



Turner & Townsend

# International construction market survey 2019

making the **difference**





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# Economic turmoil is not a barrier to growth

In the last 12 months, the economic backdrop has shifted. The International Monetary Fund has cut its forecast for global economic growth, stock markets have retreated, and house price inflation has slowed.

Added to this, political turmoil and trade-war tensions have increased uncertainty and volatility within global markets, with tariffs directly affecting the construction sector.

Despite these headwinds, the global construction sector entered this year with significant momentum, having seen growth of five percent in 2018.

Prospects throughout 2019 are equally buoyant – our 2019 international construction market survey reveals 28 percent of markets are hot or overheating and a further 36 percent continue to warm up. Just eight percent are cooling, indicating widespread and continued growth in workload throughout the year.

## **Demand - a double-edged sword**

Increasing activity and demand, in an already hot market, presents both opportunities and challenges for the construction industry and its customers. On one hand, strong growth in construction will help support economic growth, reducing the potential of a major downturn. This could cushion some of the negative impacts on the sector and help maintain favourable conditions for business in many markets.

The challenge is, as hotter markets become more overstretched, escalating construction costs and tighter labour markets will increasingly frustrate attempts to deliver projects to desired standards, cost and timeframes.

This will also put pressure on the price gap between markets, which have also widened. In 2018, the cost of constructing one building in the ten most expensive markets was equivalent to delivering four buildings within the bottom ten markets. In 2019 that cost gap has grown to five.

## **No time for complacency**

A future easing of economic growth may indeed take some heat out of the market. But while this may provide some relief, the symptoms of an overstretched sector – cost overruns, delays in delivery and an erosion of quality – should not be ignored.

We cannot hide from the increasing volatility markets are experiencing. Nor can we ignore growing impatience that construction is not adapting or improving fast enough. We continue to face some fundamental issues.

Clients and suppliers equally have an opportunity – and a responsibility – to drive productivity through new innovations in building, developing new ways of working and business models, using technology in a smarter way and developing new skills for the future. As a sector filled with pride and ambition, now is our time to shine.

Against this backdrop of rising costs and market volatility, it is time to join forces across the industry, identify levers, mobilise and accelerate change. By doing this together, we can benefit collectively from the whole industry and our ability to deliver next generation real estate solutions for all. Combining this with which markets offer the most attractive conditions for investment, both in terms of the potential for construction today and with a view to future growth, may yield unexpected results.

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# About our survey

Our 2019 International construction market survey (ICMS) brings together data and experience from 64 global markets. It is our largest and most in-depth survey to date, providing insights into the current state and direction of the global construction industry.

Our 2019 survey draws on construction data and analysis from real estate projects around the world, providing asset investors and owners with an even greater insight to the constantly changing dynamics of global construction activity. With the addition of 18 new markets, this year's survey now encompasses 84 percent of global GDP.

Markets in new countries included in this year's survey are:

- **Auckland** and **Christchurch** – New Zealand
- **Harare** – Zimbabwe
- **Mexico City** – Mexico
- **Riyadh** – Saudi Arabia
- **Stockholm** – Sweden
- **Vienna** – Austria.

The additions of key markets within countries already covered in the survey enables more comprehensive cross-country comparisons to be drawn. This year, these are:

- **Atlanta, Chicago, Indianapolis** and **Phoenix** – USA
- **Vancouver, Ottawa** and **Edmonton** – Canada
- **Berlin** and **Frankfurt**, Germany and **Barcelona**, Spain – Europe
- **Guangzhou** – China.

2018 was the peak of the global construction cycle that started in 2009, following the global financial crisis. As a result, the construction sector has begun 2019 with considerable momentum. This impetus should continue to help support the global economy during the year. Of the markets surveyed, 28 percent are

hot or overheating and a further 36 percent continue to warm up.

Global economic turmoil will continue; markets stumbled at the end of 2018, Brexit is in full swing and trade wars are impacting. But the strength of construction in many markets shown in our survey indicates that they may be cushioned from the full effects of any economic downturn.

Our research gathers data on market conditions, as well as challenges and opportunities our local experts are seeing on the ground. We also analyse input costs such as labour and materials, and the average cost per square metre across different construction types from residential to commercial.

A variety of construction cost comparison methodologies are adopted to ensure our findings deliver accuracy and insight. As well as straight-line USD conversion, we also use purchasing power parity (PPP) and location factors. These methods remove the impact from changing exchange rates, to standardise our data and draw valid conclusions.

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⊕ For more information on the methods we use see pages 112 and 113. Detailed explanations of what's included and excluded from our cost information is given on page 114.

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## Key highlights

**35**

markets are warm,  
hot or overheating

**23**

markets are  
warming up

**5**

markets  
are cooling

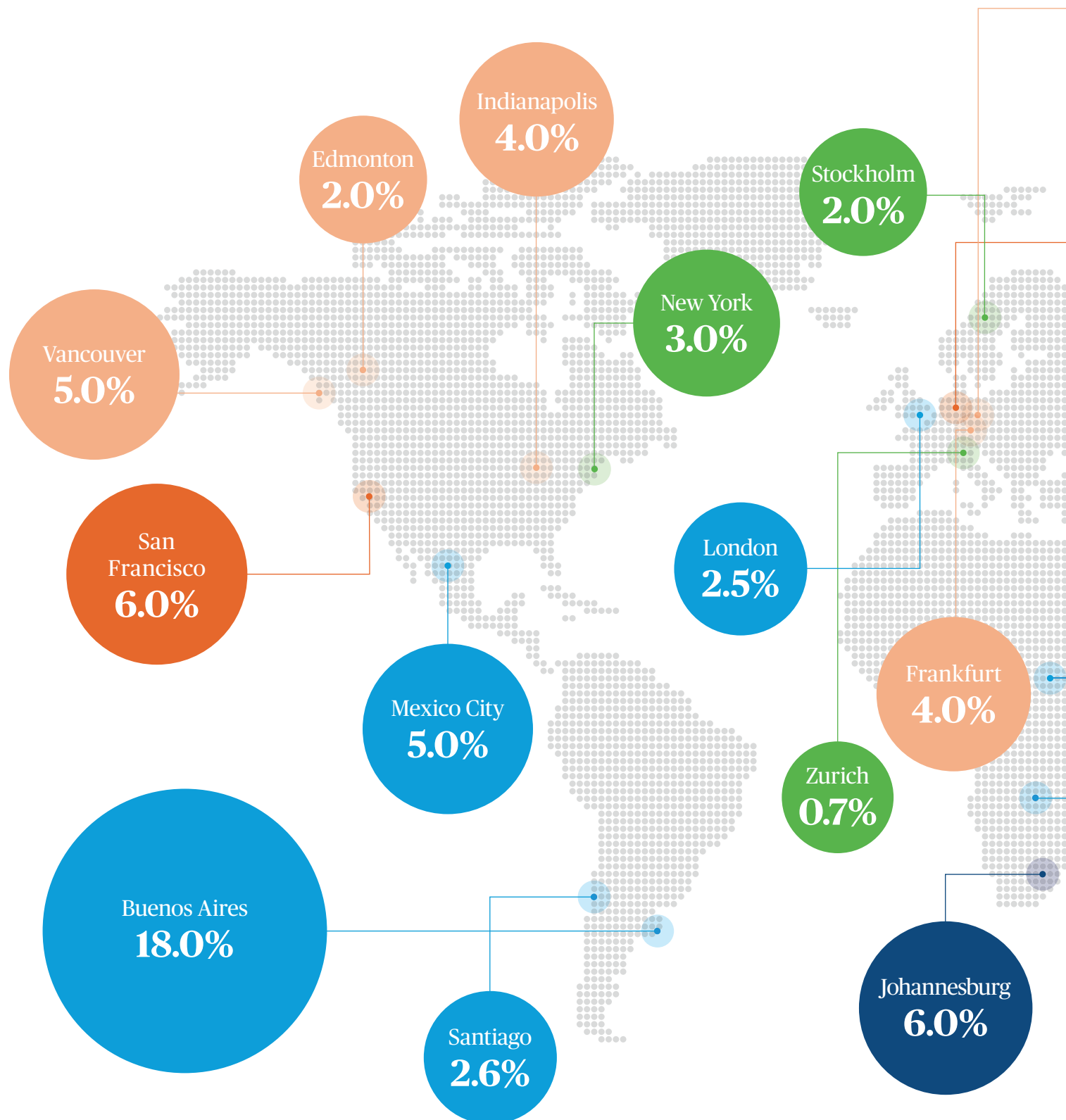
**18**

new markets in  
the 2019 survey



Construction costs in Auckland are the closest to the global median

## Construction cost escalation 2019-2020



## Current tendering conditions

- Overheating
- Hot
- Warm
- Lukewarm
- Cold

## New markets in this survey

### Mexico City, Mexico

With tight links to the USA and Canada, its inclusion completes the North American picture. Mexico's refreshed trade deal with the USA and Canada, a growing manufacturing base and lower than average construction costs make Mexico City a key city to follow.

### Berlin and Frankfurt, Germany

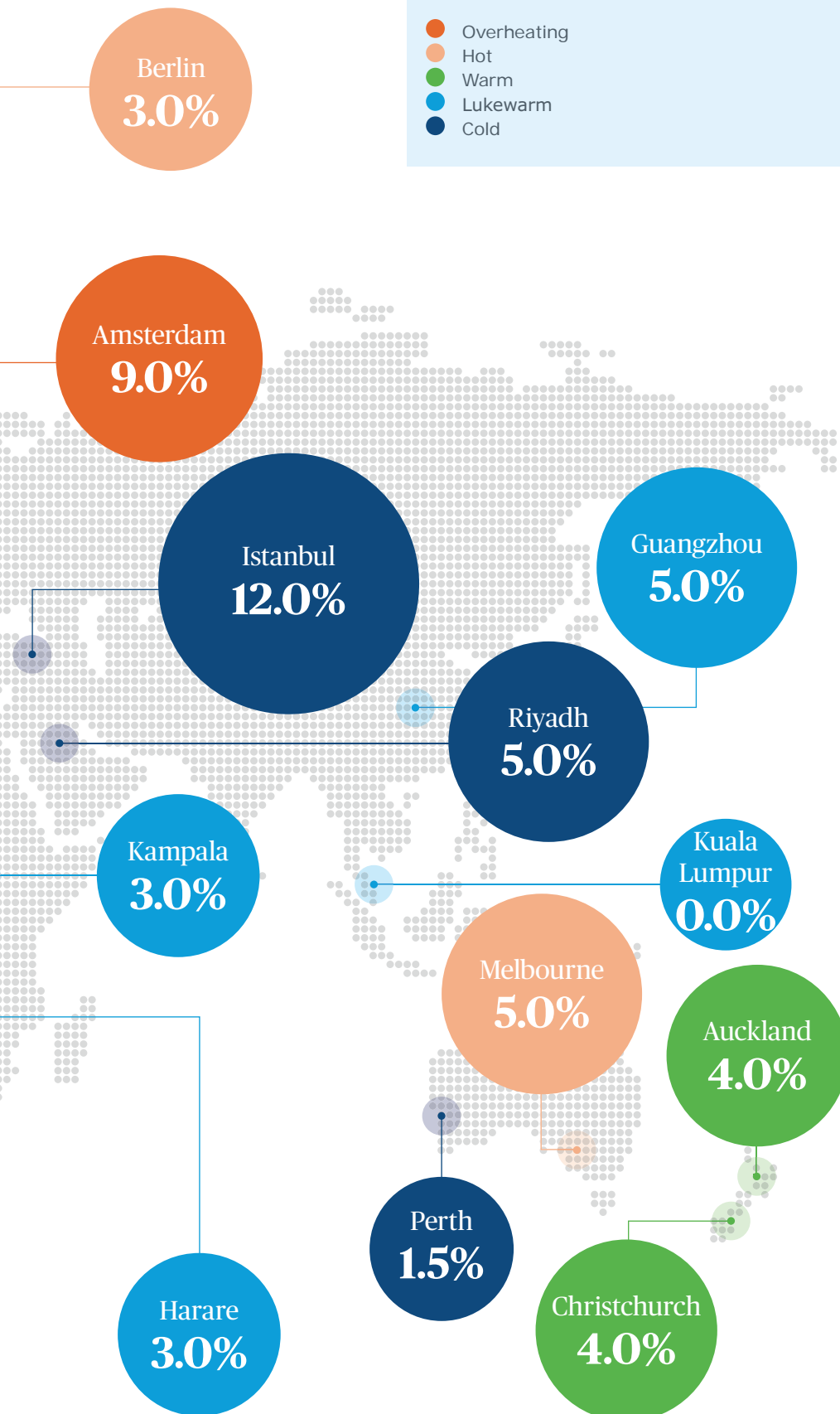
Adding Berlin and Frankfurt to our survey provides a rounded picture of the German construction market. Both are considered to have hot tender market conditions, but construction costs and wages are lower than Munich, with Berlin the lower cost of the three. Frankfurt is seen as a significant e-commerce hub with distribution logistics and data centres.

### Stockholm, Sweden

Stockholm becomes the first Scandinavian country included in this survey, offering insight into a nation of 10 million people and ranked, by the World Bank, 11th on GDP per capita. According to our survey, average construction costs in Sweden is aligned with other capitals, such as Paris and Berlin, despite its high living costs.

### Auckland and Christchurch, New Zealand

Ranked number 1 in the World Banks rankings of Ease of Doing Business, New Zealand is an attractive destination for investment. Recently, Auckland and Christchurch's construction markets have been relatively overheated, and there has been strong cost inflation of construction costs. Overall, contractors tend to be quite small, and there are some skills shortages when work volumes increase significantly.



# An uncertain economic backdrop

There are clear signs of a retreat in stock markets, of lower house-price inflation, and falls in many developed economies, where cheap credit, tax cuts and speculation have inflated the price of assets.

As a potential economic slowdown is expected, there are increased uncertainties in the political sphere which have potentially powerful economic impacts. Brexit and the implications not just for the UK but Europe, trade wars, USA government shutdown and political tensions, climate change fears rising with the perception that natural disasters are increasing, mass migrations of disenfranchised people and a rise of populist leaders, to name a few.

During 2017, global GDP reached USD80trn according to the World Bank. Of this, the group of 20 largest economies (G20) accounted for 77 percent. This same group saw five percent growth in construction during 2018, equivalent to USD315bn taking their combined expenditure on construction to USD6.2trn.

By far the largest contributor to the GDP of the G20 came from the USA, contributing 31 percent of the G20's combined GDP and 41 percent of the construction, according to World Bank data. The country also contributed 24 percent of global GDP or USD19.4trn. The next largest economy is China with USD12.2trn or 15 percent of global GDP.

The International Monetary Fund (IMF) has warned that downside risks are increasing, saying a disorganised Brexit and a faster than expected slowdown in China were potential triggers for a global slowdown. Moving into 2019, the strength of the USA, China and European economies in particular are of concern.

## USA approaching a peak

Growth in the USA peaked at 4.2 percent (annualised) in the second quarter, slowing in the third and fourth quarter. By the final quarter of 2019 an expectation of higher interest rates and weaker earnings, especially in the tech sectors, caused a 16 percent sell-off in shares on the Dow Jones exchange, which affected stock markets worldwide.

The USA has now experienced more than 37 quarters of GDP growth since the global financial crisis. This number is approaching the previous upswing duration from 1989–2001 which lasted 42 quarters before falling. House prices in the country last year surpassed the previous record high on the Case Shiller 20-City index of 207 set in late 2006. Consumer spending is the most important component of the USA's GDP. High house prices not only provide consumer confidence, but also increase the ability to borrow and make major purchases.

At the end of 2018 there were several sources of concern for the US economy. The Fed raised interest rates in 2018 which caused a ripple effect through the markets. The imposition of tariffs, the government shutdown and a slump in stock markets raised fears among business and consumers. Faced with worsening confidence the Fed has resisted further monetary tightening in 2019, and this is causing the indicators to improve.

Despite this, our survey shows the construction sector is especially strong in the USA, with overheating and record high levels of construction costs in the tech cities of the West coast.



## Economic overview:

### Global

# 3.5%

forecasted GDP growth in 2019

# 3.6%

forecasted GDP growth in 2020

### USA

# 2.5%

forecasted GDP growth in 2019

# 1.8%

forecasted GDP growth in 2020

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“The group of 20 largest economies (G20) saw five percent growth in construction in 2018, equivalent to USD315bn.”

## Overview

### Global economic outlook

#### Slowing growth rates in China

Turning to China, its slower growth of 6.5 percent reflected escalating trade tensions with the USA caused by the imposition of tariffs on steel and aluminium and further threats of USD200bn of tariffs on manufactured exports. This prompted exports to fall by 4.4 percent year-on-year. The economy is on a long-term transition from the investment-led growth of the past to growth being led by services and domestic consumption.

Nevertheless, these sectors suffered a setback in late 2018 and early 2019. Sales of cars and smartphones were down, and revenues in the real estate and retail sectors fell as tighter borrowing conditions affected consumer demand.

Finally, there is concern regarding China's massive debt overhang from the construction of infrastructure and state-owned enterprises. The overall size of the debt and China's ability to generate enough income to repay it bears down on business confidence, leading to lower Chinese demand for imports, of which further impacts on the global economy.

#### Europe's revival cut short

Growth in Europe also appears to be slowing. During 2017 and early 2018, growth rates in Germany, UK, Spain, Italy, Greece and France increased to levels that suggested Europe was finally on its way to a sustainable recovery following the global financial crisis. However, in the second half of 2018 rates began to fall across all regions.

The German economy is particularly concerning. It shrank by 0.2 percent in the final quarter of 2018, recording only 1.1 percent growth for the year. Weaker demand for cars, capital goods and industrial machinery from China is hitting German exports. New emissions standards and testing has also slowed the German car industry. With so much of European industry connected to supplying the German export machine, a slowdown may have far-reaching effects.

#### A bad Brexit

The disruption caused by Brexit is another major concern. With Brexit's final details still stuck in political turmoil, there are fears over the scale of any potential disruption to cross-border supply chains and how this might inhibit consumers and businesses getting the goods they need. Even when Brexit is resolved, both the UK and Europe are likely to see a further slowdown in growth in the short term.

#### Climate change debate heats up

Around the world, 2018 proved a significant year for tangible signs of climate change. It was the fourth hottest year on record, with temperatures a full 1°C above temperatures in the late 19th century. In October, the Intergovernmental Panel on Climate Change (IPCC) indicated that the time window was closing to carry out necessary actions to prevent the temperature of the planet increasing by more than 1.5°C. The IPCC report said: "Limiting global warming by 1.5°C will require far-reaching transitions in land, energy, industry, buildings, transport and cities."

#### Resources and commodities

In 2018, volatile commodity price movements affected construction costs and investment confidence. A glut of oil has been caused by overproduction in OPEC and the emergence of the USA shale oil sector as a global supplier. With oil prices lower, in the region of USD60/barrel, a reduction in fuel prices and delivery costs for materials is positive for construction activity.

The prices of copper, nickel and steel, which are all used in building materials, eased down a little in the second half of 2018. Copper prices affect the cost of electrical cabling. Nickel affects stainless steel prices.

However, trade tariffs on steel are imposing additional costs on USA contractors that use a high proportion of steel.



### Global construction will help to cushion the landing

For now global construction remains a solid performer. Our 2019 survey indicates there is considerable momentum in the global construction sector, helping to mitigate the effects of weaker, late-cycle economic growth.

With construction projects generally spanning multiple years, once started, construction projects are likely to keep going. There are many instances where large projects, such as the natural resources sector, transcend economic cycles, often continuing during a downturn and delivering into a recovering market.

Our survey shows the global construction sector still warming up, with 28 percent of the surveyed markets potentially hot or overheating by the end of 2019. But strong growth in construction will help support economic growth, reducing the potential of a major downturn. This would cushion some of the negative impacts on the sector and help maintain favourable conditions for business.

“China’s economy is on a long-term transition from the investment-led growth of the past to growth led by services and domestic consumption.”



# A strong year for construction

Even as the global economy starts to slow the construction sector remains strong. Our survey suggests there is enough activity to help cushion the worst impacts of any global economic downturn.

There are reasons to be positive. This year's survey shows the global construction sector is in a strong period, with 18 markets from nine countries describing the construction market as hot or overheating compared with just eight regions from six countries in 2018. None of the hot or overheating countries are forecast to cool in 2019. Five are expected to keep warming up. See figure 1.

By 2020 there could be 24 markets described as hot or overheating compared with 18 today. This is based on the high number of regions where the survey indicates the market is getting warmer. This significant optimism in the global construction sector gives us great confidence that the coming slowdown in the global economy is unlikely to lead to a global recession in the next 18 months. This is in line with the IMF, who are predicting a slowdown rather than a full-blown recession.

Looking deeper, 23 locations describe their construction markets as warming up. Yet only five markets are expected to get cooler. The warming regions are evenly spread across the globe, in Africa, South America and the Middle East, where last year's survey found a disproportionate number of markets described as cold or lukewarm. See figure 1.

There are 35 markets (out of 64) from 18 countries where the market is described as warm, hot or overheating and of these only one market is forecast to cool a little in 2019. This is Kuala Lumpur, a country highly dependent on oil exports and trade with China, both of which are

currently under pressure. Of the remaining 34 regions, 21 are forecast to stay the same and 13 are expected to warm up in 2019.

Only five of all 64 regions are expected to cool in 2019, Kuala Lumpur, Harare, Seoul, Stockholm and Istanbul. The number of countries described as lukewarm is set to fall dramatically from 21 to 14, with most moving into the warm category.

Turning to the UK, current construction markets can at best be described as "steady". Perhaps the markets have already factored in Brexit. Northern Ireland remains cold. Scotland, UK South and London are lukewarm. UK Central and UK North are warm. Of the six UK regions in the survey five are expected to stay the same and one (UK Central) to warm up.

Eight markets globally are described as cold. These are Johannesburg, Perth, Moscow, Istanbul, Northern Ireland, Muscat, Riyadh and Doha. Other than Northern Ireland and Istanbul, these are markets with a high natural resources exposure.

Perth, Muscat and Riyadh see a brighter future with their markets set to warm up as the early stages of a recovery in the minerals and oil and gas sectors encourage growth and construction.

Elsewhere, as in the case of Istanbul and Moscow, global geopolitics are perhaps the main driving force behind the lack of incentive to invest, which is keeping the market cold.

## International improvers

- **São Paulo** moved from **cold to lukewarm** and is expected to warm up in 2019 as the outlook and prices for natural resources improve.
- **Houston** moved from **lukewarm to warm** but is expected to stay the same in 2019. With the USA energy sector undergoing long-term growth Houston's growth prospects are improving.
- **Brisbane** moved from **lukewarm to warm**. Several significant and large projects in road, rail and entertainment construction are getting underway giving the market a boost.
- **Toronto** moved from **warm to hot**. **Vancouver, Edmonton and Ottawa** are new to the survey this year and come in as **hot**. Each of these cities has seen solid amounts of construction despite residential construction markets slowing down.



#### Other newcomers to the survey

- **Vienna** is in the survey for the first time. It comes in as a **hot** market region.
- In Germany, **Berlin** and **Frankfurt** have been added to **Munich**. All are **hot** markets. Frankfurt is warming up. Despite evidence of a slowdown in the German economy, the region looks remarkably strong for construction.
- Eight markets from the USA are now part of the survey. All are warm, hot or overheating. The tech cities of **San Francisco** and **Seattle** are **overheating**. Newcomers **Phoenix** and **Indianapolis** are **hot**, and **Atlanta** and **Chicago** are **warm**.
- Another major newcomer to the survey is Mexico, a country with 123 million people, GDP of USD1.1trn and GDP growth of 2.5 percent. **Mexico City** is described as having a **lukewarm** market at the start of 2019.
- New Zealand, a country of 4 million people, includes **Auckland** and **Christchurch**, both with **warm** construction markets.

Frankfurt, Germany, is a hot market in this year's survey

## Overview

Global construction cost performance

Figure 1 **Defining market temperature**

### Current tendering condition

- Overheating
- Hot
- Warm
- Lukewarm
- Cold

### Future market outlook

- Warmer
- No change
- Cooler



### Summary:

**4.7%**

Overheating

**23.4%**

Hot

**26.6%**

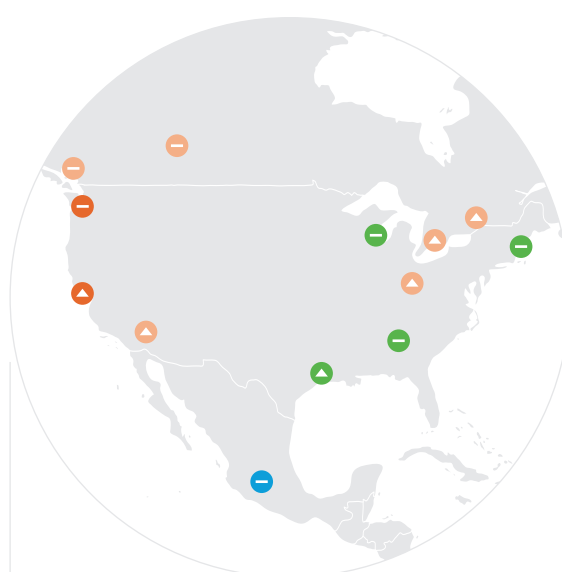
Warm

**32.8%**

Lukewarm

**12.5%**

Cold



#### North America

- San Francisco
- Seattle
- Indianapolis
- Ottawa
- Phoenix
- Toronto
- Edmonton
- Vancouver
- Houston
- Atlanta
- Chicago
- New York City
- Mexico City



#### South America

- Bogotá
- Santiago
- São Paulo
- Buenos Aires





### Europe

- ▲ Amsterdam
- ▲ Frankfurt
- Berlin
- Dublin
- Munich
- Warsaw
- Vienna
- ▲ Barcelona
- ▲ Madrid
- ▲ Paris
- ▲ UK Central
- UK North
- Zurich
- ▼ Stockholm
- London
- Scotland
- UK South
- Moscow
- Northern Ireland
- ▼ Istanbul



### Middle East

- UAE
- ▲ Muscat
- ▲ Riyadh
- Doha



### Africa

- ▲ Dar es Salaam
- ▲ Kampala
- ▲ Kigali
- Nairobi
- ▼ Harare
- Johannesburg



### Asia

- Tokyo
- Bangalore
- Ho Chi Minh City
- Hong Kong
- ▲ Shanghai
- Beijing
- Guangzhou
- Jakarta
- Singapore
- ▼ Kuala Lumpur
- ▼ Seoul



### Australasia

- Melbourne
- Sydney
- ▲ Brisbane
- Auckland
- Christchurch
- ▲ Perth

## Overview

### Global construction cost performance

#### Current market conditions

We asked our experts to describe their local construction market as cold, lukewarm, warm, hot or overheating. Comparing market heat provides useful insight relating to the strength of competition in the construction supply chain and likely cost pressures.

As a rule, we would expect hot or overheating markets to have higher price inflation. As the demand for construction services or materials increases against a relatively fixed supply, prices increase. When a market is cold, the whole supply chain must compete more vigorously to win work or a supply contract and this encourages lower prices. We should see the evidence all along the supply chain with rising labour rates, rising materials costs and rising costs of construction in hot markets.

There are exceptions to the rule. For example, even in cold markets higher prices of materials, perhaps caused by rising international commodity prices, can push up construction costs. Similarly, where a country is dependent on a high proportion of imported materials any fall in the exchange rate would also lead to inflation in overall construction costs.

In figure 2, two markets experienced exceptionally large construction cost increases in 2018. These were:

- **Buenos Aires** – lukewarm market, staying the same, 43.4 percent increase in 2019
- **Istanbul** – cold market, getting cooler, 15 percent cost increase

There were several hot or overheating markets where construction costs were increasing as might be expected in a construction boom:

- **Amsterdam** – overheating market, getting warmer, 8.8 percent cost increase.
- **Dublin** – hot, staying the same, current construction cost inflation of 7.0 percent
- **Warsaw** – hot, staying the same, construction cost inflation of 6.0 percent
- **Bogotá** – lukewarm market, warming up, 6.5 percent.  
As Bogotá warms up cost escalation could reach 8.0 percent in 2019.

#### Construction costs are lower

This year we have prepared a weighted average construction cost inflation, weighting each country by its GDP. This removes the impact of very high inflation in smaller countries or regions skewing the overall average excessively.

On this basis, using this improved method, average global construction cost inflation was 4.9 percent in 2017, easing in 2018 to 4.2 percent.

Using the same weighted average technique, we now expect cost escalation to nudge down to 4.1 percent.

Despite global construction growing by 5.0 percent during 2018, construction costs increased at a slower rate than in 2017. The principal reason for this comes from China and the USA. Both experienced slower construction cost increases:

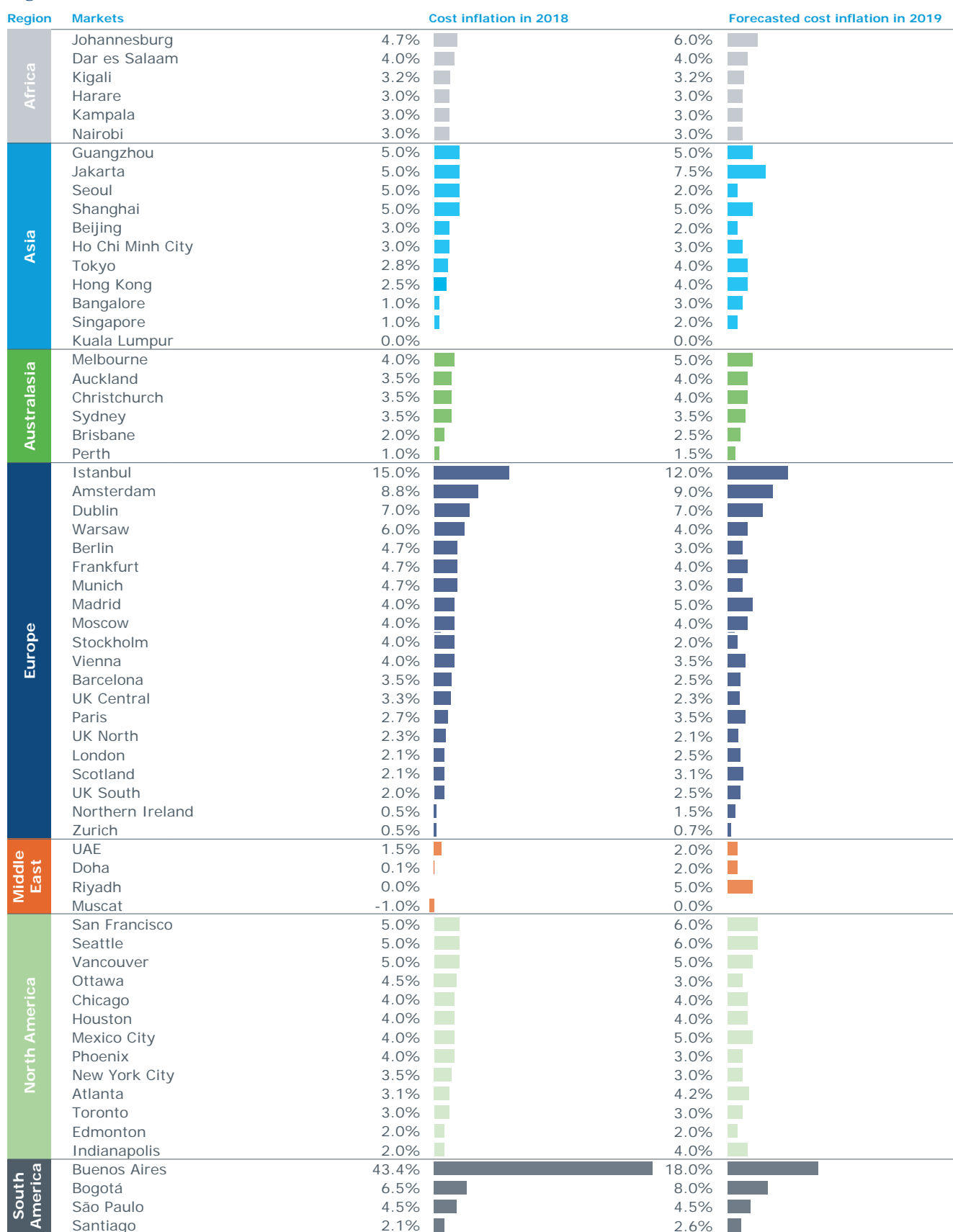
- In China, average construction cost escalation in 2017 was 9.0 percent, and this fell to 4.3 percent in 2018. In the main, construction cost escalation in the major cities is slowing down
- In the USA, the addition of some lower-cost cities including Atlanta (3.1 percent growth in 2018) and Indianapolis (2.0 percent) has brought the average down.

Nevertheless, there are 20 markets where construction costs are increasing and are likely to be higher in 2019. In most cases, the difference is quite minor. A matter of an additional 0.5 percent or 1.0 percent.

In some cases, however, construction costs look set to jump a little more. These include:

- The warming Riyadh market where some major projects are coming to construction including a six-line Metro Rail in Riyadh, Al Faisaliah Smart City and the 1km high Al Jeddah Tower. Construction cost increases could reach 5.0 percent in 2019
- In Qatar, where preparations for the World Cup are driving construction in the Doha central business district, the airport and nine new soccer stadiums, construction cost inflation could increase from 0.5 percent in 2018 to 2.0 percent in 2019
- In Madrid, construction cost inflation could reach 5.0 percent in 2019 as growing confidence and a shortage of offices and apartments in the major cities are driving the incentive to invest
- In Jakarta, construction cost inflation could reach as high as 7.5 percent in 2019, driven by strong transport infrastructure investment and up to USD60bn of potential Chinese investment in belt and road projects
- In Mexico City, construction cost inflation could reach 5.0 percent in 2019. Despite the market being described as lukewarm, up to 3 million square metres of high-quality mixed residential office towers are under construction in the five major cities of Mexico City, Guadalajara, Monterrey, Querétaro and Puebla, driving the demand for construction services, labour and materials
- Within Australia, Melbourne looks set to see the largest rises in construction cost inflation, from only 2.0 percent in 2017 to 5.0 percent. In 2019, a big expansion in road and rail construction together with a buoyant commercial construction sector are now adding to cost increases.

Figure 2 **Construction cost inflation**





## Overview

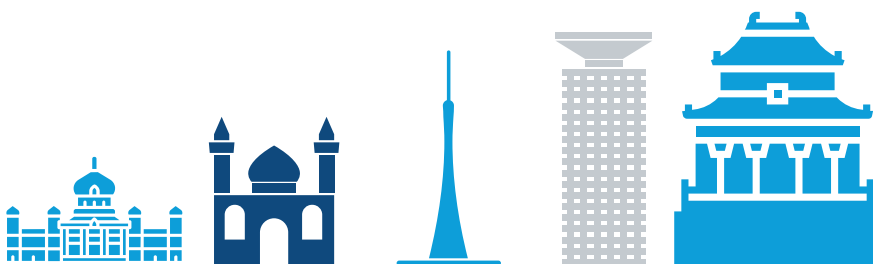
Global construction cost performance

### Five most expensive places to build



1. San Francisco
2. New York city
3. London
4. Zurich
5. Hong Kong

### Five least expensive places to build



1. Bangalore
2. Istanbul
3. Guangzhou
4. Nairobi
5. Beijing



## San Francisco

takes the top spot as the most expensive place to build in the world, with the average cost of construction increasing 5.0 percent in 2018.

#### Where is the most expensive region to build?

To identify the most expensive place to build, the average build cost in USD of six different types of construction was assessed:

- Apartment high-rise
- Office block prestige
- Large warehouse distribution centre
- General hospital
- Primary and secondary school
- Shopping centre including mall.

The five highest cost cities remain San Francisco, New York, London, Zurich and Hong Kong. This year, San Francisco removes New York from the top spot, having increased by 5.0 percent in the last year. See figure 3.

Singapore has construction costs closest to the average, while the closest to the median cost of USD2,272 is Auckland.

Low construction costs in Chinese and Indian cities are not much of a surprise, having been in this position in previous surveys. However, Istanbul continues to surprise by having such low construction costs. The Turkish lira has fallen from close to USD0.50 to USD0.19 since 2015, which helps explain the dramatically low construction costs when converted back to US dollars.

Figure 3 **Average cost of six building types in USD**

| Region        | Markets          | Average cost of six building types | USD     |
|---------------|------------------|------------------------------------|---------|
| Africa        | Harare           |                                    | 1,683.3 |
|               | Kigali           |                                    | 1,085.4 |
|               | Kampala          |                                    | 967.3   |
|               | Johannesburg     |                                    | 952.2   |
|               | Dar es Salaam    |                                    | 922.3   |
|               | Nairobi          |                                    | 738.4   |
| Asia          | Hong Kong        |                                    | 3,749.0 |
|               | Tokyo            |                                    | 2,660.7 |
|               | Singapore        |                                    | 2,100.1 |
|               | Seoul            |                                    | 1,702.8 |
|               | Kuala Lumpur     |                                    | 992.7   |
|               | Jakarta          |                                    | 879.7   |
|               | Ho Chi Minh City |                                    | 813.7   |
|               | Shanghai         |                                    | 764.0   |
|               | Beijing          |                                    | 756.7   |
|               | Guangzhou        |                                    | 728.7   |
|               | Bangalore        |                                    | 582.2   |
| Australasia   | Sydney           |                                    | 2,735.5 |
|               | Melbourne        |                                    | 2,415.5 |
|               | Auckland         |                                    | 2,272.2 |
|               | Brisbane         |                                    | 2,262.0 |
|               | Christchurch     |                                    | 2,238.9 |
|               | Perth            |                                    | 2,165.8 |
| Europe        | London           |                                    | 3,790.1 |
|               | Zurich           |                                    | 3,756.9 |
|               | Dublin           |                                    | 3,245.1 |
|               | UK South         |                                    | 2,938.2 |
|               | Munich           |                                    | 2,924.7 |
|               | Amsterdam        |                                    | 2,866.4 |
|               | Vienna           |                                    | 2,816.0 |
|               | Frankfurt        |                                    | 2,707.2 |
|               | Scotland         |                                    | 2,698.1 |
|               | UK North         |                                    | 2,693.9 |
|               | UK Central       |                                    | 2,685.7 |
|               | Paris            |                                    | 2,668.4 |
|               | Berlin           |                                    | 2,645.8 |
|               | Stockholm        |                                    | 2,584.4 |
|               | Northern Ireland |                                    | 2,291.7 |
|               | Barcelona        |                                    | 2,238.3 |
|               | Madrid           |                                    | 2,205.2 |
|               | Warsaw           |                                    | 1,013.8 |
|               | Moscow           |                                    | 933.3   |
|               | Istanbul         |                                    | 611.6   |
| Middle East   | Doha             |                                    | 2,420.6 |
|               | UAE              |                                    | 1,742.1 |
|               | Muscat           |                                    | 1,314.1 |
|               | Riyadh           |                                    | 1,288.0 |
| North America | San Francisco    |                                    | 4,482.7 |
|               | New York City    |                                    | 3,958.3 |
|               | Seattle          |                                    | 3,640.0 |
|               | Chicago          |                                    | 3,188.1 |
|               | Vancouver        |                                    | 2,720.8 |
|               | Indianapolis     |                                    | 2,628.6 |
|               | Phoenix          |                                    | 2,592.7 |
|               | Atlanta          |                                    | 2,584.8 |
|               | Houston          |                                    | 2,551.5 |
|               | Toronto          |                                    | 2,550.7 |
|               | Edmonton         |                                    | 2,506.5 |
|               | Ottawa           |                                    | 2,415.7 |
|               | Mexico City      |                                    | 1,144.7 |
| South America | Santiago         |                                    | 1,430.0 |
|               | Buenos Aires     |                                    | 1,310.1 |
|               | Bogotá           |                                    | 1,224.6 |
|               | São Paulo        |                                    | 968.2   |

## Overview

### Global construction cost performance

The overall spread of average construction costs is remarkable and increasing. Bangalore costs are just 13 percent of those in San Francisco. The bottom ten markets have average construction costs of just 22 percent of the top ten regions. In other words, you could build five similar structures in the bottom ten regions for the same cost as one in the top ten regions.

In 2018, the average construction cost of the bottom ten regions were 25 percent of the average of the top ten regions. At this time, the lowest cost regions could build four similar structures for the same cost as the average top ten markets.

#### Construction labour

The survey includes an assessment of the cost of construction trade labour by

region (figure 4) and by market (figure 5). We also asked the respondents to indicate the cost to the employer rather than just the wage, so the rates include, where appropriate, travel expenses, pension contributions and health insurance as well as other benefits. In some cases, these bump the labour cost up substantially above the wage.

The survey again highlights the massive disparity between labour costs worldwide. China, India, and Africa regions have the lowest costs, while North America has the highest costs with Europe and Australasia a little behind. The highest labour costs were recorded in Zurich, where even a general labourer could cost as much as USD99 per hour, and a skilled electrician might cost USD118 per hour.

When comparing high-cost and low-cost labour regions it is worth considering education, skill levels and overall labour productivity. Generally, high labour-cost regions will invest much more heavily in labour-saving machinery and pay close attention to labour productivity. But, where labour is very low cost it is cost-effective and efficient to employ more labour.

#### Labour skills shortages

Survey respondents were asked to advise on the state of labour skills shortages in their local market. Are there trades labour skills shortages or is the market in balance or even in surplus? In this survey the proportion of markets experiencing skills shortages continues to increase. Two thirds of the markets in this year's survey are experiencing skills shortages.

Figure 4 **Average hourly wage (USD) by region**

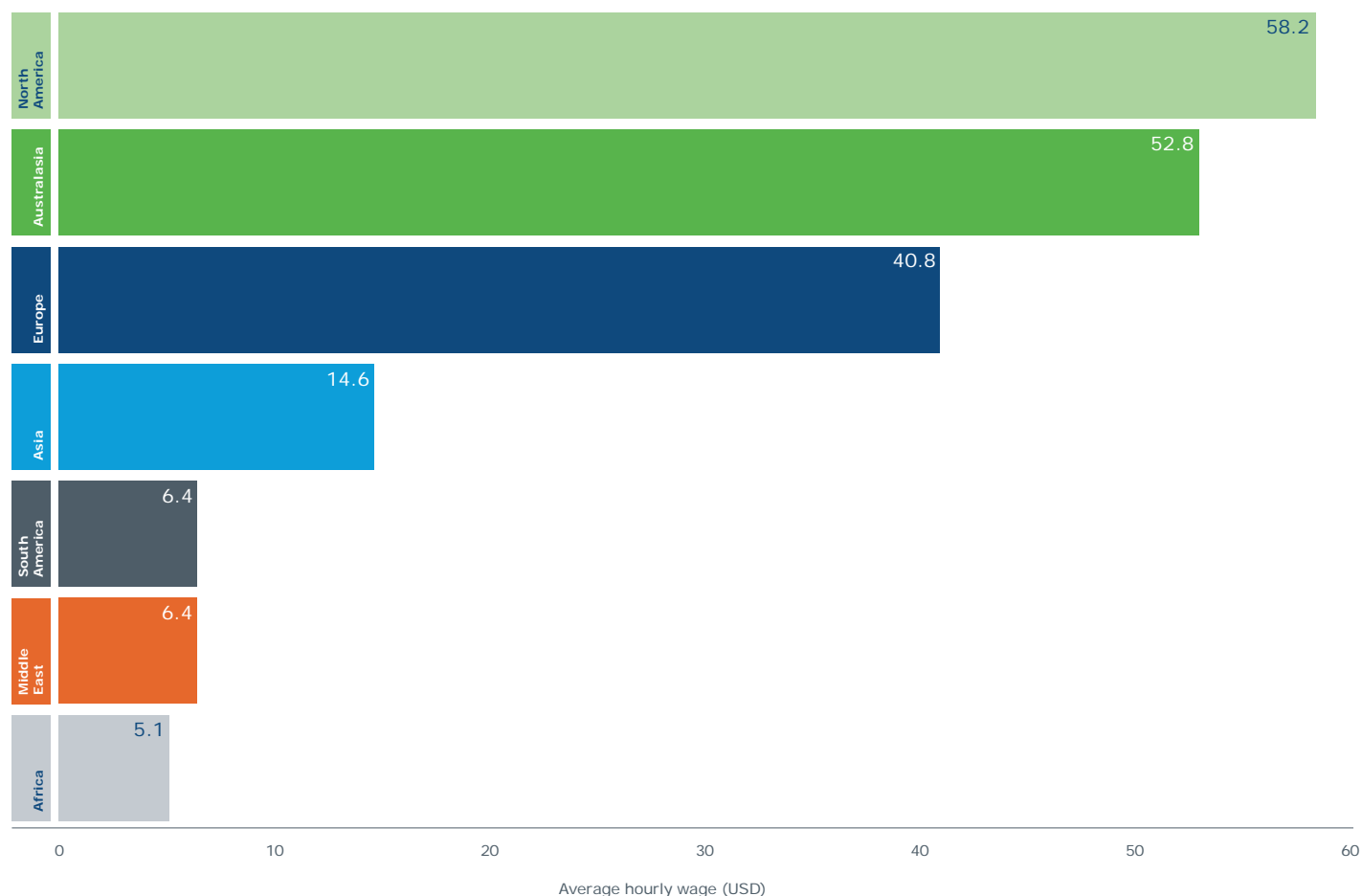
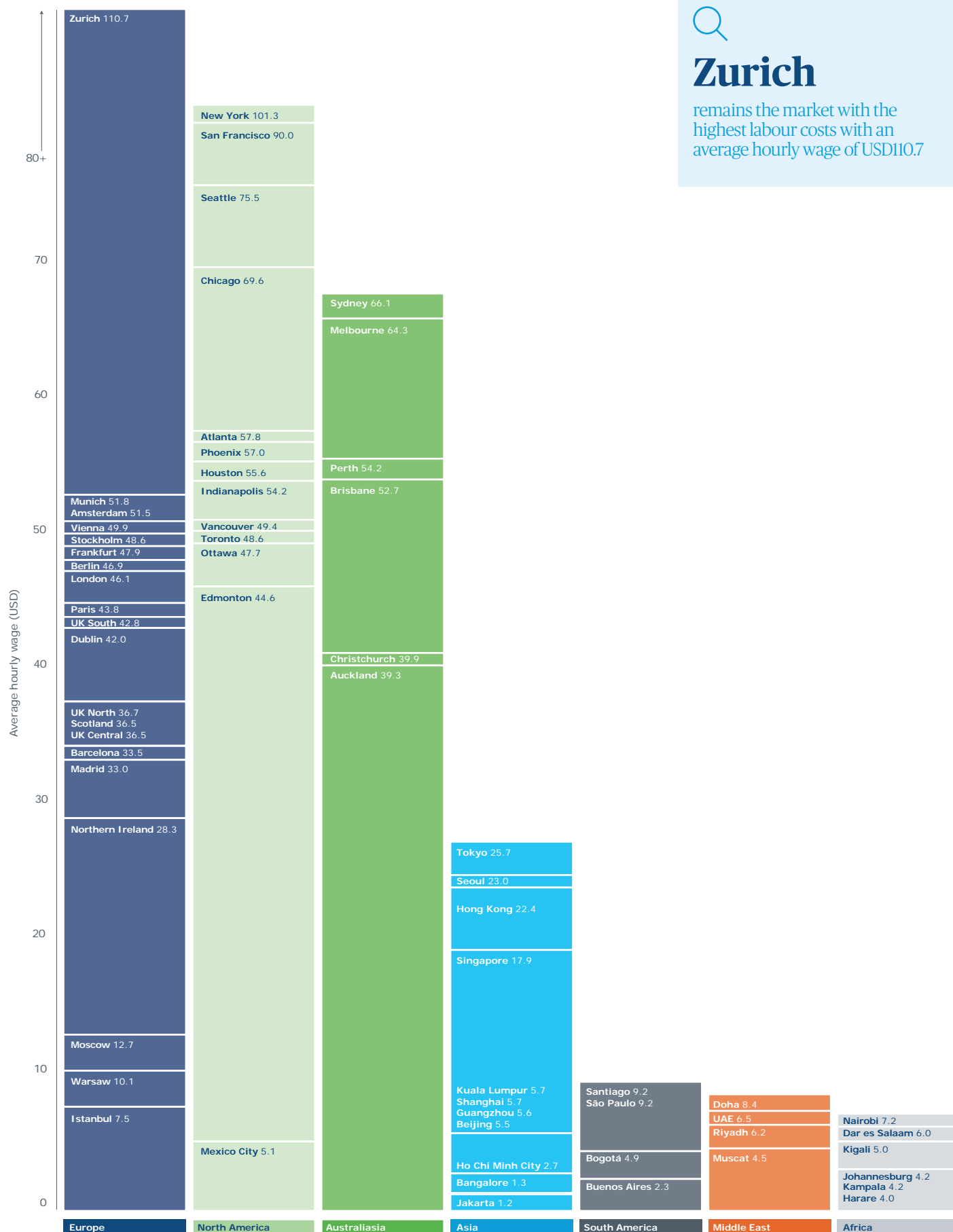




Figure 5 Average hourly wage by market



## Overview

### Global construction cost performance

The number of regions 'in balance' has fallen while the proportion of regions with a skills surplus remained constant. As might be expected, hot and overheating markets are experiencing skills shortages. None of these regions said their markets were in balance. For many high-cost countries skills shortages are a near perpetual problem, easing only when the market dips into recession. See figure 6.

Underlining the persistence of skills shortages is that some regions with a cold market still reported trade skills shortages, such as Johannesburg and Northern Ireland. Perth remains a cold market, but the skills situation is regarded as in balance.

Eleven regions considered lukewarm are still reporting skills shortages. This raises the question of where labour will come from as and when these markets heat up from lukewarm to hot. Some may come from other occupations such as agriculture where the operation of heavy machinery is common, others from service-based

occupations. But often in the high-labour-cost regions barriers to entry can be significant, such as a requirement for labour to have trade permits, licences or "tickets". The ease with which additional labour can be mobilised will influence cost inflation. Where it is hard to employ additional labour quickly, wages often increase through competitive bidding, ultimately ending in higher construction costs.

#### Preliminaries and margins

Preliminaries can vary quite widely within a region, depending on the type and location of the construction. As they take account of the setting up costs for a construction job, in regions where there is a high degree of complexity preliminaries tend to be higher. Tight construction spaces, traffic management, site delivery management, all add to costs. Typically, higher preliminaries costs occur in Australasia, Germany, the UK and the USA. See figure 7.

Some of the lowest profit margins among main contractors are in the

United Kingdom, where the average is just 4.0 percent. Australasia is only slightly higher, with New Zealand at 7.0 percent margin. In the USA and Canada, the average margin is 5.2 percent. South of the border in Mexico margins are higher at 10.0 percent. In South America margins tend to be higher, averaging 8.0 percent.

There was a wide range of main-contractor margins recorded for Europe. Overall, most regions recorded five to six percent margins. However, in overheated markets, such as Amsterdam and Sweden, margins are as high as 10.0 percent.

Asia has some with very high margins. Margins in Kuala Lumpur, Bangalore, Jakarta and Ho Chi Minh City are all 10.0 percent or above. In previous years, some of the highest margins have been in the Middle East, where 10.0 percent margins have been common, but in 2019 the average is 6.6 percent.

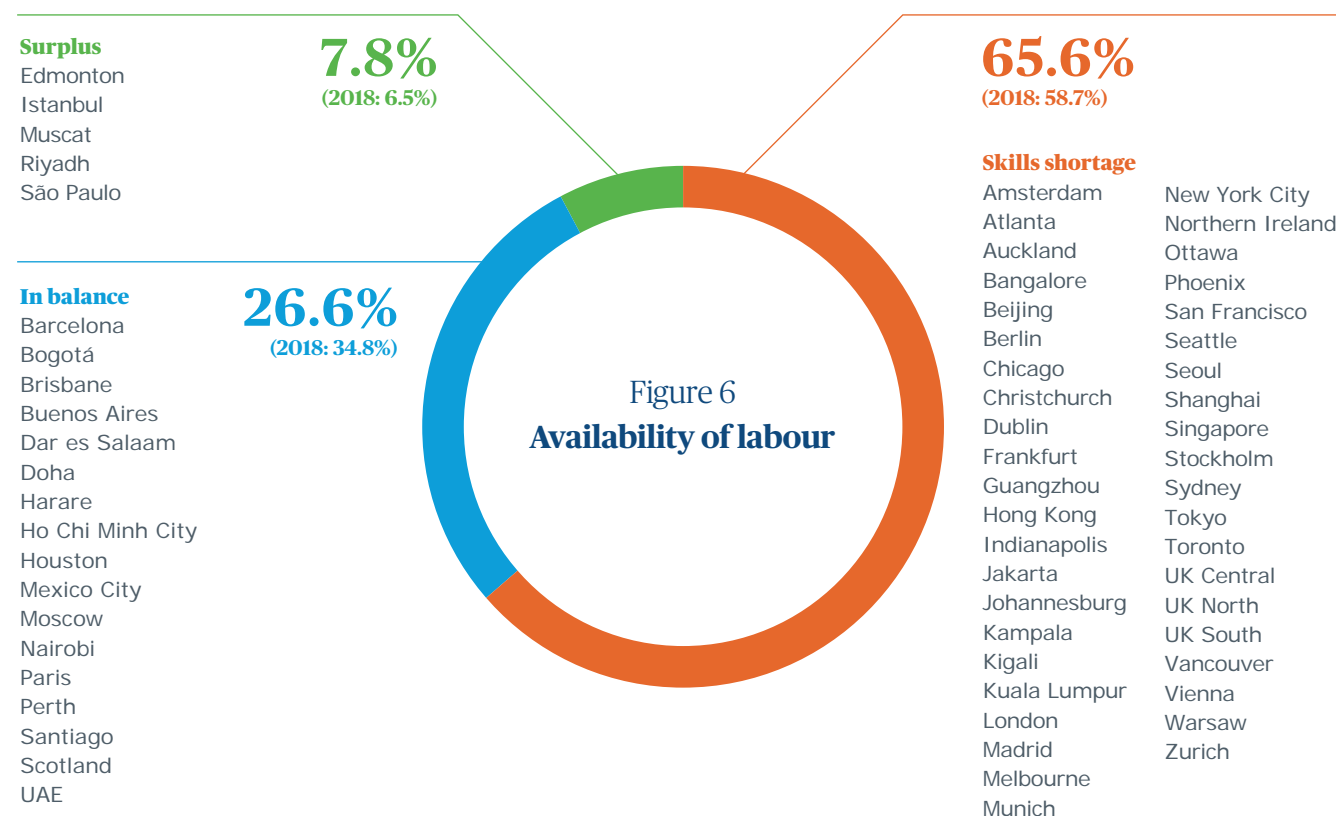
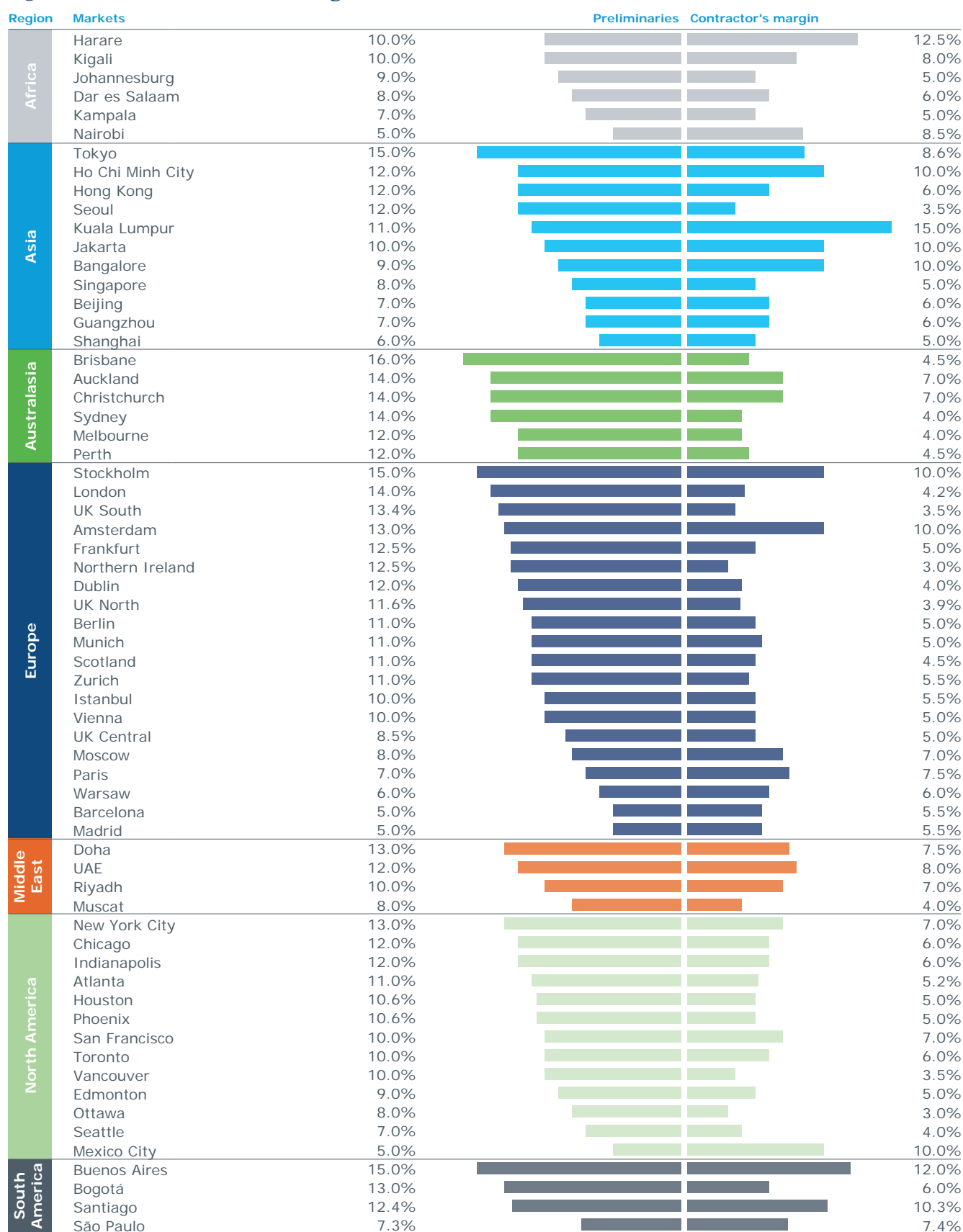


Figure 7 Preliminaries and margins



# The trade wars ripple effect

Every year we ask our experts around the world to tell us about the challenges in their markets. Moving into 2019, high on the list are concerns over tariffs, which ranked in the top five issues affecting construction across our global locations. But with steel a key building material, what is the real impact import tariffs might have on construction costs around the world?



## USA

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After years of liberalising trade, recently imposed tariffs on steel (25 percent) and aluminium (10 percent) imports have unsettled financial markets and sparked concerns about global trade.

The imposition of tariffs represents a challenge with real cost implications for construction. The industry needs to consider more than ever the amount of steel in various types of construction. If we know the steel design, we can evaluate the degree of impact a steel import tariff might have on construction costs around the world.

Steel is a vital component in most construction, although the steel design of buildings varies greatly depending on the type of construction. While the superstructure accounts for the greatest amount, it also includes piping, many lighting fixture enclosures, stairways, ornamental metals, etc.

Steel's proportion of a building's total cost varies by country and region. As a general guide, we estimate the proportion (as indicated by the square

metre or square foot costs in this publication) tends to range upwards from 5 percent to 25 percent, for the most steel intensive buildings.

At the lower extreme a 25 percent rise would add about one percent on the total cost. For the more steel intensive buildings the increase could top 6 percent.

But not all cost rises from import tariffs would be passed on in full. As economists say: "prices are sticky", a term when global price rises or falls are not necessarily passed on in full immediately. They are often delayed for various commercial reasons.

Meanwhile, local steel producers and fabricators, not impacted by tariffs, would also tend to mirror to some extent the price changes in imported prices.

To capture the current impact of tariff for construction, we recently undertook a cost study of a 90-story building at the Hudson Yards Development completed before tariffs were introduced. We found that if it was being built now the tariffs would increase the cost of the core and shell construction by between USD75m and USD100m.

Owners and developers can expect to spend 5 percent to 10 percent more on their overall core and shell construction for tall and supertall steel-framed buildings. Furthermore, tariffs are also creating delays at customs. This affects build programmes and turning to local supply doesn't necessary solve the problem alone. It means thinking more creatively around the full supply chain from steel mills, to fabricators and erectors.

Overall USA steel price demand is rising given the amount of current construction. While there has been some stability as of late in the price of steel from 2018, we still expect to see incremental rise across the region.





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As the largest global producer of steel, the tariff impact affects steel exports across Asia. Nevertheless, the biggest impact has been on sentiment and fear rather than export earnings, which make up only a small proportion of the total export value.

Tariff concerns are Asia wide, as regions wonder what else is coming. For example, in Hong Kong increased volumes of steel in the Asia market, due to a lack of export opportunities in the USA, may result in downward steel costs.

In Japan, the effect is mostly felt by the auto exporters having to cut margins to compete in the USA market. In the longer term over the next 12 to 24 months, this is expected to trickle through to the Japanese construction market, with steel fabricators looking at ways in which they can mitigate the cost impact associated with the tariffs, which will ultimately drive an increase in the cost of steel.

Canada is the biggest international buyer of American steel. The introduction of the USA's tariffs led Canada to announce retaliatory tariffs on steel and a variety of other USA goods. The net effect was to increase prices of steel and aluminium-based building products in the Canadian market.

For 2018, the overall impact of the tariff was an increase of approximately 3 percent to 5 percent in overall construction cost and significantly higher for steel-intensive buildings such as manufacturing or industrial facilities and warehouses.

Tariffs are likely to continue to contribute to higher construction costs across the region in the short to medium term (three to six months) and will level off until the supply chain catches up with the market demand.

Tariffs on steel imports into the USA add to the cost of building products equipment and machinery exported from the USA. These additional costs affect the global supply chains for building materials and equipment. They are especially onerous for developing countries, such as Africa, where construction is sensitive to costs of imported materials and machinery.

Faced with rising costs from existing suppliers, construction firms in African countries, for example, are forced to seek cheaper alternatives from other regions less affected by the tariffs. Changing a supplier mid-stream in a project carries risks of delays to schedules, inferior quality and higher costs.

Looking forward, there are positive movements in East and West Africa, where increasing commodity prices are driving investment decisions and the tariffs are likely to continue to contribute to higher costs across the region.

# Impact of the steel tariffs around the world

According to our survey, the impact of tariffs ranked in the top five issues across our global locations.



## Steel price increases since 2018:

### San Francisco, USA

17%

Reinforcement bar 16mm (tonne)

30%

Structural steel beams (tonne)

### UAE, Middle East

22%

Reinforcement bar 16mm (tonne)

11%

Structural steel beams (tonne)

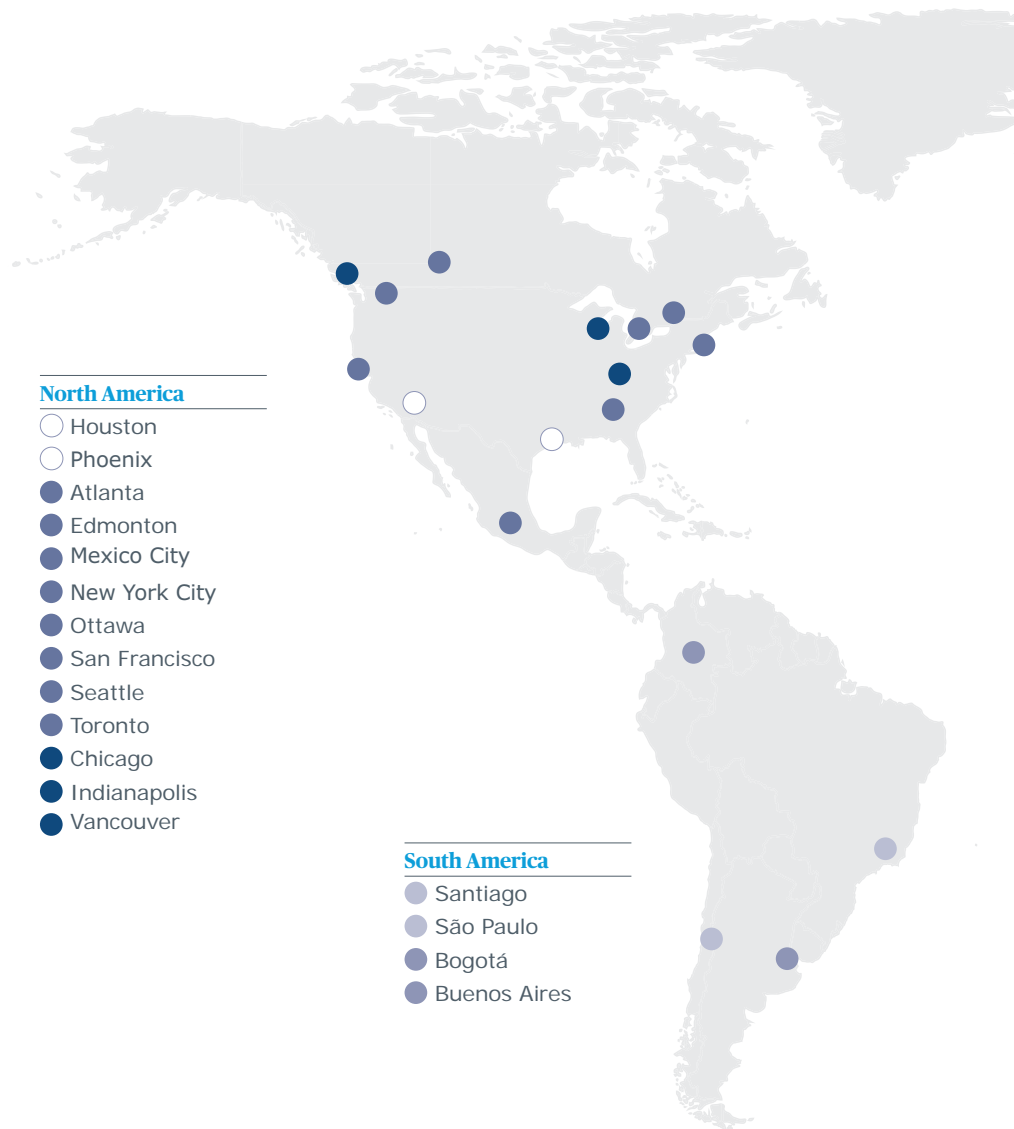
### Toronto, Canada

20%

Reinforcement bar 16mm (tonne)

20%

Structural steel beams (tonne)



## Impact scale

- Not true/no impact
- Slightly true/little impact
- Moderately true/moderate impact
- True/high impact
- Very true/very high impact



# 25%

Import tariff could, if passed through, add up to 25 percent on a building's steel input cost.

