

PART II. THE STORY IN THE DATA

This section describes the insights about urban makers that we can glean from analysis of available secondary datasets – as well as from quantitative data collected as part of the project. We estimate a potential loss of thousands of firms and making jobs if firms choose to move over redevelopment and space pressures.

4. EXISTING DATA SOURCES

4.1 INADEQUACY OF EXISTING DATA

In the Phase 1 Report, we identified several data sources that are available for research use. We conclude that none of these datasets is adequate – by itself or in combination with other datasets – to understand the economic contributions, spatial arrangement, quantum and other relevant features of the Urban Manufacturing sectors. The datasets we review are:

- Australia Bureau of Statistics Census (2001, 2006, 2011), including the Journey to Work (JTW) data
- City of Melbourne Census of Land Use and Employment (CLUE) survey
- Australian Business Register (ABR) data.

Australia Bureau of Statistics Census (2001, 2006, 2011)

The Census of Population and Housing “Census” from the Australian Bureau of Statistics (ABS) provides information on population and is a geographically-comprehensive source of population and employment profile data. The data is undertaken at a person and household level but reported in Census geographies. In addition to demographic and household data, journey to work information can also be derived from the ABS Census. The data profiles the location and occupation of workers and details the number of jobs by industry. The Census provides us with employment statistics by location, ANZSIC code (three digit) and occupation in reasonably-large geographies called Destination Zones (DZ).

The Journey to Work data does not link employer information but matches the employee survey response with the workplace location. For our project, notable shortfalls with the JTW data include:

- The large geographic area the DZs encompass. In the 2011 Census, for instance, the Melbourne CBD was a single DZ. These broad geographies do not allow analysis of clustering and small-area nuance.
- The lack of consistency of DZ with other geographic levels from the Census.
- The lack of consistency in DZ boundaries between each census period.
- It does not provide information on firm size.

Given the above, we can use the Census data to estimate the size of a sector, i.e., how many people work in certain kinds of industries and in certain kinds of jobs. However, the Census gives us no way of knowing whether those people work in small, medium or large firms.

City of Melbourne Census of Land Use and Employment (CLUE) Survey

The City of Melbourne has prepared the Census of Land Use and Employment (CLUE) survey which provides comprehensive information about firms (identified within CLUE as 'Establishments') within the City of Melbourne. CLUE is prepared by undertaking a physical inspection of these firms within the entire City of Melbourne area which is broken into a city block geographic level. The key data variables of relevance for our project include:

- industry structure and type (ANZSIC code and number of establishments or business locations).
- floor space type and use (office, retail, industrial, accommodation, entertainment, office vacancy rates).
- employment type and status (full time, part time, casual, contractor, male and female).
- building information (number of floors, year of construction, gross floor area, lettable area).
- venue and capacity measures (i.e. off street car parking spaces, bicycle and shower facilities, conference and meeting seats etc.).

CLUE data provides information of firm size in addition to providing many other important indicators and a firm's precise location. CLUE has been collected since 1962 and has been regularly collected – every two years since 2000 (City of Melbourne, 2014). The dataset provides a useful longitudinal picture of land use and employment in the City of Melbourne. For our project, drawbacks of CLUE data are:

- The dataset is available only for the City of Melbourne and not for the other IMAP councils.
- The dataset is not set up to track individual firms from CLUE to CLUE.

Australian Business Register data (ABR)

ABR data provides a measurement on all registered businesses, which are required to formally register for taxation purposes.

Firm characteristics available of relevance for this project include:

- entity name
- business name
- main business address
- additional business location address
- ANZSIC code.

Whilst limited data is released at a firm level, the comparison and understanding that the ABR data provides at an industry level provides a guide to the number of firm births, firm deaths and net position. Around 80 percent of the addresses for these firms have been geocoded and these files were made available for the research team thus providing the actual location of each firm. This geocoded ABR data is available for all of Australia allowing comparisons of the IMAP area with other parts of Melbourne.

There are, however, significant limitations that prevent this data from being useful for our study. ABR data does not provide information that can inform research about firm productivity, growth or size. This makes it impossible for small makers to be identified from the dataset.

In 2014 the ABR purged around two million registered firms from their rolls on the grounds that the firms did not meet the criteria for engaging in commerce. Many of these were hobbyists. These purged firms may contain some small makers. We expect our qualitative research to address the issues of some firms that were dropped from ABR rolls.

4.2 WORKING DEFINITIONS

It was necessary to make some determinations about firm size so that statistics could be reported. The following categories were developed for data sources where employee numbers were available:

- Very Small: 5 or fewer employees
- Small: 6-20 employees
- Medium: 21-50 employees
- Large: 51 or more employees.

Other variables that could be used to define makers or urban manufacturers include economic output or floorspace requirements but these data are even more difficult to gather via survey. In addition to firm size it was necessary for the statistics below to be specific about which industrial categories were to be included. At this stage, as per the “What makes a maker” section above, we did not wish to be too prescriptive about what kinds of firms should be included as makers.

For this reason, the results shown below reflect all ANZSIC codes that indicate that a made product is the central focus of the business. In short, we allowed all of the firms listed under the “Manufacturing” category in to be included. Additionally, outside of the manufacturing sectors, there are ANZSIC categories for firms engaged in activities that result in made products. These largely correspond to print media, film and television products such as printing and publishing, studio and set design and other similar categories. These additional categories, about 10 ANZSIC codes, were also included in the statistics generated below. We used four-digit ANZSIC codes because the categories reflected, e.g. textile product manufacturing or motor vehicle manufacturing are specific enough to be comprehensible to a general audience and meaningful for analysis but not too specific that the number of makers engaged in those categories is very few.

Finally, we include a number of retail and warehousing ANZSIC codes. We do this because our interviews (results shown in Part III) suggest that makers do a variety of tasks, including retail, as a core part of their business. The full list of ANZSIC codes used appears in Appendix A. In the sections below, we review the ABR data. We describe “candidate” making firms because it is impossible from the data we have to discern the size of most of the firms.

The JTW and CLUE data was reviewed in the Phase 1 report.

4.3 MAGNITUDE AND QUANTUM

The ABR data indicate that there are 43,670 businesses in the IMAP+Moreland area that match our selected ANZSIC codes. We call these, “candidate making businesses.”

Table 4.1 shows the number of these businesses by LGA and illustrates their distribution across the study area. We note that this sample only includes businesses that have active ABNs.

Table 4.1. Number of Candidate Making Businesses in the IMAP+Moreland Study Area

Council Area	N	%
Melbourne	8,849	20%
Maribyrnong	3,005	7%
Moreland	13,070	30%
Port Phillip	7,000	16%
Stonnington	5,793	13%
Yarra	5,953	14%
Total	43,670	100%

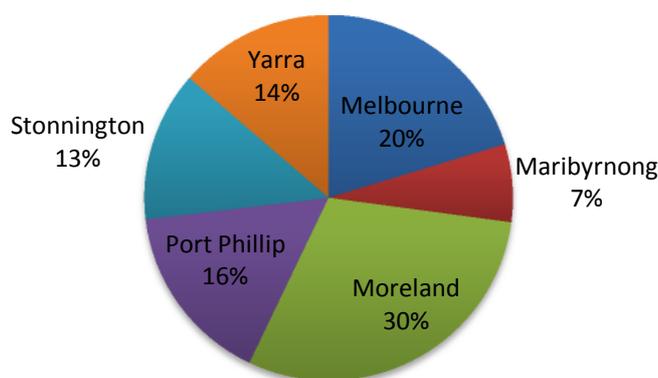


Figure 4.1. Distribution of Candidate Making Businesses as per the ABR Data

We estimate that the IMAP+Moreland study area has around 18,589 small making firms and 59,300 associated jobs.

4.4 ZONING LAND DISTRIBUTION

In this section, we describe the distribution of the jobs data by council and land use zoning type.

Table 4.2 shows the distribution of land area in the IMAP+Moreland area from two data sources:

- LGA data provided by the Australian Bureau of Statistics (ABS) for 2016 (Australian Bureau of Statistics, 2016).
- land use zones for 2016 provided by the Victorian Government, Department of Environment, Land, Water, and Planning - “PlanZone” data.

We use the GIS projection provided by the ABS in its data packs, the GDA94, EPSG 4283. The PlanZone data is provided in the same projection.

There is some disagreement in the datasets about land areas. ABS data shows an area of 37,351,300 for the Melbourne LGA - (2). Our computations from the same dataset under the ABS’s projection yield 46,865,261 - (3). The summed compilations of all land use zones in Melbourne from the PlanZone data is 40,739,187 – (1).

The discrepancies between (1) and (3) are not as significant but there is a large disagreement with (2).

In order to proceed with spatial comparisons, we needed to decide on a common spatial unit. We have decided to use those reported in columns (1) and (3). All statistics requiring land areas reported herein are based on these areas. Where we must decide between columns (1) and (3), we select column (3) because these areas come from published ABS maps.

Table 4.2. Comparison of PlanZone and ABS Land Areas, Square Metres

	(1)	(2)	(3)	
LGA	PlanZone Summed Area (sq. m)	ABS Area (sq. m)	Computed Area, GDA94 (sq. m)	Notes
Melbourne	40,739,187	37,351,300	46,865,251	(a)
Maribyrnong	39,318,962	31,225,400	39,583,846	
Moreland	64,643,724	50,951,900	64,530,836	
Port Phillip	29,815,766	20,709,200	26,272,781	
Stonnington	32,523,179	25,651,400	32,544,035	
Yarra	24,795,383	19,542,500	24,773,779	
TOTAL	231,836,200	185,431,700	234,570,529	
Data Source	Vic PlanZone	(ABS, 2016)	(ABS, 2016)	

Notes:

(a) GDA area for Melbourne LGA excludes Port of Melbourne, which has a land area of 489,982 square metres according to the PlanZone dataset

Figure 4.2 shows the distribution of land by zone type for the IMAP+Moreland study area.

49% of land is zoned for residential use. Industrial zoning accounts for 6% and commercial and mixed-use zones account for 5% and 2% respectively.

Figure 4.3 shows the distribution of land by General Zoning Class for the IMAP+Moreland study area.

Our analysis is focused on the land available for urban manufacturing and making. In order to simplify the discussion, we collapse the multiple categories of land use into three General Zoning Classes:

1. Employment zones - those designed to house employment including special classifications of mixed use such as the Capital City zone, Docklands zoning, Activity Centre zoning and Mixed Use zoning.
2. Residential zones - if the primary use is residential including residential growth areas.
3. Other zones (e.g. parks and roads)

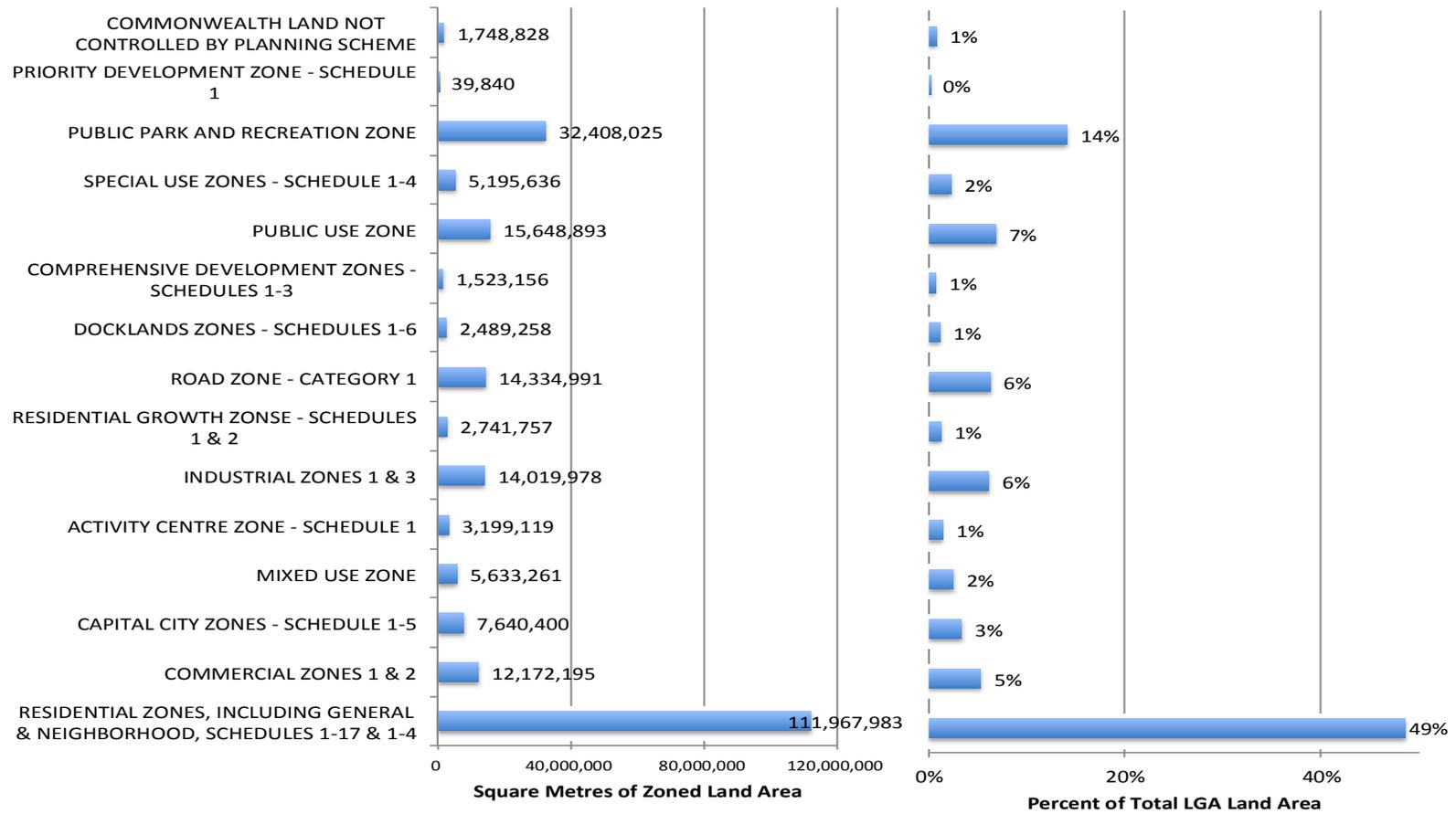


Figure 4.2. Square Metres of Land by Zone, IMAP+Moreland Study Area

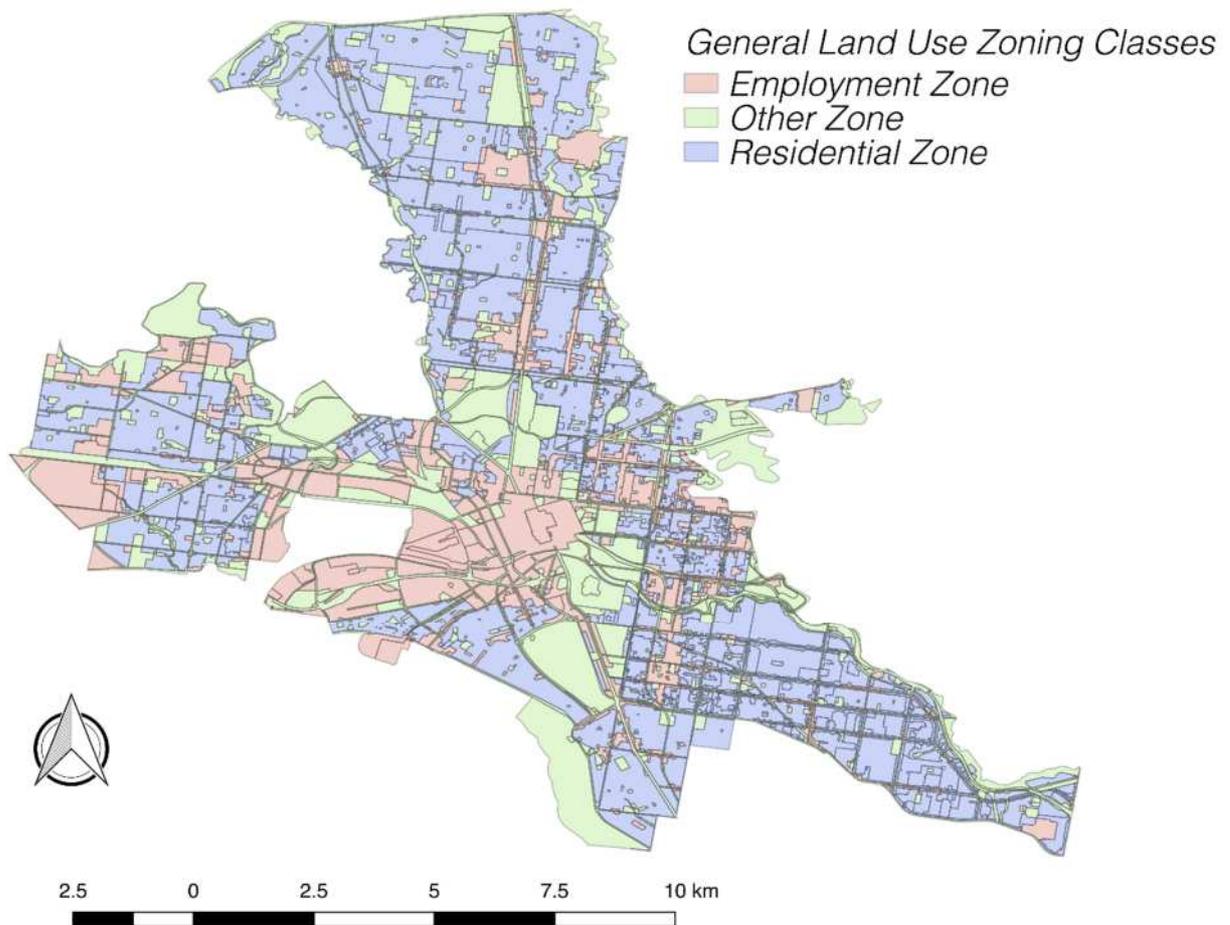


Figure 4.3. Zoning in the IMAP+Moreland Study Area, General Zoning Categories

Figure 4.4 disaggregates the data by council.

Yarra has a higher concentration of commercial zoning (13% versus 3-6% for other councils).

Yarra and Melbourne have higher concentrations of mixed use zoning (5% and 6% versus 0-2% for the other councils).

Melbourne, Maribyrnong and Moreland have higher concentrations of industrial zoning (6-14 % versus 0-3% for the other councils).

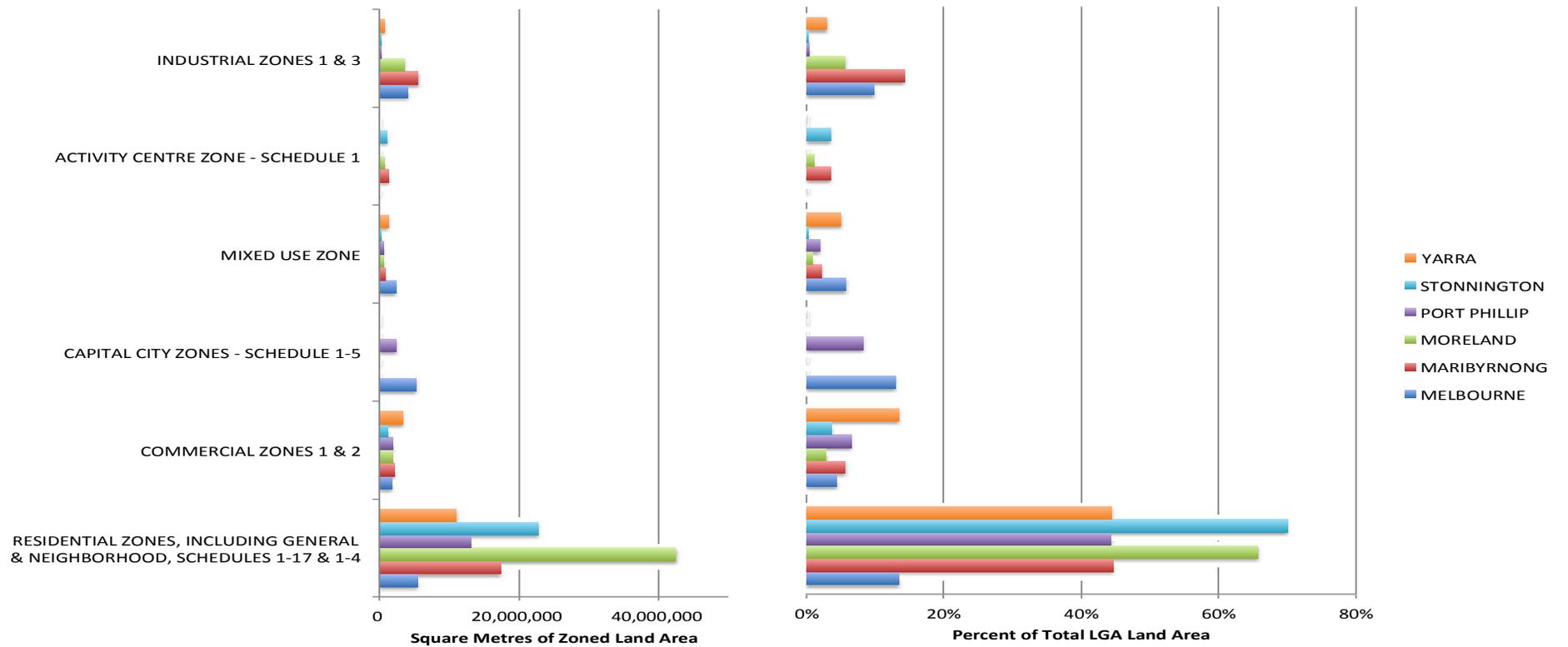


Figure 4.4. Distribution of Zoning Types by Council, Number and Percent

Collapsed into the three General Zoning Classes we get a simpler comparison of the five LGAs. The six councils differ significantly in the proportion of their lands available for employment from Melbourne’s 39% to Stonnington’s 8%. A summary of the lands contained in each class is shown in Figure 4.5.

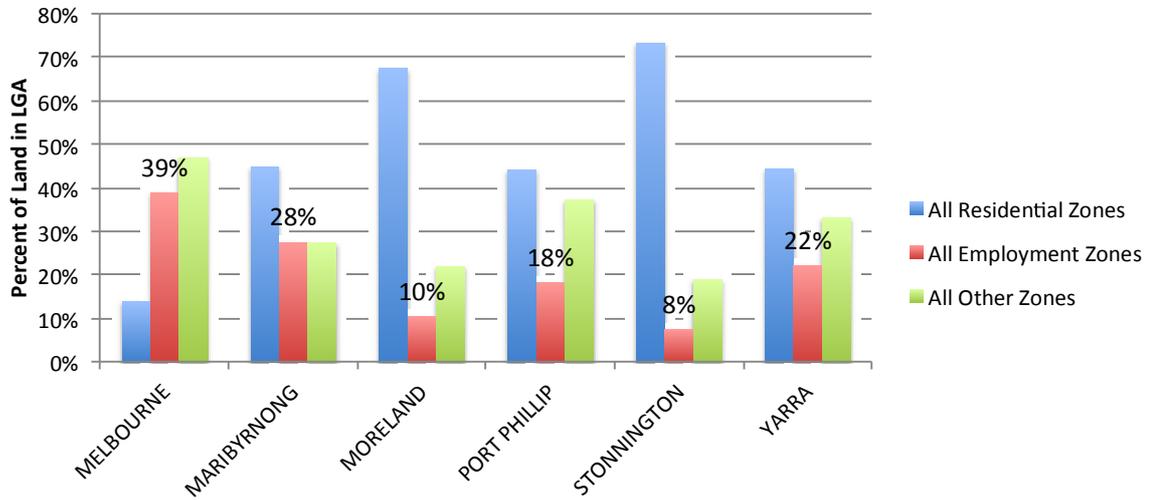


Figure 4.5. Percent of Lands in General Zoning Class, IMAP+Moreland Study Area

4.5 FIRM OFFERINGS

Figure 4.6 shows the 33 most-represented ANZSIC codes in the IMAP+Moreland area by number of firms.

All of these ANZSIC codes have more than 200 firms and together represent 35,321 (81%) of the area's firms.

Figure 4.6 shows that only four of these ANZSIC codes are actual manufacturers (***) , most are service firms.

These trends hold across most councils.

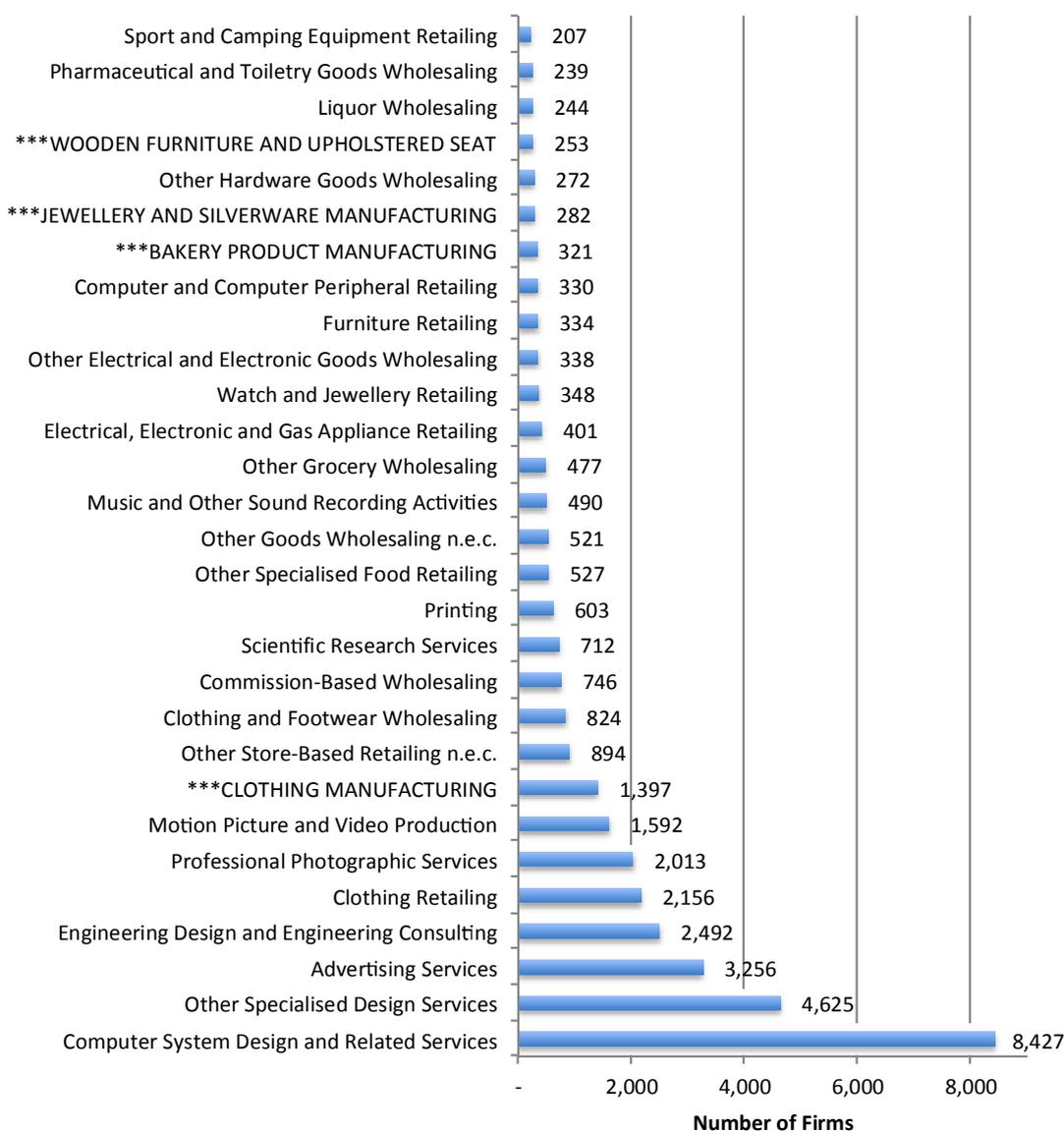


Figure 4.6. ANZSIC Codes with More than 200 Firms in the IMAP+Moreland Study Area

Table 4.3 indicates that 55% of firms in our selected ANZSIC codes are service-sector firms and about 15% each go to manufacturing, wholesaling, and retailing.

Table 4.3. ANZSIC Sector Businesses in the IMAP+Moreland Study Area

Council Area	N	%
Manufacturing	6,766	15.5%
Wholesaling	6,483	14.8%
Retailing	6,421	14.7%
Services	24,005	55.0%
Total	43,675*	100.0%

* Five of these operate in the port area and are known to be larger than five businesses, so are not included in subsequent computations

4.6 LOCATION IN ZONES

A majority of firms appearing in the ABR data are located in the various residential zones.

Figure 4.7 shows that of the 43,670 firms registered across the IMAP+Moreland study area (excluding the Port of Melbourne) 22,741 are located in General Residential or Neighbourhood Residential zones.

Commercial zones account for 5,133 firms and industrial zones 1,630 firms.

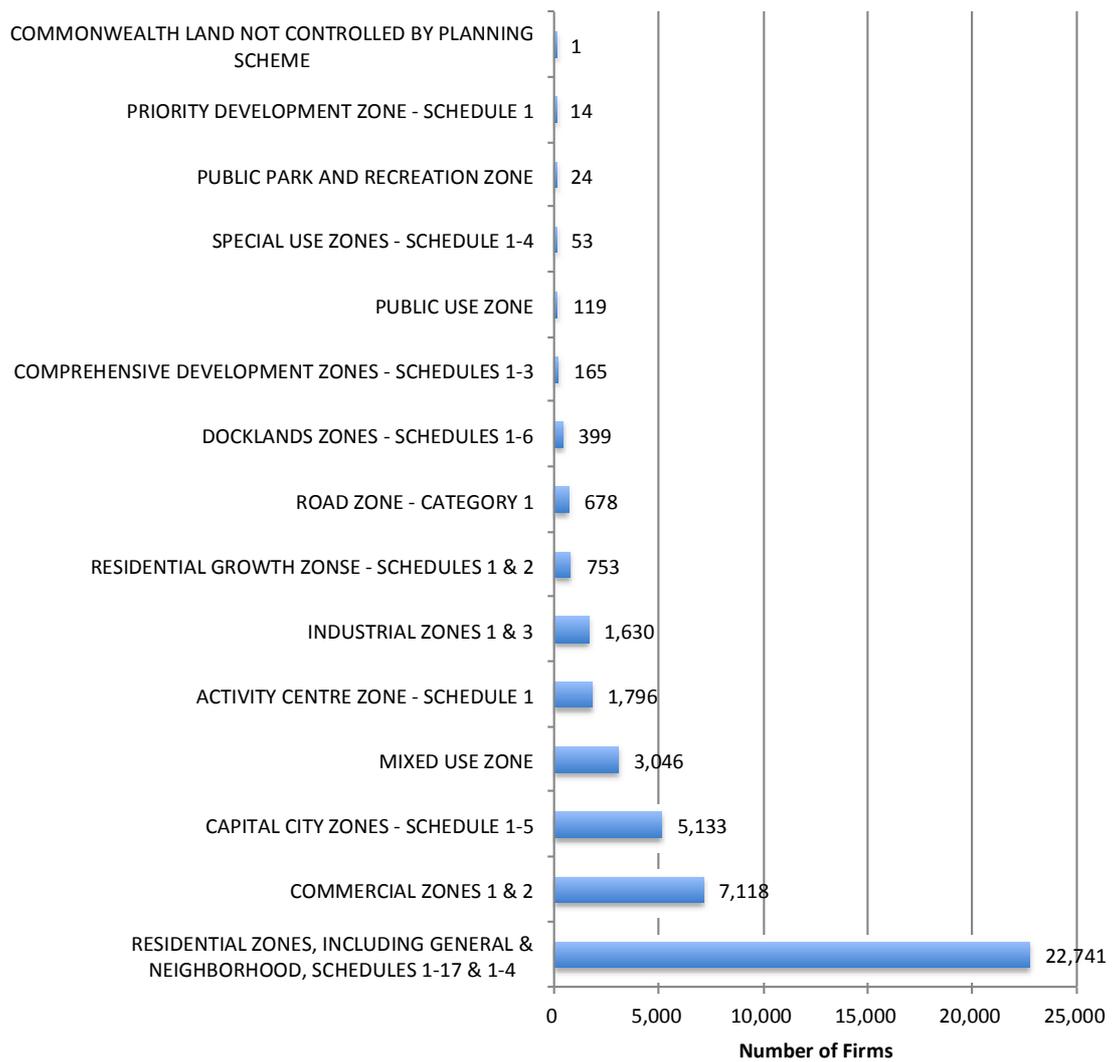


Figure 4.7. Number of Firms by Zone, IMAP+Moreland Study Area

Figure 4.8 shows the same data disaggregated by council.

All the councils, other than Melbourne, have similar proportions of firms in residential zones. The relative number of candidate maker firms in commercial, mixed use and industrial zones is compared with firms located in residential areas. Stonnington council has the largest number and proportion of firms located in Activity Centre zones.

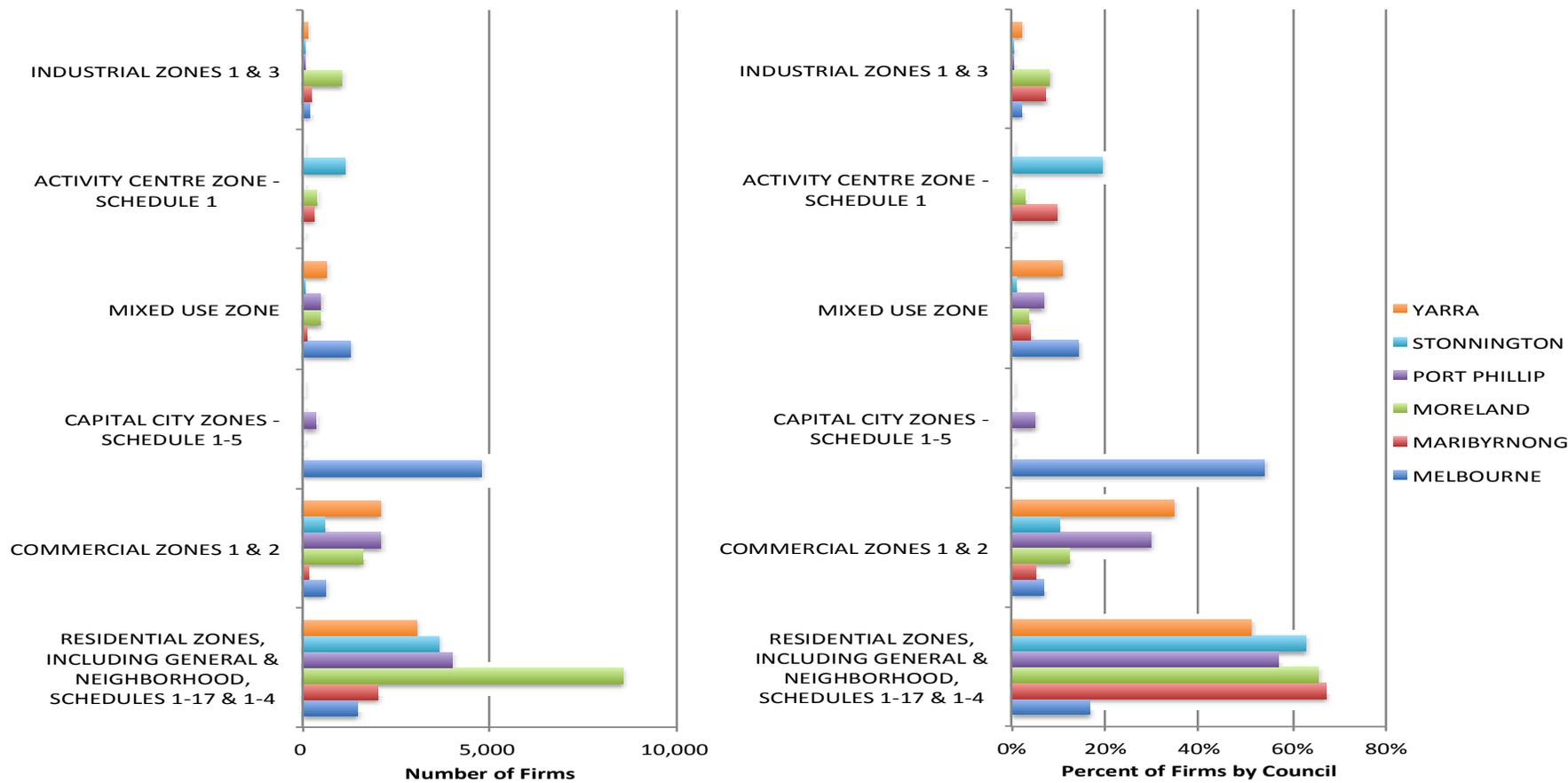


Figure 4.8. Distribution of Candidate Making Firms by Council, Number and Percent

Looking at candidate making firms per square kilometre of zoned land we can see the highest concentration occurs in commercial, mixed use, activity centre, and priority development zones (Figure 4.9).

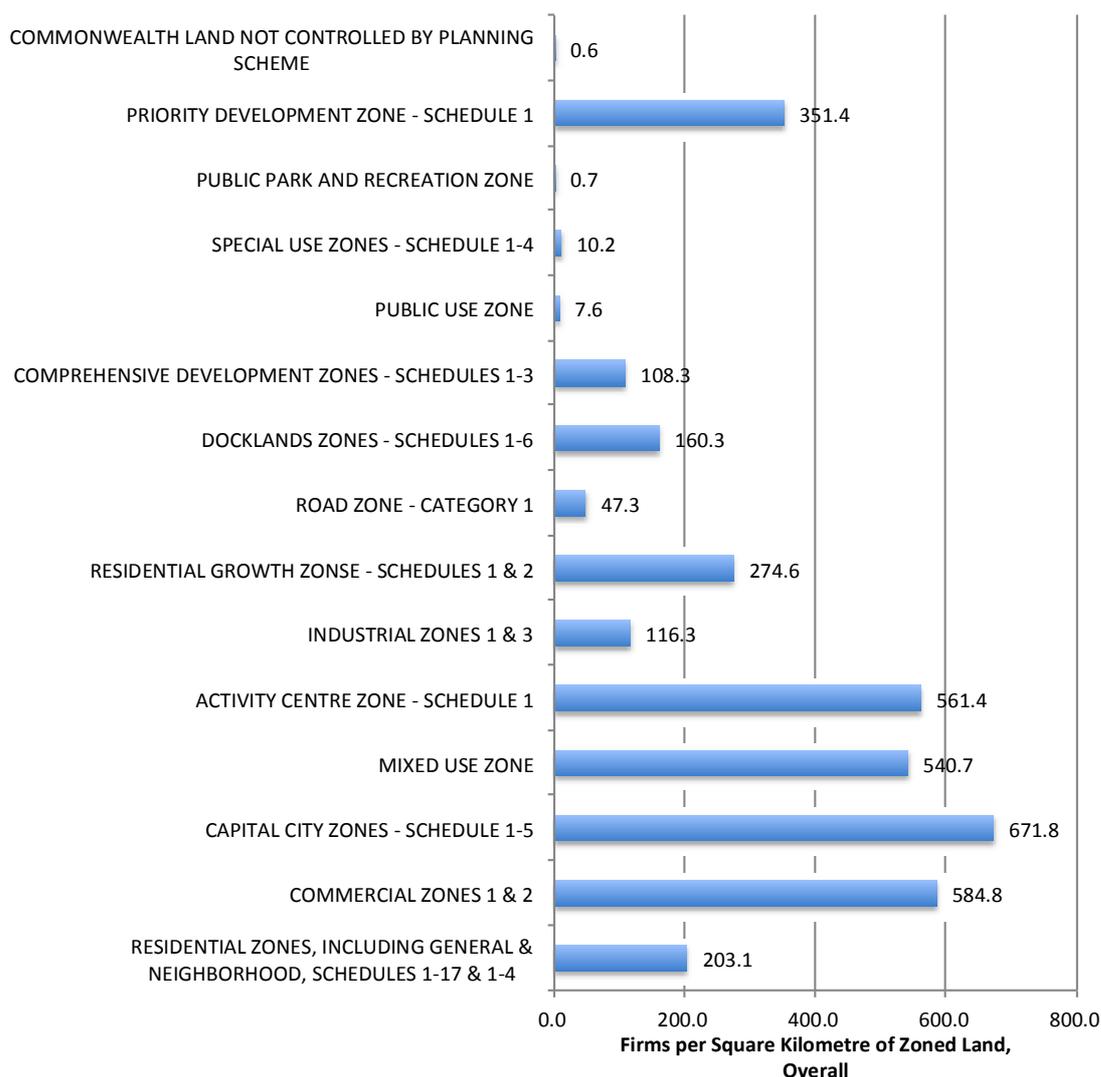


Figure 4.9. Number of Candidate Making Firms per Zoned Land Area, IMAP+Moreland Study Area

Stonnington has the highest concentration of firms in activity centre zoning.

Port Phillip has the highest concentration in commercial zones (Figure 4.10).

If we conduct an analysis of overall firms per aggregated appropriate land area by council we get a simpler picture of the concentration of firms.

For the results presented in Figure 4.11 we aggregate the various types of residential, employment and other zones to provide an overall picture of employment density.

In employment zones, Stonnington achieves the highest employment density for candidate making firms, with 724.3 per square kilometre. Maribyrnong lags among its partner councils with 83.2. Moreland has a significant number of firms registered in “other” land uses – particularly road zones – compared with its peers.

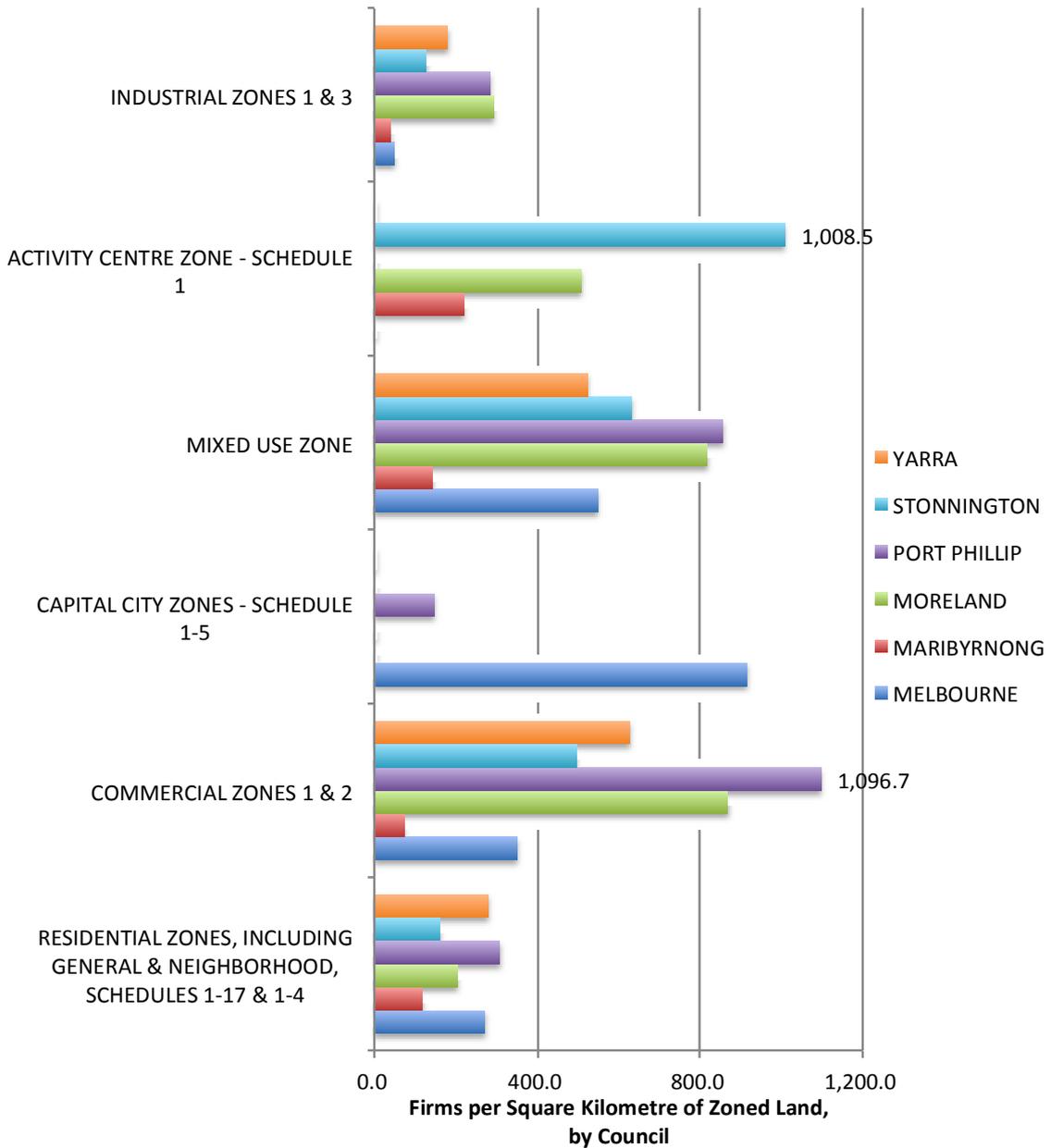


Figure 4.10. Candidate Making Firms per Zoned Land Area by Council, Number and Percent

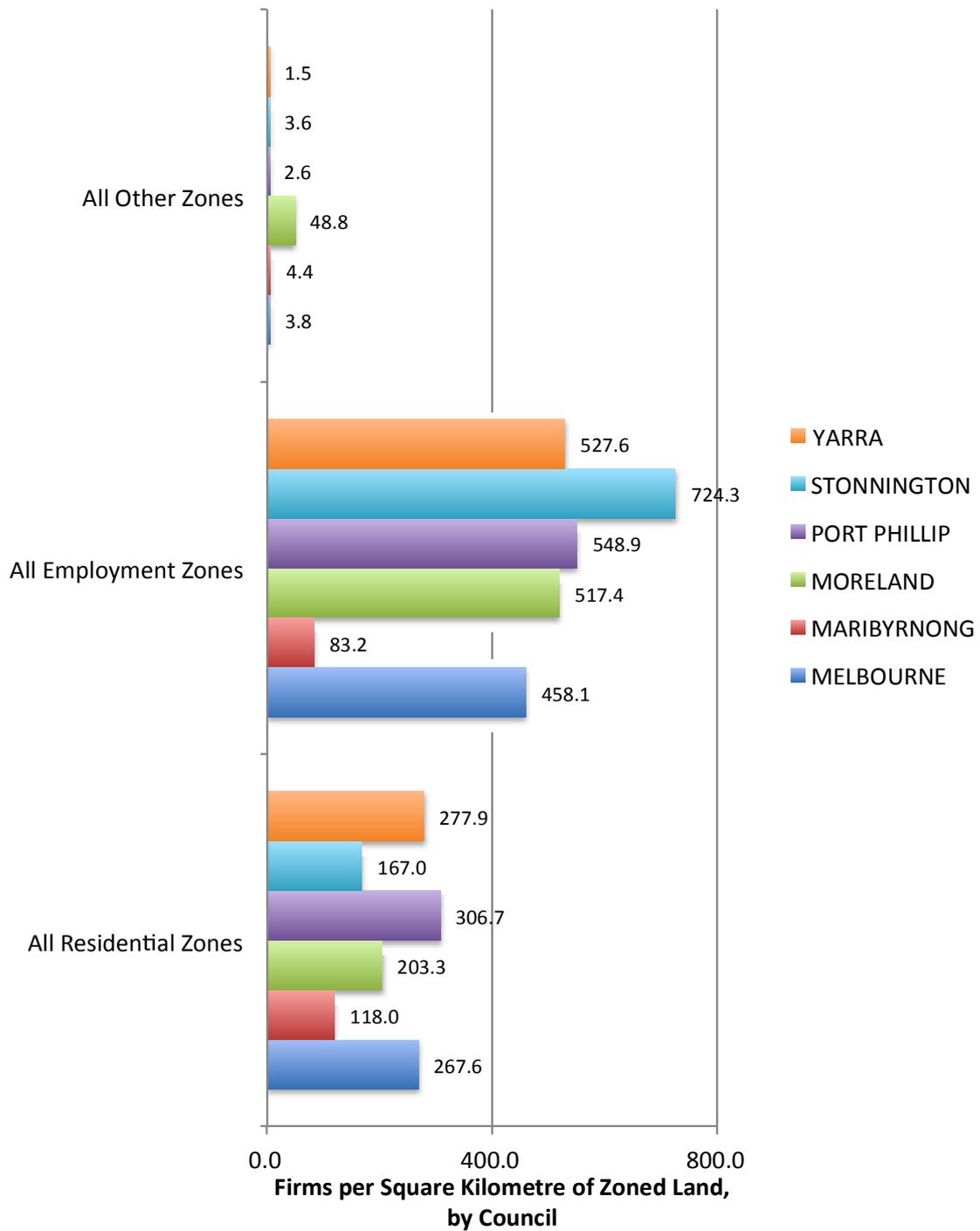


Figure 4.11. Candidate Making Firms per Zoned Land Area by Council, Aggregated Zones

5. FINDINGS FROM THE MAKERS.MELBOURNE SURVEY

This section reports on the results of two surveys conducted between October 2015 and November 2017 in which 188 makers responded to a short survey hosted on our project site - makers.melbourne. Of these 188, 106 chose to complete a longer survey on the same site.

Between August and November 2017 we conducted a phone survey through a third-party company, which generated an additional 114 responses.

5.1 RECRUITING AND SAMPLING

The two surveys were different by virtue of their formats and sampling strategies. We recruited respondents to the makers.melbourne survey via word of mouth, social media and door knocking. The phone survey generated responses from a random sample of businesses from lists provided by our partner councils. These lists included all registered businesses in the council areas. The phone survey does not include responses from businesses located in the City of Melbourne.

5.2 SURVEY FORMATS

The two surveys are not identical in the content they collected. We present the results of the two surveys together where it is meaningful and possible to do so and separately where the data structure does not allow combination.

5.3 RESPONSE RATES

Some response rate data is available. For the makers.melbourne survey the format was opt-in. 188 makers registered on the site and answered some preliminary questions, and of those, 106 opted to do the longer survey.

Response rate for the phone survey is about 22%. Out of 1,107 firms contacted 615 firms did not pass a series of screening questions designed to identify currently-operating small urban manufacturers and makers.

Table 5.1 shows totals of those that did not return phone calls or declined to take the screening questions. A total of 402 firms declined to respond, which makes the response rate about $114/(402+114)$ or 22%.

In total, we had a total of 106 surveys completed online, plus 114 surveys completed by phone, for a total sample size of 220 across the two surveys.

Throughout this section, various sample sizes are reported. Some individual questions had smaller sample sizes, as some respondents chose not to answer some questions. Some questions allowed respondents to choose more than one answer, so the total number of responses is larger. These are explained as necessary.

Table 5.1. Phone Survey Response Summary

Response	N	%	Total for Category
Already Registered on makers.melbourne	2	0.2%	2
Screening Questions			
Not a producer or manufacturer	121	10.9%	589
Employs more than 20 people	39	3.5%	
Not located in Metro Melbourne	36	3.3%	
Not a business	1	0.1%	
Business permanently Closed	8	0.7%	
Wrong Number	36	3.3%	
Phone Disconnected	112	10.1%	
No Answer	231	20.9%	
Blank	5	0.5%	
Nonresponse Reasons			
Call Back (<i>probably a refusal</i>)	204	18.4%	402
Refused	104	9.4%	
Send Letter / Email	23	2.1%	
Refused survey / but interested to register	71	6.4%	
Completed Survey	114	10.3%	114
Total Called	1107	100.0%	1107
Response Rate		22.1%	

Table 5.2 shows disaggregated response rates by council.

Table 5.2. Response Rates for the Phone Survey

Council Area	Total Called	Total Passing Screening	Responses	Response Rate
Maribyrnong	145	61	22	36.1%
Moreland	73	27	14	51.9%
Port Phillip	294	131	37	28.2%
Yarra	361	214	25	11.7%
Stonnington	234	83	16	19.3%
Total	1107	516	114	22.1%

For some questions with responses reported below respondents were allowed to choose only one response. For others, they could select as many responses as were appropriate. Thus, the number of answers reported can vary in the summary statistics given here.

5.4 MAGNITUDE AND QUANTUM

Combining the data we have on response rates and firm size from the two surveys gives us some sense of how to scale up to our study area.

Of the 599 total jobs represented by the 188 makers.melbourne businesses provides an average of 3.19 jobs per business.

Our phone survey did not collect employment data, but we do have a response rate. Of the 1,107 businesses that were called in Moreland, Maribyrnong, Port Phillip, Stonnington, and Yarra, 46.6% passed the screening questions indicating that they were of the appropriate size (fewer than 20 employees) and make a tangible product. Of those target businesses, 22% responded to the survey.

This suggests that our small urban makers contribute roughly 64,935 jobs to the IMAP+Moreland study area.

Table 5.3 shows the logic of this computation. According to our ABR lists, there are 43,670 businesses in the ANZSIC codes we identify as relevant to this study. 46.6% of this number is 20,356 total small urban makers in the IMAP+Moreland area. With an average of 3.2 jobs per small maker firm this computes to an estimate of 64,935 small maker jobs in our study area.

Table 5.3. Jobs Computation

3.2	Average jobs per business (from Section 9.6 below)
46.6%	% of businesses that are small urban makers
43,670	Total maker businesses in study area (ABR)
20,356	Total small urban makers in IMAP+Moreland (46.6% x 43,670)
64,935	Estimated total small maker jobs in study area (20,356 x 3.2)

This scaling is problematic because phone survey respondents have different profiles than makers.melbourne profiles. Phone survey respondents tend to be older businesses that are more established in their premises, own instead of rent, produce more traditional manufacturing products and sell them in more traditional ways. The computed response rate is based on a non-stratified sample which, while of a sufficient size for statistical inference with less than five percent margin of error (N=1,107), is not composed of responses from the City of Melbourne.

As long as we are willing to accept the variety of kinds of producers that are in this body of 20,000-plus businesses and the conditions of the sampling, we can use this number to provide a inference of the size of our small urban maker community in the IMAP+Moreland study area.

5.5 RESPONDENTS

Of 316 total responses (respondents could choose more than one answer), a total of 29% indicated that they are the founder and/or sole owner of the company. An additional 10% of the responses indicated that the respondent was a founding partner and 19% of the responses were from managers.

5.6 JOBS AND FIRM SIZE

Makers employing 20 or fewer employees were invited to participate in the surveys. The phone survey did not record the number of employees but the makers.melbourne survey asked respondents to report how many people are employed by their firm¹. These makers report employing 599 people in full-time and casual positions.

Figure 5.1 illustrates the distribution of responses with 74 of the 161 responses (46%) indicating that only one person is employed there. 65% (114) of the firms have one or two employees and 83% (134) have five or fewer people employed.

¹ We did not ask firms to differentiate between part-time and full-time employees.

There is a small increase in the number of first with 8 and 10 people employed, which may suggest a growth trajectory for small firms as they grow. However, this bump amounts to only 7% of the total number of firms surveyed.

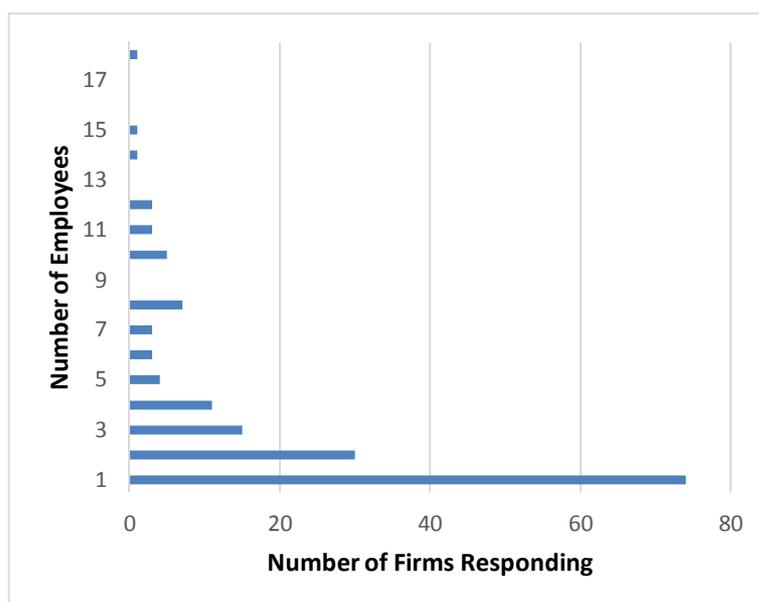


Figure 5.1. Firm Size, makers.melbourne Survey

5.7 FIRM LONGEVITY

Most of the firms in our samples have been established since 2011. As Figure 5.2 shows, of the 215 responses, 67 percent (145) have been in businesses since 2011 or later. The phone survey, however, captures a much higher proportion of older firms, with 51 percent (58 of 114) founded before 2011 compared with 11 percent (11 of 101) of the makers.melbourne firms founded before 2011. This probably reflects the life cycle of the businesses and the age of the founders and managers.

Another interesting difference between the two surveys is the spike at 2015 for the makers.melbourne results. Even though a roughly-comparable number of respondents provided answers for this question (101 for makers.melbourne versus 114 for the phone survey), many more respondents reported founding their firms in 2015 in the makers.melbourne survey (35 versus 6 in the phone survey).

The phone survey firms are also older. Table 5.4 shows the median and mean years of establishment for the overall sample as well as for the two surveys. The median phone survey respondent's firms was established four years earlier than the median makers.melbourne survey respondent's (2010 versus 2014).

Table 5.4. Comparison of Establishment Year

Survey	N	Median Year	Mean Year*	Std Dev of Year
makers.melbourne Survey	106	2014	2011	9.64
Phone Survey	114	2010	1988	11.45
Total or Pooled Measure	220	2013	1999	135.83

* The difference is statistically significant at the 0.002 level

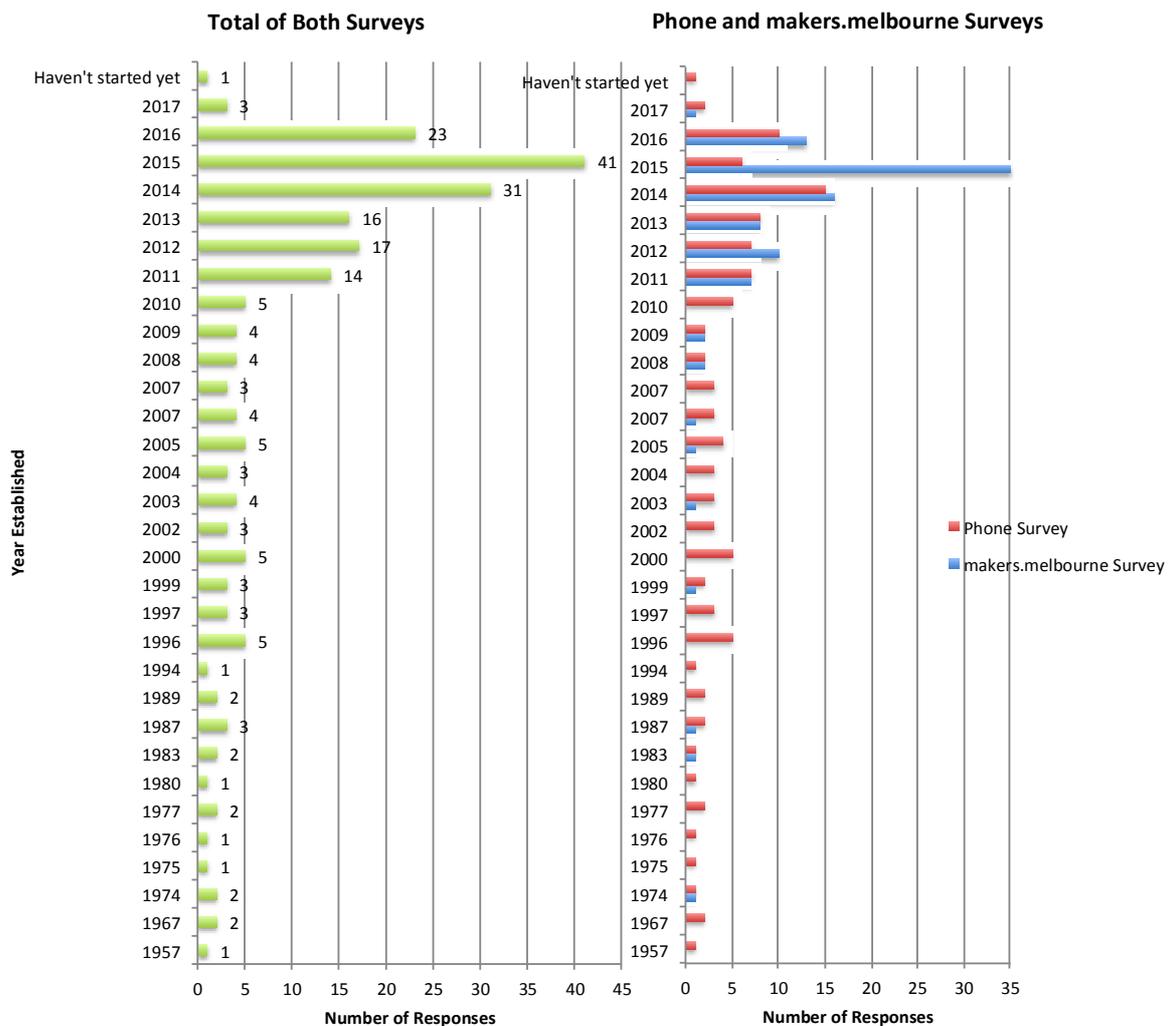


Figure 5.2. Year Firm Established – Combined and Disaggregated Responses

5.8 FIRM OFFERINGS

Our survey responses concord with a major conclusion of the analysis of existing secondary data from the CLUE: that the “other” category is strongly and disproportionately represented among makers. Of the 293 responses to a query about the product that the firm makes, combined across the two surveys, 70 makers elected the “other” category, with the next most-frequent category being Art and Culture, with 30 responses.

This data also suggests that most of our makers are concentrated in a handful of categories. Of the 293 responses, 226 (77 percent) are concentrated in eight categories with ten or more responses.

Information Media is one of these categories. There is some contention among planners and scholars about whether service-focused businesses that design virtual images and products should be included in the making category. We allowed respondents to self-identify as makers. Thus, the representation of these information services in our survey responses suggests that a making identity exists among at least some small “digital” makers.

In addition to the kinds of products that the makers make, we also sought information on the kinds of activities that comprise the business they do. Consistent with the inclusion of service-based making and making that does not result in made goods, our makers report higher incidence of warehousing,

marketing, and sales than product design. This makes sense: most firms that produce a product also need to store, market, sell that product.

Phone survey respondents are more likely to engage in warehousing, sales, and training as a significant part of their workflow. Figure 5.3 shows the overall and relative distributions of the surveys. The makers.melbourne respondents are more likely to focus on product design and much less likely to have warehousing as a major part of their business.

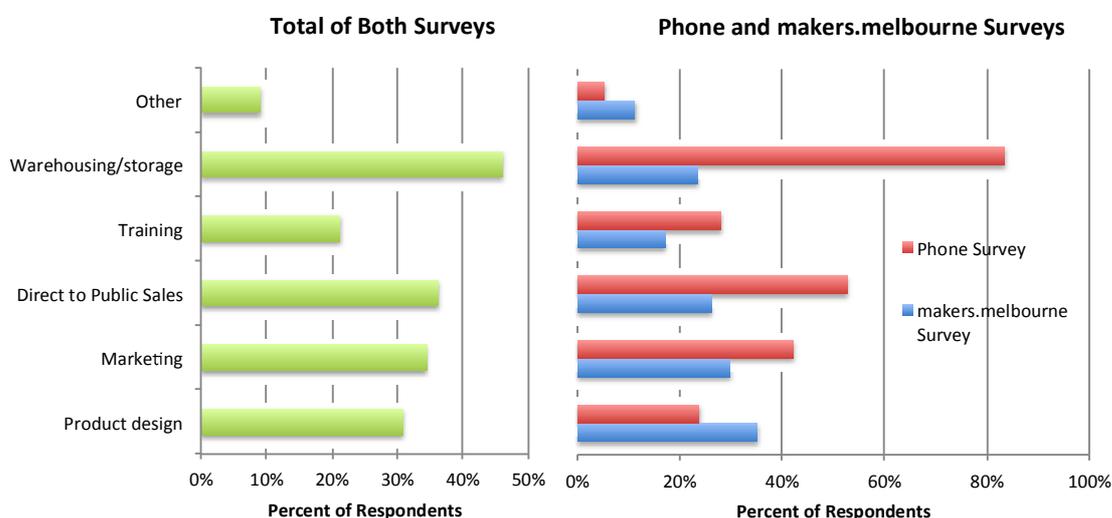


Figure 5.3. Types of Activities, Aggregated and Disaggregated

5.9 THE “OTHER” IN A MAKER’S IDENTITY

A strong theme that emerges throughout this work is the strong identity that makers experience and an associated difficulty that they experience in self-classification. This comes through in this data as well as in our qualitative work in Part III.

14 percent (27) of the makers.melbourne survey respondents and 38 percent (43) of the phone survey respondents were not able to classify themselves in one of the proffered categories – instead opting for the “other” classification.

This high incidence of “other” suggests that some makers may not feel that their products and services fit into the proffered categories. For instance, a photographer and a theatre production company opted for “other” rather than selecting the Arts and Culture category, a maker of culinary knives selected “other” rather than a option for housewares or metal products, and a maker of biodegradable and recycled plastic products opted not to classify her work in the Plastic Products category. This further suggests that new ANZSIC categories may be appropriate.

5.10 LOCATION AND MIGRATION

Our phone survey did not capture any firms currently located in the City of Melbourne. Figure 5.4 shows the distribution of responses by current location.

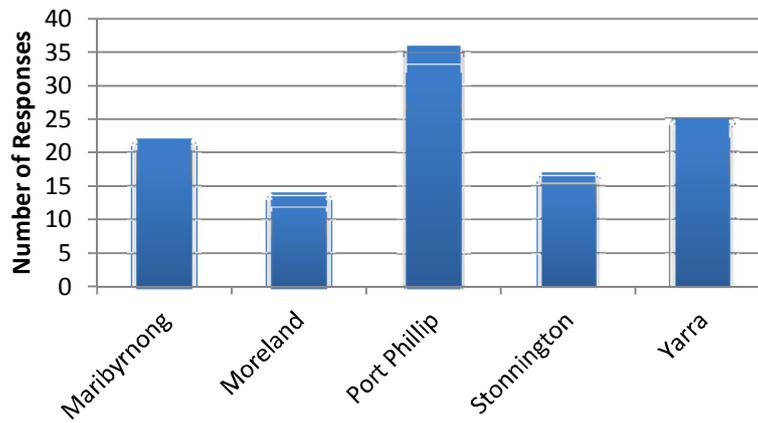


Figure 5.4. Current Firm Location, Phone Survey

Firms responding to the phone survey reported being about equally likely to move or remain stationary over the next five years. Of the 114 firms responding, 52 percent (59) have not moved locations in the past five years and 48 percent (54) have either moved within the same council or between councils. Of these, 37 percent (20) moved within their own council, and 63 percent moved from one council to another.

All of our firms have current locations in the IMAP+Moreland study area. Of the 54 firms that have relocated, 76 percent (41) have moved from another IMAP+Moreland location, and 24 percent (13) have moved from outside the IMAP+Moreland study area. Those that moved from outside the study area came from a variety of places, including one from regional Victoria, one from the Sydney metropolitan area, and eleven from other suburbs in the Melbourne metropolitan area. None moved from the IMAP to Moreland or vice versa.

Among the five councils surveyed in the phone survey, there is some variation in the age of firms. Figure 5.5 shows that Moreland has the youngest firms, with a median establishment date of 2014. Maribyrnong's firms are the youngest, with a median establishment date of 2003.

We tested whether there is an association between the longevity of a maker firm and its tendency to move locations. We categorised firms based on whether they have moved into the study area, have always been in the study area but had moved within that area, or have been in the IMAP+Moreland area and never moved. Table 5.5 shows the results, which do not show an evidence of statistical association.

38 percent of firms across both samples indicated that they may move within the next five years. This distribution varies across the two surveys.

Figure 5.6 illustrates that 47 percent of online survey respondents indicate that they may move in the next five years, while only 29 percent of phone survey respondents indicate that they may move.

There is also some variation by council, though we note that the results are not spatially representative. Figure 5.7 indicates that, of those councils where data were available for the phone survey, firms in Moreland, Maribyrnong, and Port Phillip express a higher likelihood of moving than those located in Yarra and Stonnington.

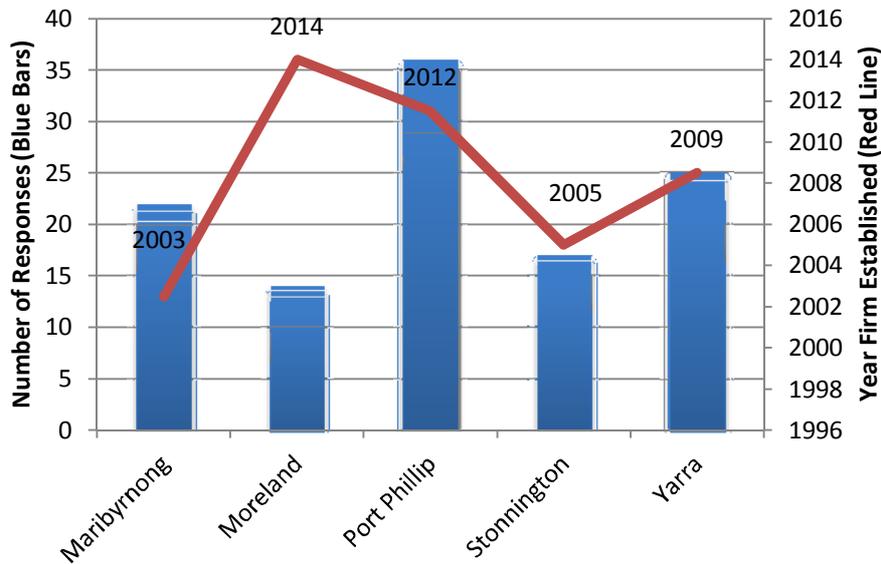


Figure 5.5. Current Firm Location and Year of Establishment, Phone Survey

Table 5.5. Comparison of Establishment Year Based on Relocation Status

Relocation Status	N	Median Year	Mean Year*	Std Dev of Year
Moved from Outside IMAP+Moreland	12	2009	2005	9.64
Moved within IMAP+Moreland	41	2012	2007	11.45
Never Moved	61	2010	2003	13.52
Total or Overall Measure	114	2010	2005	12.43

* There is no statistical evidence to suggest that the average year of establishment is different for firms that have different relocation histories

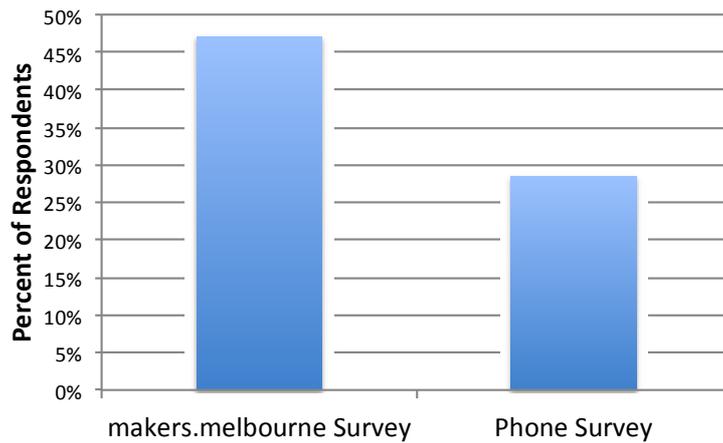


Figure 5.6. Firms Possibly Planning a Move over the Next Five Years, by Survey

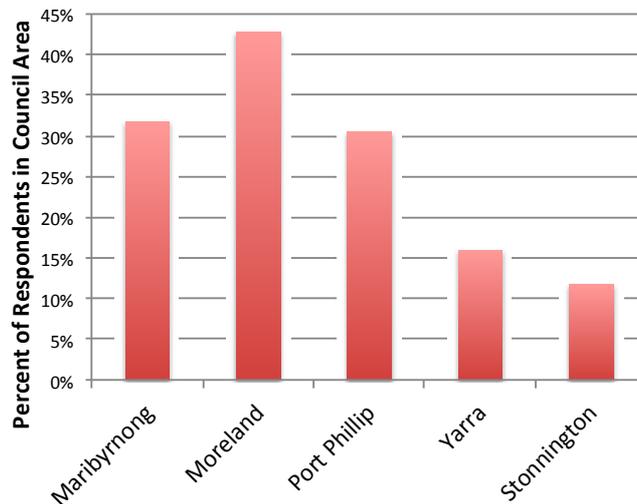


Figure 5.7. Firms Possibly Planning a Move over the Next Five Years, by Council, Phone Survey Only
(Not spatially representative)

Of the 30 phone survey respondents and 50 makers.melbourne respondents who indicate that they might relocate in the next five years, all cite expansion space and adequacy of facilities as significant reasons that they are considering a move. These distributions are summarised in Figure 5.8.

Councils are right to worry that inadequate space is a significant factor in firm relocation. Our results concord with Chapple (2014), who finds that inadequate space for expansion is a significant factor in firm relocation in the San Francisco Bay Area.

There are some differences across the two surveys, also. Phone survey respondents are more attuned to the costs of rent and factors related to scaled operations (availability of labor, regulatory compliance, space) while the makers.melbourne respondents think that they are more impacted by redevelopment pressures. Figure 8 shows the distribution of responses.

There is agreement across the surveys about where they will resettle if necessary, as shown in Figure 5.9. The vast majority prefer to stay within the inner Melbourne area, followed closely by the remainder of the Melbourne metropolitan region. However, a collective 13 percent will consider moving out of the Melbourne area and into regional Victoria, interstate, or overseas. A further 39 percent would move out of the IMAP+Moreland study area.

Of the 599 jobs represented by the 188 makers.melbourne businesses, this represents a loss of 49 jobs from the study area and 62 jobs from the Melbourne metropolitan area.

Applying this same proportion to the estimated 20,356 maker firms and 64,935 jobs in the IMAP+Moreland study area, this may mean that

- 10,584 firms may be seriously considering leaving the IMAP+Moreland study area, representing a loss of 33,766 jobs
- 2,646 firms may be seriously considering leaving the Melbourne Metropolitan area, representing a loss of 8,441 jobs
- 1,629 firms may be seriously considering leaving Victoria, representing a loss of 5,195 jobs.

We alert the reader that these numbers are based on survey responses only and do not reflect net firm churn and attrition. That is, these numbers reflect only those existing firms that are signalling a possible relocation – not, for instance, the new firms that might replace them in the premises that they leave empty when they depart. These net effects are beyond the scope of this study, but are important to understanding the overall impacts of small makers on the metropolitan economy.

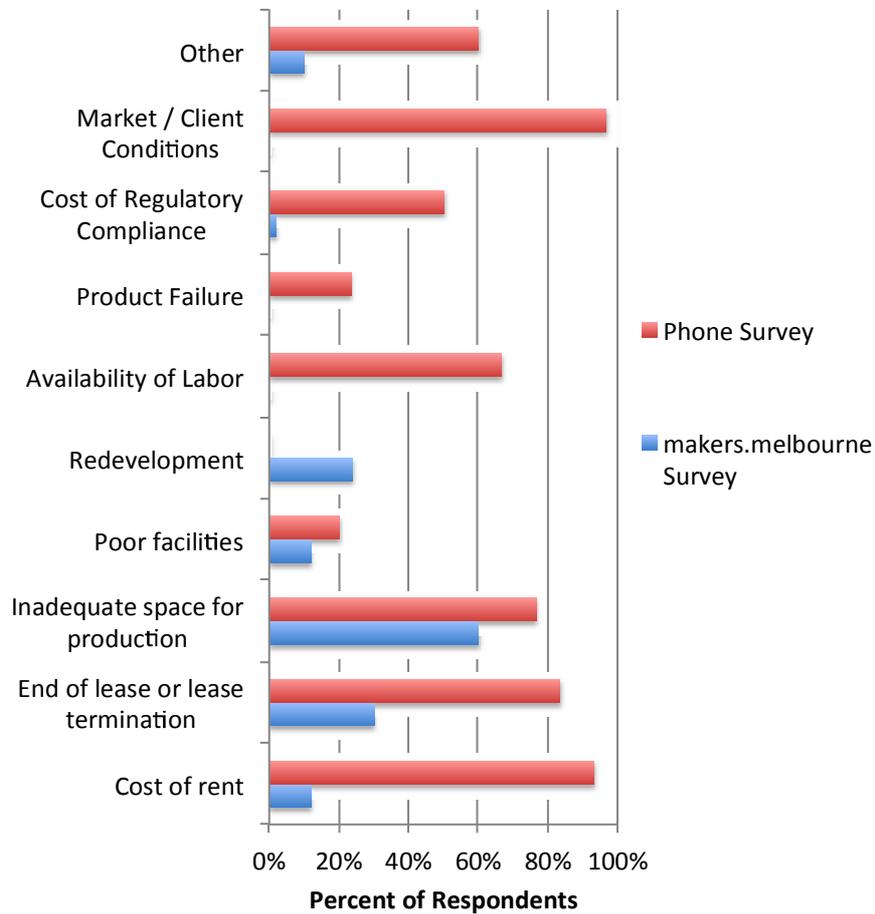


Figure 5.8. Reasons for Possible Relocation, by Survey
(respondents could select more than one answer)

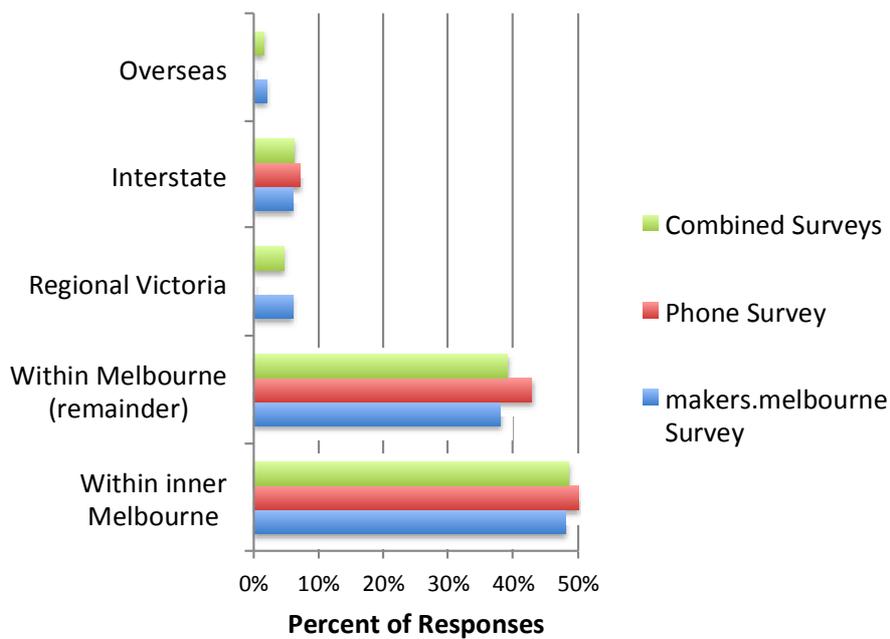


Figure 5.9. Planned or Anticipated Resettlement Location

5.11 SPACE

In general, the older firms we surveyed have larger premises. Older firms have either grown into larger spaces or that younger firms are either unable to acquire larger spaces or do not require them. Figure 5.10 shows a scatterplot of the relationship between establishment year and pooled production and office space for the full range of establishment dates, back to 1957, and also zoomed in to the 2011-2017 period.

Table 5.6 shows the relationship between the survey used and the production space, suggesting that it is the types of firms captured by the two survey formats that is more important to the kinds of space they use. Our phone survey respondents operate in a median of 200 square meters, while our online respondents operate in a median of 35 square meters. The mean values are roughly commensurate.

Figure 5.11 shows the trends in operating space for the two surveys since 2011. We provide this analysis to take out the effect of longevity, since more firms in the phone survey were established earlier, before 2011.

The trends since 2011 are actually upward for both surveys – in contrast to longer-term trends shown in Figure 5.10. However, the phone survey respondents are showing much larger upward trends: a slope of 29.4 compared with 8.6 for the online respondents. This suggests that newer firms across the two samples are acquiring more space now than in previous years, but that phone survey respondents either require more space or are able to acquire it, or both.

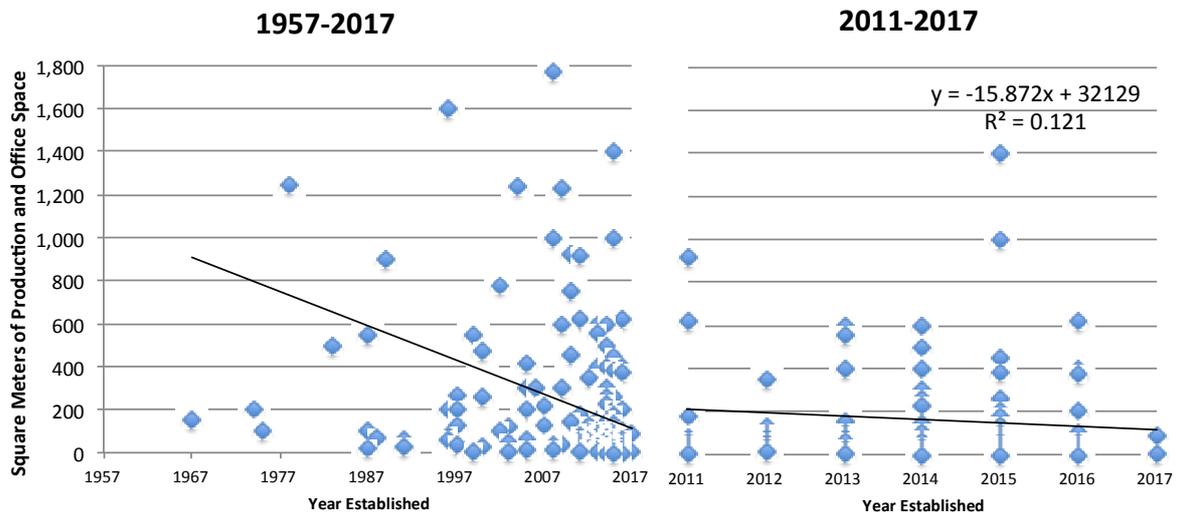


Figure 5.10. Relationship between Operating Space and Establishment Year, Combined Surveys

Table 5.6. Comparison of Production Space and Establishment Year Based

Survey	N	Median Year	Median Production Space (sq. m)	Mean Production Space (sq. m)
makers.melbourne Survey	106	2014	35.0	111.8
Phone Survey	81	2011	200.0	497.0
Total or Pooled Measure	220	2013	64.0	278.6

* The difference is statistically significant at the 0.002 level

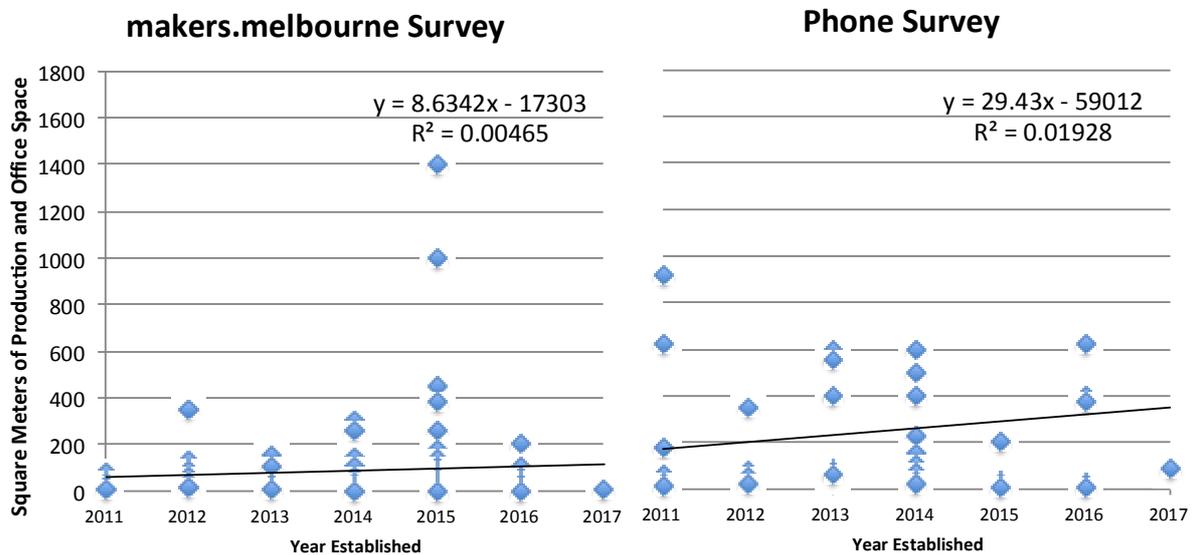


Figure 5.11. Relationship between Operating Space and Establishment Year since 2011

6. SPATIAL DISTRIBUTION

In this section, we provide visualisations of the distribution of candidate making firms as well as a basic simulation of a possible scenario of the actual distribution of small makers. We note that the simulations provided here are rough, based on a simple, step-down, proportional method of projection and the response rates from our telephone survey.

The reader will recall that we used the call records from the telephone survey to estimate the proportion of firms that fit our criteria for small urban manufacturers. The telephone survey has more than 1,000 responses (firms screened) across the three councils, which is sufficient for a roughly 3 percent margin of error in estimating this proportion presuming a random sample. However, we do not advise further disaggregation across councils because of the small sample sizes inside each of the council areas. We caution our readers to interpret these visualisations with these limitations in mind.

6.1 VISUALISATION AND SIMULATION AREAS

We start with the general zoning categories we produced, which assemble three basic types of land use zoning: residential, employment, and other. Figure 6.1 illustrates these lands by LGA in the study area.

Figure 6.1. Zoning in the IMAP+Moreland Study Area, General Zoning Categories