

# GLOBAL MANUFACTURING'S MOMENTUM TO CARRY OVER INTO 2018

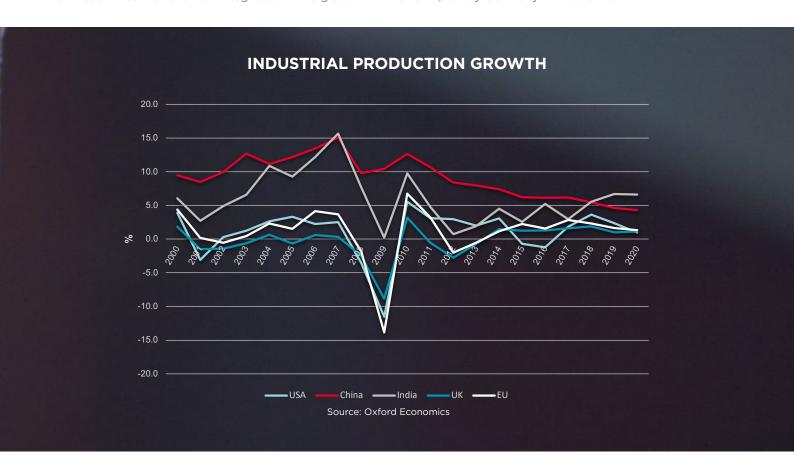
The global economy remains in good shape despite uncertainty surrounding the future of U.S.' trade policies, the shape of Brexit in Europe, and heightened geopolitical risk in the Middle East and parts of Asia and Latin America. Global GDP growth is forecast to accelerate to 3.2% in 2018, from 2.9% last year.<sup>1</sup> Multiple factors support this outlook: the robust economic fundamentals of U.S., Europe and China, a cautious monetary policy by the major global central banks, and strong trade growth. Global exports of goods are expected to grow by 5.5% in 2017 – their fastest pace in five years – and by over 4% in 2018.<sup>2</sup>

The pace of global trade will continue to feed manufacturing order books. Industrial output in 2018 is projected to increase by 3.8% globally - its fastest rate since 2011 - and by 3.0% in Europe. Europe's manufacturing continues to radiate with confidence with Markit's latest sentiment survey hitting a new peak since early 2000's. Southeast Asia is included among the global top performers with output expected to expand by over 5% in 2018.<sup>3</sup> Regions and countries that are well integrated in the global

supply chain offer a solid platform to capitalise on increasing global demand and trade flows.

Recognising and thoroughly assessing this with other competitive advantages is key to site selection; even more so at a time when some manufacturing hubs are maturing and reaching the next stage of their development. GDP per capita in Asia is forecast to increase by nearly 25% in the next five years, with India, China and Vietnam expected to see growth rates in the region of 30%. In Europe, Central Europe and the Balkans region, GDP per capita will increase by 14% on average over the same period, outpacing global growth of 13%.<sup>4</sup>

Economic development and technological trends will shape the type and distribution of future manufacturing, but the sector will remain an engine of global growth. By 2020, manufacturing's share of GDP will exceed 20% in the top 60 largest global economies. In China, manufacturing will still account for a massive 30% of GDP in 2025. In the Eurozone, manufacturing makes up 17% of GDP, led by Germany with over 23%.<sup>5</sup>



# **GLOBAL RANKING**

	BASEL	ALTERNATIVI	E SCENARIOS			
REGION	RANK 2018	CONDITIONS (40%)	RISK (20%)	COST (40%)	COST SENSITIVE RANK (CONDITIONS 20% / RISK 20% / COST 60%)	CONDITION SENSITIVE RANK (CONDITIONS 60% / RISK 20% / COST 20%)
China	1	8	26	15	1	4
Lithuania	2	16	19	20	3	5
Malaysia	3	20	24	13	2	11
China, Taiwan Province of	4	14	21	24	16	7
Canada	5	10	7	27	25	3
United States	6	3	6	28	27	1
Hungary	7	21	18	22	13	12
Czech Republic	8	24	10	26	18	13
Slovakia	9	23	13	25	19	14
Turkey	10	22	34	8	12	20
Peru	11	28	30	6	6	23
Philippines	12	31	31	3	5	27
Colombia	13	27	29	11	11	25
Russian Federation	14	38	25	5	4	32
Thailand	15	25	36	12	14	24
Romania	16	35	23	17	10	29
Poland	17	26	22	23	20	21
Singapore	18	1	15	30	30	2
Bulgaria	19	30	27	18	17	28
Indonesia	20	39	28	4	7	33
Mexico	21	32	32	9	15	31
Sri Lanka	22	34	39	2	9	34
Vietnam	23	40	38	1	8	40
Korea, Republic of	24	9	20	29	29	10
India	25	37	33	16	21	37
Morocco	26	36	41	7	22	39
Tunisia	27	33	40	10	23	38
Brazil	28	29	37	21	26	35
Argentina	29	41	35	14	24	41
Spain	30	13	14	31	31	16
United Kingdom	31	7	12	34	34	8
Australia	32	15	11	33	32	17
 Japan	33	12	16	32	33	18
	34	6	5	36	35	9
Sweden	35	2	3	39	39	6
Austria	36	11	4	38	37	19
Italy	37	18	17	35	36	30
Germany	38	5	1	40	40	15
France	39	19	8	37	38	26
Venezuela (Bolivarian Republic of)	40	42	42	19	28	42
Switzerland	41	4	2	42	42	22
Belgium	42	17	9	41	41	36

## **KEEPING PACE WITH GLOBAL TRENDS**

With the global playing field changing rapidly, the manufacturing sector is under increasing pressure to achieve growth through less organic means. The battle is for market share: maintaining and growing it. Manufacturers must constantly improve productivity and quality while at the same time, lower costs. However, finding efficiencies at both the top and bottom lines of production is even more difficult when considering intensifying global and regional threats to the free flow of goods.

To achieve growth, manufacturers must strategically position themselves to take advantage of a number of structural trends that are growing in importance and promise to transform traditional production processes permanently over the next 10 years. The most important trends impacting the sector are listed below.

1. TECHNOLOGY & INNOVATION¹ is already contributing to production efficiencies and safety in both production and finished goods. To contend with more competitive pricing, manufacturers are able to use new technology to enhanced supply chain visibility, improve speed to market, reduce labour reliance, and reshore to create jobs in home countries. However, the high cost of technology and innovation continues to limit the pace of implementation globally.

2. POLARISATION OF LABOUR REQUIREMENTS

within the manufacturing sector is expected to amplify between "easily automated" and "labour intensive" industries. To the extent that some regions can have significant labour cost disparities (e.g. Asia and Europe) due to a mix of developed and emerging economies, location decisions need to be country- rather than regional-based.

**3. PROTECTIONISM/NATIONALISM** in the form of tighter or closed borders is a lingering threat to both global and regional supply chains. Current free trade zones at risk include the EU (Brexit and tighter borders between EU states), NAFTA, and TPP. It is unlikely that this protectionist response in Europe and the U.S. will wane in coming years since the primary contributors to growing support for enhanced border controls (i.e. political and social instability in the Middle East, North Africa, Asia, and Latin America), remain unresolved.

4. CONSOLIDATION AND M&A within the manufacturing sector remains robust with 32% of the \$2.5 trillion of completed transactions in 2016 involved high-tech companies. With almost \$1.3 trillion in announced deals occurring during the first half of 2017 – well above the historical average of \$1.2 trillion, global M&A activity is maintaining its momentum. The sector's increasing focus on high tech acquisitions is a strong indication that manufacturers are embracing technology as the way of the future.

GE AVIATION PARTNERS WITH THE CZECH TECHNICAL UNIVERSITY TO ACCESS TALENT

Underscoring aerospace and other high technology manufacturers' growing requirement to access talent in these fields, GE Aviation partnered with Czech Technical University in August 2017 to build a large team of engineers to support production (starting in 2022) at their new plant near Prague.

<sup>&</sup>lt;sup>6</sup> These include automation, 3D and additive printing, big data, internet of things, nanomaterials, advanced robotics, and artificial intelligence.

<sup>&</sup>lt;sup>7</sup> Easily automated industries include chemicals; motor vehicles, trailers, and parts; basic metals; semiconductors and electronics.

<sup>&</sup>lt;sup>8</sup> Labour intensive industries include fabricated metal products; food, beverage, and tobacco; printing and publishing; wood products; textiles, apparel, and leather; furniture, jewellery, toys, and other.



## FINDING COMPROMISES WITHIN EUROPE

Within the context of the global trends outlined above, the sector has historically and will continue to address cost, growth, and geopolitical issues through location and supply chain decisions. More specifically, within Europe, manufacturing requirements are balanced with country-level locational/cost advantages and disadvantages. With Brexit looming and border controls tightening between EU member states, the emphasis remains not only on the free flow of goods, but also the free movement of labour to relieve critical labour shortages across Europe.

### **EASTERN EUROPE**

While regional disparities in cost and infrastructure quality exist in Europe, they are less dramatic than found in other parts of the world. The double dip recession and related fiscal troubles of peripheral EU countries disrupted subsidies and funding to eastern European countries that joined the EU just before this period. Consequently, countries in this region are still playing "catch up" to the rest of the EU in terms of infrastructure quality and economic stability. Access to Western European markets and the ports of Hamburg and Rotterdam are extremely limited. On the other hand, the region's less developed and mature economic circumstances means wages are lower relative to the rest of Europe, making these countries potential attractive locations for labour intensive industries.

### **CENTRAL EUROPE**

For countries emphasizing supply chain efficiencies that involve the whole of Europe or global connections, locations in Central Europe offer a compromise between access and cost. Since Poland, Czech Republic, Slovakia, and Hungary joined the EU in 2004, infrastructure quality in the form of new and improved motorways has significantly improved while labour costs have increased in line with maturing economies. Central Europe has direct access to Western Europe principally through Germany and has good proximity to the ports of Hamburg and Rotterdam.







### **PUBLIC SECTOR WAGE POLICIES IN MAJOR ECONOMIES**



#### **FRANCE**

Public sector wages were frozen for six years, then rose by 1.2% since 2016. President Macron announced another freeze for 2018.



### **GERMANY**

The settlement was 2.4% in 2016 and 2017. The next settlement in Q1 2018 could be 2.5-3% given large fiscal surpluses and the tight labour market.



#### **ITALY**

Following an 8-year freeze, next year only workers earning <€26K will get a rise.



#### **SPAIN**

The current 1% settlement covers 2016 and 2017. It follows a freeze in 2013-2015. The next settlement is currently being negotiated.



### UK

Average pay growth is currently capped at 1% annually until 2019-20 which has been in place since employees in certain areas has been



### **USA**

Federal pay was frozen in 2011-2013, and the 2016 settlement was 1.9%. Wage growth is expected to track inflation during 2018-2020.



**WESTERN EUROPE** 

With the manufacturing sector contributing to

themselves and their country relative to global

Western Europe, Germany is leading the way

in terms of technological innovation or what

Austerity that has kept public sector wages from growing, has had an indirect impact on private sector wage growth in Western

European economies, especially in France,

Italy, Spain, and the UK. Benchmarking to

public sector wages coupled with competitive

forces related to labour flows from public to

private sector have been dragging private

wages below their pre-crisis growth trend.

has been coined "Industry 4.0". However, from a corporate standpoint, burdensome social charges still contribute to high German labour

24% of national GDP, German manufacturers

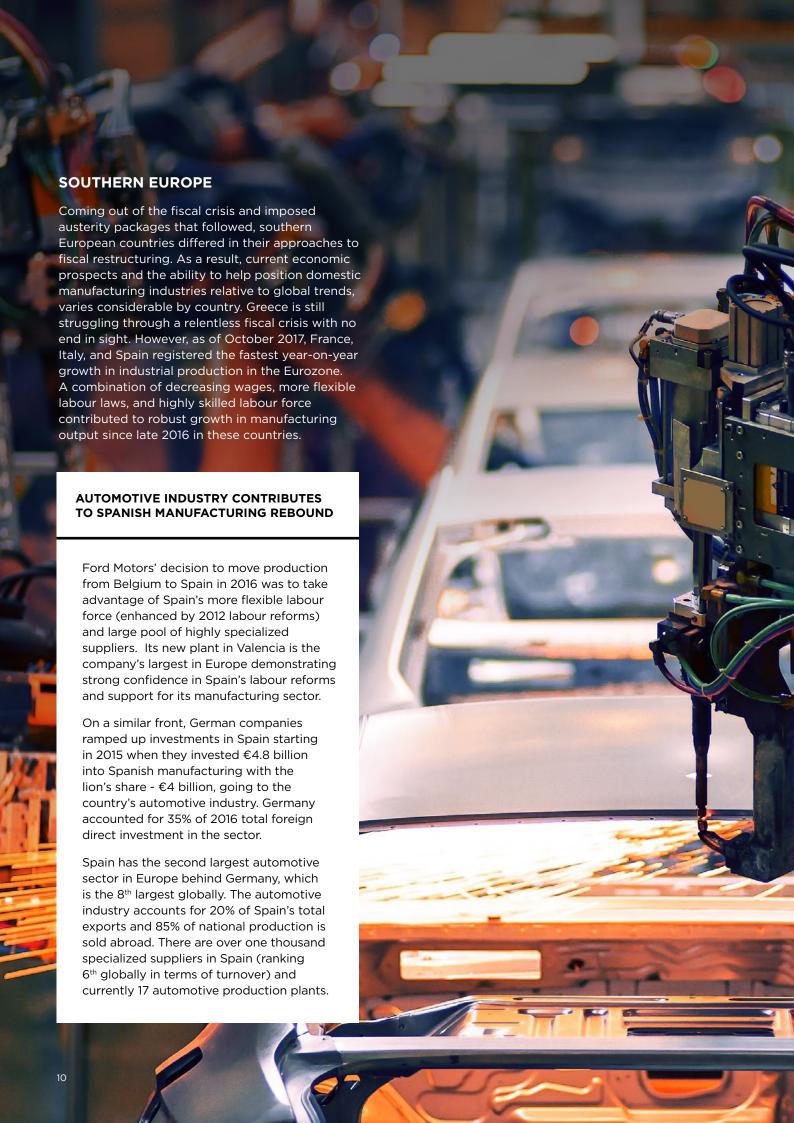
are gearing up to strategically position

structure trends impacting the sector. In

costs, despite caps on wage increases.

#### **CANADA**

2017 settlements have ranged between 1.4-2.0%. Infrastructure is being prioritized over payroll expenditures.



# UK While up until now the Brexit vote has had little impact on the UK manufacturing sector, a hard border with the rest of Europe will undoubtedly increase the cost of goods and disrupt pan-European supply chains. Though, since the July 2016 vote to exit the EU, the UK manufacturing sector has benefitted from a devalued sterling that has boosted demand for UK goods abroad. Longer term, however, depending on the outcome of Brexit negotiations, the UK's attractiveness as a location to serve the rest of Europe is at risk. **CONCERNS OVER BREXIT LIMIT EXPANSION PLANS FOR BRITAIN'S** SECOND-BIGGEST DRUG MAKER In August 2017, AstraZeneca, Britain's second largest pharmaceutical company, announced a planned multimillion GBP investment in its existing Macclesfield facility. However, this new funding will not be used to expand the facilities' manufacturing. Instead, the full funding amount is destined for exclusively technical improvements. The company points to the uncertainty surrounding Brexit outcome which has paused further commitments to expansion in the UK. The UK pharmaceutical industry expresses concerns that the approval process for new drugs could become longer after Brexit, to the detriment of patients. For these companies, the alarm sounded when the EU regulator, the European Medicines Agency, announced its relocation from London to Amsterdam once the UK leaves the EU in March 2019. MANUFACTURING RISK INDEX 2018 / 11



# CEE REGION BECOMES A FORMIDABLE CONTENDER FOR TOP RANKING

- > Lithuania ranks as the second most attractive location for manufacturing facilities on our revised index.
- > Despite wage increases in Central Europe, CEE labour costs remain the lowest in Europe. Labour costs in Lithuania are 14% below Poland and 30% below the Czech Republic.
- > Just behind Estonia, Lithuania ranks second in the CEE region on ease of doing business.
- > On a global basis, labour costs in core CEE economies (Czech Republic, Slovakia, Poland, and Hungary) are more than double those of China and India, but still 60% below the U.S.
- > Historical ties to Germany and Austria, the region (particularly Czech Republic, Slovakia, and Poland) has maintained its role as a lower cost location for car manufacturing, which continues to integrate a growing degree of automation. Meanwhile, wage hikes and growing labour shortages in Central Europe are pushing more cost sensitive industries east to Lithuania, Romania, Bulgaria, and Turkey.
- > Hungary has distinguished itself in the region as a leader in pharmaceutical production. As Hungary emerges from a lingering fiscal crisis, it has made efforts to improve its competitiveness in the region, starting with lowering its corporate tax from 19% to just 9% which became effective in January 2017 the lowest in the region.
- > Emerging manufacturing locations in Turkey, Romania, and Bulgaria are increasing in attractiveness based primarily on cost. However, poor infrastructure and relatively high corruption perceptions have deterred manufacturers' from locating their plants in these countries. In the case of Turkey, recent geopolitical unrest has decreased its attractiveness for international companies.



LABOUR COSTS IN LITHUANIA ARE

14%
BELOW POLAND AND
30%
BELOW THE
CZECH REPUBLIC



## ASIA PACIFIC STILL AT THE TOP OF THE LIST

- > Lower labour cost countries in the Asia Pacific region (i.e. China, Malaysia, Taiwan, and the Philippines) take top spots on our revised our baseline scenario.
- > China remains a global manufacturing powerhouse. While cost-sensitive production is increasingly turning to lower cost countries in the Asia Pacific region, China's efficient supply chains and infrastructure networks continue to provide a reliable export platform. The country offers growing opportunities for high-tech manufacturing as the government pursues its "Made in China 2025" programme designed to upgrade the national industry.
- > Topping last year's global index, Malaysia ranks third on our revised baseline scenario. With labour costs comparable to China's, Malaysia is shifting from its former status as a low cost location to a high-value manufacturing hub. In fact, the 2017 Global Human Capital Outlook highlights Malaysia as having the largest pool of skilled workers in the region.
- > Ranked fourth on our baseline scenario, Taiwan has gained a reputation for electronics components manufacturing. Foreign Direct Investment (FDI) in this sector reached a six-year high in 2016, highlighting the continued appeal of the country for this type of production. The government's investment policy also supports the machinery, biotechnology, pharmaceuticals, "green" innovation, and national defence sectors.



## **U.S. FASHION INDUSTRY DIVERSIFIES MANUFACTURING LOCATIONS TO ENHANCE EFFICIENCIES**

The 2017 Fashion Industry Benchmarking study concludes that China remains the top sourcing destination for American apparel companies, followed by Vietnam. Yet, the same study also points out that American companies are not relying on any one country to source their manufacturing. For the fashion industry, speed to market is critical to keep up with the latest trends. Low cost labour to increase margins and risk control are also among the top priorities for the industry. To achieve efficiencies on these three levels, American companies have adopted a diversified approach to foreign suppliers. The study surveyed American companies to produce an overall country-based performance measurement for each of these priorities as summarized on the table below.

### Source Base Ratings

	Speed to market	Sourcing cost	Risk of compliance
USA	****	**	****
Mexico	****	***	***
CAFTA-DR	****	***	***
China	***	****	***
Vietnam	***	****	***
Cambodia	**	****	**
Indonesia	**	****	***
Sri Lanka	**	****	***
India	**	****	**
AGOA	**	****	***
Bangladesh	**	****	**

Source: Fashion Industry Benchmarking, 2017

# HOPES FOR RESHORING IN NORTH AMERICA

- > Canada (5<sup>th</sup>) and the U.S. (6<sup>th</sup>) are among the top ten on our baseline scenario.
- > A sound business environment, high quality infrastructure, and availability of skilled labour contribute to the attractiveness of the U.S. and Canada as manufacturing locations.
- > Production in North America also benefits from low energy cost, which is increasingly important in the context of increasing automation. Cost of electricity in the U.S. is around \$0.07/KWH 2017, compared to circa \$0.20/KWH in Germany.
- The recent announcements from Toyota/Mazda and Samsung to make additional investments in new plants in the U.S. are fuelling hopes of reshoring. The 2010-2016 Reshoring Initiative survey points to incentives, availability of skilled workforce, and proximity to consumers as being the most persuasive for companies.
- President Trump's protectionist rhetoric and aversion to NAFTA treaty has cast a level uncertainty on the future shape of the North American supply chains. While currently unlikely, a withdrawal of the U.S. would penalise Mexico and Canada as manufacturing bases.

# IS U.S. RESHORING GATHERING MOMENTUM?

The automotive sector has been at the forefront of recent manufacturing investment in the U.S. There is evidence that other sectors are following suit. Following a similar announcement made by rival LG, Samsung recently made public its plan to invest \$300 million in the construction of a new appliance manufacturing factory in South Carolina.

Toyota and Mazda are the latest car makers to have announced plans to build a new \$1.6 billion car assembly plant in Alabama, due to become operational in 2021. It is reported that the new facility will have capacity for 300,000 vehicles and will employ up to 4,000 people.



Production in North America benefits from low energy cost

Z COST OF ELECTRICITY
IN 2017

U.S

\$0.07

GERMANY

**\$0.20** 



BASELINE SCENARIO RANK (CONDITIONS 40% / RISK 20% / COST 40%)	COST SENSITIVE RANK (CONDITIONS 20% / RISK 20% / COST 60%)	CONDITION SENSITIVE RANK (CONDITIONS 60% / RISK 20% / COST 20%)
1	1	1
2	2	2
3	3	4
4	4	5
5	7	3
6	5	7
7	8	6
8	6	9
9	10	8
10	9	10
	RANK (CONDITIONS 40% / RISK 20% / COST 40%)  1 2 3 4 5 6 7 8 9	RANK (CONDITIONS 40% / RISK 20% / COST 60%)       1     1       2     2       3     3       4     4       5     7       6     5       7     8       8     6       9     10

Source: Cushman & Wakefield

- > In developed economies, there is generally more funding for higher education (i.e. high technology, engineering, and biomedical technology) which in turn, supports a greater reliance on high value goods production.
- > To this end, the Advanced Production index focuses on the ten most educated countries, ranking them on the revised baseline and sensitivity scenarios.
- > Sixth place on our Global index, the U.S. jumps to top spot on our Advanced Production index - a confirmation that its combined flexible labour laws, incentives, highly educated population, high worker productivity, strong domestic consumption, and efficient supply chains are indeed contributing to its global competitiveness.
- > Unlike the U.S., Singapore ranks quite low (18th) on our Global index due to restrictive labour laws and high wages. However, its second place ranking on our Advanced Production index indicates that these labour issues are less relevant for high value goods manufacturing which requires higher skilled labour.
- > Led by the UK, European countries dominate the rest of the top ten list on our Advanced Production index. High labour costs, strict labour laws, and blue collar labour shortages explain low rankings for most of Western Europe on our Global index. However, similar to Singapore, a highly educated Western European population provides support for aerospace, defence, automotive, innovative, electronics, biomedical, and other innovative production.

# APPENDIX

# MANUFACTURING RISK INDEX METHODOLOGY

### 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.

#### **IDENTIFYING THE DATA**

Our Indices include key macroeconomic factors in the form of 29 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.



# 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**

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

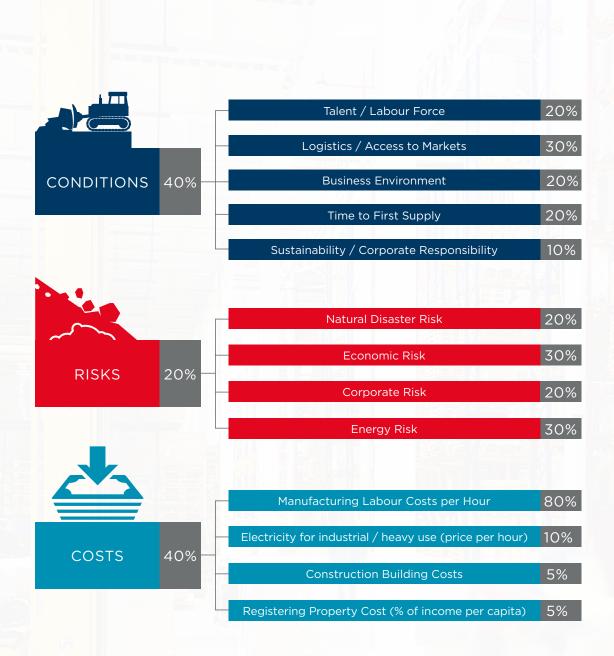


### A MANUFACTURER DRIVEN BY FAVOURABLE MARKET OPERATING CONDITIONS



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 AND WEIGHTINGS FOR OUR PRIMARY SCENARIO







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