

A granular look at Australia's economic future beyond the resources investment boom

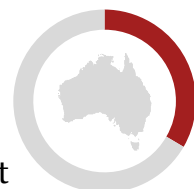
Understanding the economy from the ground up



\$1 in every \$5

National income comes from just 10 locations

1 in 3



locations had economies that contracted last year



Unique analysis reveals both these trends have been intensifying over the last 14 years





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Key points

PwC's research suggests that a new wave of economic growth can be unlocked through better understanding, and then exploiting, the vast diversity that existing at the local levels of our economy.

We have understood this diversity through unique, granular economic modelling of 2,214 locations which make up the Australian economy. Locations refer to the ABS defined Statistical Area 2 (SA2) boundaries which cover Australia. Each of these locations contains approximately 10,000 residents.

A number of key trends that have influenced growth over the past 14 years have been identified and tracked.

Understanding these trends presents major opportunities: allowing decision makers to appreciate likely return on investments and showing where there are growth opportunities to be realised on a location by location basis.

Snapshot of key findings

1. Economic activity is concentrated: Close to one in every five dollars of national income comes from just 10 locations (out of 2,214 locations).
2. Economic activity is fragmented: One in three locations (out of 2,214 locations) had economies that contracted last year .
3. Both these trends have been intensifying over the last 14 years. Looking forward, these trends do not show signs of reversing.

4. Sitting below these headline figures we find that there are three primary types of growth (and decline) that influence a granular location:
 - a. **Seasonal** growth (and decline) – eg: agricultural areas experiencing varying weather patterns
 - b. **Cyclical** growth (and decline) – eg: growth associated with a specific industry or investment cycle, such as major infrastructure investment
 - c. **Structural** growth (and decline) – eg: locations which possess both a competitive mix of industries and a locational advantage which is delivering sustained periods of growth.
5. \$350 billion was spent last year by business and government on investments in these 2,214 specific locations. Understanding the granular spatial characteristics of our economy provides the evidence base to make better decisions, improving the business returns and societal outcomes.

“Close to 1 in every 5 dollars of national income comes from just 10 locations”



Implications

The aim of this analysis is not to suggest that there are certain areas that should not be invested in. Rather, the aim is to ensure that when investing, the right decisions are made in a specific location for the right reason. The type of government investment or policy required in a location to manage its decline is vastly different to the type of investment needed in a different location to unlock unfulfilled growth potential.

To ensure we get the best out of \$350 billion invested into the 2,214 locations, four steps should be taken.

- 1. Understand why investment is needed** – Different types of investment are required in areas undergoing different types of growth (and decline). Investment decisions need to understand the drivers behind a location's performance and the likely trajectory of the location in years to come to ensure the investment meets its objective.
- 2. A clear focus on return on investment** – If investment is purely for economic reasons, there are certain locations where the return on this investment is going to be significantly higher.
- 3. Take a portfolio view** – The Australian economy is essentially a diversified portfolio of activities. This work allows us to understand that portfolio in more detail and make decisions accordingly.
- 4. Manage change**– Certain locations are in structural decline and need to be managed accordingly. Managing decline is different to stimulating economic growth. Getting these two objectives confused hinders the rebalancing (or transition) of certain locations and has an impact on local populations.

These steps will ensure a range of major challenges and opportunities are navigated in a manner that delivers the greatest social and economic return on investment. These challenges and opportunities include:

- the closure of manufacturing plants
- the investment in major transport infrastructure across Australia
- the growth of Northern Australian
- changing climatic and weather patterns



What's really driving the Australian economy?

Many Australians currently are grappling with the question: what is going to drive economic growth in the years to come?

We thought we would approach the challenge from a new, bottom up perspective: understanding how the economy functions at the granular and local levels.

To do this we mapped the spatial characteristics of our economy: more precisely, we calculated economic output for 2,214 locations across Australia, from 2000/01 to 2013/14, in a manner consistent and reconcilable with methods used by the Australian Bureau of Statistics (ABS).

This is important because when you understand the individual characteristics of Australia's 2,214 locations it becomes clear how diverse the Australian economy really is. This is important because business and Government invested close to **\$350 billion** in these 2,214 diverse locations last year. Evidence based decisions making and demonstrating a solid return on investment should be increasingly important to prospering in a rapidly changing and volatile economic land.

Against this backdrop, business and government need to acknowledge and understand four things about our granular economy:

1. Economic growth is concentrated

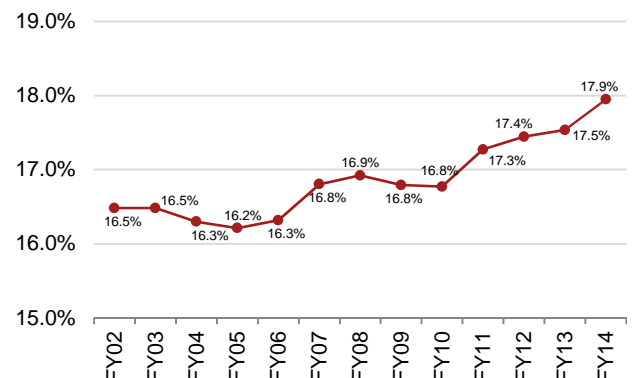
- Nearly one in five dollars of Australia's national income comes from just ten locations (out of 2,214 locations)
- This implies that there are a very small handful of locations that really matter to the Australian economy. There are a very large number of locations in Australia that from an economic perspective, matter very little.

2. Economic activity is fragmented

- The Australian economy growing at 2.5 per cent last financial year hides the fact that more than one in three locations (out of 2,214) actually had economies that contracted.

3. Both these trends have been intensifying ...

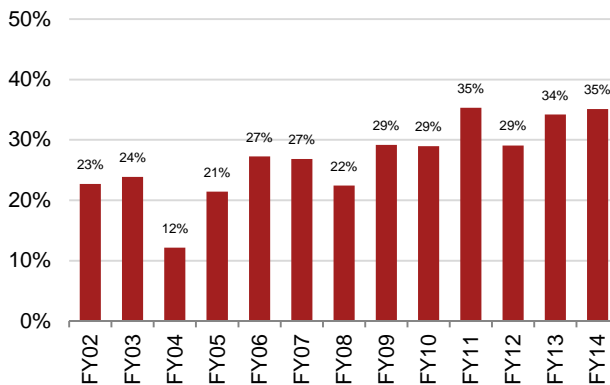
Exhibit 1: Proportion of Australian GDP concentrated in just 10 locations



What's really driving the Australian economy? (cont'd)

3. Both these trends have been intensifying ...

Exhibit 2: Proportion of locations in recession



- Both trends have been intensifying over the past 14 years. The implications of this are explored below:
 - › More and more locations are suffering declines while a key handful of locations are becoming more and more important.
 - › A shift from 16.2 per cent in FY05 to 17.9 per cent in FY14 (Exhibit 1) may not sound like much but it actually represents a real transfer of over **\$27 billion** from locations around Australia to these ten key locations. This is equivalent to the entire Tasmanian economy and all its employees being transferred into these ten key locations.
 - › A key trend, masked during the recent resource booms, has been the role that CBDs and concentrations of high value add urban economic cluster have played in driving this trend. While the spotlight has been on the Pilbra and the phenomenal growth of economic activity generated from these resource deposits, it has actually been these urban areas which have been steadily generating a larger share of economic output. This has driven the bulk of this change and is also the most important factor as we move beyond the mining boom.

4. ... and both these trends will continue to intensify into the future:

- More areas experiencing economic decline. This is being driven by:
 - › Performance of key manufacturing locations declining (and/or closing)
 - › Winding up of the capital investment phase of the resource boom and contraction of certain resources industry to mirror current market forces.
- Fewer key locations will be relied upon to drive an increasingly large share of economic growth. From an economic point of view, this implies we should potentially be less worried about the fact that 1 in 3 locations are contracting. However, from a social and equity point of view this creates unique challenges and potential conflicts between economic and social policy and investment imperatives
- There is nothing to suggest that these trends are slowing or are able to be reversed
- Grappling with this reality has been, and will continue to be one of the most challenging question facing business and government, explaining patchy policy, investments and business performance across Australia.

“The Australian economy is essentially a diversified portfolio of activities. This work allows us to understand our portfolio in more detail.”

Three types of economic growth and decline

It's a well-known fact that Australia has had 24 years of sustained economic growth. However, the same cannot be said for all locations in Australia.

Rather, there are three patterns of granular growth (and decline) that characterise locations across Australia. Understanding the type of growth or decline in a specific location is key to making the correct investment or policy decision. Misunderstanding the nature of growth or decline in specific location can erode the competitiveness of business and drains government funding through mis-specified policy and investment initiatives.

The Australian economy has expanded by approximately 46 per cent in real terms since 2000/01. Exhibit 3 below shows the greatest contributors to this growth. Exhibit 4 highlights locations where the economy has contracted over this period.

Interpreting these tables we can see that the Melbourne CBD grew by \$24.42 billion over this period, expanding by 76 per cent. On the other hand, the economy of Churchill (Larrobe valley, Victoria) contracted by 21 per cent, implying a loss of \$1.19 billion.

The locations within these tables will be used in the remaining chapter to highlight the differing patterns of granular growth across Australia.

Exhibit 3: Granular growth

Location	Change in economic output* (FY01 – FY14), \$M	Growth as a proportion of economy in FY01
Melbourne CBD [^]	24,420	76%
Sydney CBD	18,560	37%
Ashburton (WA)	17,253	611%
East Pilbara	17,201	776%
Perth City	12,196	73%
Brisbane City	10,154	72%
Pyrmont – Ultimo	4,971	173%
Macquarie Park – Marsfield	4,916	108%
Adelaide	4,824	43%
Australia	491,260	46%

Note: All locations are SA2 (as defined by the ABS) with the exception of the Melbourne CBD[^] which encompasses the Melbourne City, Southbank and Docklands SA2s.

* Real Economic Output is calculated in a manner consistent and reconcilable with the ABS

Source: PwC Geospatial Economic Model (GEM) 2015.



Three types of economic growth and decline (cont'd)

Exhibit 4: Granular decline

Location	Change in economic output* (FY01 – FY14), \$M	Growth as a proportion of economy in FY01
Nanango (Qld)	-1,219	-61%
Churchill (Latrobe Valley, Vic)	-1,189	-21%
Moe – Newborough (Latrobe Valley, Vic)	-452	-20%
Condell Park (Sydney, NSW)	-401	-20%
Wetherill Park Industrial (Sydney, NSW)	-249	-10%
Mount Gravatt (Brisbane, Qld)	-152	-23%
Sunnybank (Brisbane, Qld)	-127	-40%
West Footscray – Tottenham (Melbourne, Vic)	-126	-19%
Deniliquin (rural, NSW)	-104	-25%
Cairns City (Qld)	-102	-4%
Australia	491,260	46%

Note: All locations are SA2 (as defined by the ABS) SA2s.

* Real Economic Output is calculated in a manner consistent and reconcilable with the ABS

Source: PwC Geospatial Economic Model (GEM) 2015.



Three types of economic growth and decline (cont'd)

There are three patterns of growth and decline: structural, cyclical and seasonal. Understanding structural growth and decline is the most important from a government perspective, with strategic investments able to influence these outcomes. Cyclical and seasonal growth and decline occur naturally in the economy, with government and business needing to account for these trends when investing.

1. Structural growth and decline

Structural growth

Structural growth is defined as locations which have had 14 years of real economic growth. Combined, these locations account for 15 per cent of the Australian economy.

The drivers behind structural growth are diverse. This is highlighted by examining examples from Exhibit 3.

- **Major CBDs**
 - Accounting for a disproportionately high proportion of the Australian economy, these dense, multi-industry urban economic clusters within our major capital cities are becoming more important. This looks set to continue given these locations house the high value add knowledge industry jobs which are becoming increasingly important to Australia's competitiveness.
 - However, as shown in Exhibit 3, even growth between CBDs is very diverse. The Melbourne CBD grew by 76 per cent over the 14 year periods, substantially above the national average (46 per cent).
 - This growth was primarily driven by the physical expansion of the CBD into Docklands and Southbank, two locations which have consistently outperformed in terms of annual economic growth. The spatially constrained Sydney CBD only grew by 37 per cent over the same period, below the national average. However, recent results show the economic performance of the Sydney CBD to be picking up. The physical expansion of the CBD into Barangaroo should also drive strong growth similar to the Southbank and Docklands experience.
- **Resource areas (Ashburton and East Pilbra)**
 - Many resource areas have experienced phenomenal growth, albeit off a very low base. The growth has been a combination of two drivers of granular growth: increased demand for commodities (structural growth) as well as the capital investment required to extract these commodities (cyclical growth, discussed on page 12).
- **Pyrmont (Sydney, NSW)**
 - Growth has been driven by a combination of the expansion of the CBD and a dynamic mix of high value add service and innovation sector jobs. We consistently see locations on the fringes of the CBD outperforming the actual CBDs in terms of year on year growth rates, highlighting the growing importance of these areas to the national economy. Other examples of this trend includes Surry Hills in Sydney, Fortitude Valley in Brisbane, Braddon in Canberra and Docklands and Southbank within Melbourne.
- **Macquarie Park (Sydney, NSW)**
 - A business park development that has grown very strongly since 2000. This growth was accelerated by the opening of the Epping to Chatswood Rail Link (ECRL). This provided the location greater connectivity with other key areas of economic strength and expanded the skilled labour market which businesses in the area can draw from. It also underscore the importance not just of a specific location, but the connectivity to, and between, key locations.

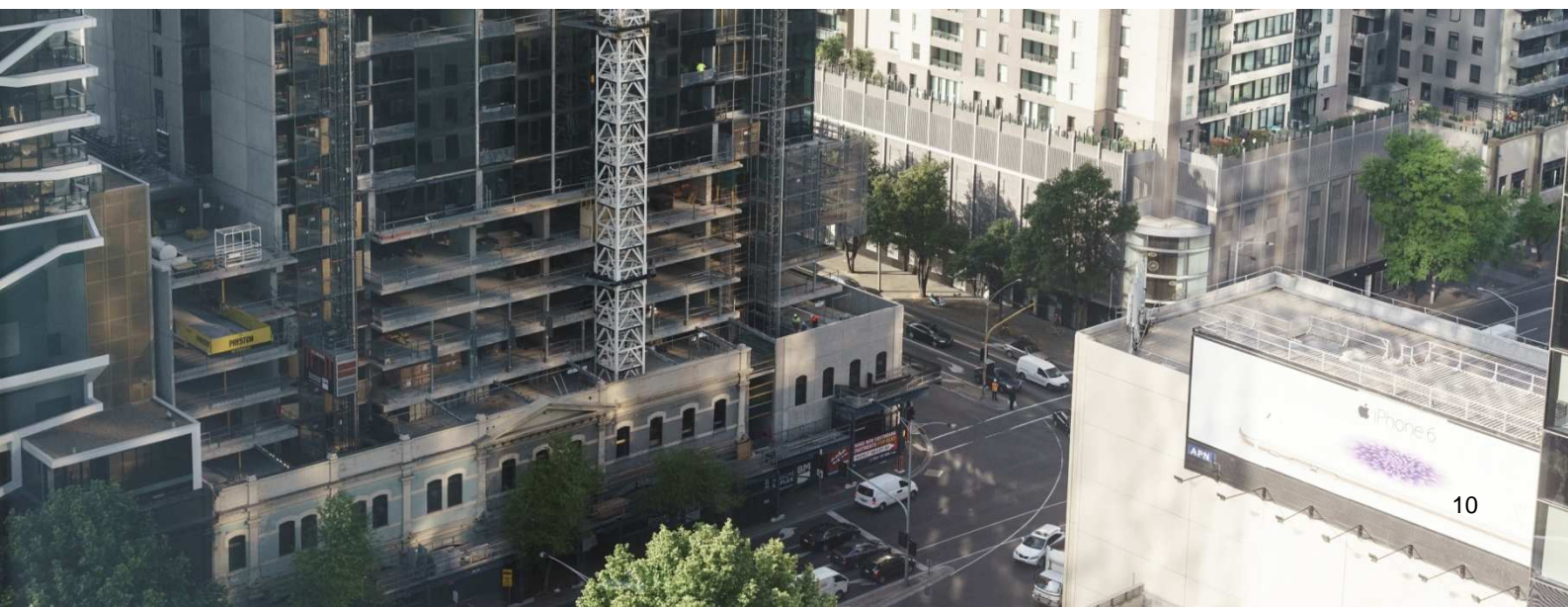
Three types of economic growth and decline (cont'd)

Structural decline

For this analysis, we define structural decline as being in decline for the majority of years since 2000/01 and/or have a smaller economy (in real terms) than they did in 2001. Combined, this accounts for an estimated one in seven locations within Australia.

The drivers behind structural declines are diverse. This is highlighted by examining examples in Exhibit 4:

- **Nanango (Qld), Churchill and Moe (Latrobe Valley, Victoria)**
 - These are locations which have relied heavily on coal extraction and associated coal fired power plants to drive economic growth. All locations have been hit by both volume and price effects. On the volume side, demand has ebbed as more efficient energy sources have meant a falling reliance on these plants. In turn, the price paid for this coal has fallen markedly.
 - Both Churchill and Moe have a fairly diverse economic base and are in closely proximity to major metropolitan areas (compared to other mining areas). This has helped ensure that the declines in resource output have not translated into contractions in surrounding industries or associated job losses. While the area is still undergoing adjustment, these locations provide insights as to how other resource dependent locations may be able manage the decline associated with the completion of major investment and falling commodity prices.
- **Condell Park and Wetherill Park (Sydney, NSW)**
 - These are traditional manufacturing, wholesale trade and transport & logistics service locations. Both have experience continual downward decline over the past 14 years due to two factors:
 1. The erosion of the competitiveness of traditional Australian manufacturing and the flow on effects this has had to the associated trade and transport services within the location
 2. The importance of location and the growing concentration of economic output in key locations. In this case, both locations have felt the effects of industry shifting towards Eastern Creek. Eastern Creek arguably offers more competitive access to major transport routes and has attracted major logistics, trade and manufacturing companies. The result has been a growing concentration of these industries around this key location, from traditional locations which lack the same level or transport connectivity or benefits that stem from being closely located with complimentary companies.



Three types of economic growth and decline (cont'd)

- **Mount Gravatt and Sunnybank** (Brisbane, Qld)

- These two locations have contracted for 12 out of the 14 years since 2001/02, more than any other locations within Australia.

Both these locations have diverse economic bases, yet have been experiencing gradual decline. The decline here has been driven by spatial factors as well as the location's continued integration into the Brisbane urban area. Strong growth in major shopping centres and 'big box' retail in surrounding suburbs has drawn retail and service activities out of these suburbs towards the larger areas of specialisation.

This is another example of economic activity within Australia becoming more concentrated around certain locations, albeit on a suburb by suburb level. This is a trend we see played out across Australia, with many 'traditional' suburbs suffering declines in retail and industry activity as this is drawn towards major centres.

Importantly, this decline has not translated into direct impacts on residents, with the area still showing population and wage growth. This underpins the importance of connectivity, with the locations playing an increasing role as a source of labour, but decreasing role as a local centre of economic activity.

- **Deniliquin** (rural NSW)

- Deniliquin faces a combination of interlinked demographic, climatic and economic challenges. Severe drought conditions and a declining population and workforce imply the town faces structural economic challenges.

- **Cairns CBD** (Queensland)

- Cairns CBD has experienced a contraction in both retail, accommodation and food service economic output and employment. This has been driven by the challenges that the Australian tourism market has faced under the high Australian dollar as well as shifting international visitor preference (in this case a reduction of Japanese tourists travelling to Cairns).
- Importantly, the overall Cairns urban area has grown over the periods examined. This indicates that the structural challenges have been concentrated in the CBD, one discrete location within the urban area.



Three types of economic growth and decline (cont'd)

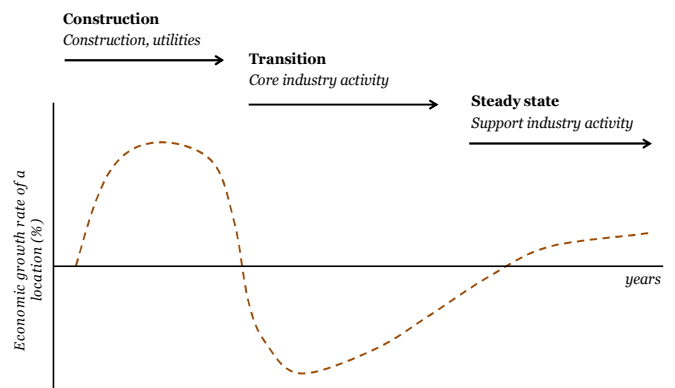
2. Cyclical growth and decline

Cyclical growth and declines are driven by natural industry or investment cycles. For example, an area will grow during the construction of a new rail line, hospital, airport or housing development.

This growth then tapers off as construction winds up and the emphasis shifts to operation and use of the infrastructure.

Examining locations undergoing cyclical growth and decline we see that this tapering can last a number of years. During this time the local economies re-adjust to the new infrastructure and rebalance to fully capitalise on the new growth opportunity. The trajectory that usually accompanies cyclical growth and decline is shown in Exhibit 5.

Exhibit 5



Source: PwC Geospatial Economic Model (GEM) 2015.

3. Seasonal growth and decline

Seasonal growth and decline is predominantly witnessed in agricultural locations. Here, economic output is closely tied to weather patterns so the changes in output on a year-by-year basis can swing markedly.

Like cyclical growth and decline this a natural pattern that can not easily be altered through investment of policy decision. However, investment and policy decisions need to be very mindful of these growth patterns and plan accordingly.

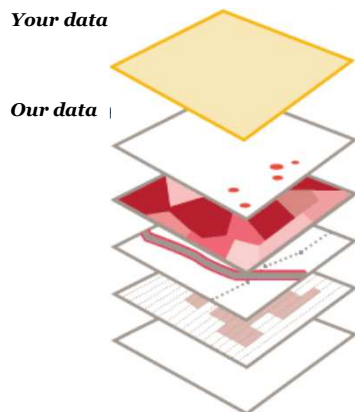


About the modelling

A quick overview on PwCs ground-breaking Geospatial Economic Model (GEM)

- Economic output is calculated for 2,214 locations across Australia. Locations are SA2, as defined by the ABS. Each of these locations contains approximately 10,000 people.
- Economic output is calculated using the income method and is consistent and reconcilable with the ABS methodology and ABS produced aggregates.
- The economic time series runs from 2000/01 to 2103/14, with projections out to 2030.
- Economic output (and projections) can also be broken down into it's components to get a granular view of what is occurring in a location. For example, we can look at the performances of the professional services sector in the CBD, the break this down further to understand what is driving these results: income to employees, income to business or income to government.
- We understand that economic performance is only one dimension that business and government need to understand in order to prosper in our changing economy. That is why we treat the economics as just one 'layer' within the broader GEM. This allows economic performance to be tested and correlated to the other dimensions that matter. These include social and demographic factors (eg age, income, education, housing density, etc), access to transport and infrastructure, access to essential services, climatic conditions, customer preference, intention to purchase, crime statistics and more.
- We also realise the importance of incorporating internal business or departmental specific data into our analyses. Simply put: your data + our data = unparalleled clarity. In an uncertain and highly competitive environment, this is the type of clarity required to make the right strategic policy and investment decisions.

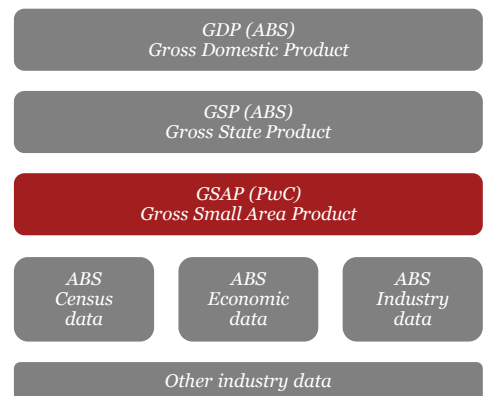
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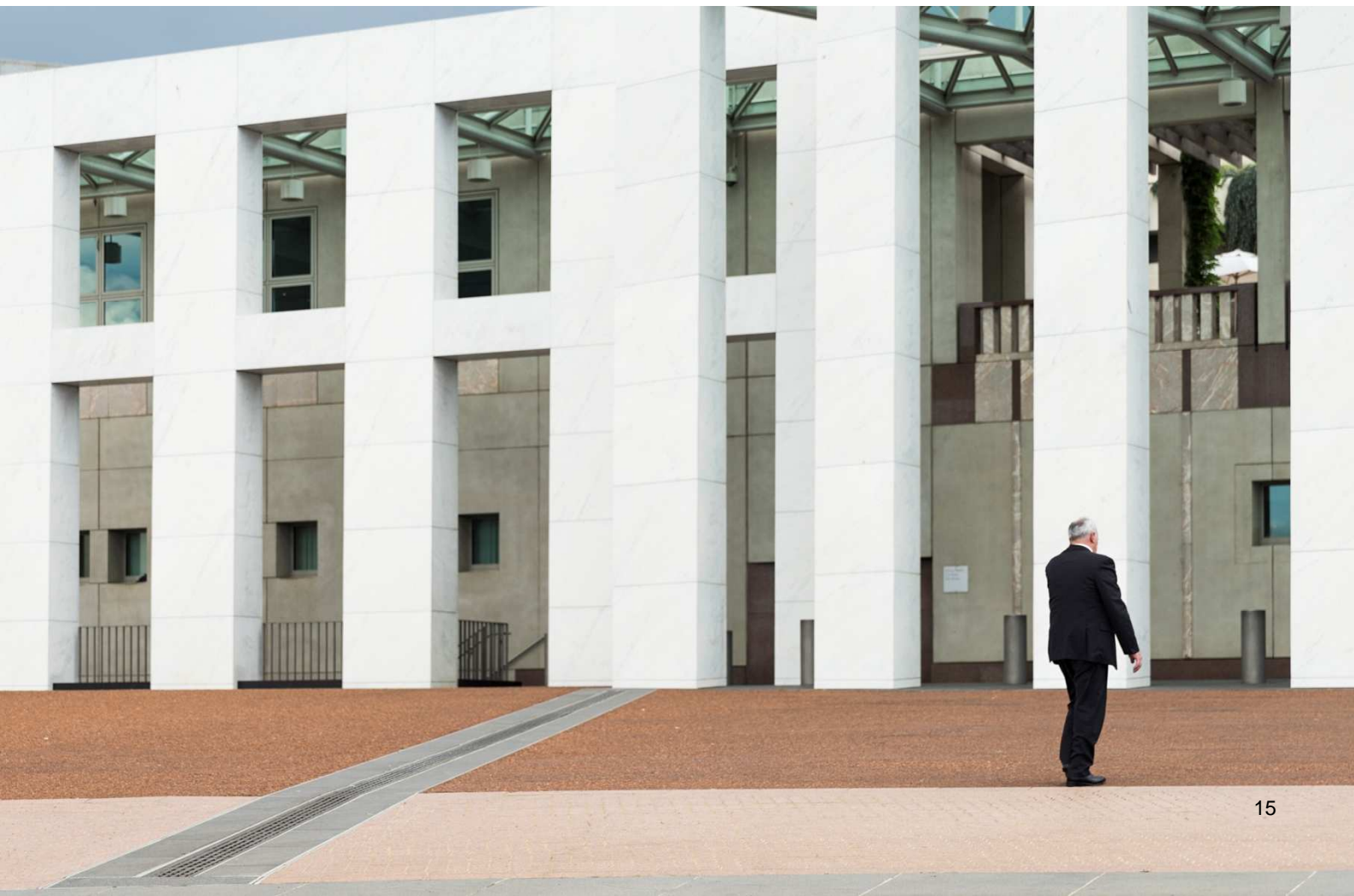
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