

# FACTBase

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## Perth's Global Connectivity

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### Introduction

Australia's economy has, much more than many other developed countries, been historically oriented toward international trade. Since the early colonial period, export-led growth has paved the way for raw materials to be shipped overseas. Over the course of the past two centuries, this transitioned from agriculture and forestry, to mining and energy. While the contemporary Australian economy is more diverse than ever, it is still heavily oriented toward the resources sectors. Today, iron ore and concentrates, coal, gold, and natural gas account for more than 40 per cent of Australian exports (Thirlwell, 2017), totalling \$133 billion. Export markets are dominated by large Asian consumer nations, with China by far the most significant at \$93 billion, followed by Japan.

Perth, perhaps more than any other Australian capital city, has grown as a result of this export economy. Western Australia (WA) exports \$121 billion annually, making up 41 per cent of the national total. Ninety per cent of this is in the mining and energy sectors, primarily oil and gas, iron ore, gold, alumina, and nickel (DMP, 2017). WA's commercial connections are tied to the linkages created

### The key findings of this Bulletin are:

- This FACTBase Bulletin concentrates on identifying the global connections of Australian firms across the major Australian cities.
- It provides an overview of Australia's major cities with a specific focus on Perth's global connectivity and compares Perth to these other cities. ASX-listed Perth-based firms are found to have 195 overseas branch offices in 58 countries.
- Perth's economy is globally connected through its firm activity, primarily through the resources and energy sectors as it links to other nations worldwide. Perth-based firms are particularly active in Africa, especially in countries with strong mining economies.
- There are a total of 652 Perth-headquartered firms listed on the Australian Securities Exchange (ASX). Of these, 391 are materials sector firms and 110 are energy sector firms, showing the significant presence of resources and energy in Greater Perth's firm distribution.
- Between 2013 and 2016, Perth lost more ASX-listed firm headquarters than any other Australian city (Sigler et al., 2018). Of the 98 net headquarters losses, 78 were in the materials sector and 19 were in the energy sector. However, these losses were counteracted by gains in other sectors, like listed firms in information technology and healthcare.
- Whilst Sydney and Melbourne are Australia's biggest cities, the notion that they are the most well-connected and globalised is not entirely the case. A major finding of this Bulletin is that it matters less *if* a city is global than *how* it is global. The data indicates that Perth is no longer a 'branch office' economy, as previous accounts may have suggested.
- This paper suggests that Perth-based firms have the capacity to leverage corporate networks to add value to overseas operations, and to create new markets deploying the city's expertise. As other FACTBase publications indicate, this is likely to be most effective with mining-related services (FB59).

by these commodity-driven exports. For example, as WA gas production increases to the levels of leading exporters such as Qatar and Malaysia, new marketplace connections are forged between consuming nations such as Taiwan and Korea, and to intermediary trading hubs such as Singapore.

Connectivity is important. As Manuel Castells famously wrote, we now live in a world where 'Spaces of Flows' are more important than 'Spaces of Places' (1996). In other words, global connectivity underpins much of a city's political economy. These connections are comprised of numerous

types of flows. Emails, financial transactions, goods imports, phone calls, airline networks, resources exports, trade agreements, and many other physical and 'virtual' flows connect Perth disproportionately with some places, and less with others.

This FACTBase Bulletin explores Perth's global connectivity. It starts by establishing some basics of Perth's economy by looking at the city's ASX-listed firms, and how they compare against other Australian capital cities. It then takes Perth's ASX-listed firm connections and explores them in greater detail by creating a global network of firm connections. Perth's network is compared against Melbourne, Sydney, and Brisbane. It is argued that the knowledge and capital flows derived from these global firm links are critical to sustaining a healthy economy, and that innovations in resource sector technologies are key to adding value to Perth's domestic and overseas commercial linkages.

## Changes Afoot in Perth's Economy

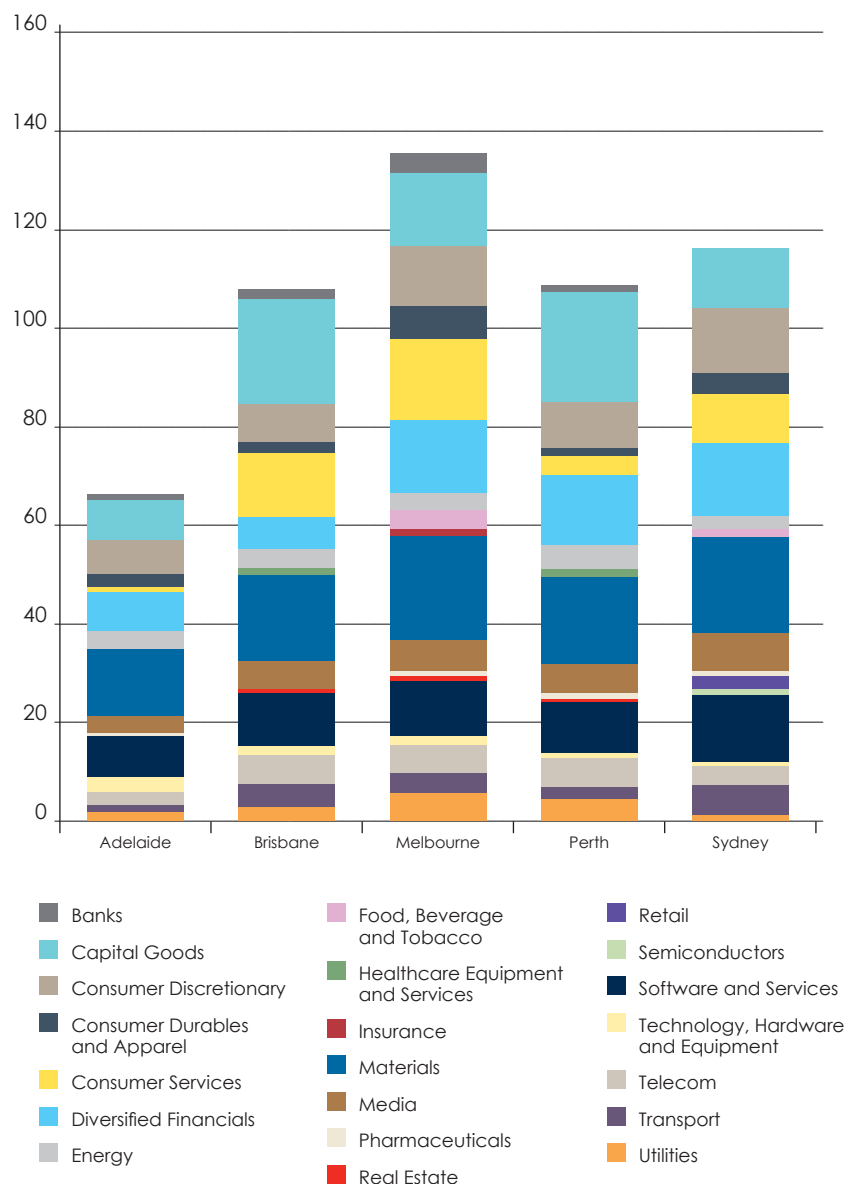
The downturn in commodity prices after 2014 had significant impacts on the corporate landscape of Perth. Between 2013 and 2016, Perth lost more ASX-listed firm headquarters than any other Australian city (Sigler et al., 2018). Of the 98 net headquarters losses, 78 were in the materials sector and 19 were in the energy sector. With the exception of Melbourne, all other major cities lost headquarters, but the local impact was more severe due to Perth's reliance on the resources sector. A major difference between Perth and other Australian cities, however, was the size of Perth's firms—many of the firms that wound up

in the three-year interval were 'junior miners'. Headquarter losses in the resources sector were to some degree compensated for by gains in other sectors. For example, Perth more than doubled the number of listed firms in the information technology sector, and had modest increases in healthcare.

As of 2016, there were a total of 652 ASX-listed firms headquartered in Perth.

Materials (391) and energy (110) were by far the most significant, with numerous firms also in the industrials, information technology, and consumer discretionary sectors. The city's largest firms include resource giants such as Woodside, Fortescue, and Iluka, as well as Wesfarmers—the parent company for numerous Australian retailers such as Bunnings, Coles, and Target.

**Figure 1.**  
Distribution of ASX-Listed Branch Offices in Major City by Sector



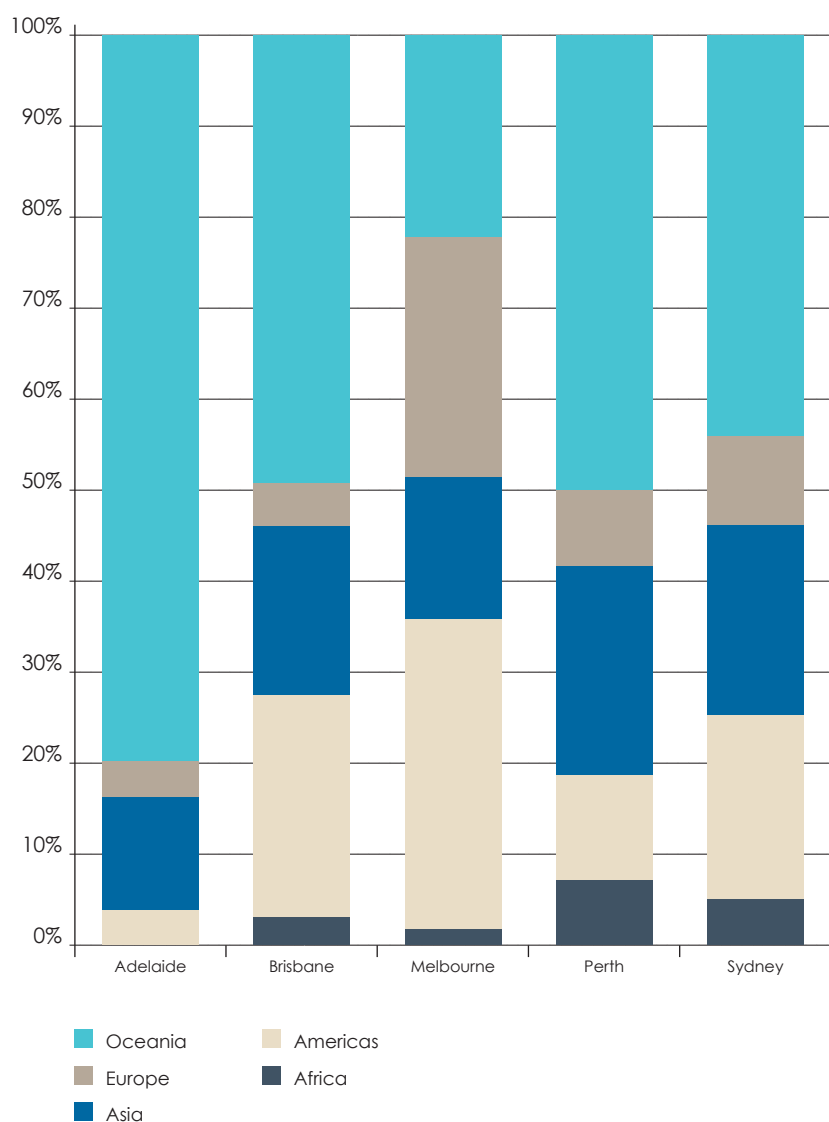
In addition to headquarters, Perth is also home to 109 branch offices. These branches are somewhat more evenly distributed across sectors, as per Figure 1. The vast majority of Perth firms are located in the city's inner five-kilometres, including the central business district (CBD) and the 'Golden Triangle', including West Perth, Subiaco, Leederville and Claremont (See Martinus et al., 2016).

## The Global Connections of Branch Offices

Though 'multinational' and 'domestic' may have been a point of distinction for firms in the 19th and part of the 20th century, today's firms are nearly all multinational by virtue of operating within a globalised world. Listed ASX firms have branch offices in 106 countries on six continents. The globalisation of the multinational firm is particularly true of the resources sector, which operates according to trends in global commodity markets. Supply and demand are determined on a global scale, and prices adjusted accordingly. This means that the local effects of labour markets are – at least to some degree – determined externally. Further, unlike manufacturing whose internationalisation was largely driven by labour costs, resource firms look overseas for new commodity markets, strategic partnerships, sources of capital and investment, and as places to sell related expertise.

Apart from those in Australia, most branch offices of ASX-listed firms were located in the United States, China, United Kingdom, and Canada, respectively. Adelaide is strongly characterised by firms with domestic operations.

**Figure 2.**  
**Relative Geographic Distribution of ASX-Listed Firm Branches by Headquarter Location**

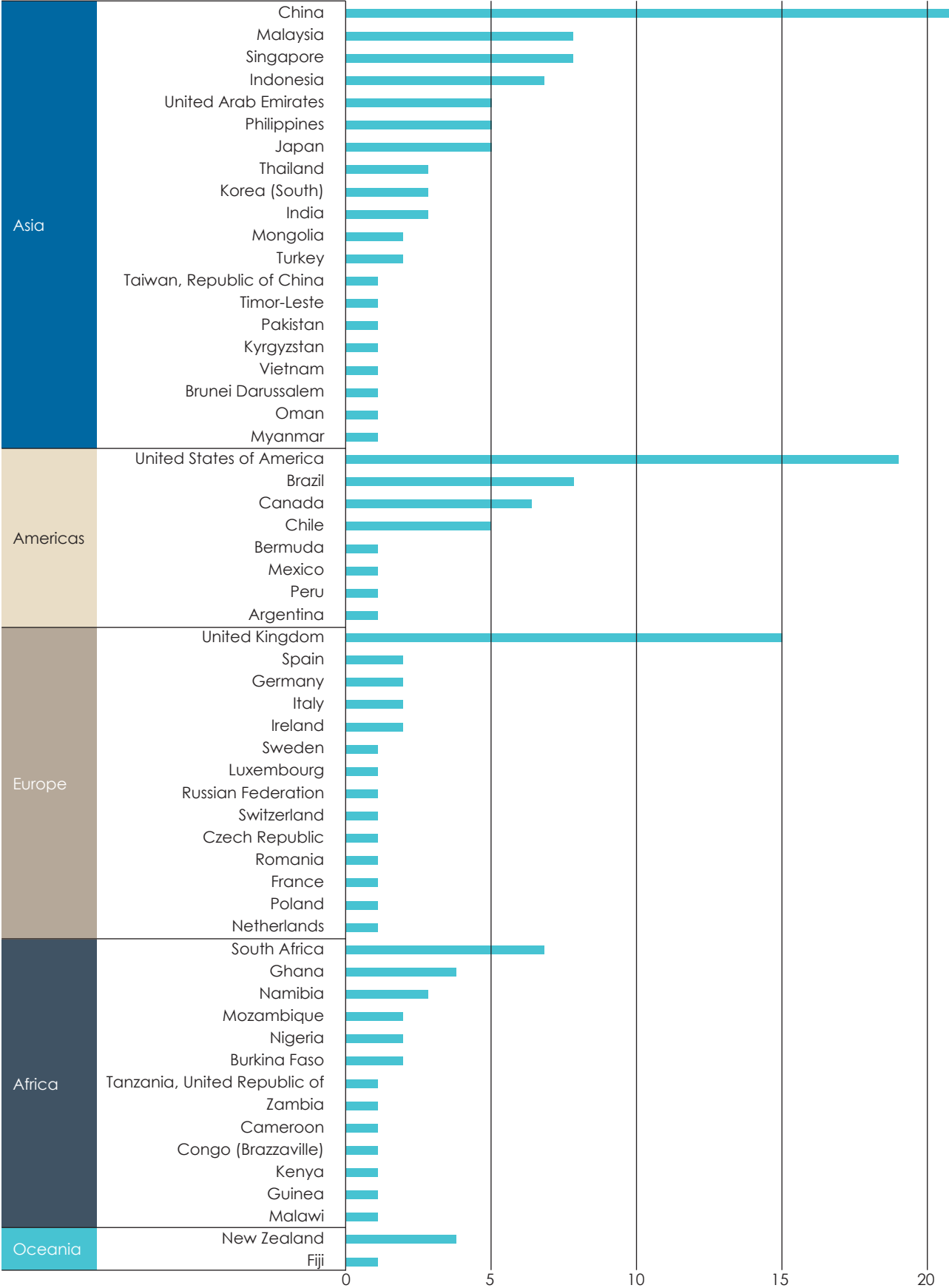


Conversely, the global reach of Melbourne firms is perhaps the most significant, with branches in 73 countries compared to Sydney firms in 68.

Melbourne and Brisbane had proportionally stronger influence in the Americas, particularly to resources-dominated economies such as Canada, Brazil, and Chile. Sydney's connections were relatively more balanced, with strong numbers of branch offices in the US, UK, Canada, China,

New Zealand, and Singapore. Perth firms had branches in 58 countries, linked largely to nations also involved in the resources sector. Figure 2 shows the distribution of ASX-listed firm branches by headquarter location and world region. The geographic distribution of these overseas branches was somewhat consistent from city to city, with some variation.

**Figure 3.**  
**Global Distribution of Branch Offices of Perth-Based ASX Listed Firms**



Perth's global corporate connections are in large part influenced by its resource sector ties. Of the overseas branches of Perth-based companies, 49 were in the materials sector and 45 were in energy, representing approximately half of the total of 195. Of the total overseas branches, 27 were in Africa, 42 in the Americas, 80 in Asia, 32 in Europe, and 5 in Oceania.

As a consequence, Perth's corporations are over-represented in countries with strong commodities sectors. For example, Perth's firms have branches in 13 African countries, and 20 in Asian. Among these are two gold and tungsten exploration companies operating in Burkina Faso, an iron ore producer in Cameroon, and several uranium production facilities in Namibia. Connectivity to South America emerges from linkages in the metals industries—namely iron ore and gold. And WA's growing hydrocarbons industry is connected globally through branch offices in major producing nations. This includes a firm servicing offshore platforms in Brunei, another providing infrastructure in Oman, and an office of Woodside in Dili, the capital of East Timor. Figure 3 summarises Perth's overseas branch office connections.

## World City Networks

Given the complex relationships created by corporate structures, networks are an increasingly popular tool for understanding relationships between cities. In some policy and academic circles, cities that are highly connected are referred to as 'Global Cities' or 'World Cities' (Beaverstock et al., 2000). Cities such as New York and London have commonly been referred to in these terms, though supporting research is generally based on the fact that these cities are home to large numbers of banks, consultancies, and accounting firms. As Martinus et al. (2015), and Sigler and Martinus (2017) have shown, these connections – and therefore the cities that emerge as important in the networks – look quite different when viewed from the perspective of alternative industries.

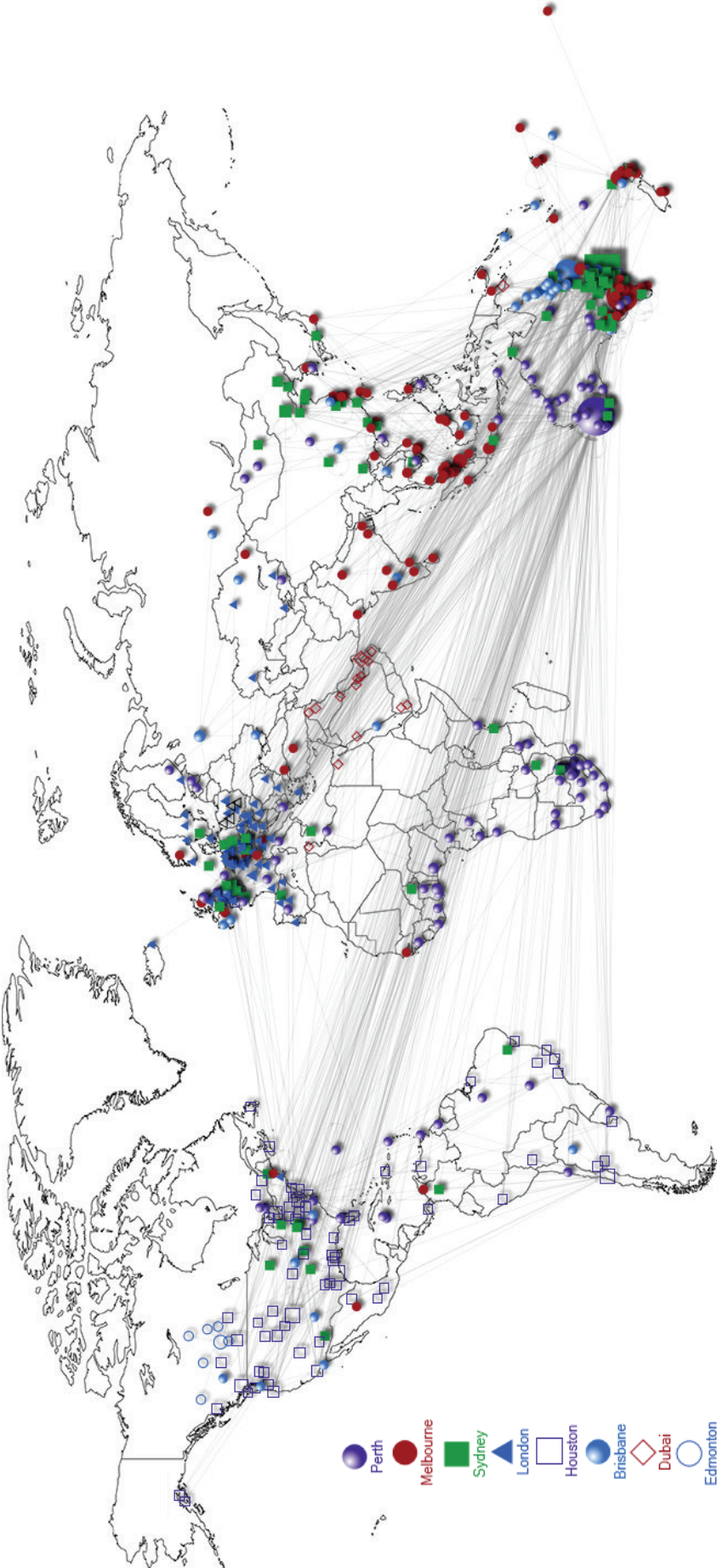
Figure 4 shows the network connections of 1,840 firms listed on the ASX, based on 2014 data. In contrast to the data in previous sections, these networks reflect not only direct connections, but the complex reporting structures of firms through indirect ties. For example, an Australian company headquartered in Perth may have a regional office in Jakarta and a small branch office in Surabaya. It was assumed that the smallest office in Surabaya would report information to the regional office in Jakarta, and that the regional office would report to Perth. This is because local information is important to the efficient operations of the firm in that nation, so creating networks from smaller to larger offices allowed this information to be mapped.

The colours on the map represent sub-networks, or 'communities of cities' that are highly interrelated. Perth's sub-network, shown in purple, not only emerges as the strongest, but as the best connected throughout Western Australia, Africa, and parts of Latin America.

The size of the symbol – a circle in the case of Perth – indicates the importance and connectedness of the city in the network. Perth emerges as either the highest, or second highest, city in Australia in terms of where ASX listed offices are most likely to be and how globally connected they are (Sigler and Martinus, 2017). Thus, whilst Sydney and Melbourne are Australia's biggest cities, the notion that they are most well-connected and globalised is not entirely the case.



Figure 4.  
Inter-Urban Networks Based on ASX-Listed Office Locations



A major finding of this Bulletin is that it matters less *if* a city is global than *how* it is global. All firms are somehow connected overseas, even if not directly then through their subsidiaries, affiliates, partners, distributors, or suppliers. Therefore every city is globally connected through a myriad of flows, including telecommunications, financial transfers, and other types of physical and virtual movements.

Figures 5A and 5B show how each city is connected through its corporate network. Colours are representative of urban clusters, which designate cities that are closely linked to one another in their corporate network relations. Perth's importance in the network shows the heavy influence of its resources industry to the entire nation. Furthermore, the presence of financials in Perth demonstrates its strong linkage to the resources sector. This is particularly interesting when you consider that financials does not appear strongly in any other Australian city other than Sydney, which both houses the ASX, and is Australia's global city hub for advanced producer services. This includes some large corporations as well as junior miners such as African Energy Resources, Aquila, Neptune Marine Services, Rialto Energy, Wildhorse Energy, Woodside, Austal, Calibre, Emeco, Monadelphous and Iluka Resources. These connect it to many of the key energy and materials cities of the world such as Houston, Calgary, Johannesburg and Santiago, as well as global financial cities of London, Shanghai, New York, Singapore and Hong Kong. Perth networks demonstrate a strong connection to Africa and Latin America, which reflects its

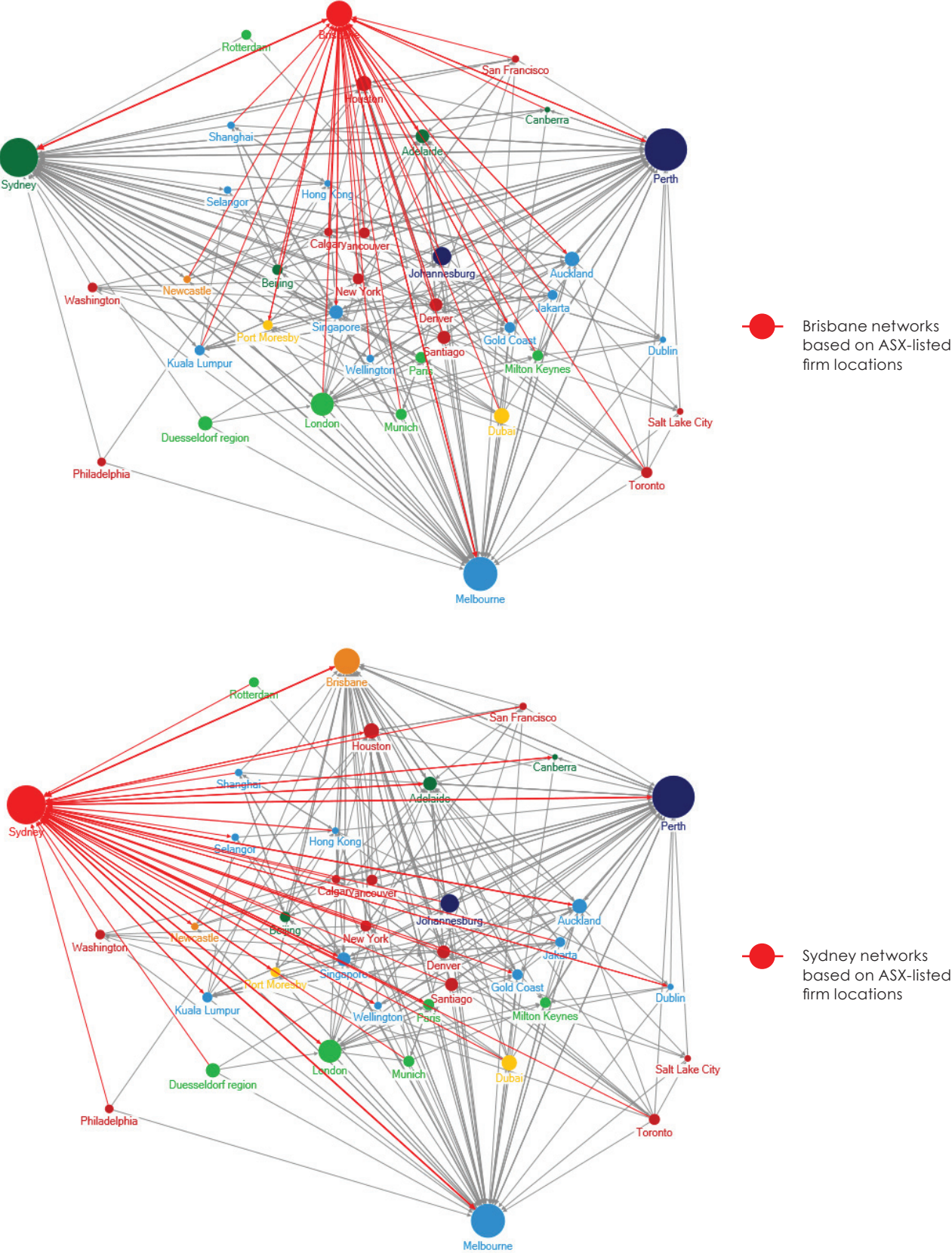
emerging position in the oil and gas sector and as a key city in the mining sector.

Sydney's global reach is also deep. Sydney's globalised economy includes some of Australia's largest multinationals such as Origin Energy, Roc Oil Company, Whitehaven Coal, WorleyParsons, Alternative Investment Trust, AMP, ASX, Brookfield, Commonwealth Bank, Charter Hall, LendLease, QBE and Axxis Technology. These connect Sydney to financial centres such as New York, Hong Kong, Singapore, Shanghai and London, as well as resource cities Calgary, Houston, Philadelphia and Santiago. The industry networks of Sydney signify its position as a 'global city' given its role in global financial networks. It is strongly connected to domestic financial circuits, particularly through the materials and energy sectors.

Melbourne was found to be less globally connected than either Sydney or Perth through its firm headquarters. Its mix of industries is also broad, and reveals its strong knowledge-service economy. As a hub for domestic manufacturing, along with its traditional strength in materials and finance sectors, Melbourne's network includes corporations such as Uranex, Ansell, CSL, Multistack, Adslot, CPT Global, Amcor, Bluescope Steel, Newcrest Mining, Orica and Rio Tinto. These connect it to a range of cities such as London, New York, Houston, Johannesburg, Dubai and Jakarta, to manufacturing cities of Düsseldorf, Munich and Milton Keynes, as well as to resource cities of Calgary, Houston and Johannesburg.

Brisbane is the least globally connected of the four, with strengths largely in the industrial sector, in which it holds the most central network position. This includes engineering firms, specialised consultancies, and large conglomerates such as Ausenco, Alliance Aviation, Cardno, Logicamms and Cokal. Brisbane's network exhibits strong connectivity to cities in the Pacific such as Port Moresby, European industrial cities of Munich and Milton Keynes, and industrialising regions of Asia, Shanghai and Hong Kong. Figures 5A and 5B reveal these network graphs.

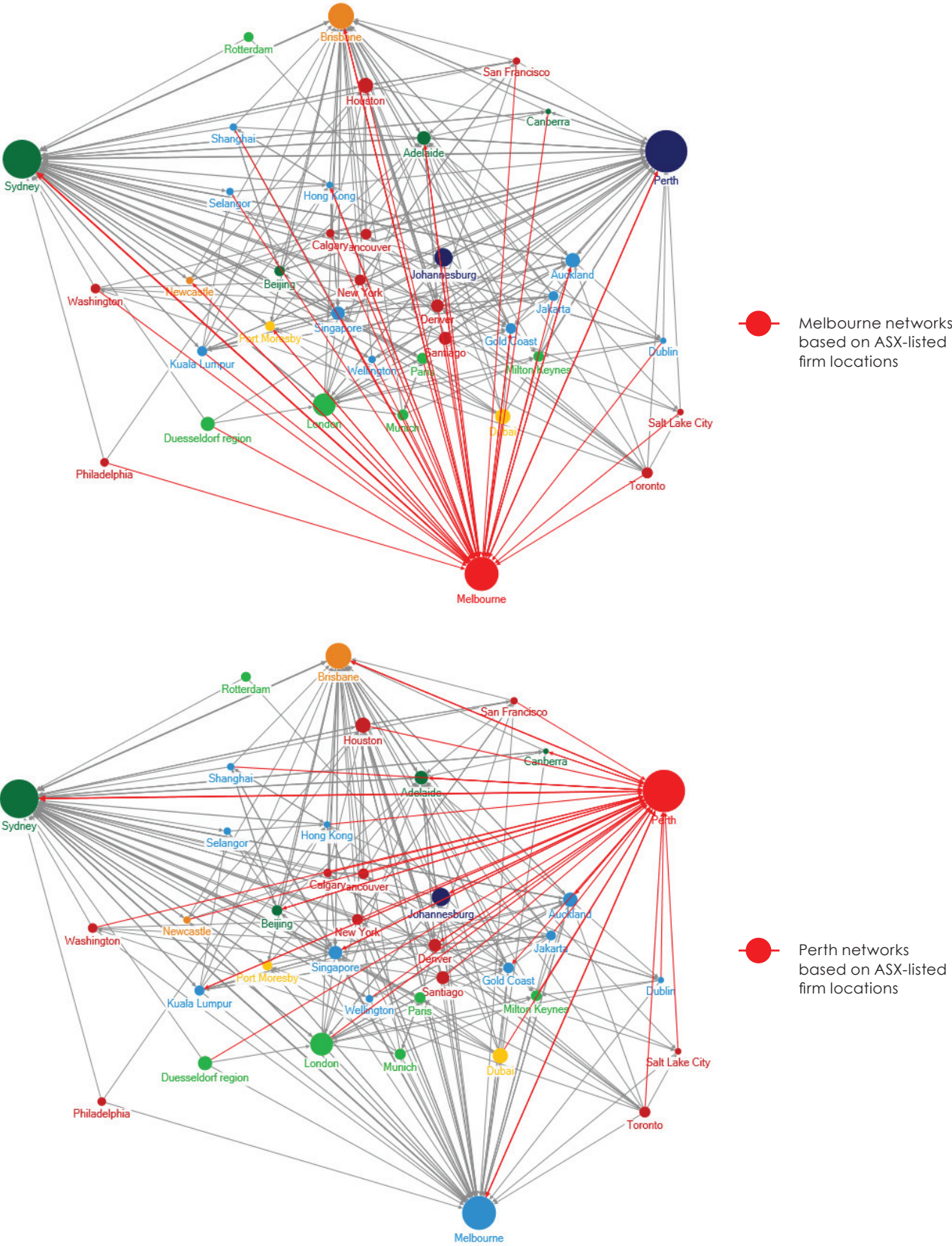
**Figure 5A.**  
**City Sub-Networks Based on ASX-Listed Firm Locations for Brisbane and Sydney\***



\* Colours are representative of urban clusters, which designate cities that are closely linked to one another in their corporate network relations.



**Figure 5B.**  
**City Sub-Networks Based on ASX-Listed Firm Locations for Melbourne and Perth\***



\* Colours are representative of urban clusters, which designate cities that are closely linked to one another in their corporate network relations.

## Conclusions

As globalisation renders all firms 'multinational', understanding how industries and the cities in which they operate can forge new global linkages will be a key policy challenge. As this FACTBase has shown, Australian firms are highly connected overseas. With branch offices in more than 100 countries, and operations through partners and subsidiaries in many more, Australian firms' networks extend over vast geographical territories in order to seek competitive advantage.

Perth in particular has a highly globalised network. Perth's firms operate through branch offices in nearly 60 countries, with activity across a range of industries. Materials (mining) and energy are the most significant of these, and a detailed look at Perth's network connectivity reveals that the city's connections are a direct result of its resources-related activities.

The globally connected marketplace of the 21st century provides both challenges and opportunities for cities like Perth. On the one hand, the globalisation of commodity markets means that resources are subject to external ups and downs. This has meant cyclical business trends for Perth, with related shifts in employment. On the other hand, globalisation brings with it new opportunities. Perth's firms sell not only commodities, but expertise and knowledge to the rest of the world. This is illustrated in particular by the strong presence of resources service firms, which provide technological and infrastructural solutions to distant markets. Technologies and insights developed in WA are able to

be sold to the world, and to some degree countervail the cyclical nature of commodities exports.

Understanding connectivity through corporate networks provides insights not only into which economic sectors are most globally connected, but also into which cities and regions of the world constitute these networks. In the case of Perth, regions with strong resources economies, particularly Africa, Latin America, and parts of Southeast Asia and North America are well-connected. These linkages provide opportunities to enhance Perth's overseas activities, and to deepen its global ties. More importantly, they pave the path for new overseas markets to be forged, and provide some guidance on which of these are unique to Perth, over other large Australian cities.

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## About FACTBase

FACTBase is a collaborative research project between the Committee for Perth and The University of Western Australia to benchmark the liveability of Perth and its global connectedness through an examination of Perth's economic, social, demographic and political character.

The FACTBase team of academics and researchers condense a plethora of existing information and databases on the major themes, map what is happening in Perth in pictures as well as words, and examine how Perth compares with, and connects to, other cities around the world.

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