

FACTBase Fremantle

Bulletin 2, May 2015

The Changing Characteristics of Fremantle's Working Population

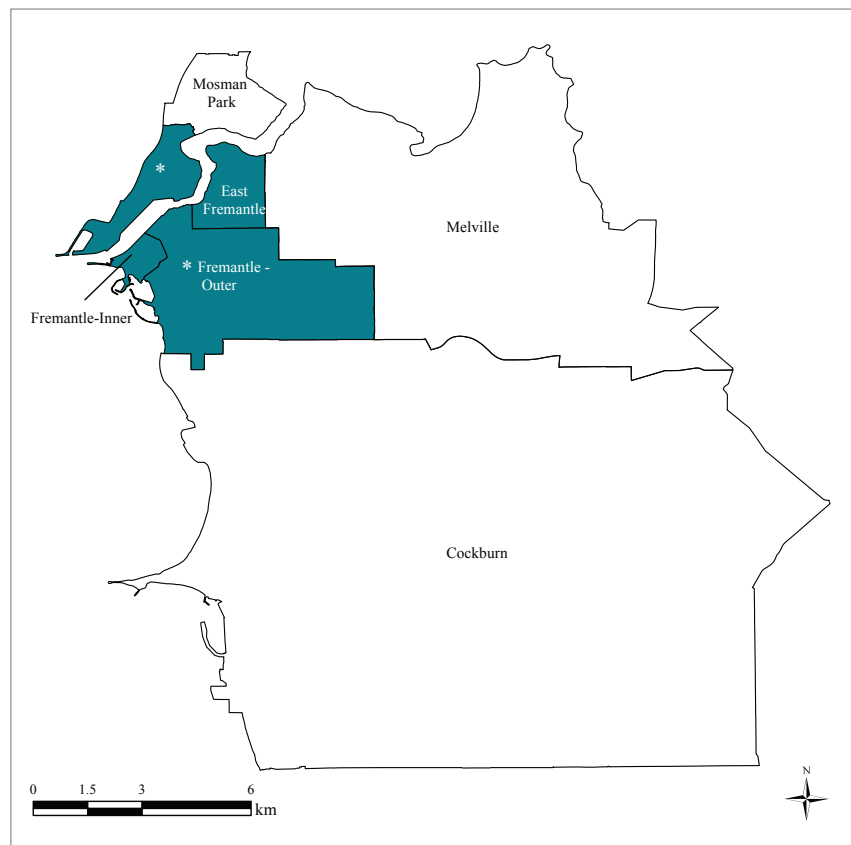
Kirsten Martinus and Matthew Tonts

Over the past century, Greater Fremantle (see Figure 1) has been transformed from a place where people both lived and worked, to a more complex set of employment-residential arrangements. Indeed, people no longer necessarily live close to their work, with residential location becoming dependent on a range of lifestyle, demographic and economic choices and constraints. In this Bulletin, we focus on the employment characteristics of people living in Fremantle including job growth, unemployment, employment sector and income dynamics. We aim to provide a more detailed understanding of exactly who lives in Fremantle, as well as their relative exposure to economic risk and vulnerability in the face of Western Australia's changing economy.

The Residential Labour Force

Over the past decade or so, the number of people living in Greater Fremantle and engaged in its labour force has increased steadily. Between January 2011 and December 2013, Fremantle residents participating in the labour force (aged 15 to 65 years) increased from 17,901 to 22,202; a rise of 24 per cent. In contrast, the labour force across

Figure 1: Map of Greater Fremantle, by Statistical Local Areas (SLAs)



the Perth and Peel Metropolitan Region rose from 707,575 to 1,106,129, or 56.3 per cent. At a finer scale, more diverse growth patterns were recorded. The strongest growth occurred in Fremantle Outer rising from 13,601 to 16,905 persons (24.3%), followed by East Fremantle, which increased from 3,892 to 4,800 (23.3%) and Fremantle Inner from 417 to 497 (19.2%).

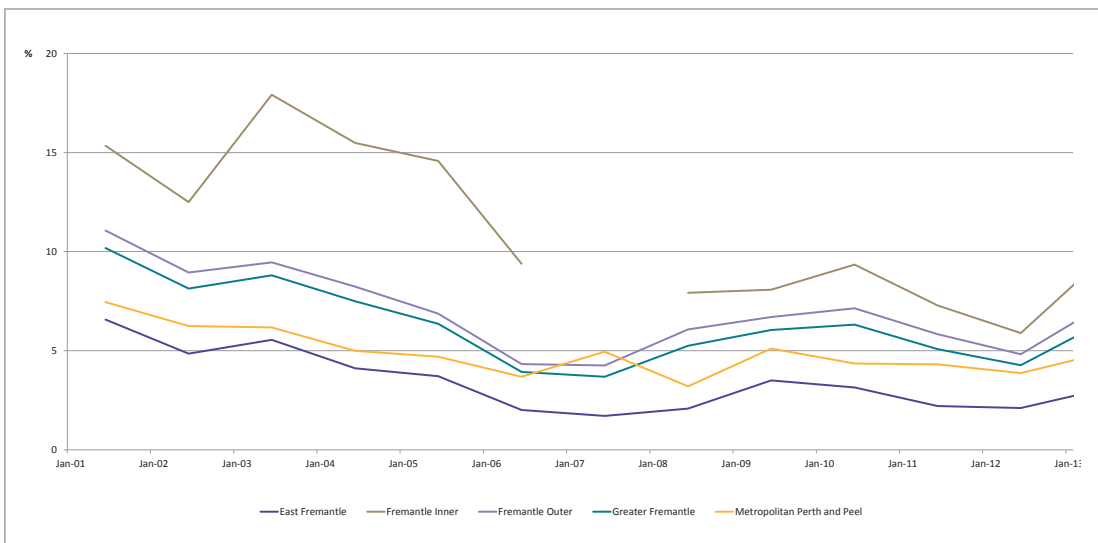
This overall trend mirrors the population findings of FACTBase Fremantle 1, in which the growth during the recent resources boom in the Fremantle region was found to be decidedly less than Perth's extraordinary population increases.

Figure 2: Labour force by region, annual percentage change 2001-2013



Source: Department of Employment (2014) Small Area Labour Market data. June 2006-2008 data not available for Fremantle Inner.

Figure 3: Unemployment rates by region, 2001-2013



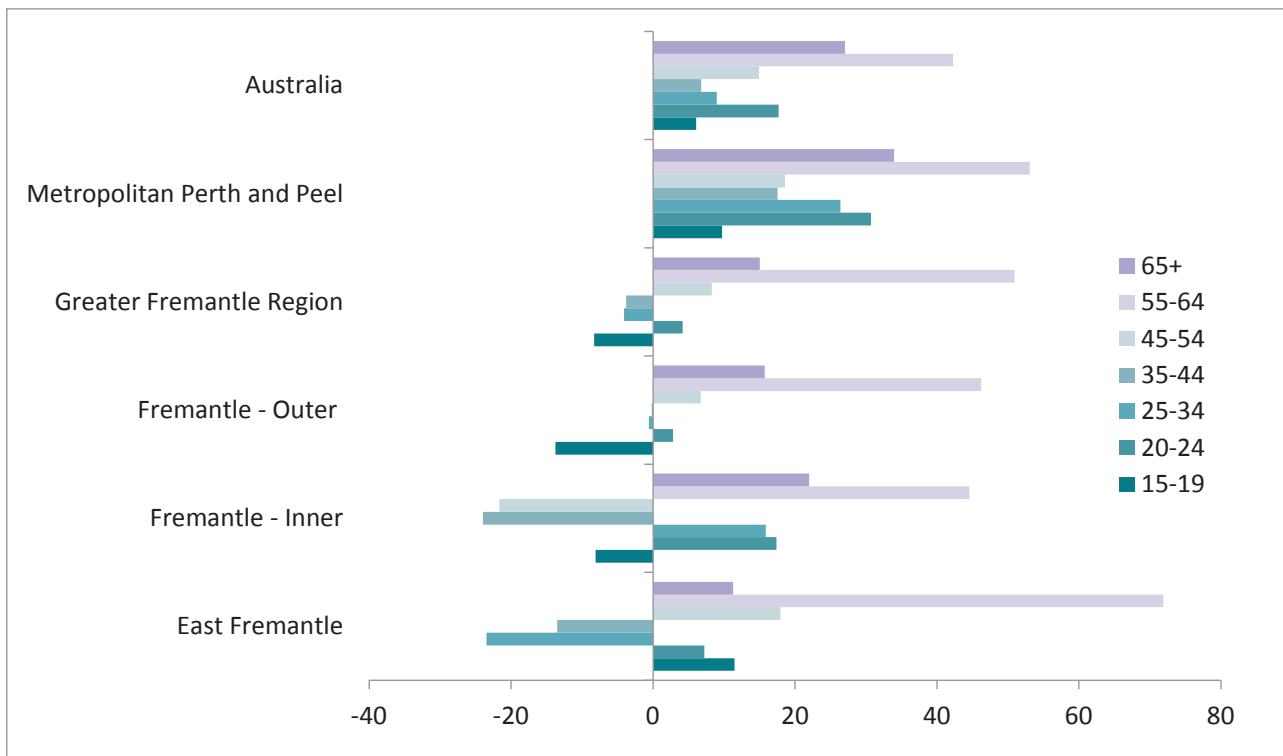
Source: Department of Employment (2014) Small Area Labour Market data. June 2006-2008 data not available for Fremantle Inner.

Figure 2 examines the annual percentage change in the labour force across Greater Fremantle, each of its SLAs and Metropolitan Perth and Peel. Over this period, the Perth and Peel region experienced consistent growth, ranging between -0.08 and 9.5 per cent per annum. Across Fremantle

SLAs, growth rates were low or negative in 2002 before rising to match Perth rates in 2008. Whereas the 2007-08 Global Financial Crisis (Martinus, 2014a, 2014b) had very little impact on annual growth rates in the Perth and Peel metropolitan region, Fremantle experienced its largest loses of the entire 13-year period.

The 2013 cooling off of the mining boom was also accompanied by a sharp drop in jobs growth not mirrored in Perth and Peel. This suggests there may be a degree of employment vulnerability within the region, particularly in the face of large economic shocks or change.

Figure 4: Labour force percentage change 2001-2011, by age group



Examining unemployment rates for the period 2001-2013, Figure 3 demonstrates that this vulnerability may have increased somewhat over the past decade. While the overall trend was downward until the onset of the Global Financial Crisis (GFC), unemployment rose in its wake before falling again in the 2010-2011 period. From 2012, unemployment began to rise sharply at a generally much faster rate than for Perth and Peel Metropolitan. In general, unemployment rates have tended to be comparatively higher across Fremantle SLAs; the exception being East Fremantle, which has remained relatively low.

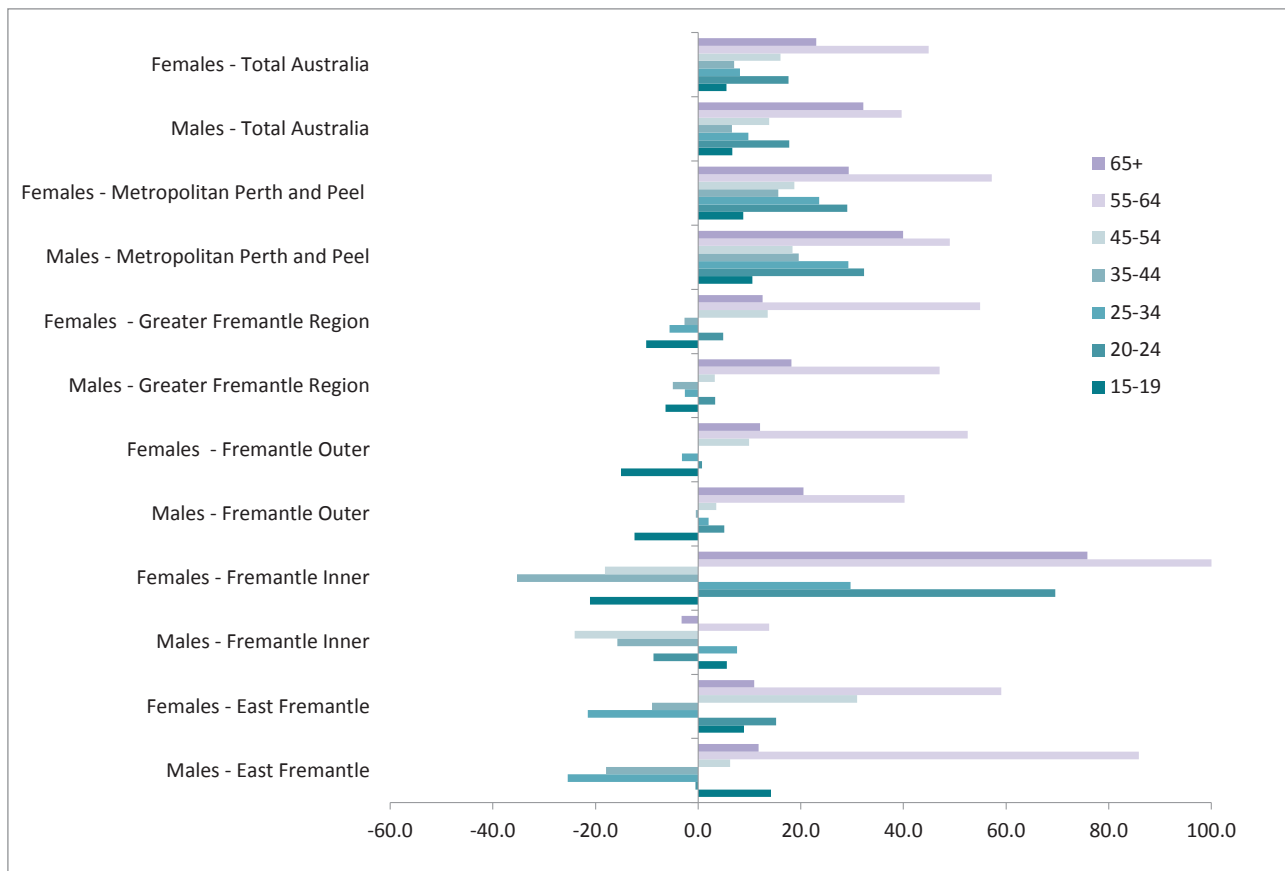
Drawing from ABS Community Profile Census data, Figure 4 shows the percentage change in labour force between 2001 and 2011 for different age groups at various spatial scales. For all age groups, the labour force of Metropolitan Perth and Peel

grew above national rates. In general, the Greater Fremantle workforce rose slightly less than Perth and Peel, experiencing declines in the 15 to 19 and 25 to 44 age brackets. By SLA, East Fremantle experienced exceptional growth in the 55 to 64 cohort, but declines in the 25 to 44 age group. The fall in 35 to 54 cohort numbers in Fremantle Inner is most likely connected to the decrease in the 15 to 19 youth cohort, as live-at-home young adults with parents move elsewhere in Perth and Peel. Fremantle Outer exhibited the most stable workforce across all age cohorts, with the only decline being in the 15-19 group.

Figure 5 disaggregates these labour force changes by sex. The general distribution of workers in the Australian workforce differs only marginally, with a slightly greater change in females in the 55 to 64 cohort and males in the 65+ cohort. While Perth and Peel follow national patterns,

the percentage change across all age groups for both sexes is higher. The Greater Fremantle Region and individual Fremantle SLAs exhibit a decidedly different structure of positive and negative growth. Overall, Greater and Outer Fremantle demonstrate an ageing population with growth in older age groups occurring with declines in working youth. Fremantle Inner exhibits a gender bias with female older population rises far outstripping males, as well as a loss of families with older working children (concomitant declines in 35 to 54 and 15 to 19 age groups). East Fremantle experienced more complex workforce changes with large rises in 55 to 64 males and 45 to 54 female cohorts accompanied by large percentage changes in the 20 to 34 cohort.

Figure 5: ABS labour force percentage change 2001-2011, by sex



Workforce Specialisation and Diversity

This section examines and compares workforce specialisation and diversity across Fremantle SLAs and the Metropolitan Perth and Peel region using ABS TimeSeries data to identify the sectors of greatest employment. Whilst an increase in the absolute numbers of workers raises economic production in an economy, workforce specialisation is an indication of the level of concentrated activity. Indeed, the latter is a

key measure of the productive capacity within certain industry sectors or ability for labour to perform specific work functions. At the same time, unfavourable market conditions may leave a highly skilled and specialised workforce vulnerable to high unemployment if labour skills are not transferable to other sectors. The social and economic impacts of this are likely to reverberate through a local economy, making workforce diversity and adaptability an important source of economic and social resilience.

Table 1: Total employment by industry sector, top 10 sectors of Metropolitan Perth and Peel 2011

	East Fremantle		Fremantle Inner		Fremantle Outer		Metropolitan Perth and Peel ¹	
	Total	% of total Perth and Peel	Total	% of total Perth and Peel	Total	% of total Perth and Peel	Total	% of total Perth and Peel
Health care and social assistance	462	0.05	65	0.01	1,789	0.21	93,346	11.06
Retail trade	290	0.03	36	0.00	1,071	0.13	88,527	10.49
Construction	237	0.03	54	0.01	979	0.12	82,050	9.72
Manufacturing	181	0.02	66	0.01	928	0.11	72,361	8.57
Professional, scientific and technical services	450	0.05	78	0.01	1,302	0.15	70,370	8.34
Education and training	498	0.06	45	0.01	1,534	0.18	69,531	8.24
Public administration and safety	234	0.03	48	0.01	791	0.09	54,550	6.46
Accommodation and food services	201	0.02	55	0.01	825	0.10	49,161	5.82
Transport, postal and warehousing	106	0.01	21	0.00	508	0.06	37,614	4.46
Mining	153	0.02	39	0.00	473	0.06	35,306	4.18
Other industries	677	0.08	125	0.01	2,477	0.29	190,264	22.54
Total	3,489	0.41	632	0.08	12,677	1.50	844,034	100.00

¹ Excluding area of Dwellingup.

Table 1 extracts the top ten industry sectors of employment of the Metropolitan Perth and Peel region, comparing them to Fremantle SLAs. Metropolitan Perth and Peel residents are primarily employed in health care and social assistance, retail trade and construction. Of the workforce residing in Fremantle, the majority is found in Fremantle Outer and employed in health care and social assistance, education and training as well as professional, scientific and

technical services. Despite having a lower proportion of the total Perth and Peel workforce, East Fremantle also specialises in these industries. The almost insignificant proportion of the total workforce residing in Fremantle Inner does not reflect the economic contribution of this SLA, given the high numbers of commuters attracted to its agglomerated core of businesses – a theme that will be taken up later in this publication series.

Table 2: Annual rate of change in employment by sector 2001-2011, top 10 sectors of Metropolitan Perth and Peel 2011

	East Fremantle	Fremantle Inner	Fremantle Outer	Greater Fremantle Region	Metropolitan Perth and Peel ²
Health care and social assistance	1.63	7.01	2.97	4.63	3.91
Retail trade	-0.79	-0.80	0.08	4.15	1.82
Construction	4.54	18.37	4.91	4.93	6.15
Manufacturing	-2.62	2.82	-1.00	3.96	0.88
Professional, scientific and technical services	3.40	6.14	4.08	4.80	4.53
Education and training	0.80	1.44	2.13	4.50	3.55
Public administration and safety	1.04	2.10	3.40	4.70	4.24
Accommodation and food services	-0.58	2.26	0.82	4.28	2.14
Transport, postal and warehousing	1.43	4.14	3.16	4.66	3.33
Mining	8.77	15.79	11.59	5.75	12.04
Other services	0.01	2.67	-0.09	5.75	1.23
Total	1.08	4.27	1.90	4.84	3.03

² Excluding area of Dwellingup.

Table 2 highlights the annual rate of change during the ten year 2001-2011 census period. For Metropolitan Perth and Peel as well as the Greater Fremantle Region, mining was a key sector of workforce employment. Perth and Peel demonstrated increasing specialisation, rising by 12.04 per cent per annum. In contrast, Greater Fremantle's workforce grew more evenly across all major industry sectors. Disaggregated by SLA, mining was a significant area of labour force growth, with Fremantle Inner also exhibiting specialisation in construction.

Regional Income Dynamics

An additional measure of local economic health and understanding of residential employment patterns is derived from an analysis of regional income dynamic. This includes the regional comparative assessment of median incomes and changes in spread of wealth across different income levels. This information is critical in understanding geographic disparities in socioeconomic well-being and opportunities. Using ABS Community Profiles, this section conducts this analysis for Fremantle in the context of broader Metropolitan Perth and Peel patterns.

Table 3 outlines the median weekly income earned by individuals at the various spatial levels. As a whole, Fremantle's workforce earns substantially more than the average Perth and Peel worker (\$216 more per week). The highest median incomes, and therefore the wealthiest residents, are found in East (\$857) and Inner (\$855) Fremantle.

Table 3: Median weekly personal income by region, 2011

Metropolitan Perth and Peel	\$579
Fremantle Outer	\$674
Fremantle Inner	\$855
East Fremantle	\$857
Greater Fremantle	\$795

Figures 6 and 7 present the distribution of weekly personal income by region across each income level for the years 2001 and 2011 respectively. The most obvious difference between the two periods is the large rise in percentage of high income earners (over \$1000 per week) and decline in low income earners (between \$1 and \$399). Much of the increase in the highest income (\$1500 and above) is found across Fremantle SLAs, indicating the relative wealth of its residents compared to the rest of Perth and Peel. Fremantle Outer demonstrated the highest increase in low income earners in the \$200-\$399 income bracket. The substantial decline across the entire region at all spatial scales of those earning \$1-\$199 per week signifies the increased level of employment and increase in wages, a reflection of broader economic pressures on labour to work given Western Australia's sustained mining boom.

Figure 6: Distribution of weekly personal income by region, 2001

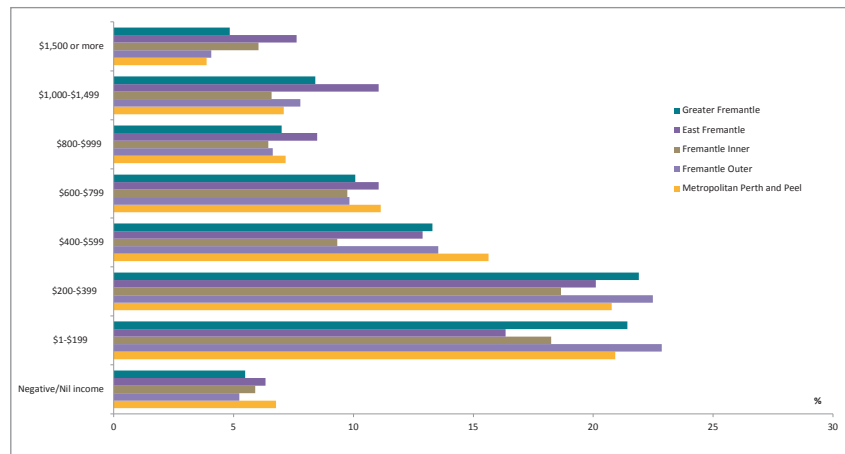


Figure 7: Distribution of weekly personal income by region, 2011

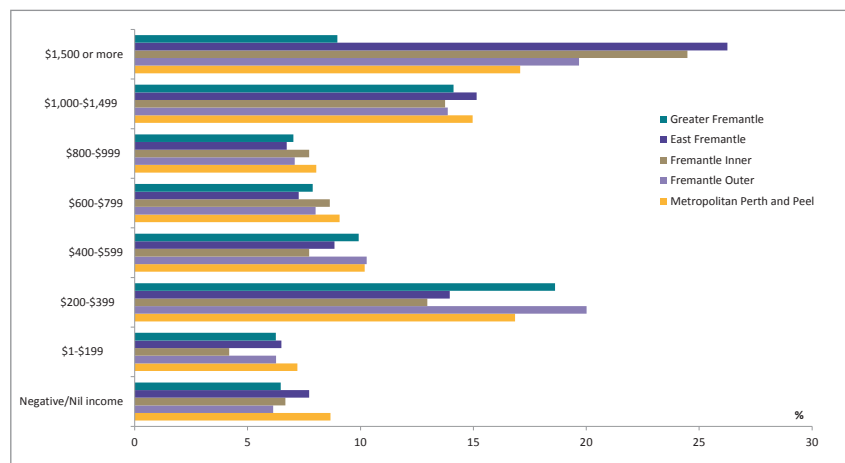


Table 4: income inequality across regions (Gini Coefficient), 2011 and 2001

	2011	2001
Metropolitan Perth and Peel	0.424	0.464
Fremantle Outer	0.412	0.471
Fremantle Inner	0.375	0.486
East Fremantle	0.393	0.456

Table 4 provides a relative index measure of how uniform incomes earners are spread across each of the income brackets in each respective spatial area. A value of 1 indicates perfect inequality in the distribution of income. In essence, these Gini coefficients measure how much of an area's income is concentrated amongst a small number of people (a coefficient of 1), or conversely the extent to which it is spread amongst residents (a coefficient of 0). Overall, income inequality

appeared to be decreasing with the index coefficient declining at each spatial level between the two periods. Of the areas under study, Perth and Peel retained the highest level of inequality (moved from 0.464 to 0.424), compared to the growing equality found in East Fremantle (moved from 0.456 to 0.393). Thus, the gap between lower income earners and higher income earners within each local area narrowed over time.

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Figures 8 and 9 present income inequality data, graphing the percentage of income earners at each percentile of cumulative income in 2001 and 2011. The 45 degree line represents perfect equality in income distribution amongst all earners. Between

the two periods, there is a slight increase in income inequality at all spatial levels, with the top 10 percent of income earners holding less of the cumulative income (the approximately 25 percent of 2001 declining to 14 percent in 2011). Whilst this

is particularly true in East and Inner Fremantle, these areas also became the most evenly distributed with 80 percent of the workforce holding 52 percent of the cumulative earnings in 2001 shifting to 77 percent by 2011.

Figure 8: income inequality across regions (Lorenz Curve), 2001

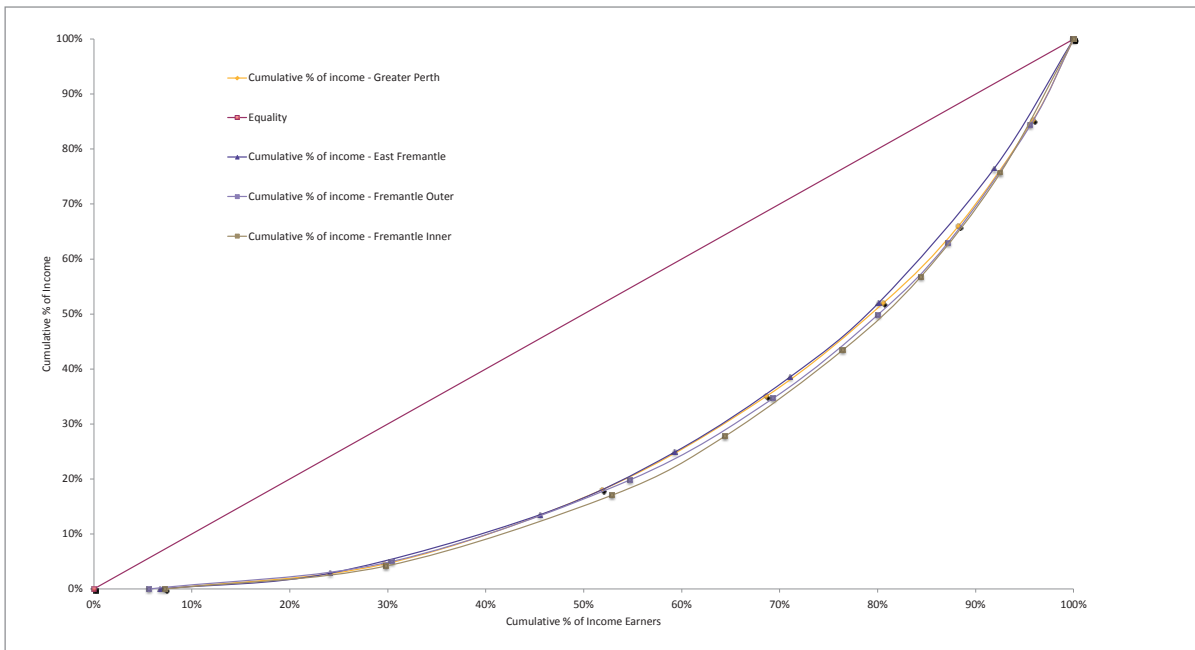
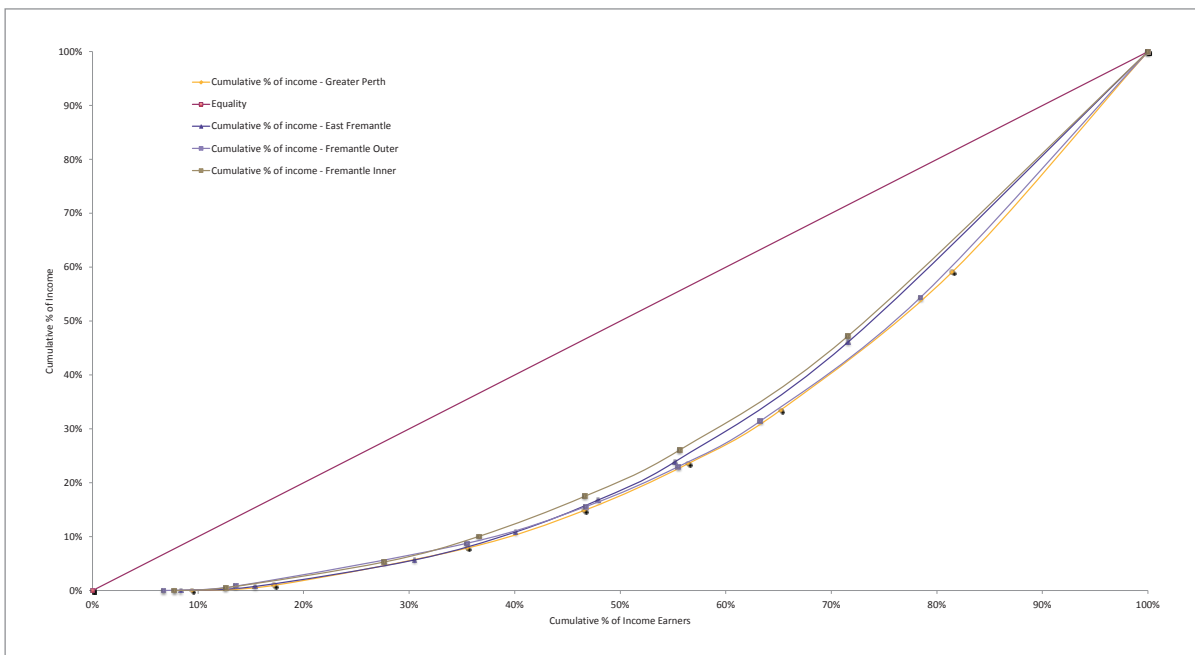


Figure 9: income inequality across regions (Lorenz Curve), 2011



Future Employment Growth and Implications

The recent economic downturn in the aftermath of Western Australia's dramatic decrease in mining related activities is a long coming reminder of the socioeconomic risk and vulnerability of community well-being and opportunity associated with a booming economy. For Fremantle, this is may be an area of vulnerability, given that this analysis found it to be historically more susceptible to unemployment and labour force fluctuations than the broader Perth and Peel economy. Whilst the high skill level of its comparatively ageing resident workforce may provide some resilience, there are nevertheless major shifts likely over the next ten years with the possible retirement of workers currently aged over 55. Given concomitant declines in young workers, the residential labour force structure requires particular policy and strategic attention to ensure long-term balanced community growth.

Despite being home to a low proportion of Perth and Peel's workforce, there is relative diversity with labour being employed more evenly across all industry sectors than is found in Perth and Peel. Whilst this signifies its overall long-run adaptability to economic shocks, as with the rest of Perth and Peel, mining and energy were sectors of significant expansion over the last decade. This suggests that the recent downturn will have some important short-term impacts. Nonetheless, it is interesting to note that the significantly higher earnings of Fremantle and its SLAs have become increasing more evenly distributed compared to the rest of Perth and Peel. This creates a certain local resilience in the face of a depressed wider labour market as global economic conditions make energy and mineral exports less profitable. Fremantle is also in a better position than many places in terms of capturing alternative employment opportunities, linked to sectors as diverse as education, tourism, leisure and other services. Stimulating economic development and diversity within the Fremantle region therefore needs to remain an important policy and planning objective.

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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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