

# REMAKING OF CENTRAL SYDNEY

## Evidence from Floor Space and Employment Survey in 1991-2006

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### INTRODUCTION

One direct impact of contemporary globalisation on Sydney is its emergence as a global city, as attested and measured in the rapidly growing global city discourse (Beaverstock, Taylor, & Smith, 1999; Friedmann, 1986, 1995; GaWC, 1998, 2009; Godfrey & Zhou, 1999; MasterCard Worldwide, 2008; Ni & Kresl, 2010; Peter J. Taylor, et al., 2011). With globalisation as an exogenous driving force, significant urban transformations have occurred in Sydney, which are the most epitomised in the central city area (or Central Sydney as delineated in this paper). It is contended that 'Sydney's global city status is based firmly on an essentialisation of the central business district (CBD) and historic core' (D. McNeill, Robyn Dowling, Bob Fagan, 2005, p. 939).

Observations and discussions on the transformations of Sydney with a relevance to or a focus on Central Sydney in the context of globalisation have been made from a range of angles: on an neoliberal agenda towards the planning of a global Sydney and shifted focus on promoting economic competitiveness (McGuirk, 2003, 2004); on the challenges on the multi-scalar urban governance presented by the imperatives of sustainability and the need for a metropolis-wide authority (Acuto, 2011); on the agglomeration of advanced business services and corporate headquarters (Spiller, 2003; Tonts & Taylor, 2010); on the increased concentration of the knowledge-based economy in the central city area (Hu, 2010); on the reinforced clustering of producer services and an emergent multimedia cluster in inner Sydney (Searle, 1998a; Searle & Valence, 2005); on the reconfiguration of the office work, office workers and workspaces towards practices of association, interaction and shared workspaces (O'Neill & McGuirk, 2003); on the undertaking of urban design initiatives towards the promotion of a global image and the enhancement of living and amenity spaces characterised by a neoliberal planning regime and commercial culture (D. McNeill, 2011; Punter, 2005); on the political agenda and community effects of urban consolidation, redevelopment, and gentrification of the traditional industry districts (Bounds & Morris, 2005, 2006; Bunker, Gleeson, Holloway, & Randolph, 2002; Searle, 2007; Searle & Filion, 2011); on the planning and development of global entertainment, activities and cultural facilities (Gibson & Freestone, 2002; Searle, 1998b; Searle & Bounds, 1999a); on the socio-cultural changes with increasing younger populations and accompanying urban lifestyles and cultural imaginaries (Shaw, 2006; Vipond, Castle, & Cardew, 1998).

This study takes an urban functional angle to investigate the transformations of Central Sydney in the context of contemporary globalisation. Based on the time series data from surveys on floor space and employment in Central Sydney in 1991-2006, this study systematically examines the functional changes through the lenses of industry divisions and space use divisions so as to identify and interpret their patterns. Next section is a literature review of theorising transformations of central cities in globalisation; the third section provides a historic narrative of Sydney's development in the post-World War II (WWII) decades as a backdrop; the forth section explains the methods and delimitation of the study area Central Sydney; the rest of the paper presents the results, discussion and conclusion.

### THEORISING TRANSFORMATIVE CENTRAL CITIES

The impacts of the contemporary process of globalisation on cities are ubiquitous, no matter whether cities in the developed countries or developing countries, prominent cities or less prominent cities. The urban impacts of globalisation are the most imprinted in the functional changes of central city areas. Numerous scholarly works have been produced on globalisation and cities, many of which are focused on the central city areas. Broadly

speaking, the theoretical underpinnings on the transformative functions of central cities in association with globalisation fall into three strands: economic restructuring, spatial reorganisation, and neoliberal urbanism. The former two strands are centred on the different dimensions functional changes; the third strand deals with the local political responses to the increasing globalism.

The economic restructuring of central cities in globalisation is mostly related to the discourse of global cities. One key argument is that a group of 'world cities' or 'global cities' emerge in contemporary globalisation as the centres or nodal points of the global economy (Friedmann, 1986; Friedmann & Wolff, 1982; Hall, 1998; Knox & Taylor, 1995; Sassen, 1995a, 2001; P. J. Taylor, 2004). Saskia Sassen (1994, 2001) offers a benchmark argument on the paradigmatic global cities to capture their roles in the economic shift from production to finance: global cities are the command and control posts of the integrated world economy, home to transnational corporations, banks, financial, information and specialised service companies and international organisations of all kinds. To sum up, global cities are the decision places and production places of finance and highly specialised producer services. These defining functions of global cities are usually located in the central city areas, which provides an explanatory framework for the transformative functions of central cities towards financialisation and specialised producer services. There are some supplementary arguments to the thesis of global cities as leading financial centres based on empirical grounds. Taylor (1999) indicates a far more complicated set of relationships connecting global cities and a wider range of cities that can be grouped under the label 'global cities'. Some empirical studies provide examples of cities which also have witnessed globalisation-led economic restructuring in central city areas, though they are not leading global cities of financial centres. Examples include the rise of the information technology (IT) economy in Stockholm (Stahre, 2004); the role of foreign direct investment (FDI) in Philadelphia as a centre for both the headquarters and operations of globally active nonfinancial firms in manufacturing, business services, and trade (Hodos, 2002); and the transformation of the old residential districts in central Istanbul towards commercial and tourism functions (Ergun & Dundar, 2004). These empirical cases have enriched the discourse on the transformative central cities in globalisation. However, a related concern is that these global city theories might result in a form of economic reductionism (J. Robinson, 2002).

As warned of economic reductionism, the discourse on transformative central cities in globalisation has been more than economic restructuring. Another strand of theoretical underpinnings has been on spatial reorganisation, encompassing important social and political implications as well. In the central city areas of emergent production clusters, there has been increasing demand for commercial spaces to accommodate the production, transaction and transmission of the specialised producer services, such as office, hotel, convention and exhibition, entertainment and cultural facilities, and apartment buildings (Hall, 1996). Vancouver presents a typical reflection of the spatial reorganisation in the central city area as seen in the 'emergent production clusters, residential mega-projects and spaces of consumption and spectacle' (Hutton, 2004, p. 1953). In such urban redevelopment projects, an accompanying symbolism is often attached in the form of having celebrity architects produce architectural luxuries in the most desirable locations for the purpose of presenting a global image as part of a globalised city marketing strategy. This phenomenon is typically seen in the emerging global cities such as Shanghai (Wu, 2003) and other Asian cities (Marshall, 2003), Tokyo (Sorensen, 2003), and Sydney (Punter, 2005). In the making of urban forms and spaces, urban design, which is a ready tool under the paradigmatic New Urbanism, is largely elitist, and deployed in the direct creation and promotion of economic competitiveness, and aspiration to capital interests and values and the accommodation of the creative classes in their desire for gentrification and inner city living (Gospodini, 2002; Gunder, 2011).

One intrinsic process associated with such globalist urban redevelopment is gentrification, a process of transforming traditionally industrial zones (or harbour districts) for low incomers in central cities to quality apartments and facilities for new urban upper and middle classes. By the 1990s, gentrification occurred in cities around the world to different degrees (Smith, 2002), as documented in New York (Smith, 2002), London (Hall, 1996), San Francisco (T. Robinson, 1995), Vancouver (Hutton, 2004), Stockholm (Stahre, 2004), Sydney (Bounds & Morris, 2006),

Istanbul (Ergun & Dundar, 2004)...to name a few. In terms of spatial reorganisation, gentrification has led to the emergence of new central city spaces, often in the form of high rise apartment buildings and related services, to accommodate people whose work has been linked with the afore-mentioned economic restructuring. Gentrification has presented more a social dimension of the spatial reorganisation in central cities, that is, the class transformation in association with the creation of affluent neighbourhoods together with displacement and polarisation (McFarlane, 2006; Smith, 2002; Stahre, 2004).

The transformative central cities in the forms of economic restructuring and spatial reorganisation are related to the global process of growth and change as exogenous factors. On the other hand, the endogenous instrument is associated with neoliberal urbanism which had been in practice globally by the 1990s. Planning and local politics have represented influential and decisive agencies of change: the local policy role in the reconfiguration of central area has extended well beyond conventional regimes of regulation, in the form of development control and growth management, to include transformational visions and assertive implementation programmes (Hutton, 2004). Despite different local settings, the global practices of neoliberal urbanism tend to share these commons in transforming central cities: 1) an interventionist approach towards new competitive forms of urban development in association with an expansion of the urban political system from 'government' to 'governance'; 2) the erosion of traditional welfare rights and policy tendency on capitalist production rather than social reproduction; 3) prioritisation of global competitiveness in the urban strategy; 4) concerted and systematic public-private partnership in entrepreneurial urban planning and development (Smith, 2002; Stahre, 2004).

By the 1990s, the transformative central cities had become a globalised phenomenon, and had shared some common or 'globalised' thematic features. The focus of this study is on the functional changes in the case of Central Sydney in terms of economic restructuring and spatial reorganisation, while the neoliberal urbanism is a local political and planning response to the global process which has been a crucial agency for the functional changes. These three theoretical strands underpin the empirical investigation of the function changes in Central Sydney since the 1990s.

## **HISTORICAL BACKGROUND**

Two important processes marked the urban changes in Central Sydney in the post-WW II decades: one was the process of suburbanisation in the Greater Sydney region; the other was the office boom in the CBD area.

Suburbanisation is arguably one of the most important developments in Australia's history, and the process accelerated enormously in the long boom years after the WW II (Ashton, 2008). As described by Max Kelly (1987), Sydney is a 'city of suburbs'. The 1950s mark a dividing line in Sydney's process of suburbanisation. Sydney was a mono-centric city of commercial dominance and industrial concentration until the 1950s. This mono-centric urban form developed to be a poly-centric urban region with exponential growth of freeways and vehicles. In the 1950s, car ownership for Sydney families became 'an essential rather than a luxury' (Aplin, 1987, p. 204). The number of vehicles in the state of New South Wales (NSW), the majority of whose population resided in Sydney as the capital city, quadrupled in the 20 years from 1950 to 1970, while it increased very slowly before the 1950s (Sydney City Council, 1971). A group of new regional sub-centres grew in Newcastle, Wollongong, Parramatta, Blacktown, and Penrith. The suburban centres which grew with the rail systems in the early decades of the 20<sup>th</sup> century strengthened their status as commercial and retail centres, such as Bondi Junction, Chatswood, Burwood, Hurstville and Ryde. Rail transport seemed ideal for moving people and goods into the central city from surrounding suburban centres (Diefendorf, 2000), but motor vehicles and expressways could only accelerate urban sprawl and suburbanisation.

Suburbanisation as seen in the growth of sub-centres meant exodus of certain industries away from Central Sydney. For the first time, post-WWII residential decentralisation to the suburbs was accompanied by large-scale outward movement of commerce and industry (Aplin, 1987). Sydney CBD's total employment share in Greater Sydney decreased from 30

percent in 1945 to 13 percent in 1981: Sydney CBD lost employments in manufacturing, retail and services in the post-WWII suburbanisation process, while its office workers grew from 85,000 to 140,000 in this period (Spearritt & DeMarco, 1988). Central Sydney was transiting from an industrial centre to a commercial centre of specialised services. This generated a huge office market demand as seen in the office boom in the 1960s and 1970s.

The rapid growth of office workers occurred along with an office development boom in Central Sydney. Sydney did not have any significant office construction until the 1960s; the net office space in Sydney CBD from 1960 to 1976 accounted for more than 50 percent of the total net office space from 1800 to 1976 (Sydney City Council, 1980). Apparently, market demand was the major driving force to provide working spaces for the rapidly growing office workers. On the other hand, the 150-foot height limit imposed on construction in Sydney in 1912 was removed in 1957 (Punter, 2005). This technically ushered in the boom of high rise buildings.

The post-WWII office boom in Sydney CBD was stalled by the economic downturn in the 1970s. By the mid of the 1980s, Sydney was ready for another construction boom. The approaching Bicentennial created 'a strong desire in the heart of the government to leave an indelible mark on the landscape (or cityscape) in time for the celebration' (Turnbull, 1999, p. 283). More importantly, Sydney's growing role as a Pacific Rim financial centre required more office spaces to accommodate overseas and domestic institutions. Another concurrent opportunity for Sydney in the 1980s was the tourist surge. The number of tourists to Australia grew by over one million to 2.2 million between 1980 and 1990 (Murphy & Watson, 1997, p. 40), and jumped to 4.5 million in 1999 (Sydney City Council, 2000, p. 58). Of all Australian cities, Sydney was the top tourist destination. This created a remarkable market demand for visitor accommodation and related facilities. Many of Sydney's luxury hotels were built in the 1980s. In the 1990s, running up to the Olympics 2000 provided an important incentive for urban growth in Central Sydney. Overall, the urban construction in Central Sydney demonstrated a somewhat cyclical pattern of bust and boom from the post-WWW II decades until very recently. This study focuses on the period of 1991-2006 in order to understand the nature of the urban changes occurring in Central Sydney at the turn of centuries.

## **STUDY AREA, DATA AND MEASURES**

The study area of Central Sydney is delimited within the boundary of the City of Sydney local government area (LGA) in 2001<sup>1</sup>(see Figure 1), an area of 6.7 km and a resident population of 30,858 in 2001 (ABS, 2003). The City of Sydney Council carried out the Floor Space and Employment Survey of the city centre area from 1976 to 2006 once every five years. This study is based on the data collected from the four surveys from 1991 to 2006 with regard to the delimited Central Sydney area.

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<sup>1</sup> The City of Sydney LGA was amalgamated with the South Sydney LGA in 2004. As a result, the current City of Sydney LGA (as of 2011) is much larger than its boundary in 2001, incorporating both the central city area as well as the original LGA of the South Sydney.



Figure 1: Map of the City of Sydney in 2001

Source: The City of Sydney Council, downloaded from [www.cityofsydney.nsw.gov.au](http://www.cityofsydney.nsw.gov.au), reworked by the author.

In order to analyse the functional changes of Central Sydney in 1991-2006, two sets of measures are used in this study as in the original surveys: one set of measures are made by industry divisions; the other set of measures are made by space use divisions. The industry divisions are based on the 17 broad divisions of the Australian and New Zealand Standard Industrial Classification (ANZSIC) 1993 version. The space use divisions are based on 14 broad divisions determined by how floor space with areas as small as five square meters is used (e.g. office, residential, storage, and parking). The measures by industry divisions include: internal floor space by industry divisions; employment by industry divisions; business establishments by industry divisions. The measures by space use divisions include: internal floor space by space use divisions; employment by space use divisions. This study examines the time-series trends of these measures to capture the patterns of functional changes occurring in Central Sydney in 1991-2006.

Certain limitations of the data need to be considered in this study. Given the span of 15 years of the survey series which involved variations in people and approaches in the large-scale field work, some inconsistencies and errors in the raw data were unavoidable, which hypothetically impacted the authenticity and validity of this study. Some noticeable doubts or inconsistencies in the raw data were adjusted in consultation with the personnel responsible for the surveys.

## RESULTS

### Overall Functional Changes

Central Sydney witnessed significant growth in internal floor space, employment and business establishments in 1991-2006 (see Table 1). Both internal floor space and employment increased by close to 50 per cent. Much of the internal floor space growth was attributed to residential development. With private household space and vacant space excluded, the occupied commercial internal floor space increased by nearly half the growth rate of the overall internal floor space, that is, 24 per cent. During the same period, the number of business establishments in Central Sydney increased by 11 per cent. The following part of this section will display the functional changes of Central Sydney within these overall growths.

Table 1: Internal Floor Space, Employment and Business Establishments in Central Sydney (1991-2006)

	1991	1996	2001	2006	Change (1991-2006)
Internal Floor Space (m <sup>2</sup> )	11,842,285	12,982,809	15,114,765	17,582,722	48.47%
Occupied Commercial Internal Floor Space* (m <sup>2</sup> )	8,046,172	8,287,179	9,261,196	9,938,416	23.52%
Employment	204,742	231,854	260,025	300,010	46.53%
Business Establishments	11,233	12,281	12,603	12,416	10.53%

(\* Excluding private households, vacant and others.)

### Functional Changes by Industry Divisions

- Changes of Internal Floor Space, Employment and Business Establishments

Growing and declining industry divisions are classified according to their gain or loss in the three measures of internal floor space, employment and business establishments in Central Sydney in 1991-2006 (see Table 2). The majority of the industry divisions gained in all of the three measures. The major industries (occupying more than 4 per cent of total internal floor space on average in 1991-2006) that had growth in the three measures include: finance & insurance; accommodation, cafes & restaurants; business services; cultural & recreational services; education; and retail trade. On the contrary, two major industries – transport & storage; and manufacturing – had loss in the three measures. Despite a tiny employment growth, government administration & defence as a major industry is classified as a declining industry since it had significant loss in internal floor space and business establishments. Of the non-major industries (occupying less than 4 per cent of total internal floor space on average in 1991-2006), industries which gained in the three measures include personal and other services; communication services. The industry division of health & community services is classified as growing industry since it enjoyed a significant gain in internal floor space and employment despite a modest loss in business establishments. Two small industry divisions gained in the three measures: agriculture, forestry, fishing & mining; and construction. Despite the status of being the smallest industry division, construction had striking growth rates in the three measures. The declining non-major industries are wholesale trade; electricity, gas & water.

Table 2: Change, Share Difference and Average Share of Internal Floor Space, Employment and Business Establishments by Industry Divisions in Central Sydney in 1991-2006

	Industry Division (ANZSCI)	Internal Floor Space			Employment			Business Establishment		
		Change	Share Difference	Average Share	Change	Share Difference	Average Share	Change	Share Difference	Average Share
Growing Industries	Finance & insurance	27.27%	0.43%	15.29%	57.14%	1.67%	25.74%	13.69%	0.26%	8.70%
	Accommodation, cafes & restaurants	109.50%	7.06%	14.49%	80.91%	1.16%	6.74%	54.24%	2.45%	7.31%
	Business services	157.73%	8.97%	12.55%	162.34%	11.80%	20.50%	37.16%	5.81%	27.15%
	Cultural & recreational services	78.14%	2.67%	7.60%	153.33%	1.67%	4.36%	11.26%	0.02%	3.02%
	Education	46.75%	1.01%	5.77%	84.64%	0.67%	2.89%	121.38%	1.42%	2.27%
	Retail trade	5.42%	-0.88%	5.31%	41.22%	-0.25%	6.12%	6.91%	-0.71%	21.46%
	Personal and other services	14.67%	-0.26%	3.60%	12.32%	-0.92%	3.50%	15.16%	0.21%	5.47%
	Communication services	-8.71%	-1.14%	3.38%	19.29%	-0.98%	4.27%	262.96%	1.65%	1.38%
	<i>Health &amp; community services</i>	36.76%	0.15%	1.59%	30.19%	-0.23%	1.81%	-5.08%	-0.82%	5.41%
	Agriculture, forestry, fishing & mining	3.73%	-0.07%	0.40%	10.18%	-0.15%	0.50%	42.86%	0.16%	0.65%
Construction	53.40%	0.04%	0.20%	137.43%	0.10%	0.23%	37.50%	0.09%	0.40%	
Declining Industries	Transport & storage	-20.51%	-5.13%	11.50%	-22.18%	-3.38%	4.83%	-10.91%	-1.22%	5.82%
	<i>Government administration &amp; defence</i>	-25.47%	-5.60%	10.90%	0.77%	-4.48%	11.38%	-56.23%	-3.19%	2.90%
	Manufacturing	-58.49%	-4.44%	4.17%	-36.27%	-3.45%	4.16%	-37.02%	-2.11%	3.89%
	Wholesale trade	-74.23%	-2.13%	1.63%	-70.19%	-1.77%	1.37%	-61.68%	-3.11%	3.14%
	Electricity, gas & water	-17.05%	-0.67%	1.60%	-35.75%	-1.46%	1.59%	-72.06%	-0.90%	1.04%
	<u>Total Establishments *</u>	23.52%	0.00%	100.00%	47.16%	0.00%	100.00%	10.53%	0.00%	100.00%

(\*Excluding private households, vacant and other; italicised industries have both growth and loss in internal floor space, employment and business establishment.)

- Changes of Share of Internal Floor Space, Employment and Business Establishments

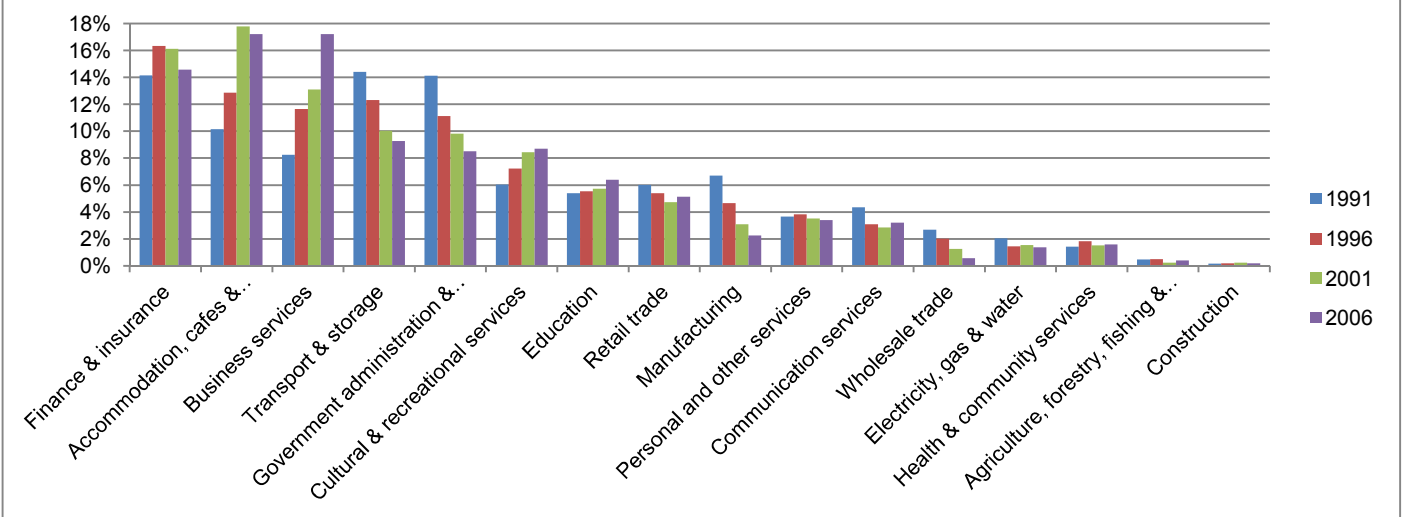
The shares of industry divisions are compared by the three measures of internal floor space, employment and business establishments in Central Sydney in 1991-2006 (see Figure 2). The industry divisions indicate both converging and diverging time-series patterns by the three measures. Internal floor space was spread among more industry divisions, followed by employment. Business establishments tended to be concentrated on fewer industry divisions.

Measured by internal floor space use, leading industry divisions included finance & insurance; accommodation, cafes & restaurants; business services; transport & storage; government administration & defence; cultural & recreational services. They were followed by important industry divisions of education; retail trade; manufacturing. However, they demonstrated different time-series trends in shares of internal floor space. On average, finance & insurance was the largest internal floor space use industry in 1991-2006, and its time-series share did not change much. Two industry divisions – accommodation, cafes & restaurants; business services – enjoyed sharp share increase in internal floor space, surpassing finance & insurance as the top two internal space use industries in 2006 (accommodation, cafes & restaurants surpassed finance & insurance in 2001). The industry division of cultural & recreational services enjoyed impressive share increase in internal floor space too. The shares of internal floor space decreased markedly in three industry divisions: transport & storage; government administration & defence; manufacturing. Education had modest share increase while retail trade had modest share decrease.

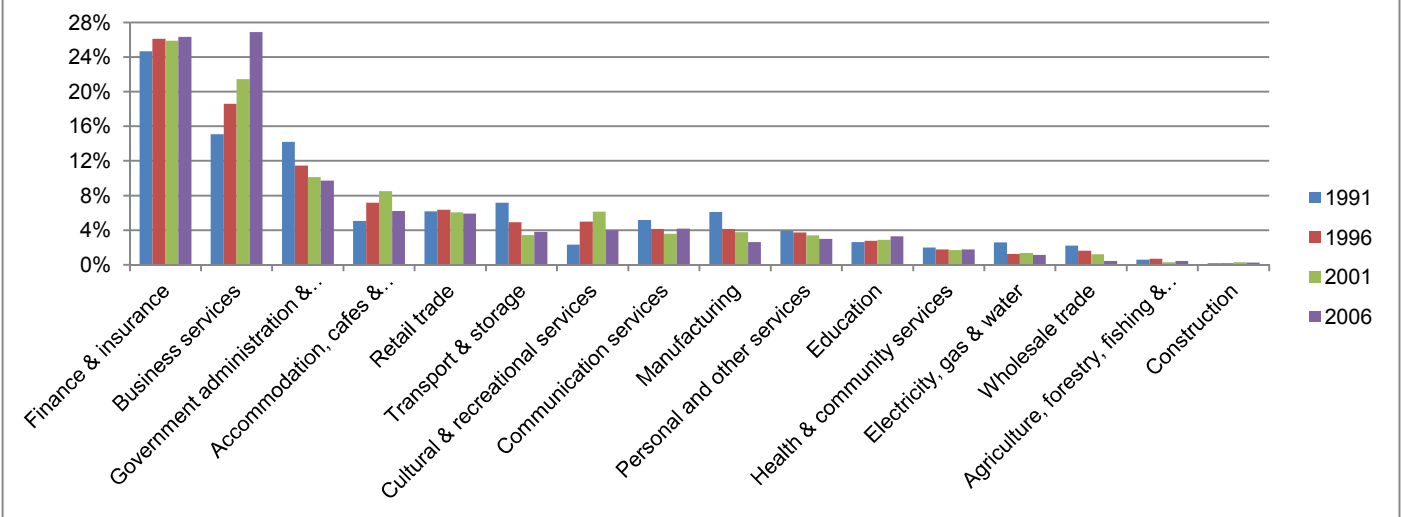
Measured by employment, top two industry divisions were finance & insurance; business services, followed by important employment industry divisions of government administration & defence; accommodation, cafes & restaurants; retail trade. The industry division of finance & insurance had a stable and modest time-series growth in share of employment. The sharpest growth of employment share occurred in business services, which surpassed finance & insurance as the largest employment industry division in 2006. Significant employment share growths occurred in industry divisions of accommodation, cafes & restaurants; cultural & recreational services. A few industry divisions whose internal floor space shares reduced also had reduced employment shares, such as government administration & defence; transport & storage; manufacturing. Some industry divisions indicate converging patterns in time-series shares between internal floor space and employment for.

Measured by business establishments, business services and retail trade were far more than the other industry divisions. As in internal floor space and employment, the business establishment share of business services increased significantly in 1991-2006 too. The business establishment share of retail trade remained constant with a tiny decrease. Noticeable business establishment share increase occurred in finance & insurance; accommodation, cafes & restaurants. Likewise, industry divisions of transport & storage and manufacturing had marked decrease in their business establishment shares.

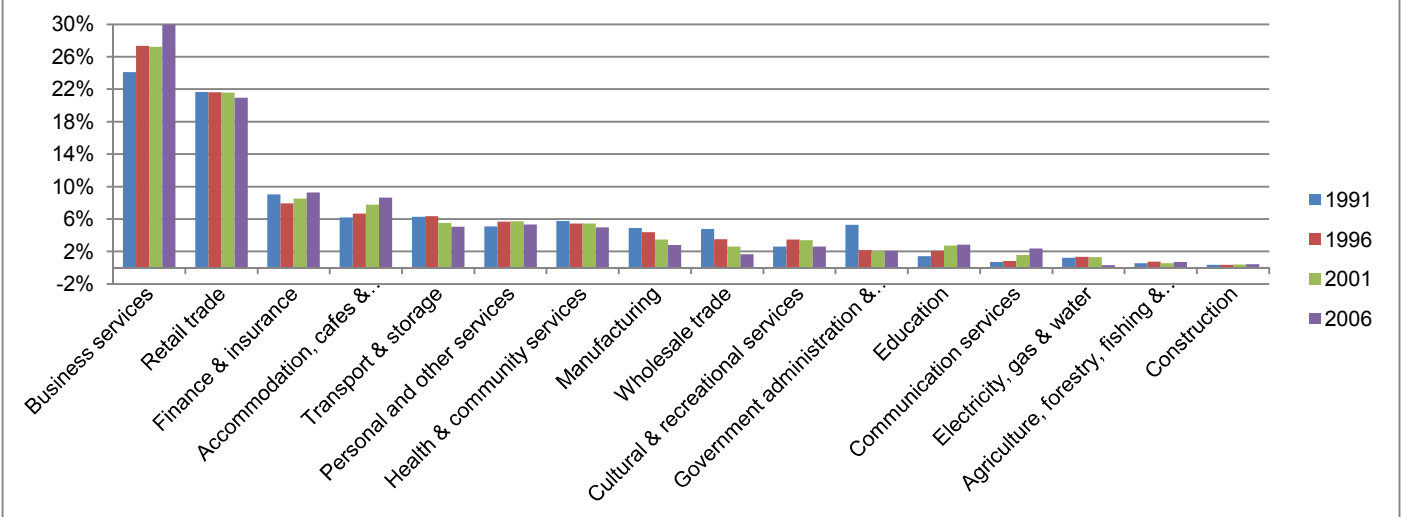
### Internal Floor Space



### Employment



### Business Establishments



(\* Based on occupied commercial internal floor space; industry divisions are organised by their respective average values in 1991-2006 from the highest to the lowest.)

Figure 2: Shares of Internal Floor Space, Employment and Business Establishments by Industry Divisions in Central Sydney in 1991-2006

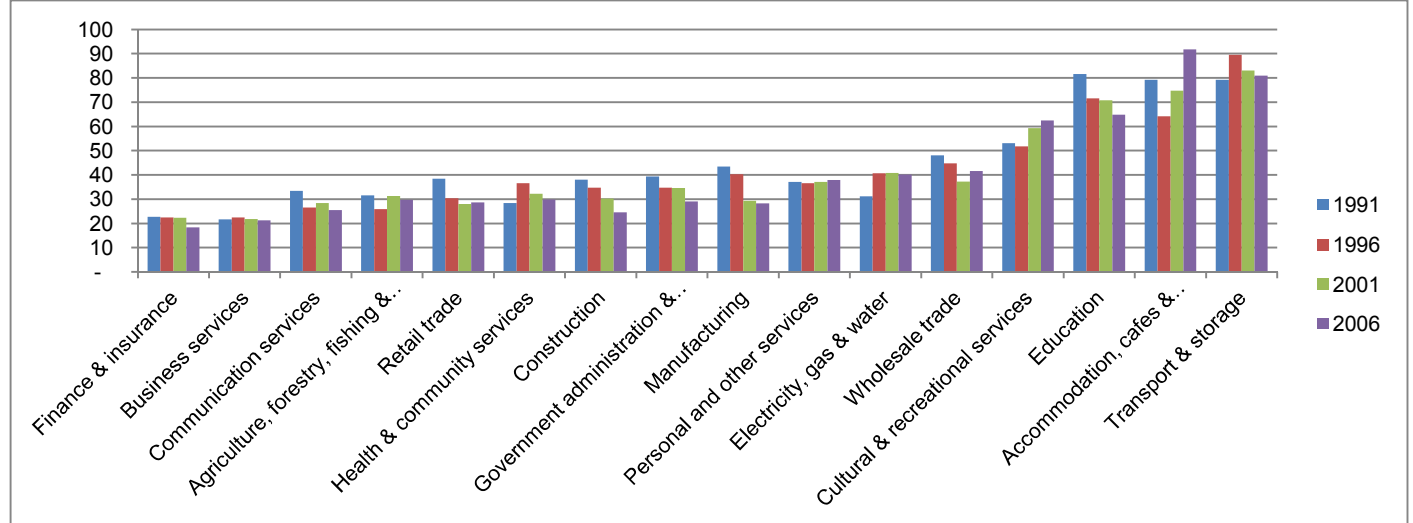
- Changes of Internal Floor Space Per Employee, Internal Floor Space Per Business Establishment, and Employees Per Business Establishment

Overall, internal floor space per employee was decreasing, while both internal floor space and employees per business establishment were increasing in Central Sydney in 1991-2006: internal floor space per employee decreased from 40 m<sup>2</sup> in 1991 to 36 m<sup>2</sup> in 2006; internal floor space per business establishment increased from 716 m<sup>2</sup> in 1991 to 800 m<sup>2</sup> in 2006; employees per business establishments increased from 18 in 1991 to 24 in 2006. However, the increasing or decreasing trends differ much by industry divisions (see Figure 3).

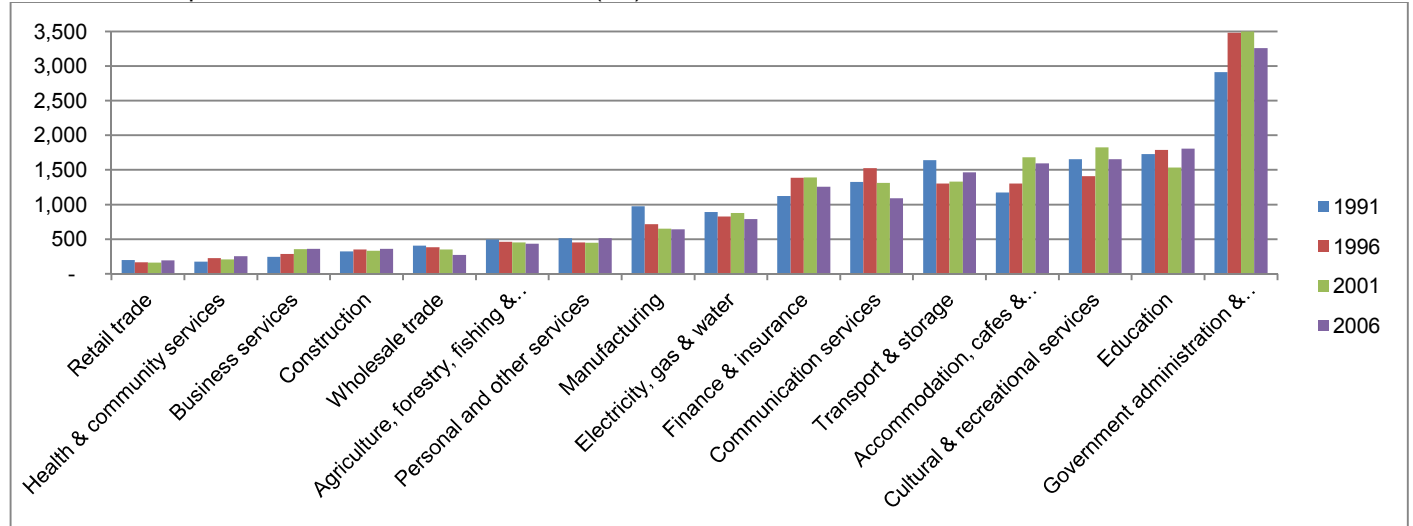
With the overall decrease of internal floor space per employee in 1991-2006, most industry divisions reduced internal floor space per employee. The two most space intensive industry divisions – finance & insurance; business services – had a very modest decline in internal floor space per employee, maintaining an average of a bit more than 20 m<sup>2</sup>. Some less space intensive industries had significant reduction in internal floor space per employee, including communication services; retail trade; construction; government administration & defence; manufacturing; wholesale trade; education. The less space intensive the industry divisions are (that is, larger internal floor space per employee on average), the more reduction of internal floor space per employee they tend to have. At the same time, two less space intensive industries – cultural & recreational services; accommodation, cafes & restaurants – enjoyed significant increase in internal floor space per employee. The rest of industry divisions, which are mostly obscure industries in terms of both space use and employment, maintained constant internal floor space per employee. They are health & community services; personal and other services; transport & storage; agriculture, forestry, fishing & mining.

Contrary to the mostly decreasing trend of internal floor space per employee for the majority of industry divisions, more industry divisions indicate general increase in internal floor space per business establishment and employees per business establishment in association with their overall growths. However, certain industry divisions do not demonstrate so smooth increasing or decreasing trends in internal floor space per business establishment or employees per business establishment as in internal floor space per employee. There are fluctuations in certain years despite their general increasing or decreasing trends. With or without fluctuations, major industry divisions which increased internal floor space per business establishment in 1991-2006 include: finance & insurance; accommodation, cafes & restaurants; cultural & recreational services; education; government administration & defence. Industries which had impressive decrease in internal floor space per business establishment include: manufacturing; communication services; and wholesale trade. Likewise, most industry divisions increased their employees per business establishment except for a few industries: education, manufacturing, transport & storage; agriculture, forestry, fishing & mining. Significant growth of employees per business establishment occurred in major industry divisions: business services; accommodation, cafes & restaurants; cultural & recreational services; communication services; finance & insurance; government administration & defence. It is worth noting that the industry division of government administration & defence used the largest internal floor space and hired the most employees per business establishment, far more than the other industry divisions on average.

Internal Floor Space Per Employee (m<sup>2</sup>)



Internal Floor Space Per Business Establishment (m<sup>2</sup>)



Employees Per Business Establishment

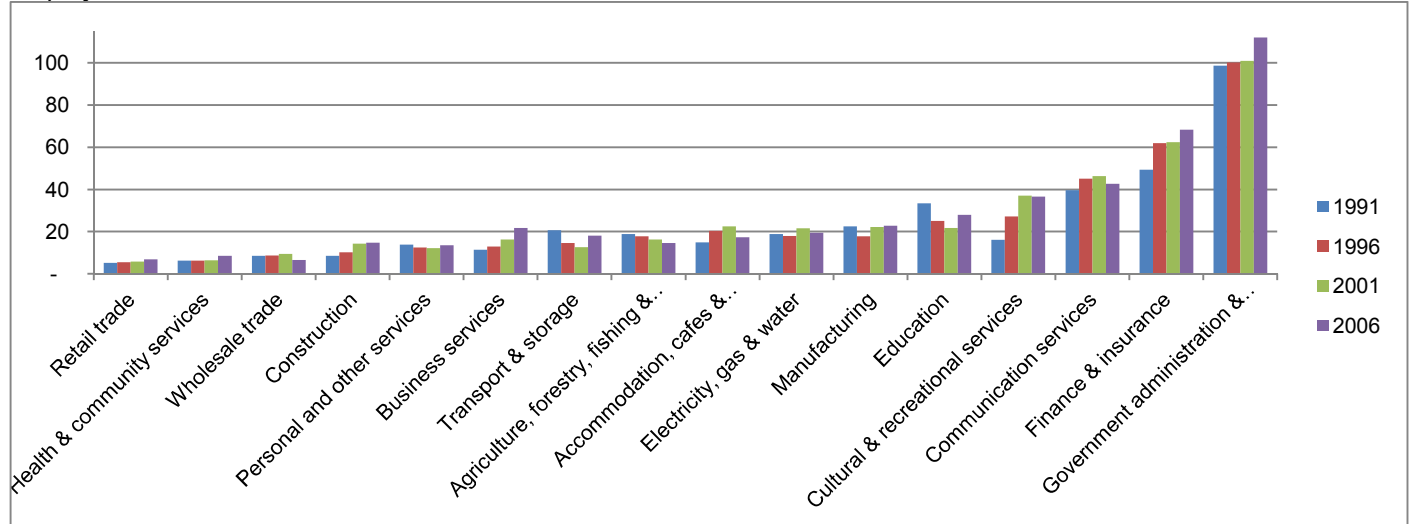


Figure 3: Internal Floor Space Per Employee, Internal Floor Space Per Business Establishment, and Employees Per Business Establishment by Industry Division in Central Sydney in 1991-2006

**Functional Changes by Space Use Divisions**

- Change of Internal Floor Space and Employment

Space use divisions are classified into growing space uses or declining space uses according to their gain or loss in internal floor space and employment in Central Sydney in 1991-2006 (see Table 3). For space use divisions whose internal floor space and employment contradict in gain or loss, internal floor space prevail over employment in determining whether they should be classified as growing or declining space uses. Of the major space use divisions (occupying more than 4 per cent of total internal floor space on average in 1991-2006), all – office; common area; parking; residential visitor accommodation – are classified as growing space uses because of their increases in internal floor space except for space use division of storage which lost in both internal floor space and employment in 1991-2006. Of the four growing major space uses, office is the only space use division which enjoyed significant growth in both internal floor space and employment. The other major space uses are mostly employment extensive and reduced employment to a great extent, while in the case of residential, no substantial employment is applicable. The internal floor space growth of residential and visitor accommodation are especially striking: the former grew by 463 per cent and the latter grew by 274 per cent in 1991-2006.

Of the non major space uses (occupying less than 4 per cent of total internal floor space on average in 1991-2006), retail and amenity-related space use divisions had growth in both internal floor space and employment in 1991-2006, such as shop/showroom; entertainment/leisure; restaurant/eating. Space use divisions of industrial and transport lost in both internal floor space and employment. The space use divisions of utilities and community demonstrate oppose patterns: the former gained in internal floor space, but lost in employment; the latter lost in internal floor space, but gained in employment.

Table 3: Change, Share Difference and Average Share of Internal Floor Space and Employment by Space Use Division in Central Sydney in 1991-2006

	Space Use Division	Internal Floor Space			Employment		
		Change	Share Difference	Average Share	Change	Share Difference	Average Share
Growing Space Uses	Office	34.60%	-3.15%	34.56%	54.61%	4.30%	82.90%
	<i>Common area</i>	22.05%	-3.78%	18.44%	-100.00%	-0.40%	0.21%
	<i>Parking</i>	102.76%	3.72%	12.28%	-78.47%	-0.06%	0.04%
	Residential	462.48%	8.52%	7.80%	NA	NA	NA
	<i>Visitor accommodation</i>	273.27%	3.24%	4.46%	-85.97%	0.30%	0.91%
	Shop/showroom	15.55%	-0.67%	2.73%	36.34%	-0.37%	5.19%
	Entertainment/leisure	71.01%	0.35%	2.72%	231.54%	0.68%	1.24%
	<i>Other</i>	85.21%	0.87%	2.51%	-86.21%	-0.05%	0.06%
	Restaurant/eating	52.26%	0.06%	2.29%	84.18%	1.02%	4.92%
Declining Space Uses	<i>Utilities</i>	521.43%	1.21%	0.86%	-81.29%	-0.77%	0.53%
	Storage	-37.83%	-5.43%	6.10%	-36.28%	-0.83%	0.92%
	Industrial	-34.89%	-1.86%	2.20%	-71.46%	-3.31%	2.29%
	<i>Community</i>	-28.76%	-1.44%	1.84%	6.25%	-0.19%	0.59%
	Transport	-52.61%	-1.63%	1.20%	-79.22%	-0.33%	0.18%
	Total	48.34%	0.00%	100.00%	45.46%	0.00%	100.00%

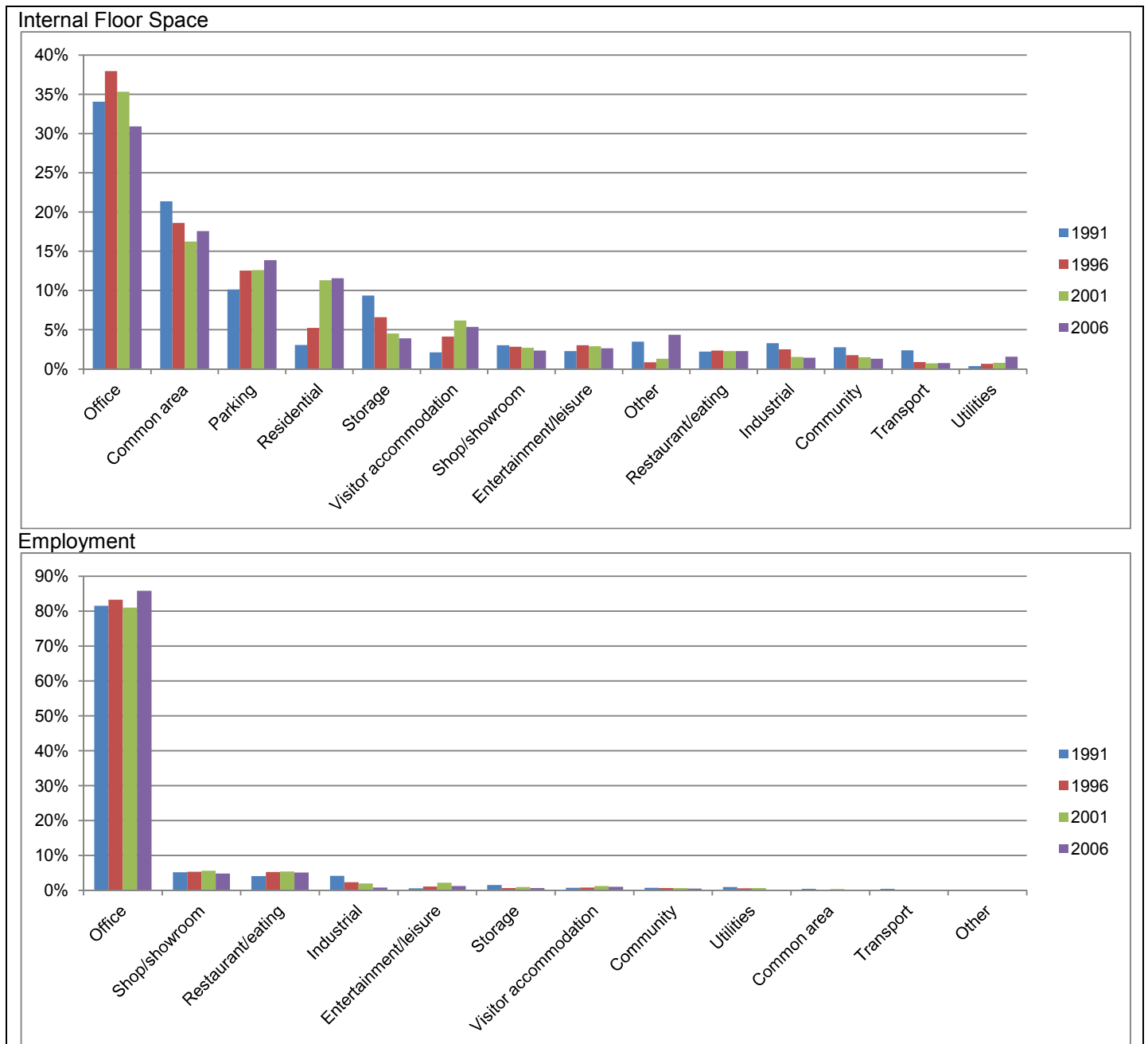
(\* Italicised industries have both growth and loss in internal floor space and employment.)

- Changes of Share of Internal Floor Space and Employment

The shares of space use divisions are compared by the two measures of internal floor space and employment in Central Sydney in 1991-2006 (see Figure 4). The internal floor space is spread among more major space use divisions, while employment is the most concentrated with office, making it a predominant space use division measured by employment. Major floor space divisions demonstrate opposite time-series trends in their shares of internal floor space: the shares of office; common area; and storage were declining; the shares of parking; residential and visitor accommodation were increasing. The largest increase in the share of

internal floor space occurred in residential. Small traditional space use divisions tended to reduce their shares of internal floor space too, including industrial; community and transport.

Office was the predominant space use division measured by employment, and its predominance tended to be strengthened: its employment share increased from 82 per cent in 1991 to 86 per cent in 2006. Of the other minor land use divisions, only restaurant/eating and entertainment/leisure indicated some noticeable increasing trend in employment share. All the other space use divisions had reduced employment shares in this period, very modestly notwithstanding.

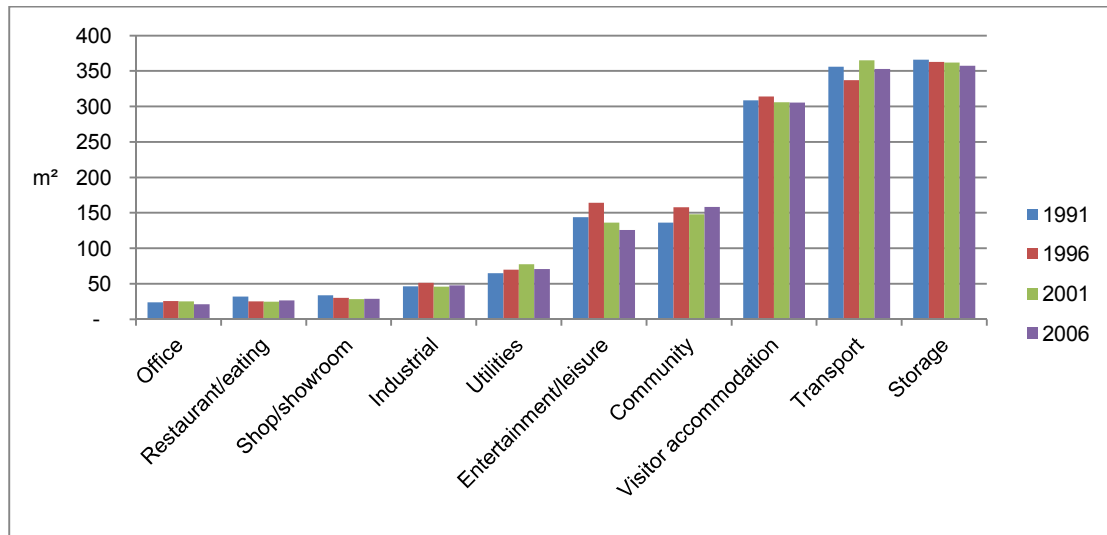


(\* Measurement of internal floor space is based on occupied commercial internal floor space; employment measurement is not applicable for residential; industry divisions are organised their respective average values in 1991-2006 from the highest to the lowest.)

Figure 4: Share of Internal Floor Space and Employment by Space Use Divisions in Central Sydney in 1991-2006

- Changes of Internal Floor Space Per Employee

On average, internal floor space per employee in Central Sydney in 1991-2006 was decreasing measured by space use divisions: it fell from 36 m<sup>2</sup> in 1991 to 31 m<sup>2</sup> in 2006<sup>2</sup>. But the time-series patterns differ much by space use divisions (see Figure 5). The three most space intensive divisions – office; restaurant/eating; shop/showroom – tended to reduce their internal floor spaces per employee. Less space intensive divisions – industrial; utilities; community – increased their internal floor space use per employee, but entertainment/leisure increased its internal floor space use per employee. Of the three most space extensive divisions, visitor accommodation and transport maintained constant internal floor space per employee, while storage – the most space extensive division – slightly reduced its internal floor space use per employee.



(\* Excluding residential, parking, common area, other)

Figure 5: Internal Floor Space Per Employee by Space Use Division in Central Sydney in 1991-2006

## DISCUSSION

The results indicate significant functional changes occurring in Central Sydney in 1991-2006 as measured by industry divisions and space use divisions. Both sets of measures point out some outstanding patterns. The measures by industry divisions indicate the dominance and strengthened dominance of service industries which can be broadly categorised as knowledge economy or experience economy: finance & insurance; business services; accommodation, cafes & restaurants; cultural & recreational services. The measures by space use divisions indicate an impressive increase of living and urban amenity spaces in Central Sydney, including residential; visitor accommodation; entertainment/leisure. With these, the dominant space use of office reduced its share in the total floor space despite a significant growth of office space in the same period. The central question for discussion is: how did these functional changes in Central Sydney occur in association with the exogenous factors and endogenous factors of the time?

Sydney was the main urban beneficiary of Australia's increasingly globalised commodity and financial markets (Searle, 2008). By 1988, Sydney had 150 head offices of international institutions (43 in Melbourne) and 155 of the 185 Australian head offices of foreign banks (Daly & Stimson, 1992). In 1997 and 1998, some 61 multinational corporations set up Asia Pacific regional headquarters in Sydney, more than four times the total for any other

<sup>2</sup> The figures of internal floor space per employee measured by space use divisions (36 m<sup>2</sup> in 1991; 31 m<sup>2</sup> in 2006) are lower than those measured by industry divisions (40 m<sup>2</sup> in 1991; 36 m<sup>2</sup> in 2006). This inconsistency occurs because the measurement of industry divisions excludes the category of "private households" and "other", which respectively have considerable amount of internal floor space and some employments, the measurement of space use divisions accounts for internal floor space and employment of all categories.

Australian or New Zealand city (Daly & Pritchard, 2000). Comparing Sydney's employment structure with overseas cities indicated that Sydney's performance in finance and business services in the mid 1990s was approaching that of New York and London in the mid 1980s (Searle, 1996). A study done by the accountancy firm Price Waterhouse Coopers in 1998 compared Sydney with seven international cities (New York, London, Frankfurt, Singapore, Atlanta, Vancouver, and Kuala Lumpur) and concluded that Sydney was performing reasonably well across a wide range of measures (Price Waterhouse Coopers, 1998). Hall (1995) placed Sydney in the ranking of sub-global cities then. Some other scholars argued that Sydney's economic characteristics of finance and producer services were indicative of its emergence as Australia's global city in the late 1980s and early 1990s (Baum, 1997; Lepani, Freed, Murphy, & McGillivray, 1995; Newton, 1995; O'Connor & Stimson, 1995; Searle, 1996). Understanding the functional changes in Central Sydney in 1991-2006 needs to be integrated with the impact of globalisation on Sydney and Sydney's growing role to be a global city.

A global city's status tends to be defined by its capacity to provide 'producer services' such as financing, banking, accounting, advertising, marketing and management consultancy and these complexes of the knowledge economy are usually located in CBDs of a few global cities (Sassen, 1995b, 2001). Searle (1998a) investigated changes in producer services location in Sydney based on an analysis of four industries of management consultancy, insurance, graphic design and data processing and concluded that 'globalisation appears to have reinforced the traditional central city focus of Sydney's producer services sector' (Searle, 1998a, p. 237). Forrest (1996) examined the spatial clustering of the journey to work in Sydney and pointed out a decreasing dependence on the central city as a focus of employment other than those employed in the business, finance and information service sector. Research by O'Neill & McGuirk (2002) indicated that the surge of finance-based economic activities in Central Sydney helped sustain Australian economic prosperity in the late 1990s. The findings of these researches converge to point to the concentration of the advanced producer services in Central Sydney, which has been strengthened across the turn of the centuries as attested by the results of this study.

The other facet of functional changes in Central Sydney in 1991-2006 is related to its growing capacity of experience economy, such as amenity facilities, and cultural and recreational services. Central Sydney has witnessed a growing presence of experience space and creative industries in relationship to the globalisation process. Searle and Valence (2005) found an emerging inner Sydney multimedia cluster including graphic design, advertising and related media. The high concentration of the multimedia firms in Central Sydney in relation to the Greater Sydney formed part of a shift towards an information economy. Set in a global context, Sydney's performance in the creative industries of cultural and media services was impressive too. In the index ranking global cities' capacity of providing producer services produced by the Globalization and World Cities (GaWC) program at the Loughborough University, Sydney ranked the fifth in advertising performance of major global cities (P. Taylor, 2008, p. 56). In comparison, Sydney's performances in other categories of producer services – accountancy, banking and financing, insurance, law, and management consultancy – were much less impressive in a global context.

Florida's (2002, 2005) theory of creative class provides an explanatory framework for the increasing concentration of the creative cultural and media services in Central Sydney. The creative workers required and driven by the information technology are urban lifestyle class (Florida, 2002). They are globally mobile electronic migrants (Blakely, 2001; Florida, 2005), and are willing to choose to live and work in the central city areas of global cities with favourable environments. Sydney's cityscapes – built and natural lifestyle environment, and social tolerance and cultural diversity – are important assets of the city's competitiveness for a creative economy and creative city (Gibson, 2006; Throsby, 2006). The growing amenity services – accommodation, cafes & restaurants; cultural & recreational services – constitute part of Central Sydney's urban assets in attracting the creative workers and nurturing a creative economy in addition to catering for the increasing demand of international tourism as the base of an experience economy.

To be in live with the measures by industry divisions, the most impressive growths by space use divisions in Central Sydney in 1991-2006 occurred in the experience services too – visitor

accommodation; entertainment/leisure – in addition to residential and office. Residential had the highest growth of internal floor space of all space use divisions: Sydney's residential construction in inner areas continued at 'unprecedented levels' (Vipond, et al., 1998, p. 215). The remarkable growth of the experience economy related space use divisions as well as residential in Central Sydney was an urban development response to the planning strategies of Living City<sup>3</sup> and City West<sup>4</sup> programs in the late 1980s and the 1990s: the former program was driven by over-generous residential and hotel bonuses to revitalise city life (Punter, 2005); the latter program incorporated redevelopment of Darling Harbour and urban consolidation and gentrification of Ultimo-Pyrmont areas (Bounds, 2001; Bounds & Morris, 2006; Searle, 2007).

By the early 1990s, the CBD development boom had run its course, and an emerging demand for inner city apartment dwellings took its place, which meant that 'Ultimo-Pyrmont's redevelopment became focused on high rise apartments in a drive for consolidation' (Searle, 2007, pp. 6-8). In addition to providing inner city apartment living for the new CBD workers, the City West redevelopment focused on providing amenities of urban lifestyle, and hotels, meeting centres and entertainment to compete for 'global activities' and 'global entertainment' as seen in the bid for the 2000 Olympics and the Sydney Casino (Searle, 1998b; Searle & Bounds, 1999b). The impacts of these urban redevelopments were reflected in the internal floor space and employment growth in related space use divisions. An accompanying phenomenon was rapid population growth: the inner city population in Sydney grew by 19 percent in 1994-1999 (Stein, 2002, p. 32).

The space use division of office enjoyed significant growth in both internal floor space and employment, but demonstrated contradictory patterns in their changes: throughout the years, office as a space use division occupied around one third of total floor area with a slight declining trend, while its employment share was on a firm rising trend with an average of 83 per cent. These seemingly contradictory patterns can be explained by the changes of office work, workers and workplaces which have been undergoing in Central Sydney as the central city area of a global city. O'Neil and McGuirk (2003, p. 1751) pointed out that 'complex processes of reconfiguration' are being experienced in the 'new forms of office work and new subjectivities of office workers' under the impact of 'economic financialisation'. With such reconfiguration, they highlighted 'association' and 'interaction' in financialised office work, new knowledge office workers, and 'shared' and 'communalisation space' in work places in Sydney CBD. These observations on the impacts of financialisation and new business services on office space use infers a transformative shift towards 'less workspace per worker' in office, which has been verified by the results of this study: the overall office workspace ratio tended to be declining; the ratio of workspace use per person in both partitioned office and open plan office decreased while the shared office ratio increased.

## CONCLUSION

This study systematically examines the floor space and employment in Central Sydney in 1991-2006 respectively through the lenses of industry divisions and space use divisions, so as to summarise the patterns of functional changes. This study provides an empirical case of Sydney underpinned by the theoretical framework of transformative central cities in the context of contemporary globalisation. The identified functional changes in Central Sydney towards strengthened capacity of the knowledge services and experience services occurred

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<sup>3</sup> The Living City concept was initiated by the Lord Mayor Frank Sartor in 1994. The booklet *Living City: Sydney City's Council's Blueprint* announced the civic aspiration for a vibrant city of world standing that will be prosperous in the long term and pursuit for a global Sydney. The overall objective of the Living City program was to draw people back in the central city area, especially after office hours, by enhancing the public spaces and promoting mixed uses of commercial, residential and tourism.

<sup>4</sup> The City West program was proposed by the NSW state government in the Central Sydney Strategy 1988 and later implemented to expand the CBD which was in a north-south linear spine westward across Darling Harbour to include the industrial districts of Ultimo-Pyrmont. In the 1990s these traditionally industrial districts were gradually redeveloped and gentrified.

in association with the exogenous factor of Sydney's emergence as a global city as well as the endogenous factor of urban planning and development efforts.

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