



Government of **Western Australia**
Department of **Treasury**

Structure of the Western Australian Economy

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Executive Summary

Over the past 30 years, the Western Australian economy has expanded at a faster pace (4.1% per annum) than Australia as a whole (2.9% per annum) and other similarly developed economies (2.1% per annum). This strong growth means that the Western Australian economy is now more than three times the size it was in 1989-90, and accounts for 15% of the Australian economy, up from 10.6% in 1989-90.

The strong growth is largely due to the emergence of China as a global economic power which generated strong demand for the resources with which Western Australia is naturally endowed. Strong demand for commodities has in turn boosted commodity prices and led to very substantial mining investment in Western Australia.

While this mining investment underpinned a very impressive growth performance, that performance has come at the cost of being a less diversified economy. The State's industry structure, export composition and export markets have all become less diversified:

- the expansion of the mining sector contributed almost half of the total growth of the Western Australian economy over the past 30 years. As a result, the mining industry's share of the State economy has increased from around 15% in 1989-90 to more than 40% in 2019-20;
- the expansion of mining has been dominated by iron ore, LNG and (to a lesser extent) gold. Iron ore alone, which accounted for less than 15% of exports in 1989-90, accounted for over 60% of total merchandise exports in 2020-21, while LNG and gold each accounted for around 10% of the total value of exports; and
- China now accounts for more than 60% of Western Australian goods exports, up from 5% in 1989-90. By comparison, 30 years ago, the five largest export markets (Japan, the USA, China, South Korea and Singapore) combined accounted for just under 60% of merchandise exports.

While Western Australia has clearly benefited from the emergence of China, with global steel demand expected to be close to peak levels, and the move to a net zero emissions world over coming years, diversifying the State's economy is an imperative.

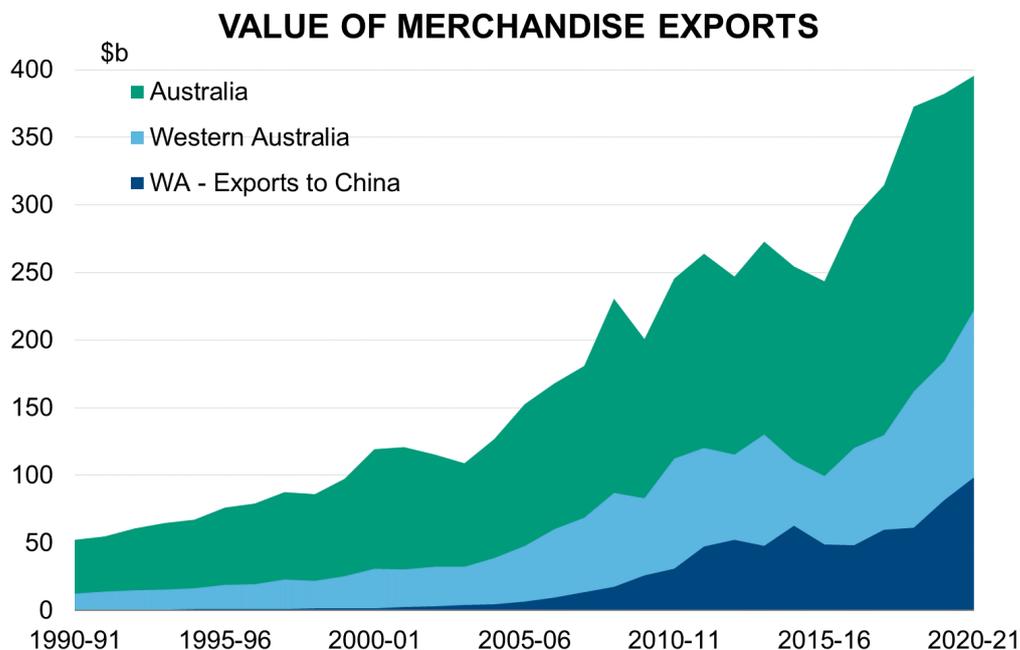
Introduction

This paper provides an analysis of the structure of Western Australia’s economy and includes an assessment of the key drivers of growth over the past 30 years (outlined in the Overview section). This includes a brief bottom-up analysis on how the State’s economy has transformed, followed by a top-down analysis of changes in State output.

Key Trends and Drivers

The economic development of Western Australia over the past three decades has been closely tied to activity in developing economies across the Asia-Pacific. Growth was particularly strong between 2001-02 and 2013-14, a period when the rapid expansion of China’s economy generated strong demand for the resources necessary for the country to build its capital stock (Chart 1). Increasing demand generated strong signals in the market, supporting robust price outlooks for key commodities. The positive outlook for commodities promoted investment in Western Australia’s mining industry due to the State’s natural abundance of mineral resources. This was further supported by the State’s proximity to developing nations in the Asia-Pacific region.

Chart 1



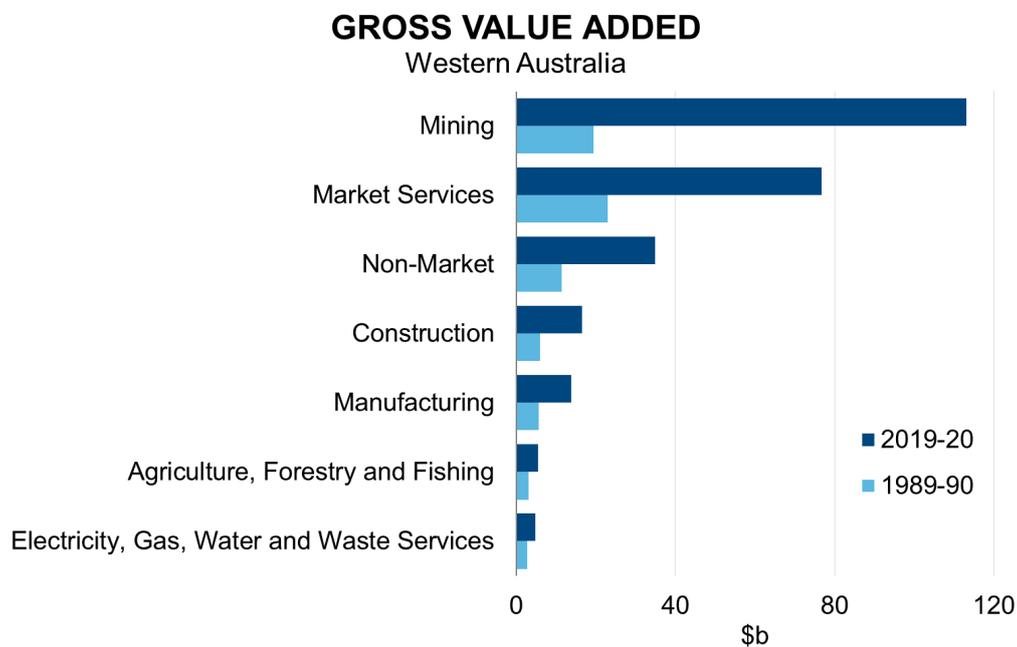
Note: Current prices (free on board)
Source: Australian Bureau of Statistics, cat. No. 5368.0.

The influx of investment in the mining sector generated numerous benefits which flowed through to other segments of the economy. Industries positioned to support the sector (e.g. construction and professional, scientific and technical services) experienced strong growth in demand. This supported strong employment and wages growth, which attracted migrants to the State. The rise in population subsequently generated demand for public infrastructure and promoted rapid growth in domestic consumption.

A key trend illustrated throughout the assessment of Western Australia’s economic structure is the sensitivity of a range of sectors to the performance of the mining sector. Notably, certain segments of the economy were adversely impacted by the expansion of the mining sector. For instance, high commodity prices for minerals contributed to a higher exchange rate, which subsequently weighed on other export orientated industries such as agriculture and manufacturing.

Whilst the mining industry was the strongest driver of growth over the past three decades, due primarily to strong external demand, certain domestic factors influenced the growth of discrete sectors. For instance, changing population demographics (the ‘ageing of the population’) and community standards in care and social assistance have promoted growth in the healthcare sector (a component of the broader non-market sector). This consistent trend has driven the industry to become the third largest individual sector, based on its share of total industry Gross Value Added (GVA), in Western Australia.

Chart 2



Source: Australian Bureau of Statistics, cat. No. 5220.0.

Structure of the Western Australian Economy

These factors have subsequently shaped the current structure of Western Australia's economy (Chart 2)¹ and contributed to a relatively unique growth pattern over the past three decades when compared to the national growth profile. The prolific development of the mining sector has accounted for a larger proportion of the State's output, conversely diminishing the reliance on non-mining sectors in the economy. Accordingly, the growth in Western Australia's Gross State Product (GSP) during periods of high mining investment exceeded national figures by significant amounts. As this tapered off in more recent periods, growth receded to levels below national averages.

The remainder of the paper assesses the Western Australian economy using a top-down analysis of output.

¹ Market services covers a broad range of industries and occupations, ranging from finance, consulting, logistics, hospitality, media, and trade related services. The non-market sector includes public administration, education and training, and the healthcare and social assistance sectors.

Overview

There are a number of ways to look at the Western Australian economy. One way is to look at how much the economy produces (the ‘production measure’). Another is to look at how much households, businesses, Government, and non-Western Australians spend on goods and services (the ‘expenditure’ measure). A third way is to measure the amount of income earned through wages and profits (the ‘income’ method). There are other ways to look at the economy too. These include how the economy combines labour and capital (and other ‘inputs’ such as land, energy and water), to produce goods and services.

In addition to the measures detailed above, the three key inputs of growth (population, participation and productivity) are examined over the 30-year period. Growth in population and participation increases the quantity of labour available for productive activities, while growth in productivity increases the amount of production given a certain amount of labour input. This is followed by an outline of average earnings and disposable income, which can provide a proxy for the broad changes in standard of living across the State.

The latest data available, 2019-20, has been used in the analysis of GSP. Where more recent data is available, it has been incorporated in the relevant sections of the report.

Data in the most recent periods has been impacted by the COVID-19 pandemic, however, the quick recovery to date suggests that the impacts may not ultimately influence very long-term trends within Western Australia’s economy.

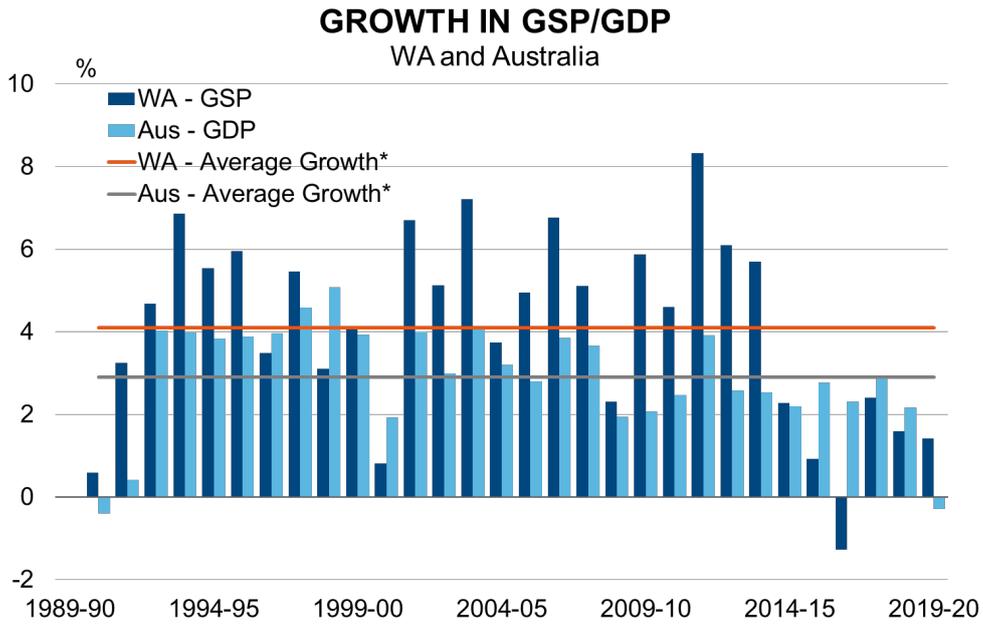
Gross State Product

In 2019-20, Western Australia’s GSP was worth \$292.3 billion, making it the fourth largest State economy in Australia. GSP grew at an average annualised rate of 4.1% in real terms² over the past 30 years. This was well above the national average of 2.9% per annum (Chart 3) and the OECD’s average long-term growth of 2.1% (Chart 4) over the same period. Whilst Western Australia experienced robust growth over the long-term, growth over the past five years has been subdued, moderating to 1% following the end of the latest mining investment boom.

² Figures are presented, where possible, in real (chain volume) terms, with 2018-19 as the standard reference year. Chain volume measures abstract from price movements by measuring values in constant dollar terms (i.e. fixed price). The purpose of this method is to measure the physical volumes of production and consumption removed from variations in unit prices. Certain data is only available in current prices, which represents values derived from the prevailing prices at the time of measurement. This paper will clearly indicate when a series is reported in current prices.

The robust growth in Western Australia over the past three decades has largely been due to a very strong expansion of the mining sector, which accounted for 46% of total growth in industry gross value added (GVA)³ over the period. The boost from mining reflects a number of key developments, most notably an almost eight-fold increase in iron ore production, and the establishment of the world’s second largest liquified natural gas (LNG) production and export industry in 2019-20⁴, accounting for 21.6% of global LNG trade in 2020⁵.

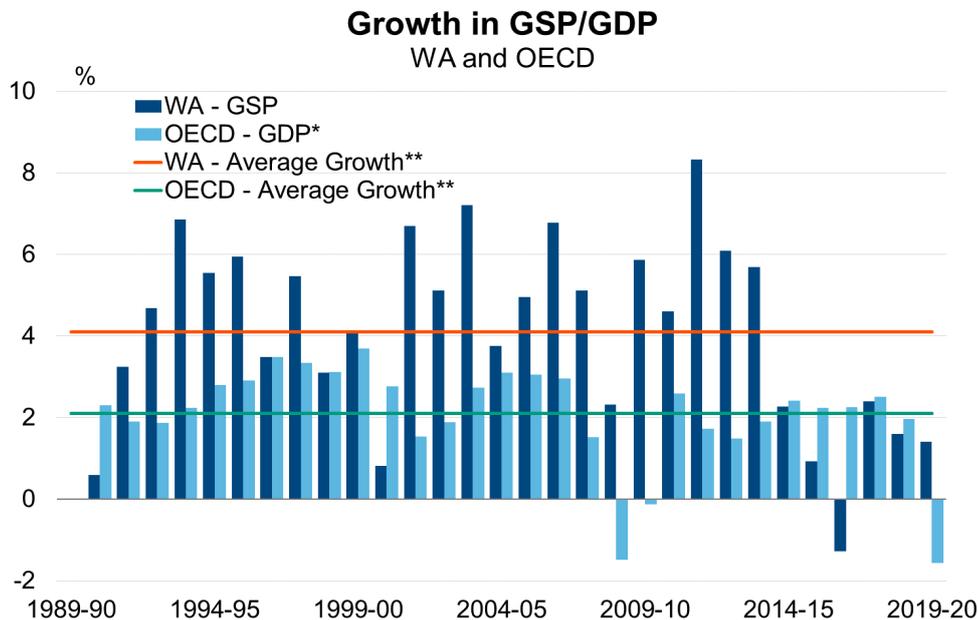
Chart 3



* Average annualised growth rate from 1989-90 to 2019-20.
Source: Australian Bureau of Statistics, cat. No. 5220.0.

³ Industry GVA equals GSP minus taxes less subsidies on products and statistical discrepancies.
⁴ Department of Mines, Industry Regulation and Safety – Western Australia Mineral and Petroleum Statistical Digest 2019-20.
⁵ Department of Mines, Industry Regulation and Safety – Major Commodities Database 2020.

Chart 4



* OECD growth rates are adjusted from calendar years to financial years.

** Average annualised growth rate from 1989-90 to 2019-20.

Source: Australian Bureau of Statistics, cat. No. 5220.0 & OECD.

Strong growth in the economy was supported by large increases in labour and capital over the previous three decades. The value of Western Australia's capital stock⁶ expanded almost four times during this period, with almost 70% of the increase attributed to increases in mining stock. Employment increased on average by 2 % annually, resulting in a more than 85% increase in total employed persons (744,000 persons in 1989-90 to 1,375,000 in 2020-21). However, mining, which is very capital intensive, only contributed 88,400 persons, or 14% of the increase. Notwithstanding this, the income from mining spilled over to other sectors, and was a key driver of employment across a range of sectors in the Western Australian economy.

GSP growth rates have comparatively moderated since 2015-16. This largely reflects the drag from a decline in investment from its peak at the mining investment boom. Over the past five years, employment and GSP grew at a quarter of their long-term average rates, with employment growth averaging 0.6% per annum, compared to 2%, and GSP growth averaging 1%, compared to 4.1% per annum.

The remainder of the paper examines trends in GSP by industry based on production, expenditure, and income measures of GSP. Assessment of GSP by factors of production (capital and labour) and productivity are explored. This is followed by a breakdown of population growth and an analysis of how the standard of living has changed for Western Australia residents over the period, with a focus on gross household disposable income and real per capita consumption.

⁶ Excludes the capital stock in dwellings and ownership transfer costs.

GVA by Industry Based on Production

The State's largest individual sectors⁷, by GVA, are mining, construction, and health care and social assistance, which collectively accounted for 51.7% of total industry production in 2019-20.

The mining sector experienced substantial growth over the past decade, underpinned by strong commodity prices and demand from key trading partners (Chart 5). The sector accounted for 40.2% of total industry GVA in 2019-20, in comparison to 28.4% in 2009-10. The sector was the fastest growing industry over the past 30 years. In particular, business investment in the mining sector over the last 20 years represented a key driver of growth for the State. Nationally, mining accounted for a significantly lower proportion of total industry GVA in 2019-20 (11.1%), as the market services and non-market sectors represented larger shares in comparison to Western Australia.

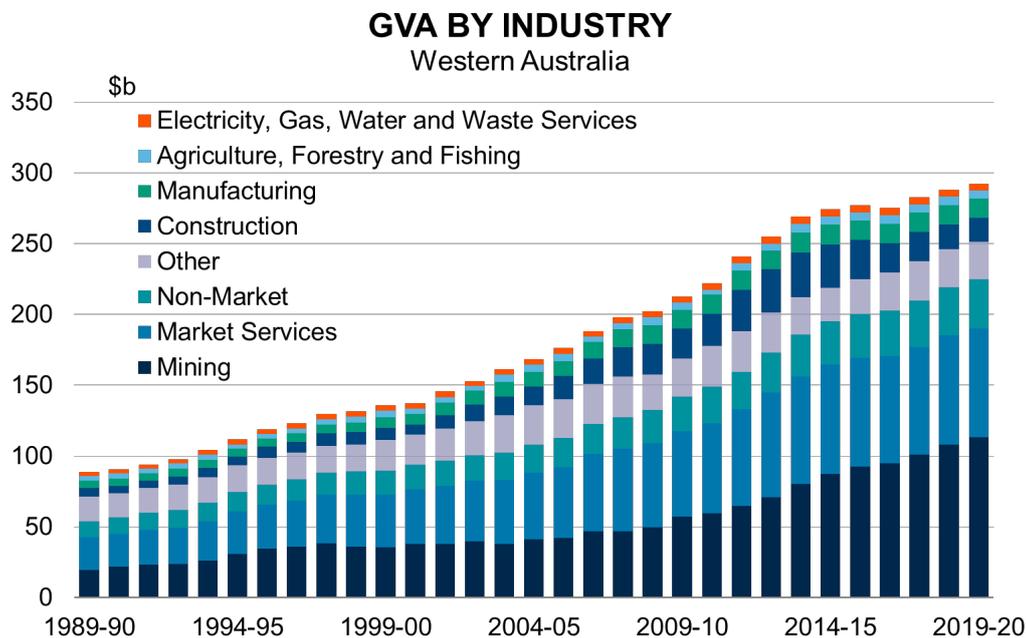
The construction sector grew in line with the mining investment boom, peaking in 2013-14. However, the sector has declined rapidly over the previous six years, with the value of construction activity falling 47.2% in real terms from the peak. The majority of the decline occurred due to sharp falls in engineering construction⁸, however, general building construction also gradually fell over the same period.

Health care and social assistance grew at an average annualised rate of 5.7% over the past 30 years. An ageing population and increased standards of the quality of care, facilitated through policies such as the National Disability Insurance Scheme, were the key drivers promoting growth in the sector. Notably, the sector continued to grow strongly over the last decade in contrast to the majority of industries, which experienced slowing growth rates.

⁷ Excludes ownership of dwellings.

⁸ Defined as any construction that does not have a roof (e.g. roads, bridges, pipelines, etc).

Chart 5



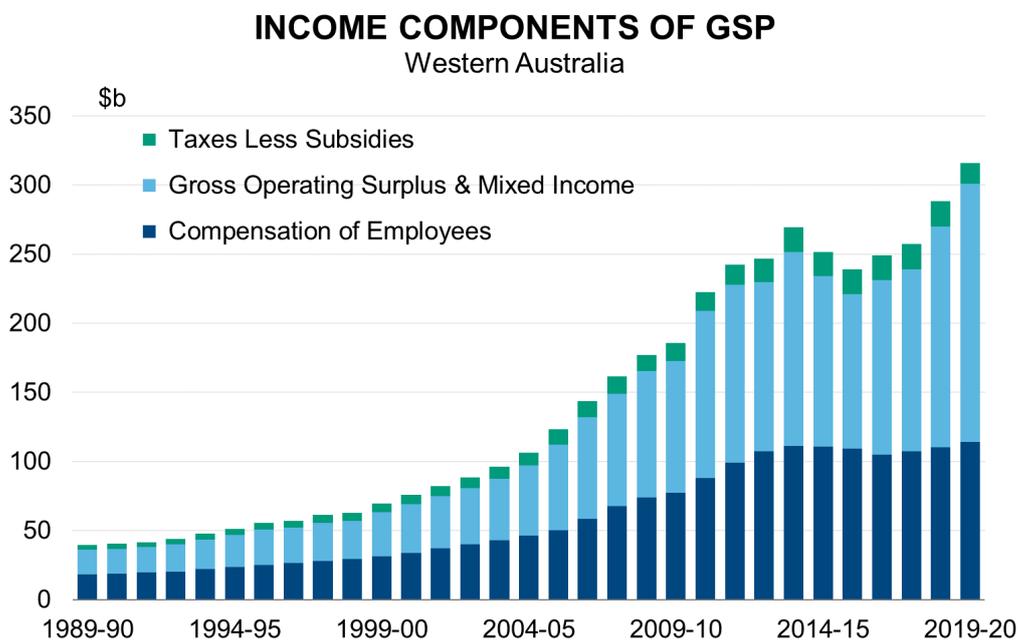
The combined market services industry accounted for over a quarter, 27.3%, of total industry GVA in 2019-20, markedly lower than the national figure of 43%. The sector decreased as a proportion of GVA over the last decade as average annualised growth was eclipsed by growth in other sectors. Within the service sector, the information media and communications sector experienced the strongest growth over the past 30 years, followed by wholesale trade.

GSP based on Income

The income measure of GSP comprises compensation of employees (COE; including wages and salaries, bonuses, and superannuation), gross operating surplus and gross mixed income⁹ (GOS; which is loosely a measure of profit¹⁰), and taxes minus subsidies on production and imports (Chart 6). The income measure is only available in nominal terms and, therefore, reflect changes in both volume and prices between periods.

⁹ Mixed income is relevant to unincorporated enterprises, in which a business is not recognised as a separate entity to the owner or owners (e.g. a sole trader or partnership). The term represents the combination of both compensation of owners through wages and operating surplus.

¹⁰ Specifically, the surplus income derived from production processes before allowing for the consumption of fixed assets.



Note: Current prices
Source: Australian Bureau of Statistics, cat. No. 5220.0.

GOS made the strongest contribution to GSP over the past 30 years. As a result, its share of GSP has grown at the expense of the shares of compensation of employees and ‘taxes less subsidies’. This largely reflects movements in commodity prices flowing through to GOS to a much greater degree than COE.

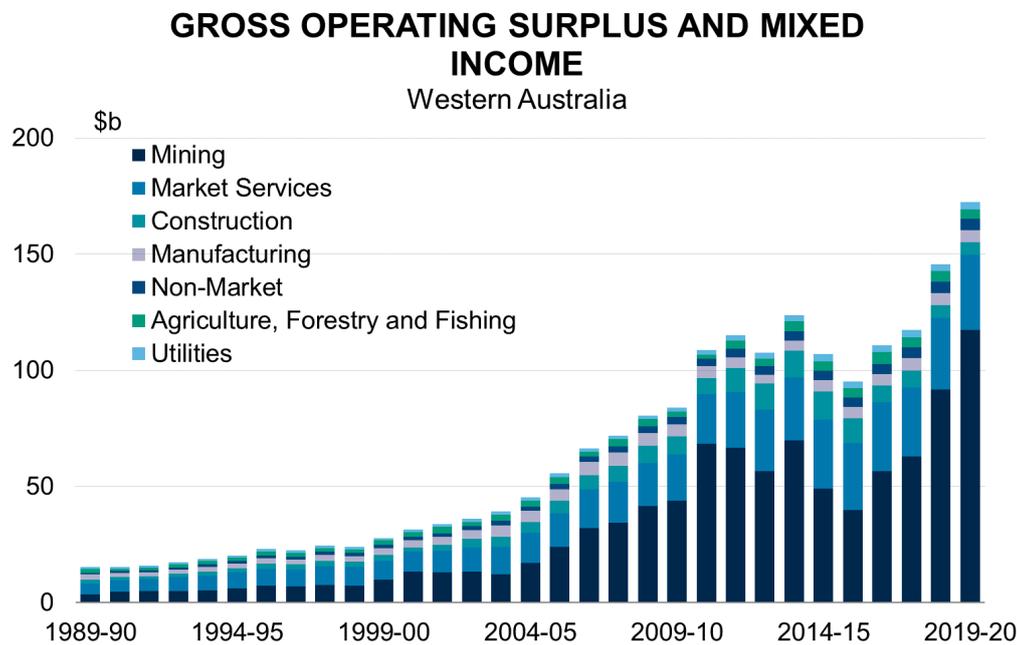
Gross Operating Surplus and Mixed Income

GOS grew at an average rate of 8.2% per annum over the past 30 years (Chart 7). The growth was predominantly driven by the mining sector, followed by the non-market and market services sectors.

At the beginning of the period (1989-90), mining represented around one-fifth of the total GOS in Western Australia. By 2019-20, mining accounted for more than 60% of the State’s GOS. The strong increase in GOS over the long term reflects an increase in the capital stock while short term fluctuations are heavily influenced by changes in commodity prices.

The substantial increase in the mining sector’s share of GOS has resulted in a smaller share across all other sectors. The manufacturing sector experienced the largest decline, from 13.4% of GOS to only 2.8% in 2019-20. The agriculture, forestry and fishing sector declined by a similar degree, from 9.6% in 1989-90 to 2.2% 2019-20.

Chart 7



Note: Current prices, excludes dwelling investment
Source: Australian Bureau of Statistics, cat. No. 5220.0.

Compensation of Employees

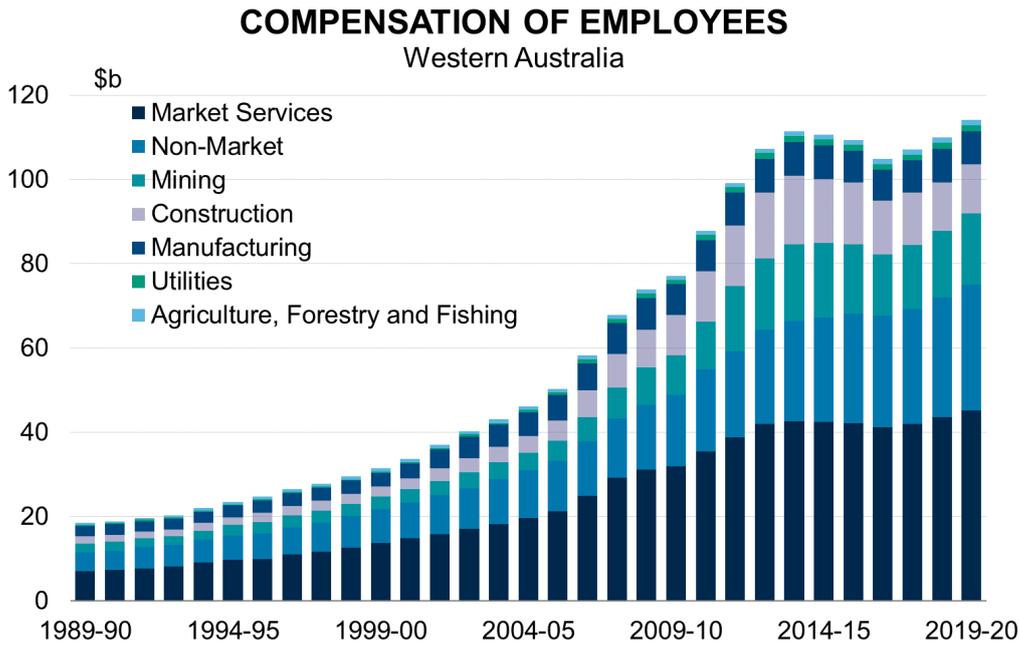
COE rose strongly in Western Australia for much of the past 30 years but levelled off (and in fact fell and recovered) over the past seven years (Chart 8). This reflects that with the end of the investment boom, employment fell over a number of years before recovering more recently, and wages growth has moved from being very strong during the boom to more modest rates of growth recently. With the end of the mining investment boom, the State has transitioned to the less labour-intensive operational phase of resource production, resulting in subdued employment growth, in comparison to periods of high business investment which provide a boost in the labour-intensive construction workforce.

The subdued growth in COE can be partly attributed to weak demand for labour as the mining sector eases from periods of peak investment. Full-time employment, outlined in further detail in the labour section, declined from 2012-13, with a small recovery over the past three years¹¹. Despite a reduction in international migration, in comparison to periods of high investment, and negative interstate migration over the past seven years, the weak demand for full-time employment resulted in an increase in spare capacity in the labour market. This spare capacity, which is evident in high rates of underemployment, has acted to restrain wages growth, and in-turn COE, over recent periods.

¹¹ Full-time employment in 2019-20 experienced a slight decline as the final quarter of the period declined sharply. This coincided with the initial impacts of the COVID-19 pandemic.

COE has accounted for a much smaller share of the Western Australian economy than the national economy over the previous 30 years. This can be attributed to Western Australia having a relatively large mining sector. Mining is typically very capital intensive and therefore a greater share of income is returned to the owners of capital. Despite this, the share of compensation of employees in non-mining industries in Western Australia has been higher than national figures over the last decade.

Chart 8



Note: Current prices
Source: Australian Bureau of Statistics, cat. No. 5220.0.

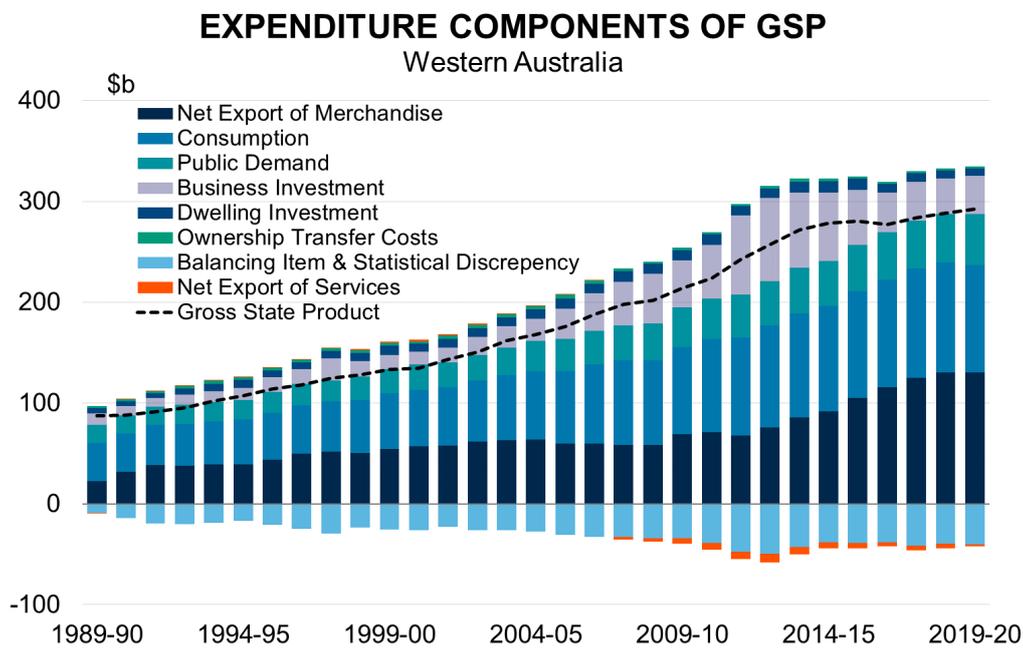
GSP by Expenditure

The expenditure measure of GSP (Chart 9) comprises household spending on goods and services (consumption) and capital (dwelling investment); private capital expenditure (business investment); goods and services spending and capital expenditure of Federal, State, and local Governments (public demand); and the net balance of external trade (net exports).

Net international merchandise exports were the single largest contributor to Western Australia’s long-term growth, accounting for over half (52.6%) of total GSP growth over the past three decades. Business investment has also been a major driver of growth, both directly (with the value of investment briefly accounting for a larger proportion of GSP growth during the mining investment boom) and indirectly (by raising the capacity of the economy to produce goods and services).

Dwelling investment is highly cyclical and tends to be supported by mining activity and strong population growth, specifically international migration. Dwelling investment has grown at a more moderate pace than net exports or business investment over the longer term. This has become more pronounced in recent years following a record four-year contraction in dwelling investment from 2016-17 to 2019-20. This protracted decline reflected a marked easing in the pace of migration, a drop-off in mining activity at the end of the mining boom, and an over-supply of dwellings arising from previous periods of investment. In 2020-21, dwelling investment rose sharply as government stimulus supported activity in the sector.

Chart 9



Source: Australian Bureau of Statistics, cat. No. 5220.0.

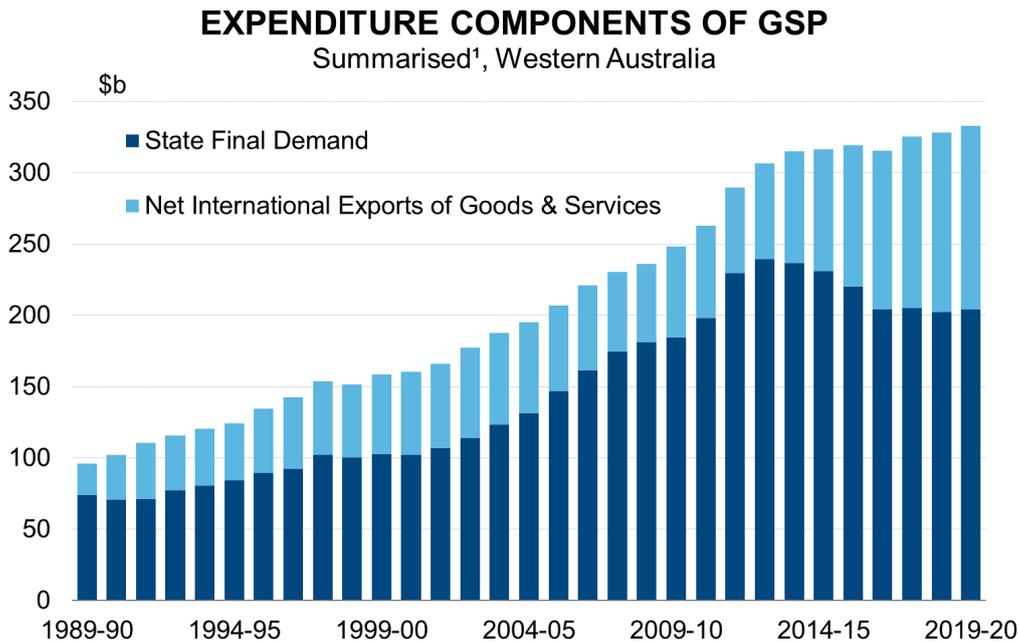
Household consumption grew strongly over the long-term, at an average of 3.5% per annum since 1989-90. Robust population and employment growth, together with periods of strong wage growth supported the long-term trend. However, growth since 2012-13 was almost a third of the long-term average, at 0.7% per annum, likely reflecting a decline in household disposable income and easing population growth, over the same period.

In line with the trend in household consumption, public demand has grown by 3.4% per annum on average over the past 30 years. However, this growth tapered from 2009-10 to 2019-20 to annual average growth of 2.5% due to the dynamic between government consumption and the change in capital formation. Government final consumption continued to grow strongly over the past decade, at an average of 3.1% per annum. Public fixed capital formation, however, remained relatively steady in level terms over this period.

Exports

The mining investment boom expanded the productive capacity of the Western Australian economy. Subsequently, as the investment boom wound down, the State increased its reliance on international trade for economic growth. As a result, net exports became a progressively larger proportion of GDP (Chart 10).

Chart 10

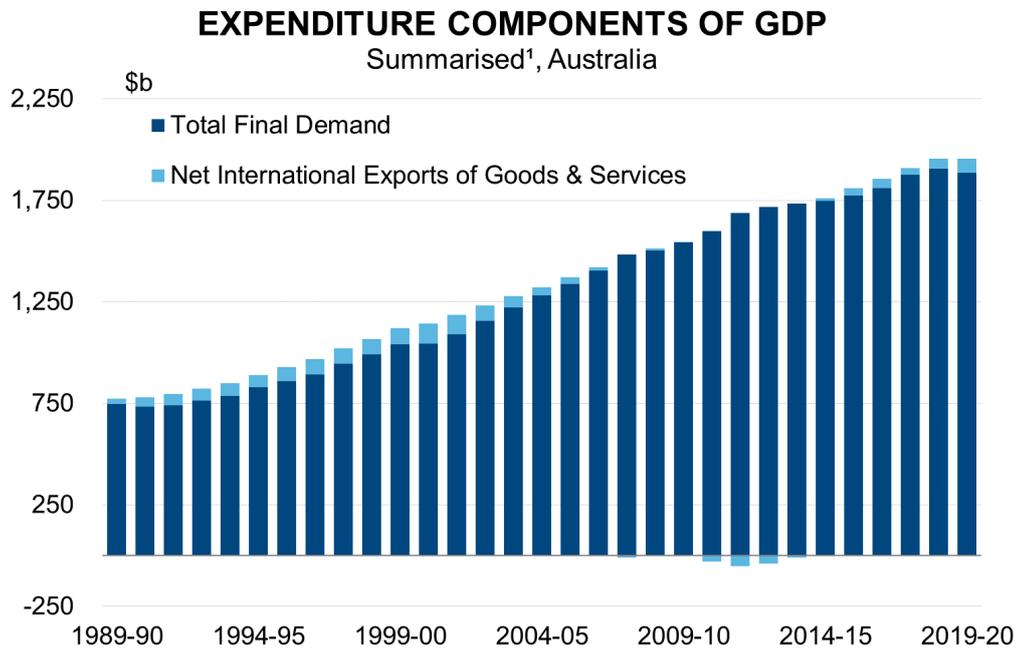


¹ Excludes balancing item, and statistical discrepancy.
Source: Australian Bureau of Statistics, cat. No. 5220.0.

The demand for Western Australian minerals, in particular iron ore, and the strong growth of China as a key trading partner represent the principal drivers of export growth. The strength of Western Australia’s international trade shielded the State from the worst impacts of recent downturns, including both the global financial crisis and more recently the COVID-19 pandemic. This has largely been as a result of economic stimulus in China, the State’s largest trading partner. Exposure to volatile commodity markets supported the economy on these occasions, but leaves the State vulnerable to negative shocks.

The proportion of GDP accounted for by net exports in Western Australia is markedly different to the national breakdown (Chart 11) as the State accounts for a disproportionately large share of national merchandise exports (56.2% in 2020-21).

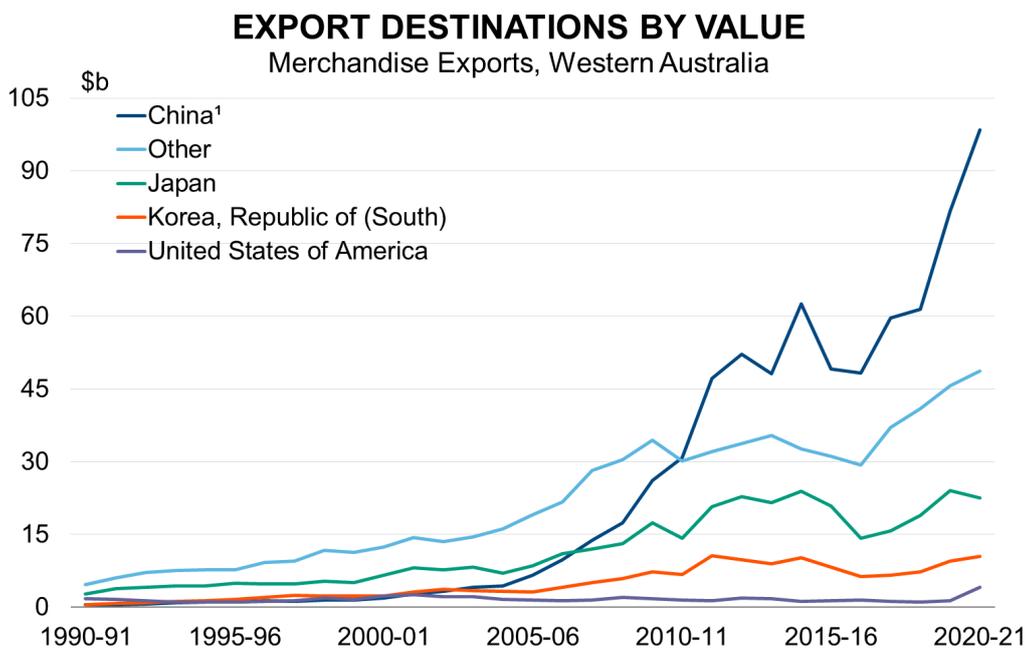
Chart 11



¹ Excludes balancing item, and statistical discrepancy.
Source: Australian Bureau of Statistics, cat. No. 5220.0.

The long-term growth in exports is closely tied to the rapid expansion of China (Chart 12), which has resulted in strong demand for Western Australia’s commodities – notably, iron ore, which accounted for 67.6% of the State’s merchandise exports by value in 2020-21 (up from 14.9% of exports in 1999-2000).

Chart 12



¹ Excludes Special Administration Regions (SARs).
Note: Values are in current prices and Free On Board (FOB).
Source: Australian Bureau of Statistics, cat. No. 5368.0.

In 1989-90, Japan represented Western Australia’s largest export destination, accounting for 25% of all merchandise exports. However, exports to China began to grow rapidly in the early 2000’s as the country’s development fuelled demand for raw resources. The rising demand in the Asian market signalled upward pressure on commodity prices, which subsequently stimulated large-scale investments in Western Australia’s extensive mineral deposits. The expansion of China and related demand has resulted in a large shift in key trading partners for the State as the country’s proportion of Western Australia’s exports grew rapidly over the past 20 years. As a result, China accounted for 60.3% of the total value of merchandise exports in 2020-21, 52% higher than Western Australia’s second export destination, Japan.

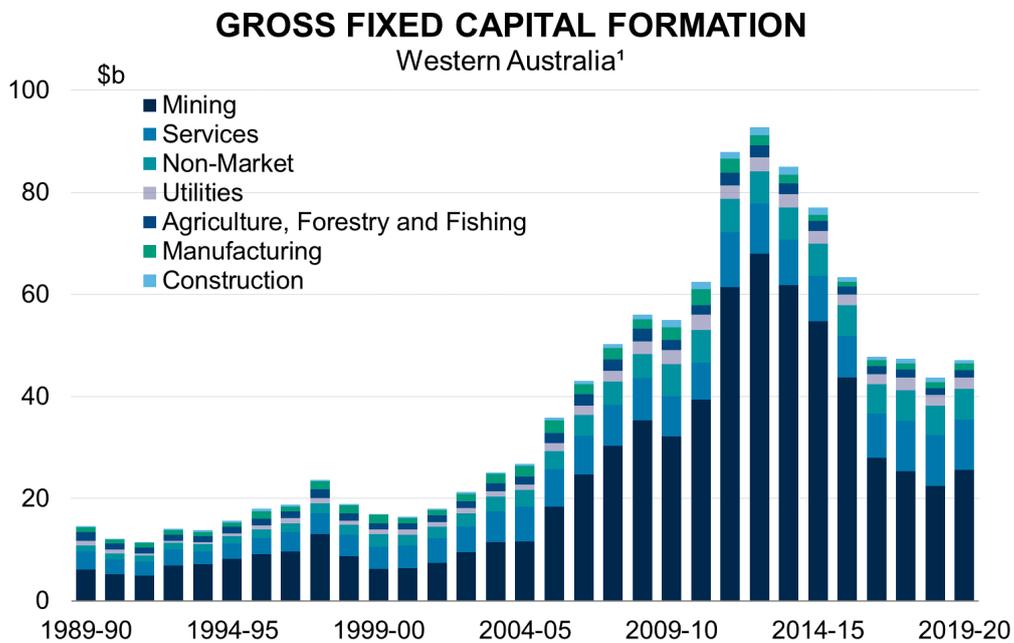
GSP by Factors of Production

Growth in GSP reflects a combination of growth in inputs to production (e.g. capital and labour) and how well these inputs are combined to produce goods and services (e.g. productivity; outlined in the subsequent section).

Capital Stock

Over the past 30 years, the total value of Western Australia’s net capital stock, in real terms, has more than tripled. The strong contribution from growth in the capital stock reflects a large increase in the capital stock of the mining sector (Chart 13).

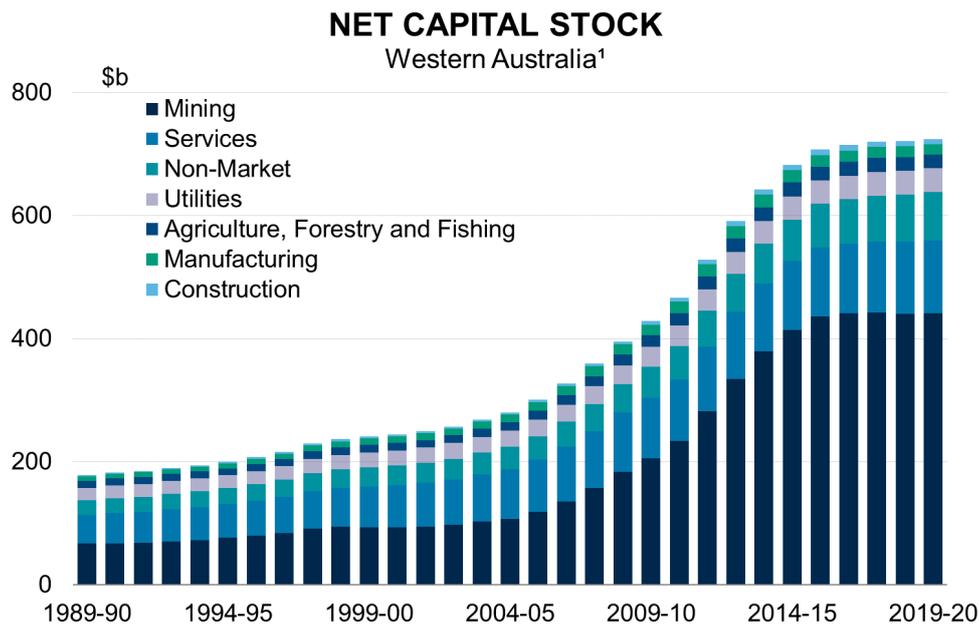
Chart 13



¹ Excludes dwellings and ownership transfer costs.
Source: Australian Bureau of Statistics, cat. No. 5220.0.

Between 2004-05 and 2015-16 alone, the value of the sector’s capital stock quadrupled. However, the value of stock plateaued as major mining expansion projects were completed, and investments became more focussed on sustaining production. Investment in mining peaked in 2012-13 and declined sharply over subsequent years. Previous levels of investment in mining may not be replicated over the coming decade (in real terms). However, maintaining the large net capital stock (Chart 14) established during the mining investment boom will require substantial ongoing investment.

Chart 14



¹ Excludes dwellings and ownership transfer costs.
Source: Australian Bureau of Statistics, cat. No. 5220.0.

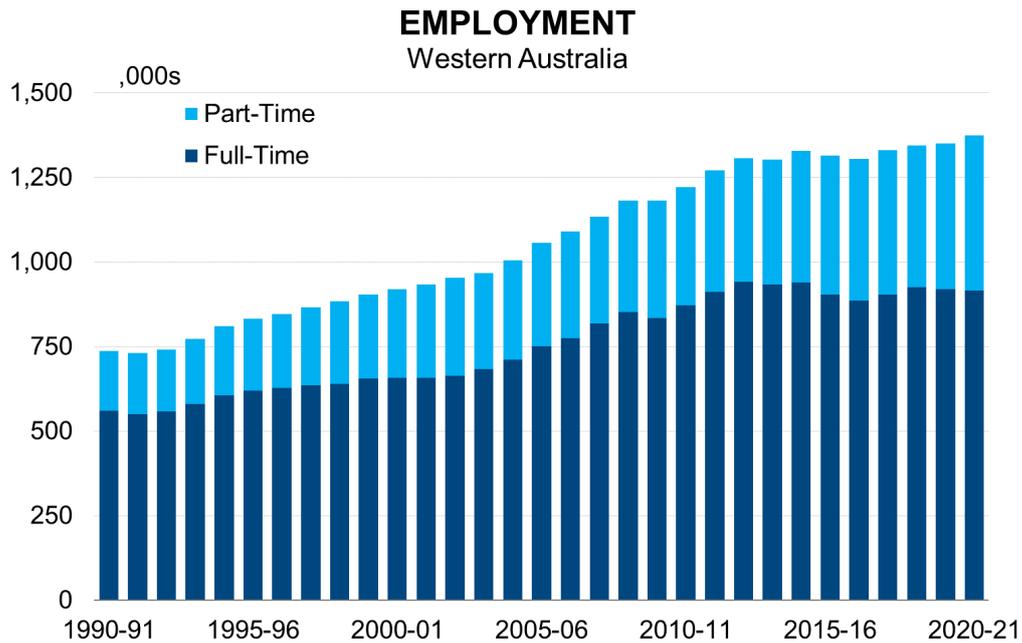
The non-market sector experienced strong growth over the 30-year period with healthcare and education sectors representing the primary drivers. Over the past decade, annual investment remained relatively flat in the sector. This can be attributed, in part, to a large rise in investment in 2009-10, increasing by 34.3% from 2008-09.

Labour

Between 1989-90 and 2020-21, labour, as measured by employment, increased at an average rate of 2% per annum (Chart 15). This is well above the equivalent national figure of 1.6%. However, the average annualised growth over the past decade moderated to 1.2%, which is below the national figure of 1.6%. This pattern of growth in employment was associated with similar movements in population, as strong long-term growth slowed over the past decade to levels consistent with the national average.

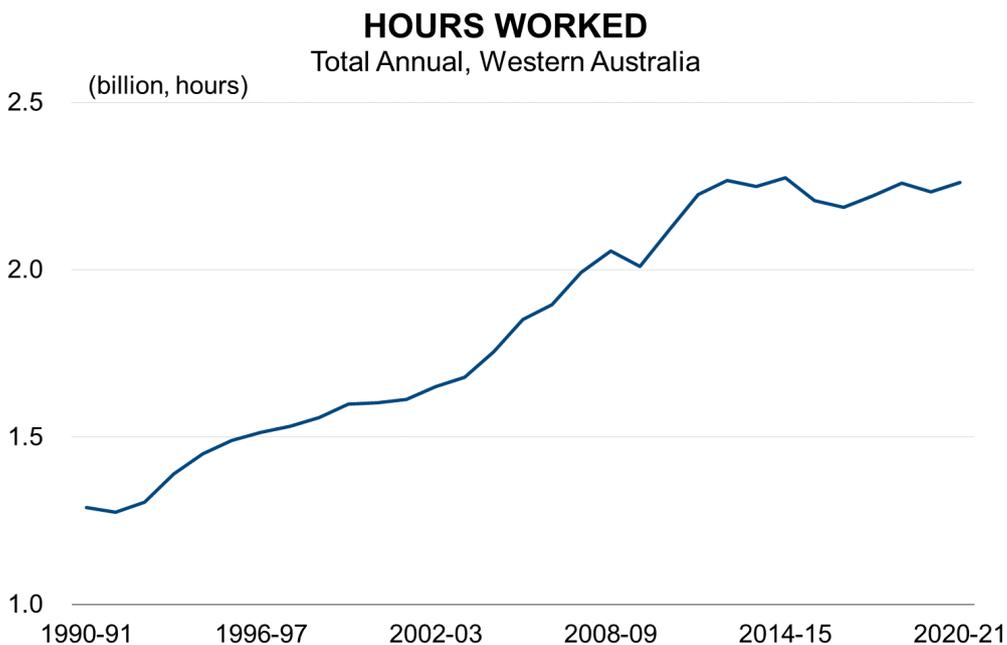
Full-time employment has remained below 2012-13 levels, as the growth in total employment since this period was accounted for by increases in part-time employment. This coincides with the total hours worked remaining relatively flat since 2011-12 (Chart 16). Part-time employment represented almost a third of total employment in 2020-21, compared to less than a quarter in 1989-90. This long-term trend experienced a temporary pause during the periods of high business investment associated with the mining boom, remaining relatively stable from 2003-04 to 2013-14.

Chart 15



Source: Australian Bureau of Statistics, cat. No. 6291.0.

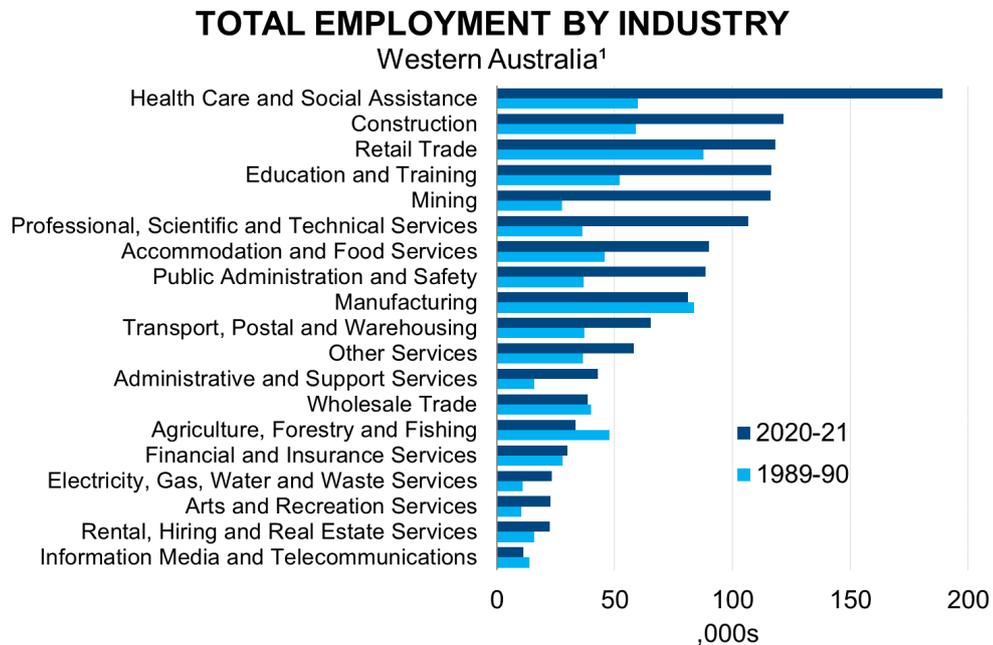
Chart 16



Source: Australian Bureau of Statistics, cat. No. 6291.0.

The largest contributors to employment growth since 1989-90 were health care and social assistance; mining; and professional, scientific, and technical services (Chart 17).

Chart 17



¹ Annual average employment
 Source: Australian Bureau of Statistics, cat. No. 6291.0.

The healthcare sector accounted for the largest share of total employment growth, at 20.5%, since 1989-90, shifting from Western Australia’s third largest employer to the largest in 2020-21. The sector served as an important driver of growth in the labour market over the past decade, accounting for just under half of total employment growth, at 45%. Part-time employment grew extensively in the sector over the past three decades, accounting for a larger proportion of the sector’s workforce, rising from 34.9% in 1989-90 to 46.7% in 2020-21.

Mining accounted for the second largest share of total employment growth since 1989-90. Mining is less labour-intensive, in proportion to its capital requirements, than other industries. Accordingly, mining represents a much lower proportion of the employment market in comparison to its contribution to GSP. Despite this, mining had the highest share of full-time employment of any industry in Western Australia in 2020-21.

The professional, scientific, and technical services sector accounted for the third largest share of total employment growth since 1989-90. The sector grew at an average rate of 3.6% per annum between 1989-90 and 2020-21, increasing its share of the State’s total employment despite the robust growth in the healthcare and mining sectors.

Retail trade is the third largest employer in the State, despite relatively modest growth since 1989-90, at an average 1.2% per annum. However, the prevalence of part-time work has increased over the 30-year period from 37.5% in 1989-90 to 55.1% in 2020-21. Total employment in the sector has slowed over the past decade. The sector has experienced a restructure as technological advancements have progressively reduced the labour-intensity of the industry. These trends accelerated during the COVID-19 pandemic as health response measures (e.g. lockdowns and restrictions) encouraged alternative consumer behaviour.

The importance of the manufacturing sector as a key employer changed since 1989-90, from being the second largest employer, accounting for 11.2% of total employment, to being a relatively small employer, accounting for 5.9% in 2019-20. Similarly, employment in the agriculture sector has gradually declined, representing less than half its share of the State's employment in 1989-90, as the industry has become less labour intensive. The declining labour intensity of both industries reflects a global trend in which productivity gains, arising from factors such as technological advancements, reduce the effort required to produce goods in these sectors.

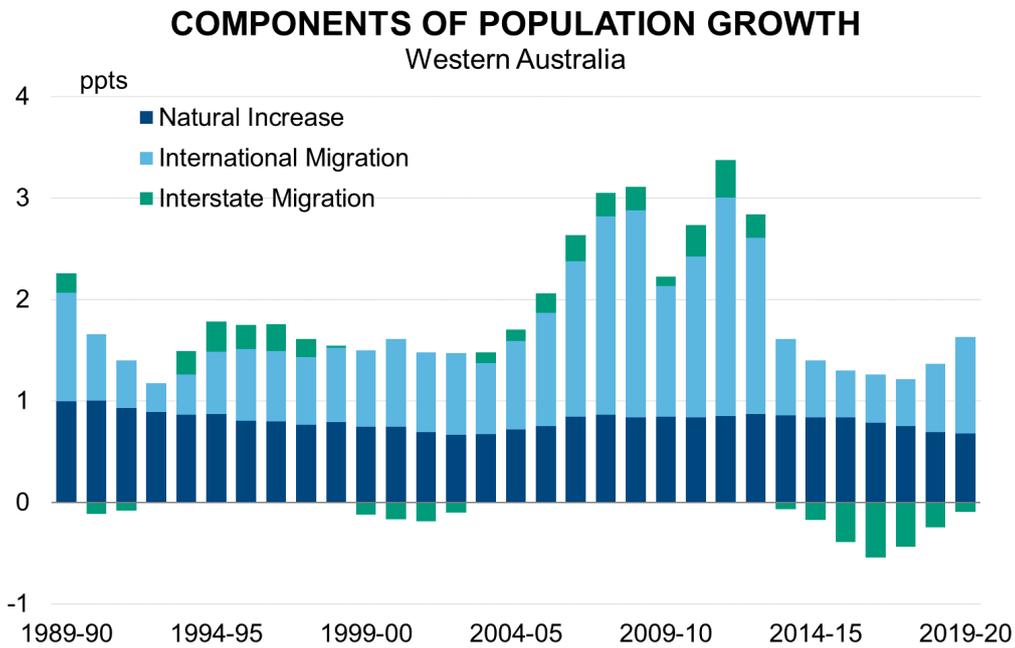
Population, Participation and Productivity

The “3-P” (population, participation and productivity) framework is one approach that has been used to look at long term drivers of economic growth (most notably in the Commonwealth Government's five-yearly Intergenerational Reports). This section briefly looks at Western Australia's economic growth over the past three decades using this framework.

Population

Western Australia's population has grown at an annualised average of 1.7% over the past 30 years to 2019-20. International migration has accounted for the majority (53.7%) of Western Australia's population growth over this period (Chart 18).

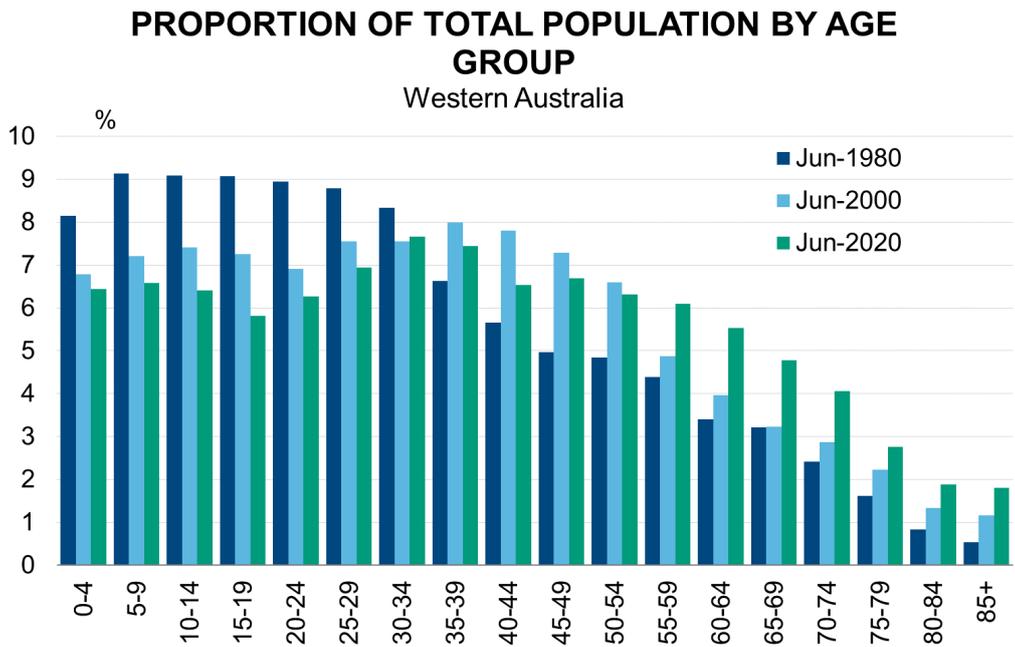
Chart 18



Source: Australian Bureau of Statistics, cat. No. 3101.0.

Growth from international migration has varied considerably across the period, with sizable peaks during periods of high business investment favouring the migration of skilled labour to the State. The fall in international migration following the mining investment “boom” has coincided with an outflow of migrants interstate, resulting in lower population growth, compared to previous periods, over the last few years.

Chart 19



Source: Australian Bureau of Statistics, cat. No. 3101.0.

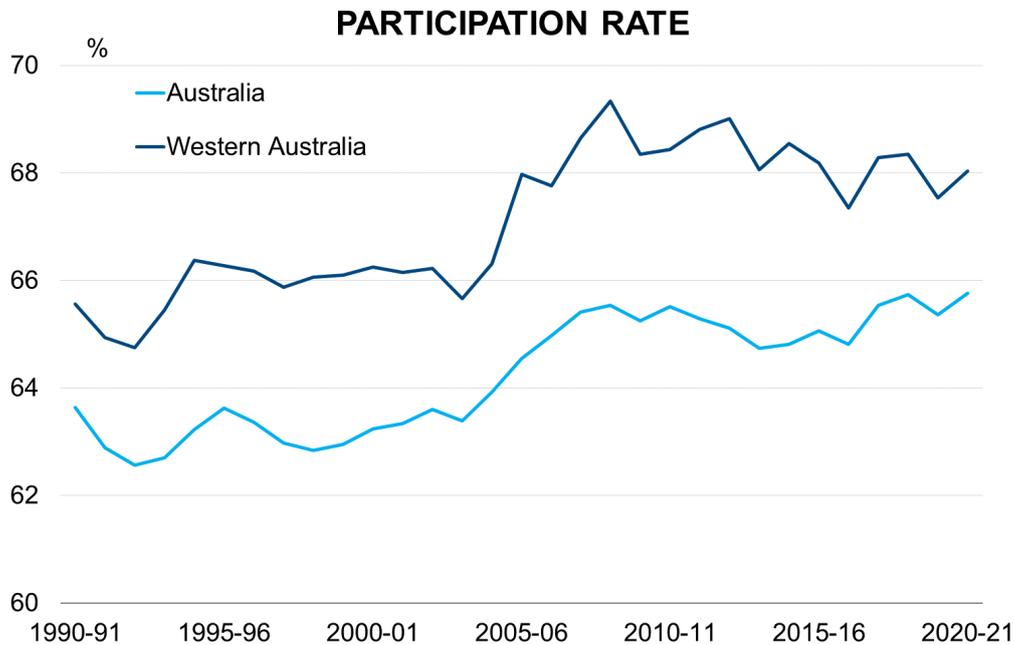
The demographics of the population have also changed over time (Chart 19). This has occurred due to gradual falls in the reproductive rate and increases in life expectancy, resulting in older age groups representing a larger proportion of Western Australia's population. This trend has contributed to the growth of the health care and social assistance sector, as demand for these services increase to support a larger and older consumer base.

Participation

While population levels represent a source of labour, the rate at which working-age people participate in the workforce also determines overall labour input to production. The average annual participation rate in Western Australia has historically been higher than national figures (Chart 20). There was a rise in the State's participation rate in 2005-06 as rising mining investment created strong demand for labour. This increased the incentives for people to participate in the labour market, in part due to the high wages offered by the sector. It also encouraged the migration of skilled labour, which attracted people of working age who would naturally increase the participation rate (in line with the high international and interstate migration).

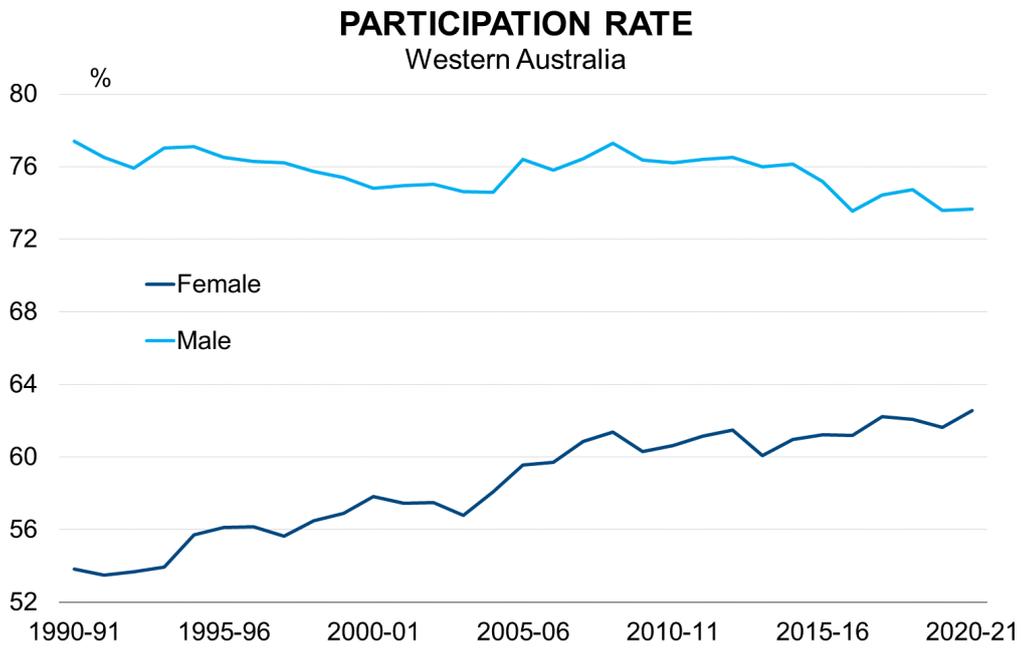
The growth in part-time work, outlined in the labour section, is considered a key contributor to participation rates remaining at elevated levels when compared to earlier periods. The rise in part-time employment coincided with strong growth in female participation rates (Chart 21), which have grown steadily over the past three decades. Male participation rates have slightly declined over the same period.

Chart 20



Source: Australian Bureau of Statistics, cat. No. 6202.0.

Chart 21

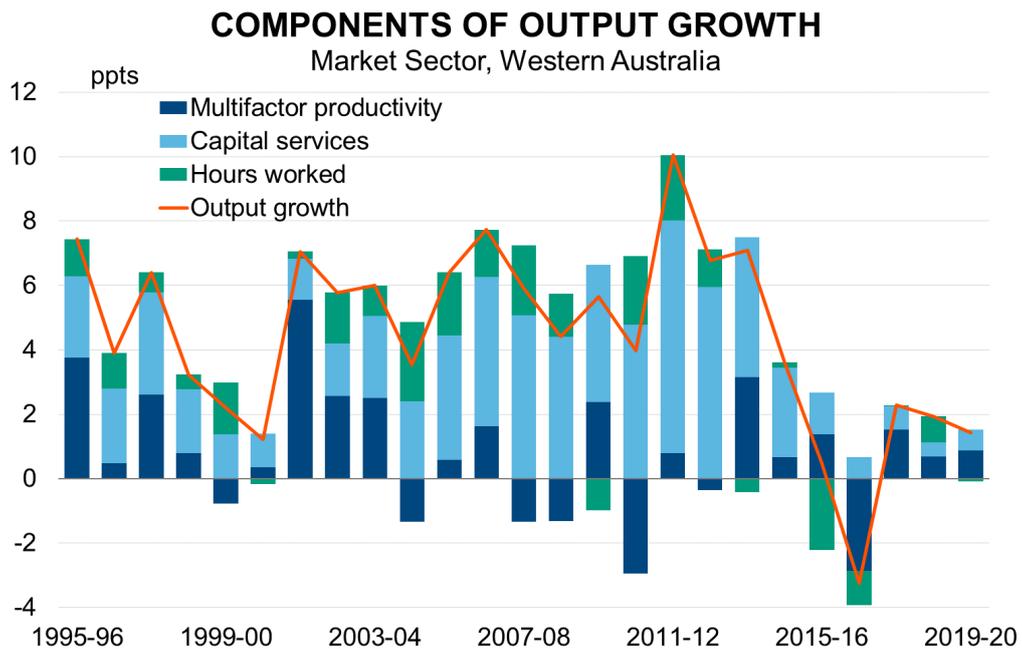


Source: Australian Bureau of Statistics, cat. No. 6202.0.

Productivity

Labour productivity is a key long-term driver of growth, in addition to increases in capital and labour. Over the 30 years to 2019-20, labour productivity growth (averaging 2.3% per annum) has been a significant driver of growth in the Western Australian economy, and has outpaced labour productivity growth at the national level (averaging 1.6% per annum).

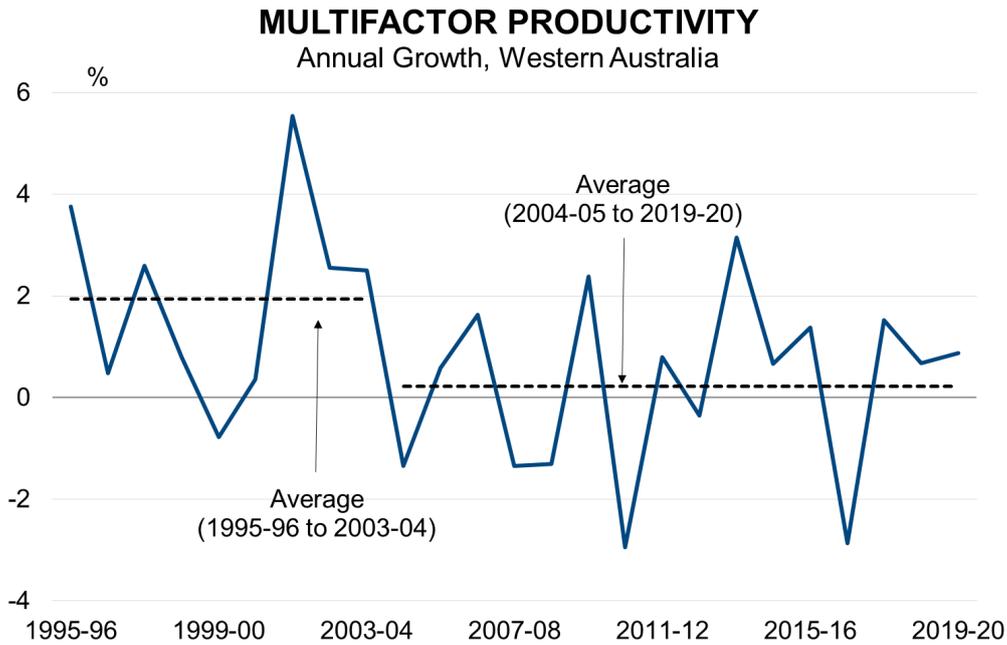
Chart 22



Source: Australian Bureau of Statistics, cat. No. 5260.0.

Labour productivity can be broken down into multifactor productivity and capital deepening (Chart 22). Multifactor productivity represents the efficiency with which labour and capital are combined in the production process, while capital deepening refers to increases in the capital to labour ratio (i.e. increased capital deepening reflects an increase in capital per unit of labour).

Chart 23



Source: Australian Bureau of Statistics, cat. No. 5260.0.

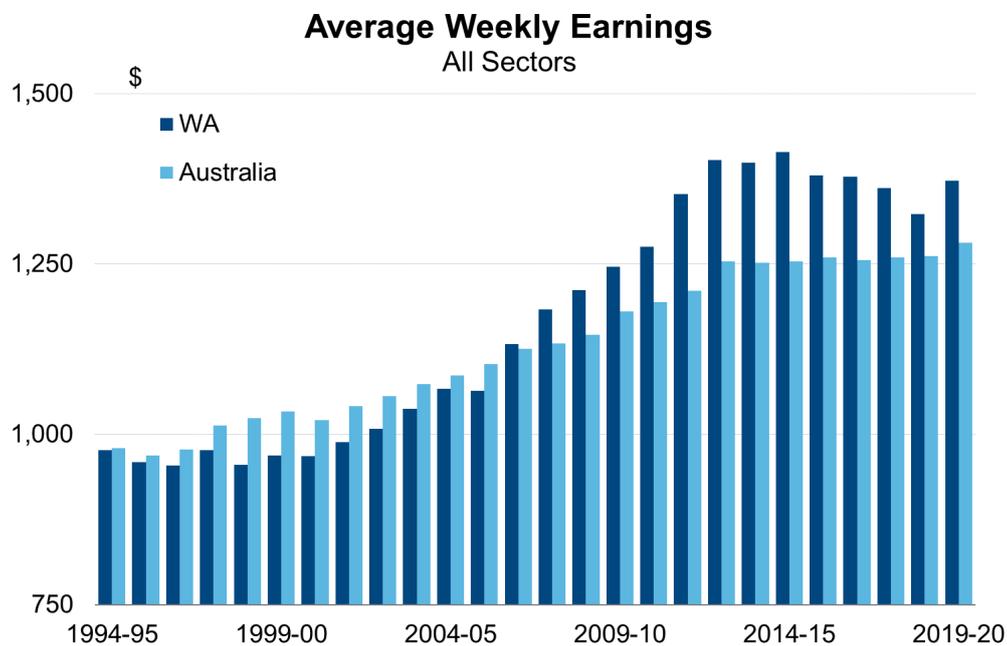
Multifactor productivity represented a key driver of output growth preceding 2004-05 as technological developments supported increased efficiencies across the workforce (Chart 23). Directly following this period, capital services (the contribution of capital to output growth) and hours worked accounted for the majority of growth. This occurred as capital investment increased rapidly in response to mining investment booms, leading to capital deepening and supporting increases in hours worked. This trend slowed around 2015-16 as investment tapered off.

Standard of Living

Real Household Disposable Income

Real household disposable income, and average weekly earnings (AWE)¹², experienced rapid growth during the periods of high capital investment within the mining sector from 2000 onwards (Chart 24). However, since its peak during the investment boom, household income has trended down. This occurred as the labour-intensive investment phase of the mining boom transitioned to the less labour-intensive production phase and a decline in commodity prices over 2014 to 2016 caused a more general economic downturn.

Chart 24



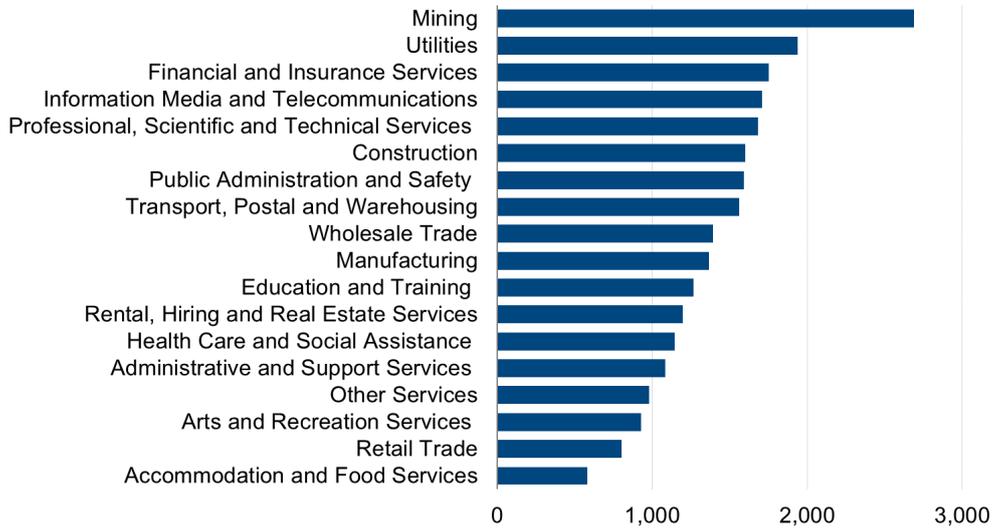
Note: Chain volumes (reference year = 2019-20)
Source: Australian Bureau of Statistics, cat. No. 6302.0.

Western Australia has markedly higher AWE compared to other States, which can be predominantly attributed to its large proportion of mining and mining related positions as the sector represented the highest paying industry based on AWE in 2019-20 (Chart 25). Notably, the impacts of COVID-19 facilitated an increased in AWE over the second half of the 2019-20 financial year as lower paid jobs were disproportionately impacted by the initial economic shock of the pandemic.

¹² Which is the largest contributor to household income.

Chart 25

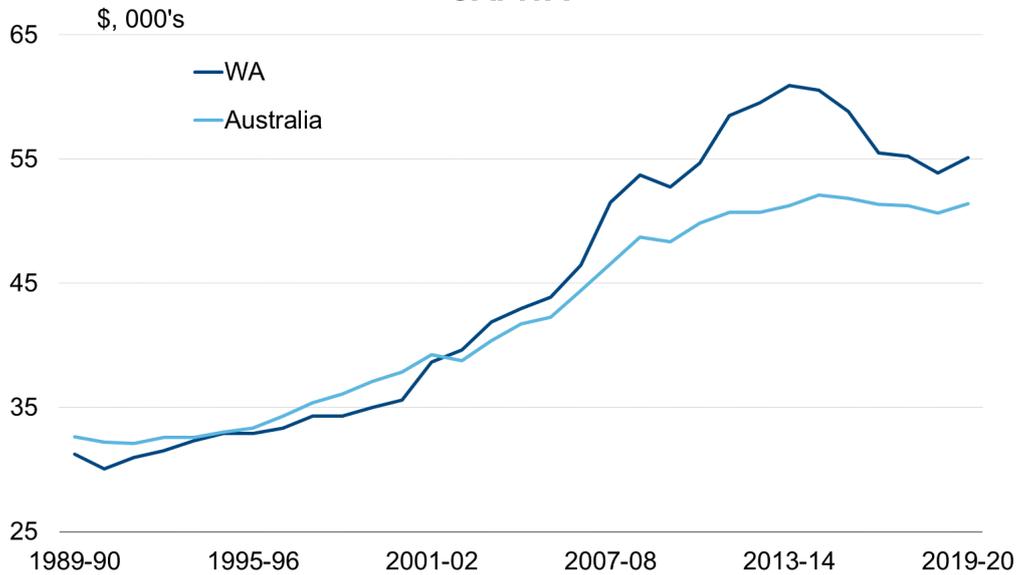
AVERAGE WEEKLY EARNINGS BY INDUSTRY
2019-20, Australia



Note: Chain volumes (reference year = 2019-20)
Source: Australian Bureau of Statistics, cat. No. 6302.0.

Chart 26

GROSS HOUSEHOLD DISPOSABLE INCOME PER CAPITA¹



¹ Adjusted by CPI, 2019-20 dollars
Source: Australian Bureau of Statistics, cat. No. 5220.0.

Summary

Over the past three decades, the Western Australian economy has grown at a faster pace than the Australian economy and other similarly developed economies.

Western Australia's strong growth performance was underpinned by the emergence of China as a global economic power, as it needed commodities with which Western Australia is naturally endowed, to build its infrastructure, manufacturing and housing base.

The resulting mining investment boom in the State supported a tripling in the size of Western Australia's economy over the past 30 years and boosted average weekly earnings and gross disposable income well above national averages.

However, the strong economic performance has come at the cost of a less diversified economy. The mining sector alone now accounts for more than 40% of the State's gross value add, with iron ore accounting for 60% of goods exports, and China accounting for 60% of exports by destination.

These recent trends, together with global steel demand expected to be close to peak levels, and a move to a net zero emissions world over coming years, means that diversifying the economy is both an imperative and a challenge.