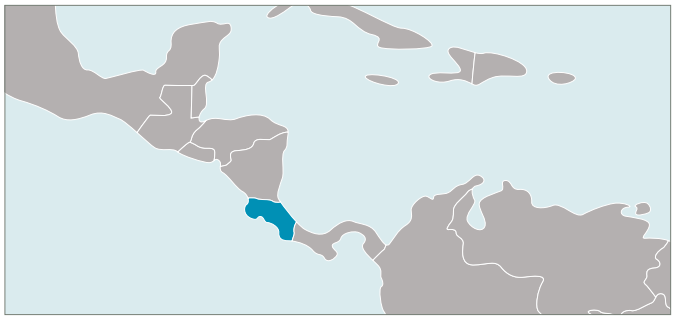
- A manufacturer exposed more to market operating conditions *(Conditions: 60% / Risks: 20% / Costs: 20%)*

"Traditional manufacturing locations are to be challenged as business value chains grow in their complexity."

PIONEERING INDEX FINDINGS

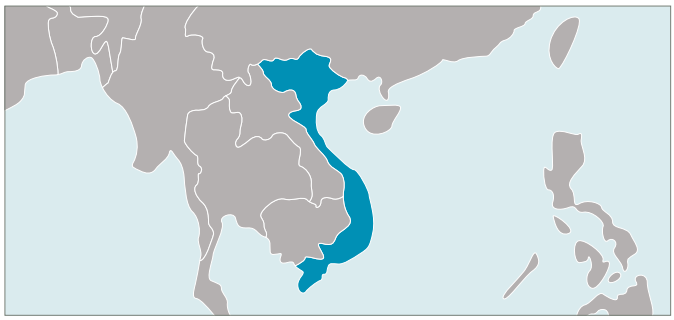


COSTA RICA TOP OF THE TABLE

> Costa Rica has risen four places on 2015 to top the Pioneering Index table and continues to witness increasing growth through increased levels of foreign direct investment in both advanced and light manufacturing operations.

> The market continues to play center stage for the Life Sciences sector and the development and creation of medical devices.

> Costa Rica continues to benefit from a low-risk political environment and should continue to attract manufacturers with the market already supportive in a large proportion of US production.

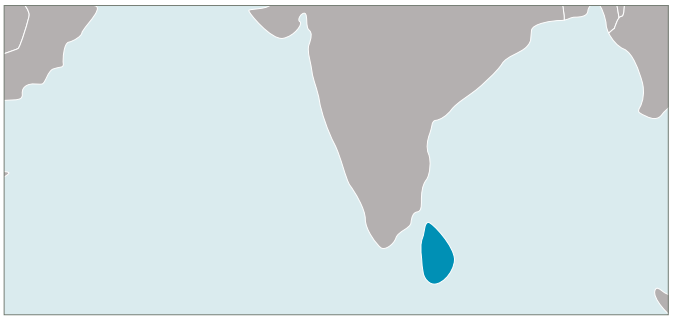


VIETNAM RETAINS ITS COMPETITIVE EDGE

> Considering the current climate of sluggish economic growth, containing costs to boost profits remains a critical imperative for manufacturers. Vietnam has become a magnet for manufacturers due to its comparatively low labor costs (ranked lowest in our Pioneering Index), and has long been seen as an alternative to China when it comes to low-cost manufacturing.

> A youthful labor force also provides Vietnam with |a competitive advantage.

> Over the last ten years, Vietnam has raised its overall productivity, prompting manufacturers to invest in billion-dollar manufacturing complexes across the country, a trend we anticipate will continue – with Vietnam ranking in second place in our Pioneering Index.



SRI LANKA RISES 4 PLACES

> Sri Lanka continues to be regarded as an attractive manufacturing market due to its lower cost profile and location that enjoys ease of access to key trade routes. Its geographic location has already attracted a number of Hong Kong manufacturers.

> Sri Lanka has the facility to deliver higher added value to products likely to appeal to buyers and importers in the more established markets, including the EU and US. The design, manufacture and export of textiles and apparel products is one of its biggest industries and it plays a key role in the country's growth profile.

> Manufacturers in Sri Lanka can benefit from the Free Trade Agreement (FTA) in place with India. Under this FTA, most products manufactured in Sri Lanka can enjoy duty free treatment when exported to India, the world's second most-populous market with more than 1.2 billion people.

> Labor shortages remain an inherent challenge for both local and foreign manufacturers, given the country's limited pool of workers. While some manufacturers claim that the labor turnover rate is high, others maintain that the retention rate is broadly acceptable. Despite this Sri Lankan workers are considered of a high quality, partly on account of the country's well-developed education system.

UNDERSTANDING THE INDEX

WHAT ARE THE INDEX AIMS AND OBJECTIVES?

To identify the parameters manufacturers consider to be critical when assessing the most suitable location to expand or relocate their plant and facilities.

"ONE SIZE DOES NOT FIT ALL"

The broad nature of the manufacturing sector means that the importance of these key parameters will inevitably vary on an individual basis.

The results contained within our ranking do not provide a definitive answer for all manufacturing companies on where their facilities should be located. They are instead intended to act as a guide as to how locations can be ranked using a given set of parameters and weightings.

METHODOLOGY

DATA IS SCORED, WEIGHTED AND RANKED IN THE FIRST INSTANCE ON THE SCENARIO OF A HIGHLY AUTOMATED MANUFACTURER (Conditions 40% / Risk 20% / Costs 40%)

A highly automated manufacturer tends to require unskilled labor and operates in a multi-regional market. These companies typically target growing urban populations and consider sustainability to be an important factor. All of our locations have been ranked based on this example, the same methodology used in the 2015 publication.

HOW IMPORTANT ARE LABOR COSTS, SOURCING OF RAW MATERIALS, INFRASTRUCTURE, CONNECTIVITY?

To identify the most suitable location it is important to match the requirements of the business to the most appropriate parameter weightings.

IDENTIFYING THE DATA

Our Indices include key macroeconomic factors in the form of 36 reliable secondary sources and data indicators.

POTENTIAL FOR FURTHER ANALYSIS?

YES. On a site-by-site basis, it is possible to replace country level data with regional or City level data. This will not only reveal which region is the most appropriate, but also highlight emerging locations which may not have previously been considered as part of any requisite scenario planning.

A number of other local factors for manufacturers seeking to acquire space may also be required - such as those surrounding quality control, regulation, certification and inspection of the assets occupiers operate from within. The Manufacturing Index can be expanded to include such analysis on a business by business basis.

WHICH COUNTRIES ARE INCLUDED AND WHY?

OUR ESTABLISHED INDEX Ranks the 30 largest countries by manufacturing output, defined by the UNCTAD (United Nations Conference for Trade and Investment).

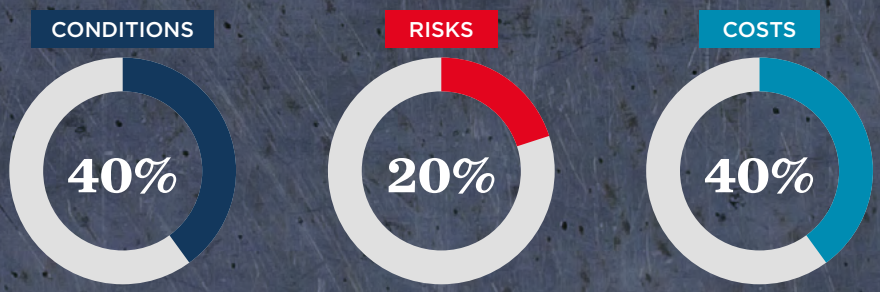
OUR PIONEERING INDEX Ranks the top 10 manufacturing locations by growth which currently are less established in terms of output but have the potential to mature as locations of choice for manufacturing organizations.

Note that while the UNCTAD is used as a source for inclusion for inclusion in this report report the size of market or growth parameters have no weighting in regards to table ranking and are purely a measure for inclusion. The Manufacturing Risk Index is designed to identify criteria for consideration and where the next wave of locations will be, both in terms of those that are maturing quickly and primed to absorb demand from already well-established markets of considerable critical mass and those high growth/pioneering locations which may be on the radar of those looking further ahead in terms of strategic planning.

CRITERIA AND WEIGHTINGS

COSTS, RISKS & CONDITIONS

Based on our experience these are the key criteria for a manufacturer considering site selection or expansion. From taking into account the thoughts and opinions from some of the largest global manufacturers we have weighted our predefined criteria as follows:



ALTERNATIVE WEIGHTING SCENARIOS

This year the Index also addresses what the impact would be for a manufacturer focussed more on Costs or market operating Conditions. We highlight what the revised position would be for each Country within our Index if alternative weightings were applied.

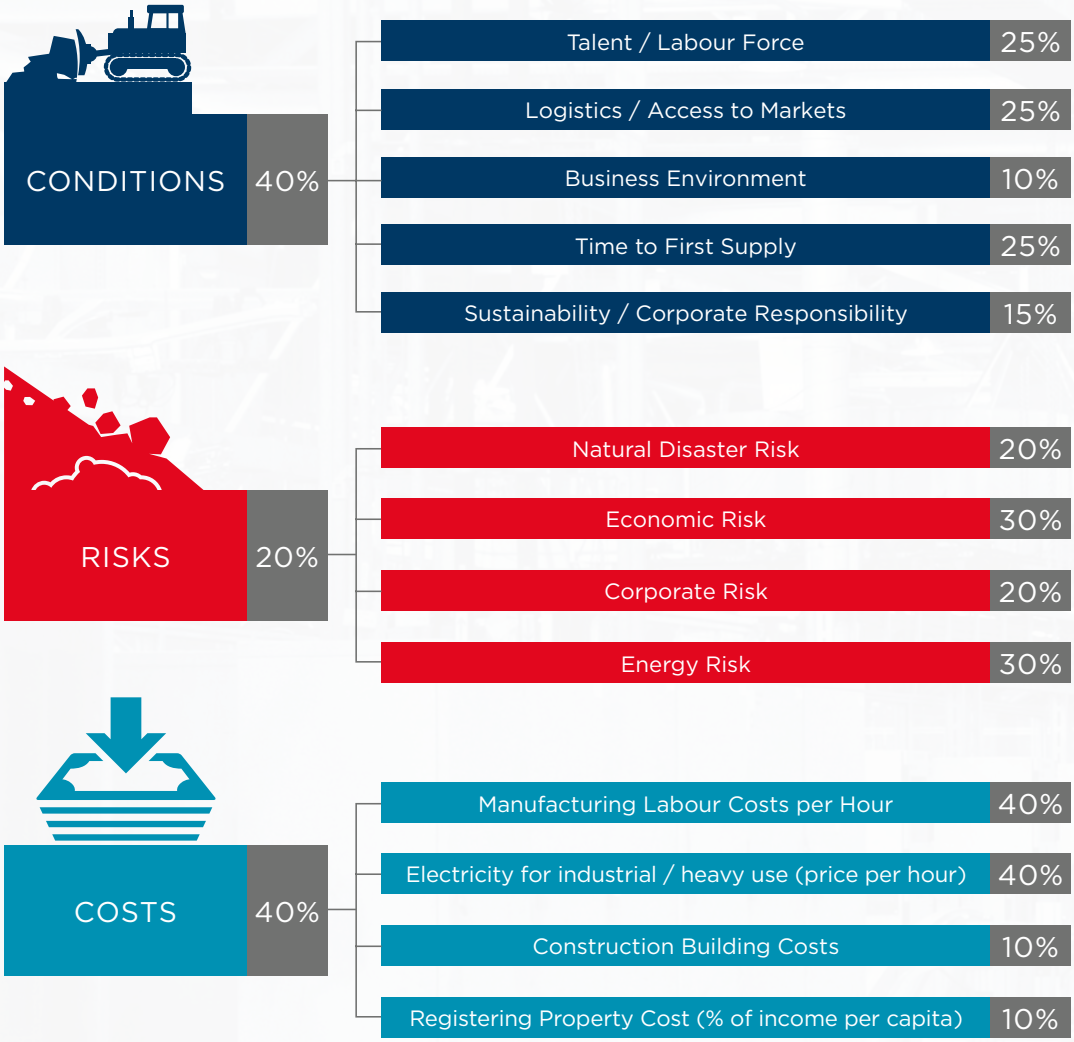
A MANUFACTURER DRIVEN BY LOW OPERATING COSTS

A MANUFACTURER DRIVEN BY FAVOURABLE MARKET OPERATING CONDITIONS

These scenarios are to be used as a guide, weightings will vary on an individual basis, and indeed different companies may have a different profile of secondary criteria that are important to their business.

CRITERIA WEIGHTINGS FOR OUR PRIMARY SCENARIO

HIGHLY AUTOMATED CATEGORY WEIGHTINGS



RE-WEIGHT & RE-RANK – THE IMPACT OF ALTERNATIVE SCENARIOS

- A manufacturer seeking lower operating costs *(Conditions: 20% / Risks: 20% / Costs: 60%)*
- A manufacturer exposed more to market operating conditions *(Conditions: 60% / Risks: 20% / Costs: 20%)*

"Finding the right balance between cost, operating conditions and risk factors remains a key challenge and certainly is specific to individual business practices. But - get it right and a successful location strategy can be adopted and a competitive advantage achieved."

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