Time series skyline and employment changes in Sydney, Australia

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Abstract

This paper covers historical and micro level analyses of floor space and employment in Sydney during the last few decades. The time-series patterns and processes of high-rise building provision in the CBD are also focused on. The CBD has experienced very complicated changes over the last few decades in accordance with the city's growing role as an "Asia-Pacific Centre". While particular types of urban functions, say finance and insurance offices and many retail activities, have been dispersed to the suburbs (e.g. North Sydney), newly emerged activities have replaced the old and traditional ones.

In this paper, population census data ("Table Builder" service provided by Australian Bureau of Statistics) was mainly used. The authors also used the detailed data of each building in the city (Microsoft Excel-readable format) provided by the Sydney City Office. The authors translated these data into GIS attribute data. A GIS package was used to assist in representing, processing, and visualizing (mapping) these data.

Introduction

Sydney ranks first in the Australian urban system in terms of population size, with 4.1 million residents indicated in the 2006 Census. As Sassen (2000) suggested, Sydney has played a pivotal role as a centre of the Asia-Pacific region. During the conservative coalition government period (especially in the late '90s), as a part of deregulation scheme, many multi-national companies newly opened Asia-Pacific headquarters in the CBD of Sydney. This trend changed Sydney's role from a national centre to a global centre. It also created a strong demand for urban office space in the city. In relation to this growth as a "world-city", an urban redevelopment project was conducted around the Darling Harbour precinct, which resulted in the creation of many high-rise self-contained condominiums adjacent to the CBD.

According to "Social Atlases" distributed by the Australian Bureau of Statistics (simply, ABS), high-status wealthy residential areas were limited to the northern suburbs until the mid 90s. However, the so-called "condo-boom" that occurred in the CBD, as a result of the "world city" process, has changed the pattern of residential areas. Areas regarded as "prestigious", or "city living" are now common in Sydney. In addition, as O'Connor and Edgington (1991) and O'Connor et al (2001) argue, the increase of "producer services" (e.g., international finance and company headquarters) was a key factor for growth. Consequently, a new pattern of office location in the CBD of Sydney emerged.

Based on the overview above, this paper considers the urban structural change, especially focusing on both building provision process and building use in the CBD of Sydney. The dataset used in this presentation is GIS attribute data provided by the Sydney City Office. In addition, statistics of ABS and various reports of Sydney City Office, available on line, were also used to underpin the analysis.

Characteristics of Sydney's growth in the 1990s

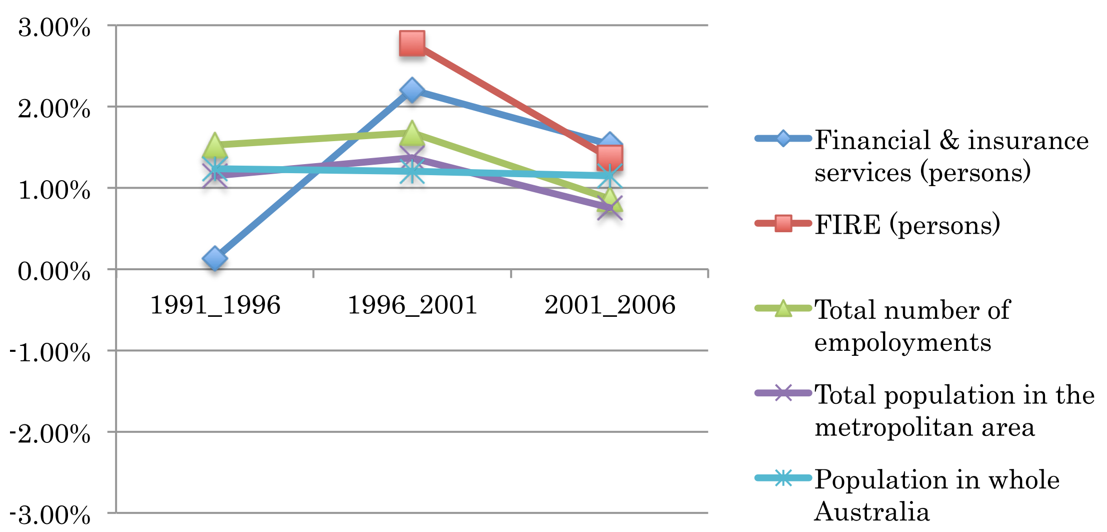
Sydney is the corporate and financial capital of Australia as well as a financial centre of the Asia-Pacific region. Almost three-quarters of Australian banks have their headquarters in Sydney, and the city is the site for the head offices of almost two-thirds of those multinational corporations that have established Asia-Pacific regional headquarters in Australia. In the late 1990s, more than 60 multinational corporations set up Asia-Pacific regional headquarters in Sydney, more than four times the total for any other Australian or New Zealand city (Hajdu, 1994; Maurie T. Daly and Bill Pritchard, 2000).

However, the rise of Sydney as a corporate and financial centre is a recent phenomenon. Particularly since the mid 1980s, the economic experiences of Sydney have diverged sharply from those of Melbourne and the other state capitals. During this period Sydney captured the lion's share of Australian financial and human capital as a result of a "world-city" growth process. Today's Sydney is dominated by the socio-economic and cultural diversity. Although the harbour once provided the fundamental social divide in the city, the city's composition is now increasingly a part of more complex spatial mosaics based on the locations of the city's highly internationalized service-centred economy – the CBD and some sub-centres in the suburbs (Maurie T. Daly and Bill Pritchard 2000).

Australia has the highest market capitalization in the Asia region, excluding Japan.

It is larger than both Hong Kong and Singapore. The expansion of the Australian Stock Exchange and financial system occurred generally in response to privatisation and demutualisation at the same period. From 1990 until 1996, 20 privatisations by Australian state and federal governments transferred approximately $21 billion of assets to the private sector. The incoming John Howard's conservative coalition government in 1996 added to this substantially through the privatisation of Telstra, by far the Australia's largest ever privatisation. All these factors assisted in the growth of Australian financial markets (Maurie T. Daly and Bill Pritchard 2000).

Figure 1 shows annual increase rates for a certain type of employment in Sydney Statistical Division (simply, SD) during 1991-2006. "Financial and Insurance services" shown in dark blue colour in the figure and "FIREs" ("Financial & insurance services" plus "Rental, hiring & real estate services") shown in red colour both indicate higher rates than the total population increase (shown in purple colour) in the whole metropolitan area (Sydney SD) after 1996. As mentioned above, in the late '90s, many multi-national companies newly opened Asia-Pacific headquarters in the CBD of Sydney. As Sassen (2000) suggested, this trend changed Sydney's role from national centre to global centre.



Data for "FIRE" is created by summing numbers in the census TSP categories "Financial & insurance services" and "Rental, hiring & real estate services."

Figure 1 Annual increase of employment in Sydney Statistical Division (1991-2006)

Data Source: ABS.

Growing population and multicultural aspects in Sydney

Sydney's population has been increasing in the last few decades. The percentage of people born overseas is 31.7% as of the 2006 census, which is the highest in the five major state capitals in Australia.

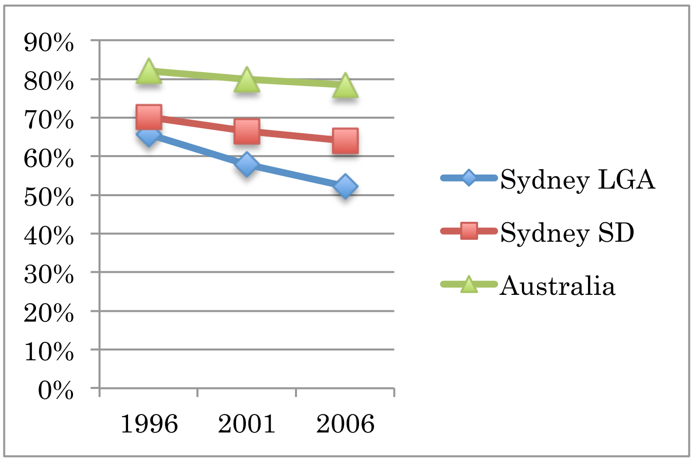


Figure 2 Percentage of persons who speak English only in Sydney during 1996 to 2006 Data Source: ABS.

Figure 2 shows the proficiency in spoken English in Sydney during 1996 to 2006 based on the time series profile by ABS (the count of persons who speak English only, excludes overseas visitors). The rate of Sydney LGA sharply decreased during the period to 52% in 2006, which is apparently low compared to broader areas (Sydney statistical Division and whole Australia). The increase in the number of people born overseas whose mother language is not English has given the city a strong multicultural aspect.

The growth of Sydney and related change of office spaces

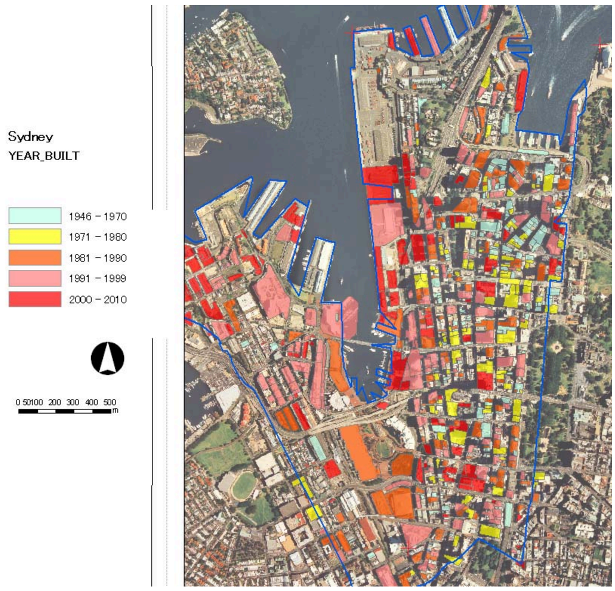
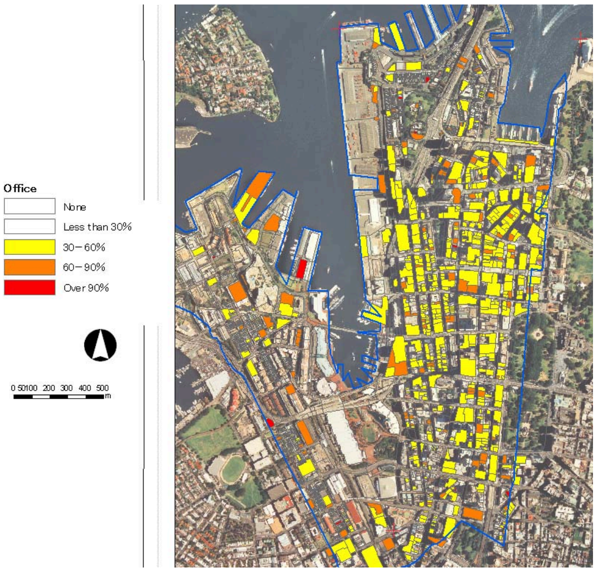


Figure 3 Built year of buildings in central Sydney
Source: Sydney City Office.

Relatively older age buildings (shown in light blue colour), built before 1970, have been concentrated in the area close to Circular Quay. In the 1970s and 1980s (yellow and orange), the heart area of building provision has been expanded southward gradually along Pitt and George streets (Figure 3). In addition, the most striking feature of this figure can be found in the precincts around Darling Harbour where relatively younger age buildings are dominant (pink and red).



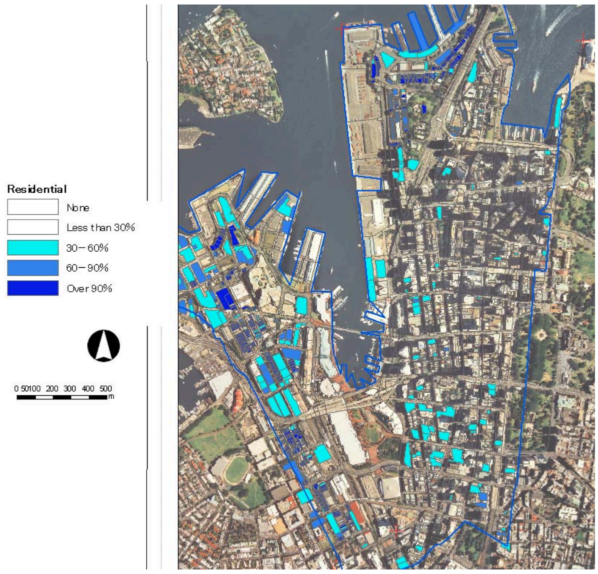


Figure 4 Percentage of offices in each building in central Sydney (Left)
Source: Sydney City Office.

Figure 5 Percentage of residential uses in each building in central Sydney (Right)
Source: Sydney City Office.

Based on the data from Sydney City Office, we calculated the percentage of certain types of building use in the area. Figure 4 shows an “office rate” and Figure 5 shows “residential rate.” A clear contrast in the distribution is that office and residential areas are concentrated in different areas of the study area. The fact that several parks occupy a large proportion of central Sydney is the biggest factor limiting the expansion of office space. Affordable office spaces are inherently limited because Sydney’s CBD is located in a narrow strip bordered by George and Pitt streets. In this context, as Connell (2000) pointed out, newly emerging industries in Sydney, such as IT and media, have dispersed into neighbouring areas (e.g., North Sydney) beyond Sydney’s city edge in the late 90s, which created a multi-nuclei structure for the metropolitan area. As a result, office spaces in central Sydney are more likely to be dedicated for "FIRE" functions (Financial, Insurance and Real Estate). With reference to Figure 3, as a "world-city" growth process, an urban redevelopment project in the Darling Harbour precinct has created many high-rise self-contained condominiums adjacent to the CBD, which offers young professional people a new way of "city living". This phenomenon called the "condo-boom" is now very common in central Sydney.

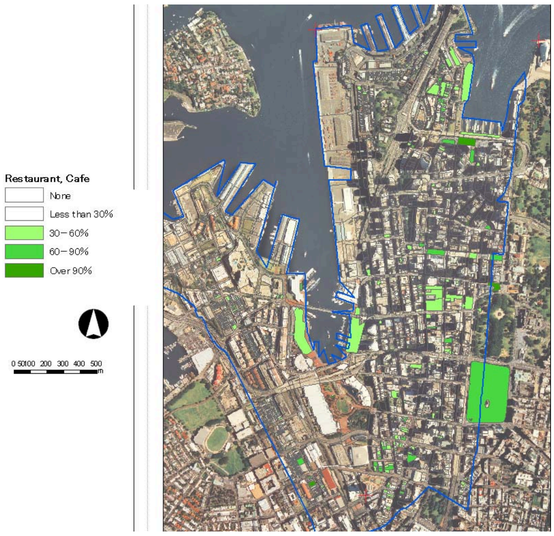


Figure 6 Percentage of restaurants and cafes in each building in central Sydney
Source: Sydney City Office.

On the other hand, areas for restaurants and cafés are limited compared to office and residential areas (Figure 6). They are dominant only in commercial precincts such as Circular Quay, Pitt street mall, China town and Darling Harbour. However, the rate of restaurant and café of relatively younger age buildings in the central area (Darling Harbour and World Square precincts) is not so high because these buildings have been designed for promoting mixed-use rather than single purpose use. The increase of high-rise and mixed-use buildings is obvious in present structure of central Sydney.

Figure 7 shows a tendency of major building use based on the built-year data from Sydney City Office data. Up until 1990, two major uses such as office and parking were dominant. However, different characteristics can be found in the 1990s. The number of newly constructed buildings was doubled compared to other decades. In addition, residential use became a second major use (15.7%) after office (21.6%) in the 90s. In the last decade, the number of newly constructed buildings has been declining sharply compared to the 90s.

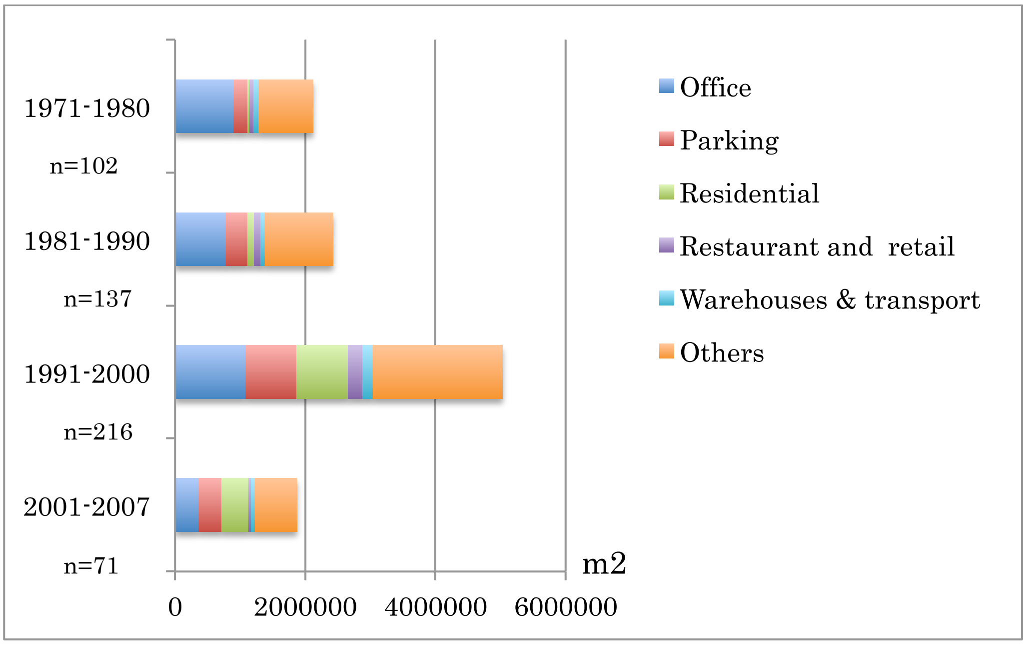


Figure 7 Floor space of each building in central Sydney constructed during 1971-2007

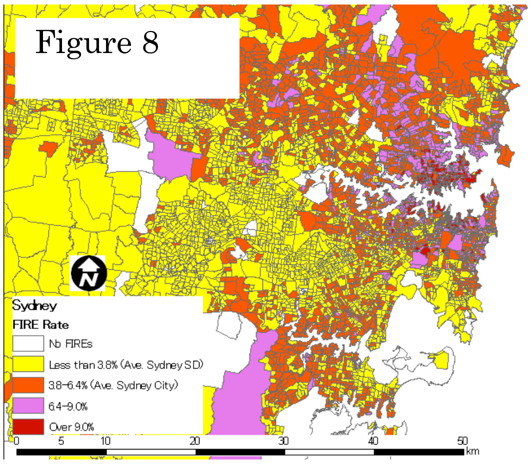
Source: Sydney City Office.

Based on the overview above, we can identify the clear fact that the "world-city" growth process has changed the city's character from the "office dominant" to the "mix of office and residential."

Discussion: Where do gentrifiers live?

In the body of literature on gentrification, it is pointed out that the so-called "condo-boom" that occurred in redeveloped areas has attracted many "gentrifiers" in major metropolitan areas in the world. They are sometimes described as "financiers", "IT-related workers", "rising class", "young professionals", "dinks" and "high income workers," etc. It is very significant to consider what types of people have become "new comers" to Sydney. In this paper, we focused on "FIRE" people (who work in financial, insurance and real estate sectors) as the representative of "gentrifiers".

Figure 8 shows the share of people who work in "FIRE" sector in the Sydney metropolitan area. High shares are obvious within, roughly, 5 km radius from the CBD of Sydney (shown in red and pink colours), which shows that these types of persons are likely to live close to the CBD. We focused on the core area of "FIRE" people in an enlarged map (Figure 9). This figure shows the share of "FIRE" people have of the total population, as well as the actual number (with a proportional symbol) in collection districts (simply, CDs) around the central Sydney in 2006. High rates are obvious on both sides of Sydney bay: concentrated in areas ranging from peninsula areas in the city's west (Birchgrove and Balmain) to the east beach (Bondi Beach) in the southern part of the bay; the area ranging from North Sydney to Manly Beach in the northern part of the bay.



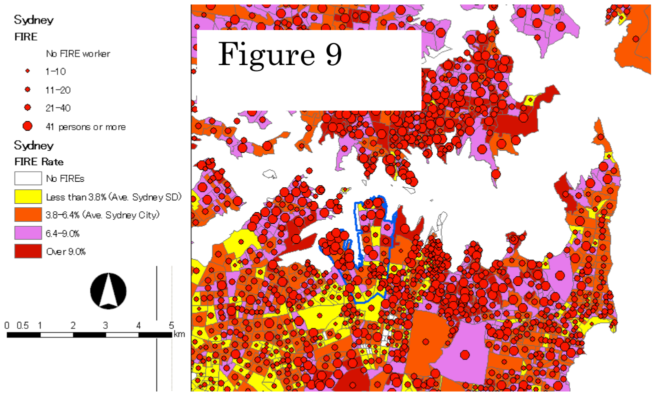


Figure 8 Share of people who work in “FIRE”* sector in the Sydney metropolitan area (Left)
*Data for "FIRE" is created by summing numbers in the census TSP categories "Financial & insurance services” and "Rental, hiring & real estate services"
Source: ABS.

Figure 9 Number of people who work in “FIRE”* sector in central Sydney (Right)
Source: ABS.

Table 1 Industry of employment in the example CDs located in high rate residential areas

Where do gentrifiers live?

CD_Code	1400117	1400203	1402001
Agriculture, Forestry and Fishing	0	0	0
Mining	0	0	0
Manufacturing	4	10	11
Electricity, Gas, Water and Waste Services	3	0	0
Construction	4	5	9
Wholesale Trade	12	3	11
Retail Trade	7	22	26
Accommodation and Food Services	8	11	29
Transport, Postal and Warehousing	0	7	15
Information Media and Telecommunications	3	11	14
Financial and Insurance Services	35	19	32
Rental, Hiring and Real Estate Services	3	0	9
FIRE	38	19	41
FIRE_Rate (%)	7.5	3.9	5.6
Professional, Scientific and Technical Services	29	32	48
Administrative and Support Services	8	10	14
Public Administration and Safety	9	10	18
Education and Training	9	14	26
Health Care and Social Assistance	16	13	13
Arts and Recreation Services	3	3	7
Other Services	3	6	3
Inadequately described	3	3	5
Not stated	3	3	0
Not applicable	345	308	447
Total	507	490	737

Source: ABS

Source: ABS.

To identify what types of people have become "new comers" to Sydney, we focused on the three CDs in central Sydney where the residential rate is quite high in Figure 5. Those CDs are all located in redevelopment areas of Sydney. The area with CD code "1400117" in the area close to Wynyard station in the CBD, "1400203" and "1402001" in the area close to China town have been selected. Table 1 shows the industry of employment in those three CDs. However, we cannot find a clear tendency in the table because these data have some problems with too many numbers of "not applicable". The number of people who work in "FIRE" and professionals are slightly greater than others, but the difference is subtle.

Concluding Remarks

Based on the analysis above, the preferred areas by the so-called "gentrifiers" ("FIRE" people) can be identified, however those areas are not limited to the narrow extent of the CBD. This fact is quite different from previous studies in London and New York where the majority of people labeled "gentrifiers" preferred to choose high-rise self-contained condominiums adjacent to the city centre (Hackworth, 2002; Hamnett, 2003; Hamnett and Whitelegg, 2007).

The following questions such as "Who is the new comer?", "Where do labeled "gentrifiers" live in Sydney?", "What's the difference between Sydney and other "world cities"?" remain unanswered.

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