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San Francisco's Urban Transformations since the 1980s

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UNIVERSITY OF CALIFORNIA

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1 Introduction

This paper examines San Francisco's urban development transformations in the post-1980 decades. The transformations are examined through two spectrums: functional concentration and economic base. Through the variables of employment by land use and floor area by land use, the functional concentration analysis identifies the changes of the urban functions concentrated in San Francisco. The economic base analysis uses the data of employment by industry to find out San Francisco's economic transformations and economic drivers with reference to the entire Bay Area as a metropolitan region.

Section 2 is a historical outline of San Francisco's urban development in the post-WWII decades as background. Section 3 and Section 4 respectively analyse San Francisco's functional concentration and economic base. Section 5 concludes and discusses the patterns of San Francisco's urban development transformations based on the above analyses and calculations.

2 Background

San Francisco as a prosperous metropolis was catalysed by the Gold Rush. In the one century between the Gold Rush and 1950, San Francisco's population kept growing by 40 percent every ten years on average (see Figure 1). In 1900, San Francisco was the 9th largest American city (Schwarzer, 2001) – this was remarkable given its constrained geographical location. However, like almost all American cities, San Francisco's population peaked in 1950 and turned to decline in the post-WWII suburbanisation process until 1980 when San Francisco's population reversed to grow. San Francisco's population growth after 1980 was exceptional: in 2000, only the populations of New York and San Francisco – the top two densest American cities – reached their historic peak levels in 1950 of all American cities (Schwarzer, 2001). Urban revitalisation and immigration – both overseas and domestic – were attributed to the new wave of population growth. San Francisco has become one of the most cosmopolitan cities in the world. In 2005, 36 percent of San Francisco's population were born overseas (US Census Bureau, 2008).

However, San Francisco's population reversal did not necessarily mean the reversal of the suburbanisation process commencing from the 1950s. As illustrated in Figure 1, despite its population growth in the post-1980 years, San Francisco's population and employment shares in the Bay Area were on a declining trend. The comparative decline of San Francisco's employment was particularly striking: from 1980 to 2005, San Francisco lost its total employment by 27 percent (San Francisco Planning Department, 2005, 2006). There are two implications here: the Bay Area's growths of population and employment were higher than those in San Francisco in the post-1980 years; at the same time, San Francisco gained residents but lost jobs. The San Francisco case verifies the claim that 'the dominant

spatial trend in US metropolitan areas during the fast-growing 1980s was decentralization of employment' (Cervero & Wu, 1998, p. 1059).

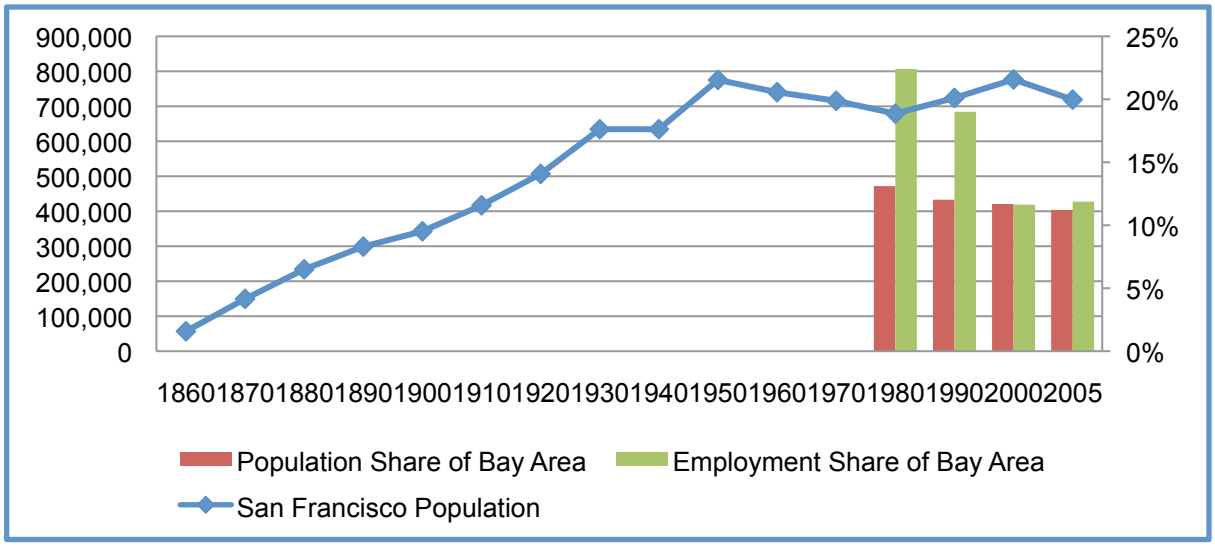

Figure 1 San Francisco Population (1860-2005) and Its Population & Employment Share of Bay Area (1970-2005)
Source: (San Francisco Planning Department, 2005, 2006; US Census Bureau, 2008)

The post-WWII suburbanisation of population and employment developed in parallel with inner city development boom in San Francisco, which was unprecedented in its history and was hardly rivalled by any other American cities. From 1965 to 1980, San Francisco's total office space more than doubled (see Figure 2). The 1980-1985 years were the last phase as well as the culmination of the post-WWII development boom before the restrictive Downtown Plan 1985 and Proposition M 1986 were enforced. Office development in the second half of the 1980s was very modest as a result of property market downturn as well as policy effects of the Downtown Plan 1985 and Proposition M 1986. In the second half of the 1990s, a renewed round of urban development arose in San Francisco, which mostly happened in the South of Market area (SoMA). Office growth in the five years of 1995-2000 more than doubled that in the previous ten years as indicated in Figure 2.

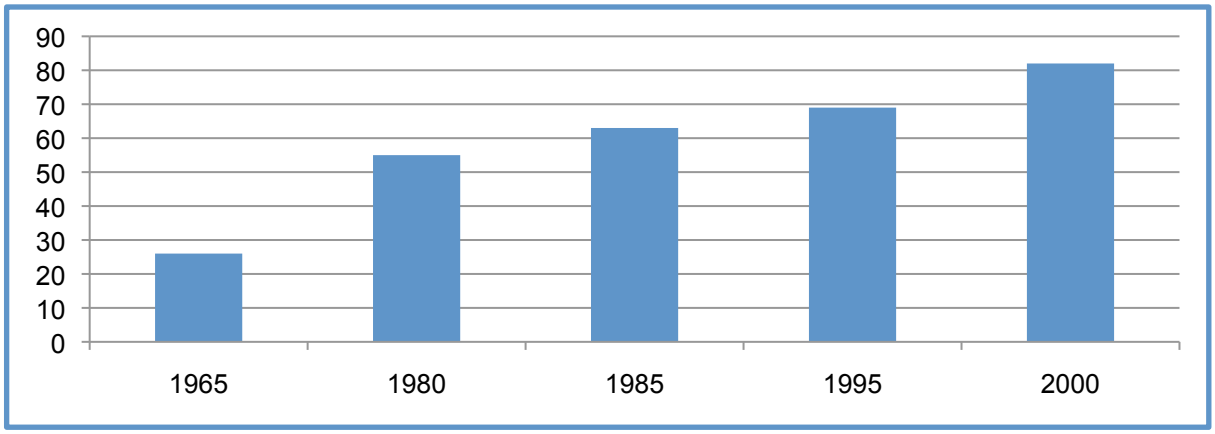

Figure 2 San Francisco Downtown Total Office Space 1965-2000
(in million square feet)

Source: (San Francisco Planning Department, 2004)

The drivers of the physical changes of San Francisco's urban forms were its urban functions which experienced fundamental shifts in the same period. San Francisco was the only major city in the West Coast in the one century time from the Gold Rush to the end of the World War Two. It was a regional centre as well as a global gateway city. It was a financial centre, a status established since the Gold Rush. It was the hub to distribute the natural, agricultural and manufactured goods across the hinterland and exchange between home and overseas. It was the prime choice to home federal, state and local government institutions. Overall, its urban roles included finance and banking, distribution, trade, manufacturing, government administration and culture.

The US economy began to transit from an industrial to a post industrial economy in the post-WWII years, in which San Francisco was a vanguard (Sims, 2000). San Francisco's manufacturing, distributing and maritime industries were decentralised to other Bay Area centres. The suburbanisation of manufacturing in the Bay Area took place along with the process of industrialisation far before the post-WWII years (Walker, 2004), but the booming post-WWII freeway and other transport infrastructure development in the Bay Area facilitated and accelerated the decentralisation process of San Francisco's industrial economy. It was a consensus among the government, business and the general public that San Francisco should be a regional centre of services and corporate headquarters in the macro context of post industrial economic transition. In order to capture the momentum, large amount of capital investment was attracted, downtown high rise office buildings were constructed, the public transit systems like BART and Muni Metro were built, and supporting facilities such as the Moscone Centre and hotels were launched. Within twenty years from the late 1950s to the early 1980s, San Francisco replaced its low rise factories and warehouses with high rise modern office buildings, shifted its economic base from manufacturing and distribution to corporate and business services, and shifted its employment base from working class to middle and upper class.

The 1980s witnessed an accelerated process of globalisation mainly driven by global financial deregulation, neoliberal reforms initiated by the Reagan and Thatcher's governments, and advancement in transport and communication technologies (Short & Kim, 1999). An integrated global economy system exerted far-reaching influences on major cities, which also shaped globalisation themselves. The following sections measure and analyse San Francisco's urban development transformations in the next context of post-1980 decades.

3 Functional Concentration

The functional concentration analysis is based on two variables: employment by land use; floor area by land use. Employment by land use in both the San Francisco City and the Financial District is analysed. The Financial District is San Francisco's CBD, where the cluster of the highest buildings is located. The analysis of floor area by land use is focused on the C-3 District, the commercial central area of San Francisco. The C-3 District is the zoning area defined by the San Francisco Planning Department to refer to the downtown commercial area, 'a centre for city, regional and international commerce' (San Francisco Planning Department, 2009). It is composed of four kinds of commercial activities: downtown office, downtown retail, downtown general commercial and downtown support. Generally C-3 is used to refer to downtown or centre of San Francisco. The geographical boundary of the C-3 District is much larger than that of the Financial District (see Figure 3). The C-3 District is San Francisco's central place, and the Financial District is San Francisco's CBD. The time scopes of analyses for these three geographical delimitations do not accurately coincide restricted by data availability.

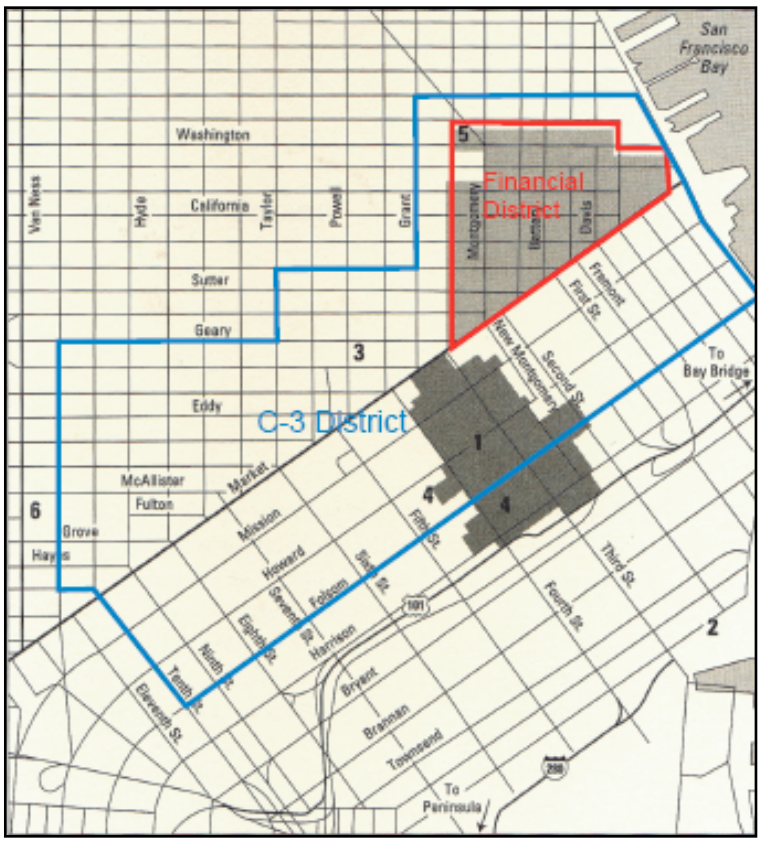

Figure 3 Map of Financial District and C-3 District in San Francisco
Note: The boundary lines are straightened purposefully to indicate the location rather than accurately coincide with the planning zones.
Source:(McGovern, 1998), reproduced by Richard Hu.

3.1 Employment by Land Use

San Francisco City

Figure 4 and Figure 5 illustrate the changes of employment by land use in San Francisco City from 1980 to 2005 based on the employment data and calculations in Appendix 1.

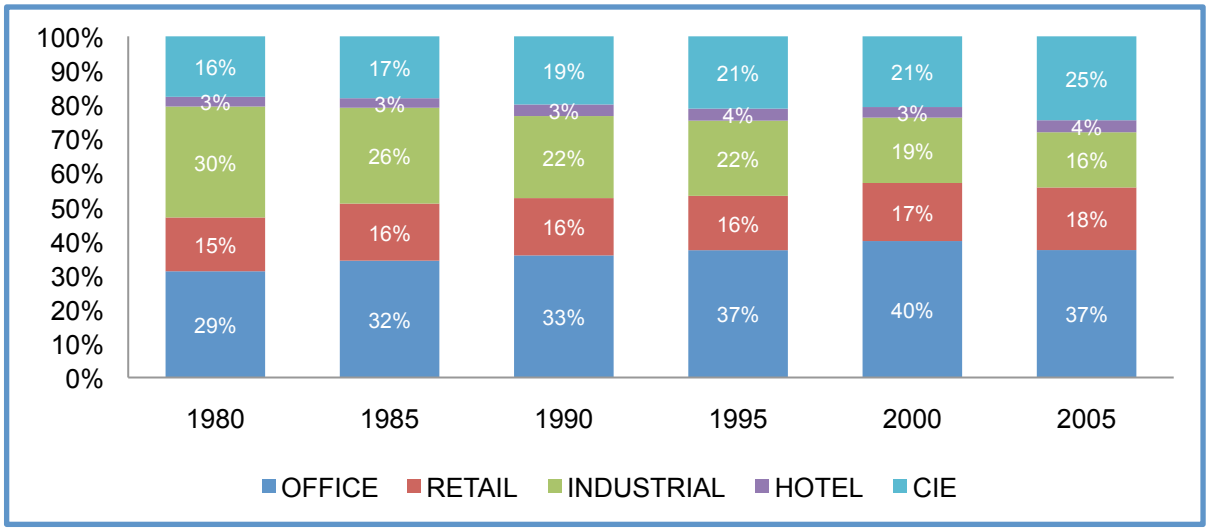

Figure 4 Employment Share by Land Use Division in San Francisco City (1980-2005)

Figure 4 shows the employment shares of different land use divisions from 1980 to 2005 at intervals of five years in the San Francisco City. The five major land use divisions fall into two groups according to their overall trends throughout these years: the grouping group of Office, Retail, Hotel and Cultural/Institutional/Educational (CIE); and declining Industrial as land use division. In 1980, Industrial was the largest land use division of employment, closely followed by Office. In 2005, Industrial's employment share decreased from 30 percent in 1980 to 16 percent, after Office, CIE and Retail. Throughout 1985-2005, Office was the largest land use division of employment, and this status had been strengthened except that its employment share declined from 40 percent in 2000 to 37 percent in 2005. Retail's employment share was also on the rise, but on a very modest scale. The land use division of Hotel increased its employment share by close to 1 percent, but this was remarkable growth given its very small employment share. CIE had the largest employment share growth from 16 percent in 1980 after Industrial and Office to 25 percent in 2005 only second to Office. This indicates a significant unban transformation in San Francisco, that is, San Francisco's increasing role in cultural, institutional and educational functions.

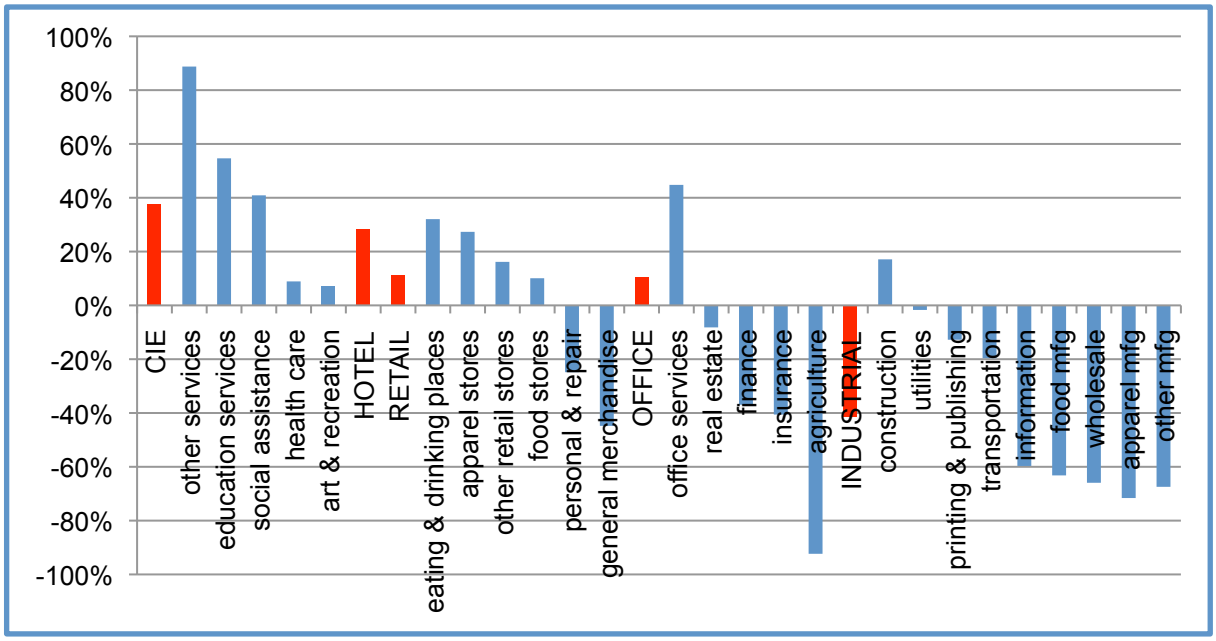

Figure 5 Employment Change by Land Use Division in San Francisco City (1980-2005)
Note: Red bars indicate the major land use divisions with the blue bars to their right indicating their respective subdivisions.

Figure 5 aligns the land use divisions and their subdivisions according to their employment changes in 1980-2005 in the San Francisco City. San Francisco's total employment number decreased by 5 percent in this period. Measured through land uses, CIE, Hotel, Retail and Office gained employment, while Industrial lost. All subdivisions of CIE gained employment, and education services increased by even more than 50 percent. For Retail, the subdivision of eating & drinking increased the most by 32 percent. Overall, Office increased its employment as a major land use division, but its subdivisions indicated different trends: office services had the highest growth rate of 45 percent, but both finance and insurance lost their respective employment by almost 40 percent. All subdivisions of Industrial lost employment except for construction – despite suburbanisation of most labour-intensive industries, San Francisco's construction remained comparatively robust for its considerably active urban construction in this period.

Financial District

Figure 6 and Figure 7 illustrate the changes of employment by land use in the Financial District, the San Francisco CBD, based on the employment data and calculations in Appendix 2.

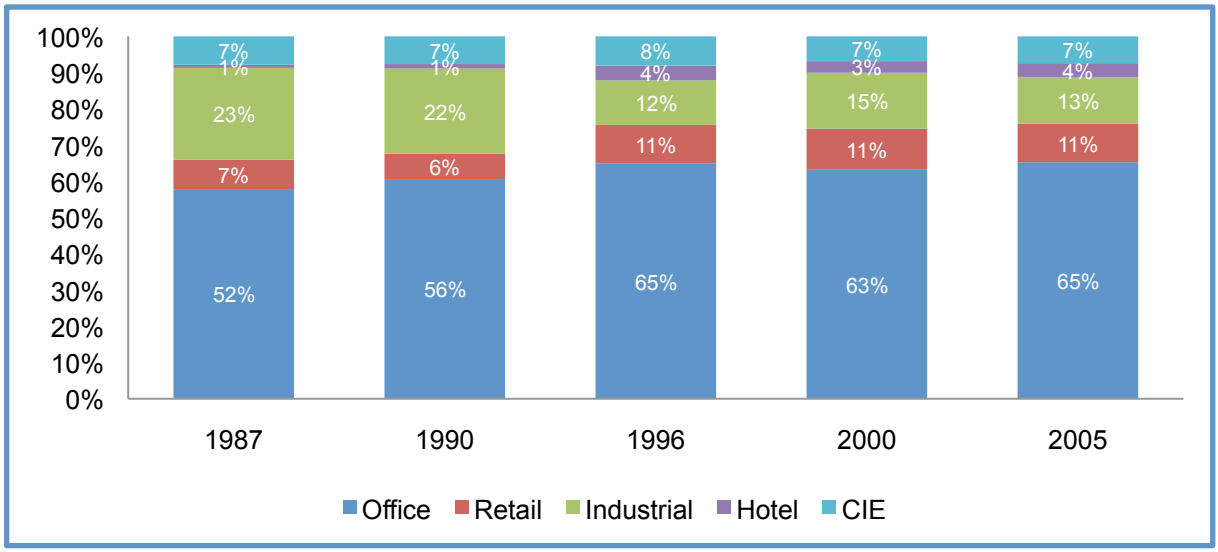

Figure 6 Employment Share by Land Use Division in the Financial District, San Francisco (1987-2005)

The employment share patterns of different land uses in the Financial District (see Figure 6) indicate both commonalities and differences compared with those in the San Francisco City. The commonalities are in the general trend – increasing employment shares of Office, Retail, Hotel and CIE and deceasing employment share of Industrial. The differences are in the specificities of employment shares in different years as well as the extents of changes across the years. Office was much more concentrated in the Financial District and its concentration has been increasing.. Notwithstanding a growing trend, the employment share of Retail in the Financial District was less than that in the San Francisco City. This is no surprising since San Francisco's Retail clustering area, the Union Square, is very close to but outside the Financial District. In 2005, Hotel employment shares in both the Financial District and the San Francisco City reached 4 percent. However, given the huge difference in their total employments, 4 percent of Hotel employment share in the Financial District indicates a very high and fast concentration. In 1990, Hotel employment share in the San Francisco City was already 3 percent while it was only 1 percent in the Financial District. It infers that the Financial District increased its Hotel function very significantly throughout the 1990s until 2005. Another major different pattern is seen in CIE. CIE's employment share in the Financial Distract had been constant at around 7 percent throughout the years, while its employment in the whole City had been very impressive with high employment shares as well as high employment increase.

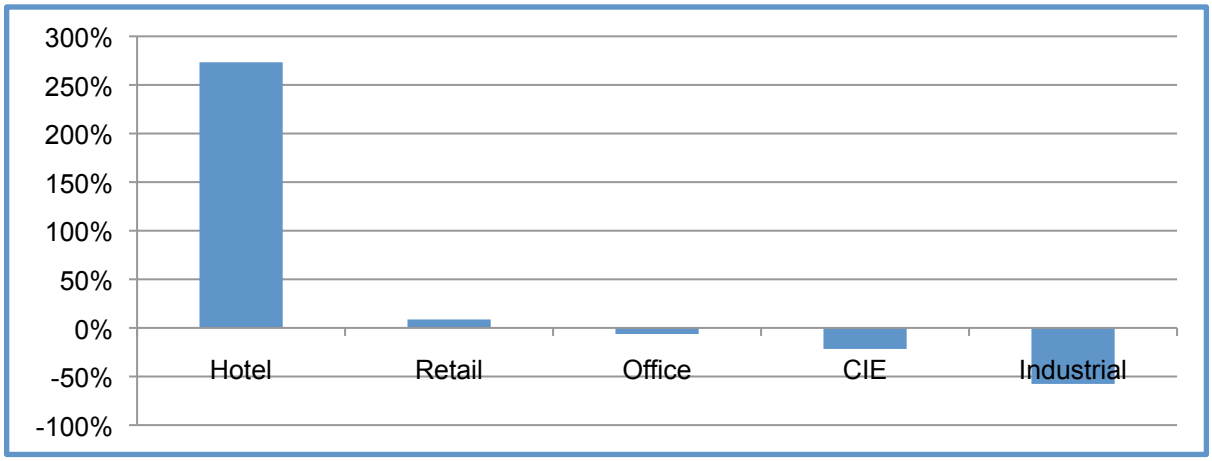

Figure 7 Employment Change by Land Use Division in Financial District, San Francisco (1987-2005)

The Financial District lost a quarter of its total employment from 1987 to 2005. The total loss was distributed among three land use divisions – Industrial, CIE and Office as illustrated in Figure 7. Retail increased its employment very modestly. Hotel employment grew at a striking rate of 270 percent, which reflects its significant employment share growth in these years.

3.2 Floor Area by Land Use

C-3 District

Figure 8 and Figure 9 illustrate the changes of floor area by land use in the C-3 District of San Francisco from 1982 to 2002 based on the floor area data and calculations in Appendix 3.

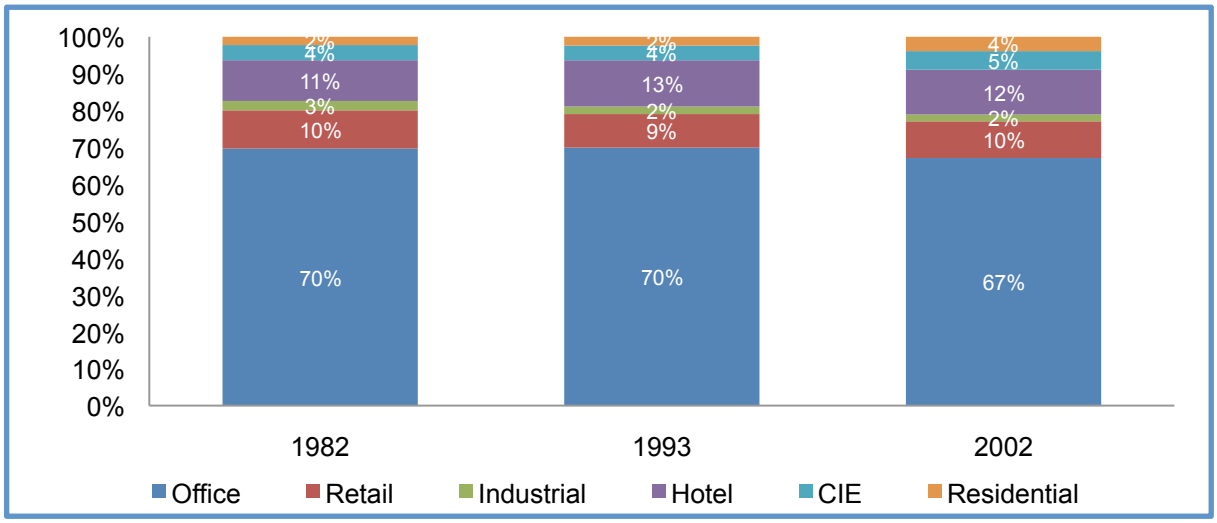

Figure 8 Floor Area Share by Land Use Division in C-3 District, San Francisco (1982-2002)

Figure 8 illustrates the changes of floor area shares by land uses in 1982-2002 in the C-3 district of San Francisco. Office remained to be the dominant land use in the two decades, but on a slight declining trend from 70 percent to 67 percent. The second largest space user across the years was Hotel, very closely followed by Retail. The comparatively high and growing space use share of Hotel indicates increasing concentration of tourist accommodation in central area of San Francisco, which is also attested by the above analysis of employment by land use division. Residential and CIE were on a slight growing trend; Industrial was on a slight declining trend.

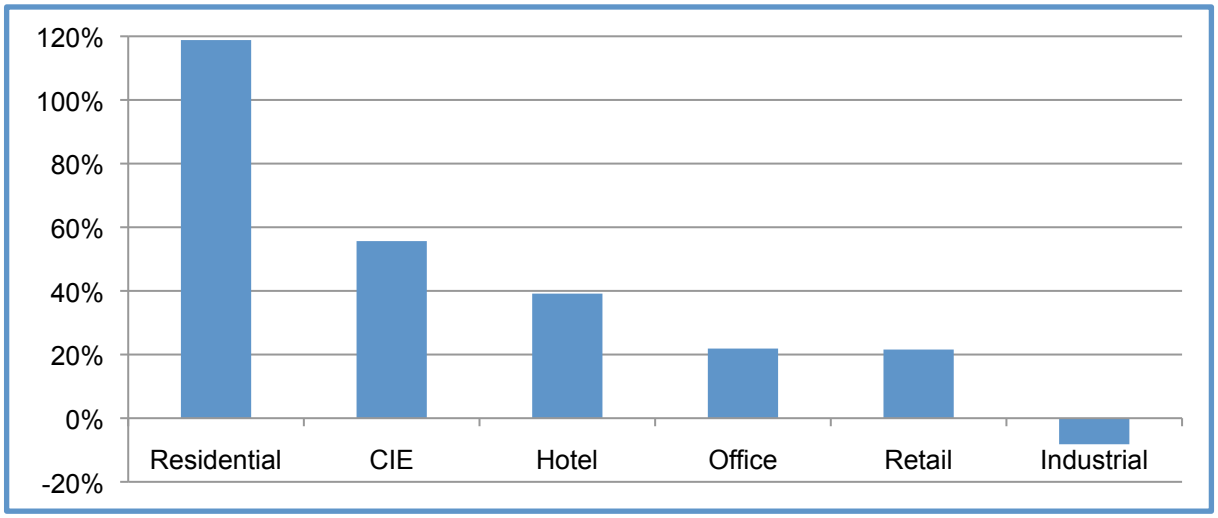

Figure 9 Floor Area by Land Use Division in C-3 District, San Francisco (1982-2002)

The total floor area in the C-3 district increased by more than 25 percent in 1982-2002. This growth was contributed to the urban redevelopment boom before 1985 and after 1995. The prevailing planning strategy in this period was to control commercial development of office and encourage residential and mixed use development. The changes of floor areas by land uses reflected the impact of this planning strategy. As demonstrated in Figure 9, the floor area of Residential more than doubled; Cultural & Institutional grew by more than half; Hotel grew by 40 percent; the dominant land uses of Office and Retail grew their space areas by a modest 20 percent, below the total growth rate. Only Industrial as a land use division lost its floor area by 8 percent.

4 Economic Base

The economic base analysis is based on the variable of employment by industry. The method is to calculate the LQ values of employments by industry divisions in the San Francisco with the San Francisco Bay Area as the reference region. The San Francisco City has a jurisdictional boundary. Though the Bay Area has no jurisdictional entitlement, it refers to the nine counties around the San Francisco Bay:

Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The data collection of the Bay Area is by aggregating the data of the nine counties.

The time scope for data collection and analysis ranges from 1980 to 2005 which fall into two phases: 1980-1989; 1990-2005. This division is for focused investigation by phases as well as for data consistency. Over the long time scope of 25 years under investigation, two industry classification systems have ever been used in US: the Standard Industry Classification (SIC) system and the North American Industry Classification System (NAICS). Both developed by the US Department of Commerce, the NAICS was released in 1997 and last revised in 2002 to replace the SIC system used before 2001. The fundamental difference between these two classification systems is that 'the SIC system classifies all business establishments based on the *kind of product or service they provide* while the NAICS classifies all business establishments based on the similarity in the *process used to produce goods or services* (US Census Bureau, 2006). The NAICS organises all economic activities into 20 broad sectors as opposed to 10 sectors in the SIC system. The corresponding industry divisions between these two systems are listed in Appendix 4 with their differences highlighted. The economic base analysis for the 1980-1989 phase is based on the SIC system and the analysis for the 1990-2005 phase is based on the NAICS system in line with the raw data collected.

4.1 Economic Base (1980-1989)

Figure 10 and Table 1 categorise the industries of San Francisco into four groups based on their LQ values in 1989 and LQ changes between 1980 and 1989. Their employment shares in 1989 are indicated by the sizes of bubbles in Figure 10 and their figures are specified in Table 1. Both Figure 10 and Table 1 are based on the data and calculations in Appendix 5.

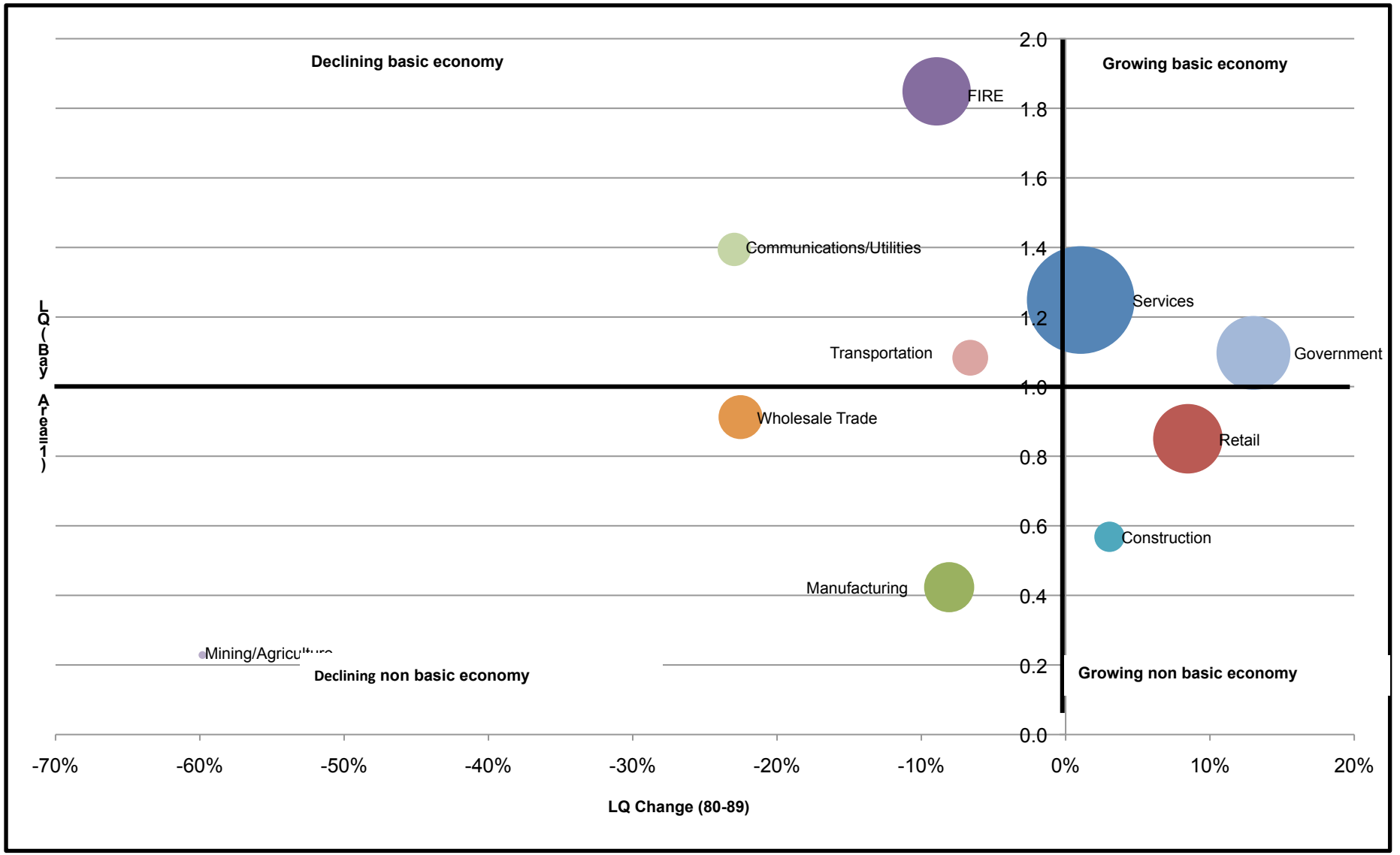

Figure 10 Grouping of Industries by Employment LQ in San Francisco (1980-1989)
Note: Bubble sizes are proportional to the industries' employment shares in the total employment of San Francisco in 1989.

Table 1 Grouping of Industries by Employment LQ in San Francisco (1980-1989)

Basic Economy	**Declining Industries**				**Growing Industries**			
	Industry Divisions by SIC (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (80-89)	LQ in 1989	Employment share in 1989	Industry Divisions by SIC (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (80-89)	LQ in 1989	Employment Share in 1989
	40-49 Communications/Utilities	-23%	1.39	3.2%	90-98 Government	15.9%	1.10	13%
	60-67 FIRE	-9%	1.85	13.6%	70-89 Services	1%	1.25	33.7%
	40-49 Transportation	-7%	1.08	3.7%				
Non Basic Economy	**Declining Industries**				**Growing Industries**			
	Industry Divisions by SIC (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (80-89)	LQ in 1989	Employment share in 1989	Industry Divisions by SIC (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (80-89)	LQ in 1989	Employment Share in 1989
	00-14 Mining/Agriculture	-60%	0.23	0.2%	52-59 Retail	8%	0.85	14.1%
	50-51 Wholesale Trade	-23%	0.91	5.6%	15-17 Construction	3%	0.57	2.7%
	20-39 Manufacturing	-8%	0.42	7.3%				

The four economic groups categorised in Figure 10 and Table 1 are:

Growing Basic Economy The growing basic economy group is made up of only two industry divisions: Services and Government. What counts is not the number of industry divisions, but the sizes and locations of the signifying bubbles in the upper right quadrant of Figure 7.12. Services was the largest employment sector with employment share of 34 percent in 1989; Government was the fourth largest employment sector with employment share of 13 percent, only slightly after the second largest sector of Retail, whose employment share was 14 percent, and the third largest sector of Finance, Insurance and Real Estate (FIRE), whose employment share was 13.6 percent. The LQ change of Government was as high as 16 percent, indicating a growing concentration of government services in San Francisco with reference to the Bay Area region. With 1 percent of LQ change, the status of Services in San Francisco's economy did not change much in 1980-1989.

Declining Basic Economy The declining basic economy group is comprised of two industry divisions according to the SIC system, but the San Francisco Planning Department where the raw data were from divided the industry sector of 40-49 Transportation, Communications and Utilities into two divisions: Communication/Utilities and Transportation. This analysis follows the division by the San Francisco Planning Department, so this group resulted in three divisions with FIRE as the third industry division. Apparently FIRE was the most important sector in this group for its bubble size as the third largest employment sector and the highest LQ value of 1.85 of all industries in 1989. FIRE remained to be the dominant economic driver of San Francisco, but its dominant status had slightly reduced as indicated by its slightly declined LQ value from 1980 to 1989. With regard to Communications/Utilities, its LQ change in 1980-1989 and LQ value in 1989 were respectively -23 percent and 1.39. It means that San Francisco's status in Communications/Utilities remained quite important in the Bay Area, notwithstanding a declining trend of its importance and its comparatively small employment share of 3 percent in 1989. Transportation was less impressive basic economy industry with very low LQ value of a little bit more than 1, as well as very small LQ change and employment share.

Growing Non Basic Economy The growing non basic economy group includes the second largest employment sector of Retail with employment share of 14 percent in 1989. Retail's LQ value in 1989 was 0.85 with a change of 8 percent from 1980, indicating that Retail was somewhat revitalised in San Francisco in the 1980s. Construction was a small growing industry in this period.

Declining Non Basic Economy The declining non basic economy group includes three industry divisions which actually had been on a declining trend much earlier than 1980: Mining/Agriculture, Wholesale Trade, and Manufacturing. With LQ value of 0.91 and employment share of 5.6 percent in 1989, Wholesale Trade still played a considerably important role in San Francisco's economy. Manufacturing remained an important employment sector with an employment share of 7 percent in

1989, but its LQ value of 0.42 indicates that manufacturing base had been more spread in the suburban centres of the Bay Area.

4.2 Economic Drivers (1980-1989)

Industry divisions with LQ value more than or equal to 1 are classified as economic drivers. Table 2 lists the economic drivers of San Francisco in 1980-1989 with classification of knowledge economy, experience economy, traditional economy and public economy depending on the kinds of products or services the basic economy industries provide.

Table 2 Classification of San Francisco's Economic Drivers in 1980-1989

Basic Economy Groups	Growing Economic Drivers	Declining Economic Drivers
Knowledge/experience Economy	70-89 Services (33.7%)	60-67 FIRE (13.6%)
Traditional Economy		40-49 Transportation (3.7%) 40-49 Communications/Utilities (3.2%)
Public Economy	90-98 Government (13%)	

Note: Figures in the brackets are the industry's employment share in 1989.

The industry divisions of Services and FIRE in the SIC system are so encompassing that the divisions between the knowledge economy and the experience economy are blurred. For example, the industry division of Services includes such knowledge sectors as business services and engineering as well as such experience sectors as motels, entertainment, and recreation. Overall, the combination of knowledge economy and experience made the economic drivers of San Francisco in this decade as listed in the highlighted cells of Table 7.3. The traditional economy of Transportation and Communication/Utilities constituted a small part of San Francisco economic base, but on a declining trend. FIRE was also on a slightly declining trend, however, its high employment share and LQ value sustained its role as a pivotal economic driver in San Francisco. Another key economic driver in this period was the public economy of government services. It was a steadily growing major employment sector. In this period, San Francisco was expanding its administrative role over the Bay Area.

4.3 Temporal Comparison (1980-1989)

Figure 11 and Figure 12 make temporal comparisons of San Francisco's employments by industry divisions between 1980 and 1989.

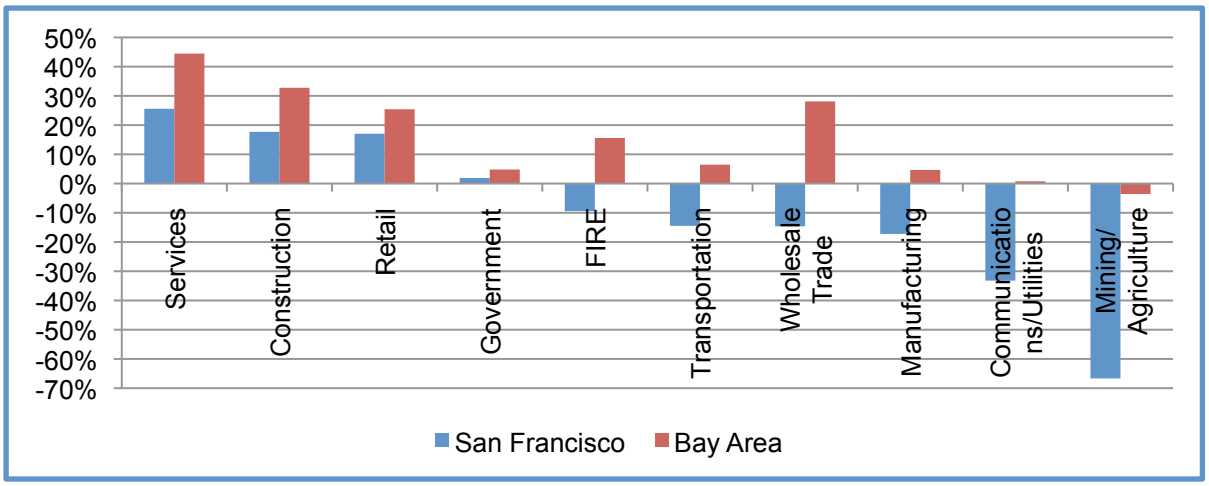

Figure 11 Employment Changes by Industry San Francisco vs. Bay Area 1980-1989
Note: Industries are aligned according to their change percentages in San Francisco from the highest to the lowest.

Figure 11 compares employment changes of different industry divisions between San Francisco and the Bay Area in 1980-1989. San Francisco's employment growth lagged far behind the Bay Area in this period: San Francisco grew by only 3.34 percent while the Bay Area grew by 20.12 percent as a total. San Francisco's employment change was much lower than that of the Bay Area in every industry division. In San Francisco, only four industries grew their employments in this period – Services; Construction; Retail; Government, but for the Bay Area, all industries grew their employments.

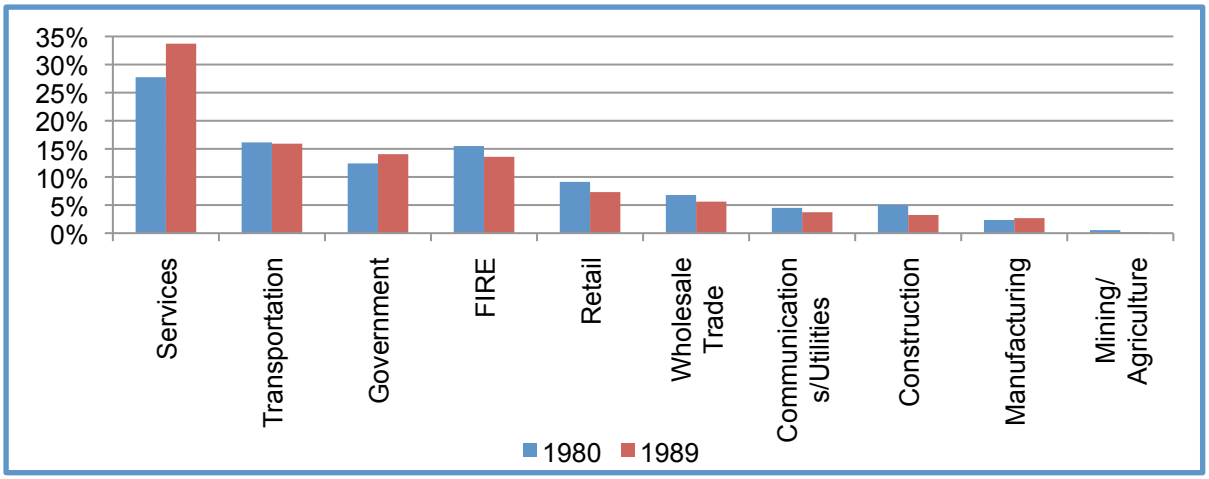

Figure 12 Employment Shares by Industry Division in San Francisco 1980 vs. 1989
Note: Industries are aligned by their employment shares in 1989 from the highest to the lowest.

Figure 12 compares employment shares of different industry divisions in 1980 and 1989 in San Francisco. All industries reduced their employment shares except for Services and Retail. The employment share increases of Services and Retail correspond to their growing statuses in the economic base analysis.

4.4 Economic Base (1990-2005)

Figure 13 and Table 3 categorise the industries of San Francisco into four groups based on their LQ values in 2005 and LQ changes from 1990 to 2005. Their employment shares in 2005 are indicated by the sizes of bubbles in Figure 13 and the figures of employment shares are specified in Table 3. Both Figure 13 and Table 3 are based on the data and calculations in Appendix 6.

The four economic groups categorised in Figure 13 and Table 3 are:

Growing Basic Economy Industries in the growing basic economy group can be further divided into two categories based on their LQ changes: fast growing industries and steady growing industries. The three industry divisions – Arts, Entertainment, and Recreation; Education Services; Accommodation and Food Services – all had a LQ change of above 14 percent. The industry division of Arts, Entertainment and Recreation even had a LQ change of as high as 37 percent, indicating a very fast growing importance and concentration of these industries in San Francisco in 1990-2005. The steady growing industry category is comprised of Public Administration; Real Estate and Rental and Leasing; Other Services (except Public Administration). By 'steady growing industries', it does not mean that they have been less important or less concentrated in San Francisco; it means that their economic base status was established in the beginning of the period of 1990-2005, and had been strengthened incrementally since then.

Of all industries in this group, three industry divisions are worth particular attention. The first one is the public sector of Public Administration. Public Administration was the largest employment sector in 2005, accounting for 16 percent of total employment. Its LQ value of 1.12 in 2005 and LQ change of 4 percent from 1990 to 2005 mean that Public Administration was a pivotal urban function of San Francisco in the whole period. This status was established in the previous decade as indicated by the economic base analysis of the 1980-1989 period. The second industry division is Accommodation and Food Services for its high value in all of the three variables: high employment share of 12 percent and high LQ value of 1.48 in 2005, and high LQ change of 14 percent in 1990-2005. The three high values point to one conclusion that Accommodation and Food Services had been a very important business sector in San Francisco and its importance was continuing to grow at a fast speed. The third industry division is Arts, Entertainment, and Recreation for its high LQ change of 37 percent. Even though its employment share in 2005 was as modest as 2 percent, which was restricted by the business nature that does not require too many employments, its high LQ value of 1.38 as well as high LQ change indicate a high and fast concentration of Arts, Entertainment and Recreation in San Francisco.

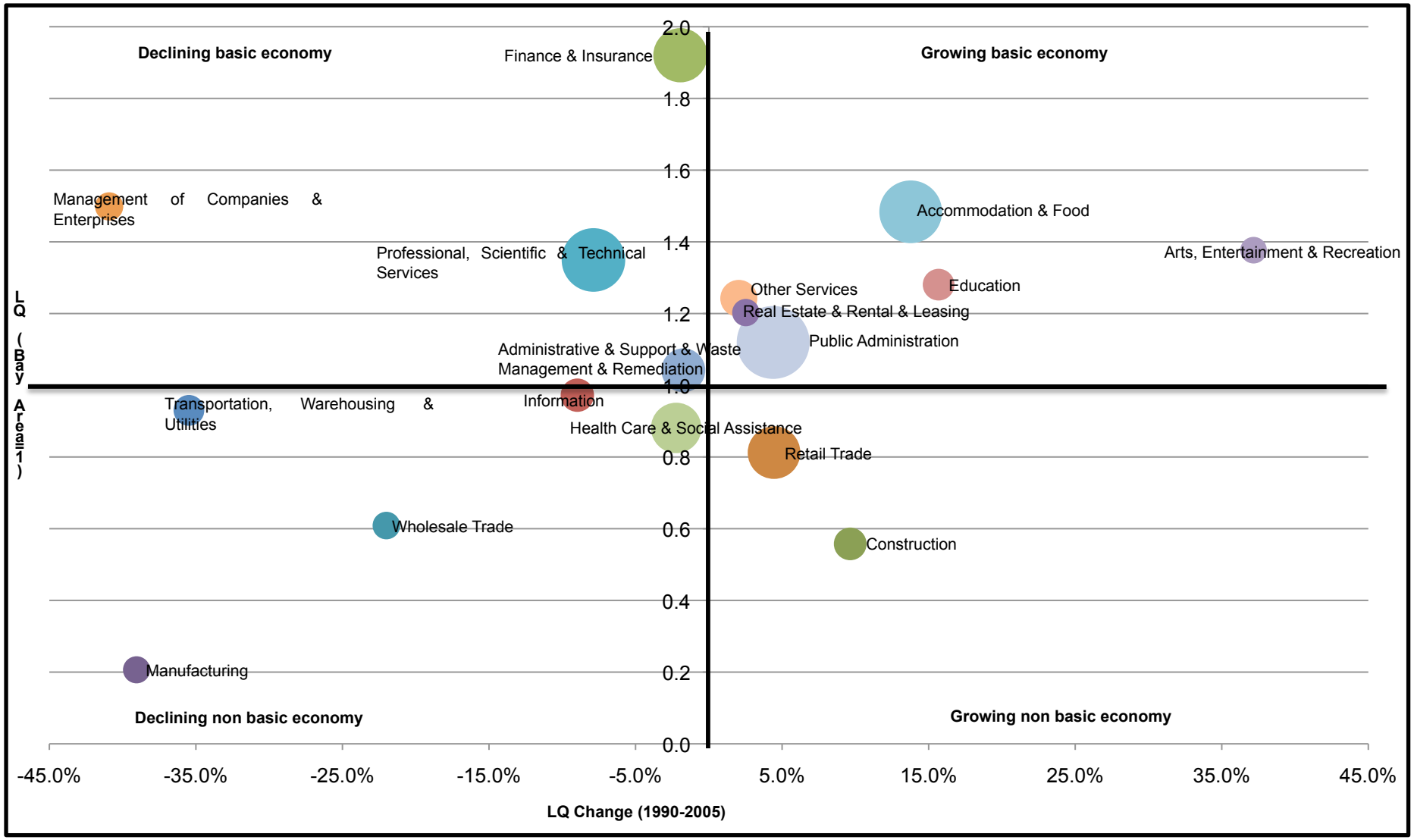

Figure 13 Grouping of Industries by Employment LQ in San Francisco (1990-2005)
Note: Bubble sizes are proportional to the industries' employment shares in the total employment of San Francisco in 2005.

Table 3 Grouping of Industries by Employment LQ in San Francisco (1990-2005)

Basic Economy	**Declining Industries**				**Growing Industries**			
	Industry Divisions by NAICS (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (90-05)	LQ in 2005	Employment Share in 2005	Industry Divisions by NAICS (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (90-05)	LQ in 2005	Employment Share in 2005
	55. Management of companies and enterprises	-40.9%	1.50	2.44%	71. Arts, entertainment, and recreation	37.2%	1.38	2.16%
	54. Professional, scientific, and technical services	-7.9%	1.35	12.35%	61. Education services	15.7%	1.28	3.07%
	52. Finance and insurance	-1.9%	1.92	8.98%	72. Accommodation and food services	13.8%	1.48	12.01%
	56. Administrative and support and waste management and remediation services	-1.7%	1.04	5.88%	92. Public administration: federal, state and local government	4.4%	1.12	16.24%
					53. Real estate and rental and leasing	2.5%	1.20	2.28%
					81. Other services (except public administration)	2.0%	1.24	4.19%
Non Basic Economy	**Declining Industries**				**Growing Industries**			
	Industry Divisions by NAICS (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (90-05)	LQ in 2005	Employment Share in 2005	Industry Divisions by NAICS (sequenced by absolute values of LQ change from the largest to the smallest)	LQ Change (90-05)	LQ in 2005	Employment Share in 2005
	31-33. Manufacturing	-39.0%	0.21	2.24%	23. Construction	9.6%	0.56	3.26%
	48-49&22. transportation, warehousing and utilities	-35.5%	0.93	2.89%	44-45. Retail trade	4.4%	0.81	8.47%
	42. Wholesale trade	-22.0%	0.61	2.32%				
	51. Information	-9.0%	0.97	3.40%				
	62. Health care and social assistance	-2.2%	0.88	7.77%				

Declining Basic Economy The declining basic economy group includes almost all advanced service industries. Finance and Insurance, with which San Francisco's role has been associated since the Gold Rush, remained to be its core urban function. Even though the employment share of Finance and Insurance was not so impressive with 9 percent, but its LQ value was the highest 1.92 among all industry divisions in 2005. Its LQ change of -2% puts it into the group of declining basic economy, however it does not mean any substantial decline of its importance in the region. Professional, Scientific, and Technical Services was another large employment sector with its employment share of 12 percent. Its importance in the region is seen in its considerably high LQ value of 1.35 notwithstanding its LQ change of -8 percent. The most striking change happened to Management of Companies and Enterprises with its LQ change of -41 percent and small employment share of 2.5 percent. However, its relative importance in the region remained quite strong as seen in its LQ value of 1.5.

The industry division of Administrative and Support Services does not provide as advanced services as the above three divisions, but it was an important employment sector with employment share of 6 percent in 2005. Its modest LQ value of 1.04 put it in a very low profile status of basic economy.

Growing Non Basic Economy The industry components of the growing non basic economy group in 1990-2005 remained to be the same as those in 1980-1989: Construction and Retail. With a minor LQ change of 4 percent, Retail remained to be a major sector in San Francisco with its LQ value of 0.81 and employment share of 9 percent in 2005. The Construction sector did not change much either.

Declining Non Basic Economy Most industries in the declining non basic economy group are labour intensive: Manufacturing; Transportation, Warehousing and Utilities; Wholesale Trade; Information; and Health Care and Social Assistance. With increasing importance of knowledge economy of high value-added advanced services and experience economy of catering for increasing visitors in San Francisco, these traditional industries have been pushed out of San Francisco to suburban centres in the region – this is a trend which has been developing since the post-WWII years. The only exception is the industry division of Information. Even though it is categorised into the declining non basic group, its high LQ value of 0.97 in 2005 indicates San Francisco's position as an important information industry centre in the Bay Area.

4.5 Economic Drivers (1990-2005)

Table 4 lists the economic drivers of San Francisco in 1990-2005 with the classifications of the knowledge economy and the experience economy highlighted.

Table 4 Classification of San Francisco's Economic Drivers in 1990-2005

Basic Economy Groups	Growing Economic Drivers	Declining Economic Drivers
Knowledge Economy	53. Real estate and rental and leasing (2.28%)	54. Professional, scientific, and technical services (12.35%) 52. Finance and insurance (8.98%) 56. Administrative and support and waste management and remediation services (5.88%) 61. Education services (3.07%) 81. Other services (except public administration) (4.19%) 55. Management of companies and enterprises (2.44%)
Experience Economy	72. Accommodation and food services (12.01%) 71. Arts, entertainment, and recreation (2.16%)	
Public Economy	92. Public administration: federal, state and local government (16.24%)	

Unlike the economic drivers in 1980-1989, the economic drivers in 1990-2005 are clearly divided between the knowledge economy and the experience economy. The performances of knowledge economy and experience economy also indicated contrary patterns: almost all knowledge economy industries were declining their importance and concentration in San Francisco with reference to the Bay Area except for Real Estate and Rental and Leasing which was a very small industry accounting for only 2 percent of total employment; on the contrary, all experience economy industries were increasing their relative importance and concentration. San Francisco's role as a public administration centre was being further strengthened. The comparatively declining industries are those which have long been associated with San Francisco' urban functions: finance and insurance, professional services, and management. These findings indicate that San Francisco's role as a financial and corporate centre has been declining at a slow but steady rate, while its role as a visitor centre as well as public administrative centre was growing at a considerably fast and firm rate.

4.6 Temporal Comparison (1990-2005)

Figure 14 and Figure 15 make temporal comparisons of San Francisco's employments by industry divisions between 1990 and 2005.

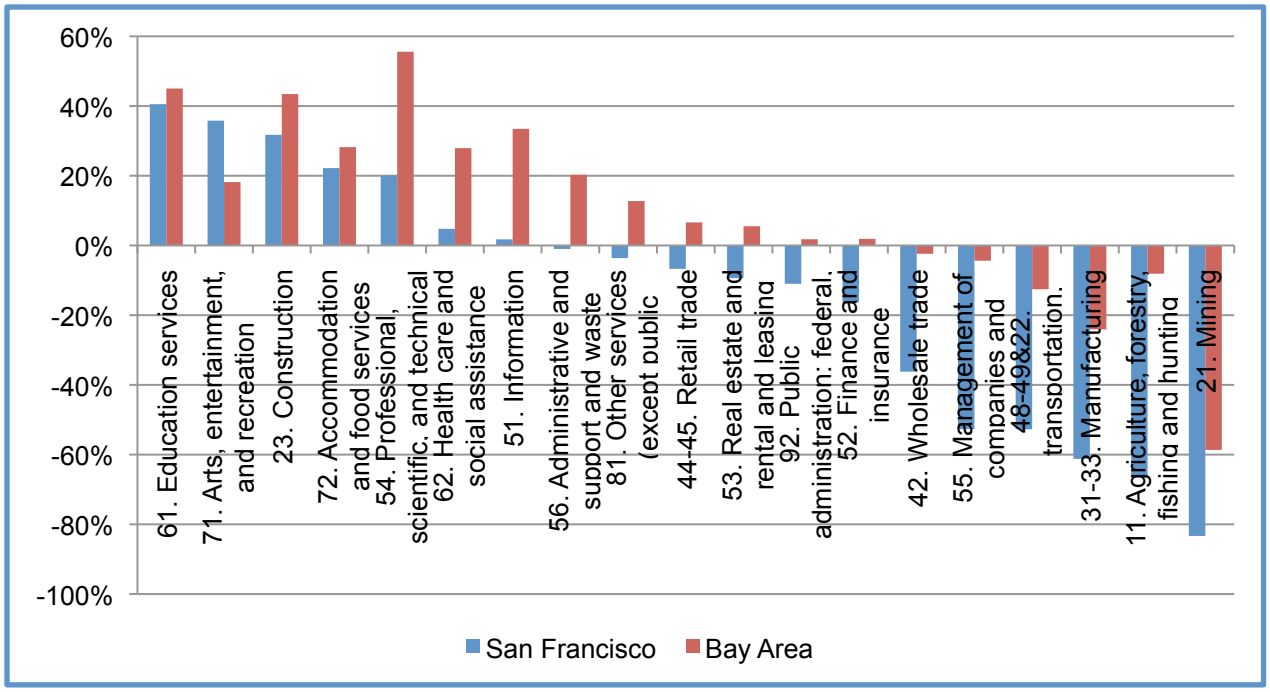

Figure 14 Employment Changes by Industry San Francisco vs. Bay Area 1990-2005
Note: Industries are aligned according to their change percentages in San Francisco from the highest to the lowest.

Figure 14 compares employment changes of different industries between San Francisco and the Bay Area in 1990-2005. San Francisco's total employment reduced by 8 percent, at the same time the Bay Area's total employment grew by 10 percent. This resulted in less growing industries and more growing industries in the Bay Area measured by absolute employment change in this period. By growth change percentage, significant growth happened to Education Services; Arts, Entertainment and Recreation; Construction; Accommodation and Food; and Professional, Scientific and Technical Services in San Francisco. They all grew their employment by more than 20 percent. The first three industry divisions belong to the growing basic economy group in the LQ analysis except for the last division of Professional, Scientific and Technical Services which is categorised into the declining basic economy group. With 20 percent of employment growth, but -8 percent of LQ change, it is clear that greater growth change of Professional, Scientific and Technical Services sector happened in the Bay Area, which was actually 56 percent, the highest of all industry divisions. Overall, the Bay Area surpassed San Francisco in the growth rates of all industries with only one exception – Arts, Entertainment and Recreation. This corresponds to the finding of growing importance and concentration of Arts, Entertainment and Recreation in San Francisco in the economic base analysis.

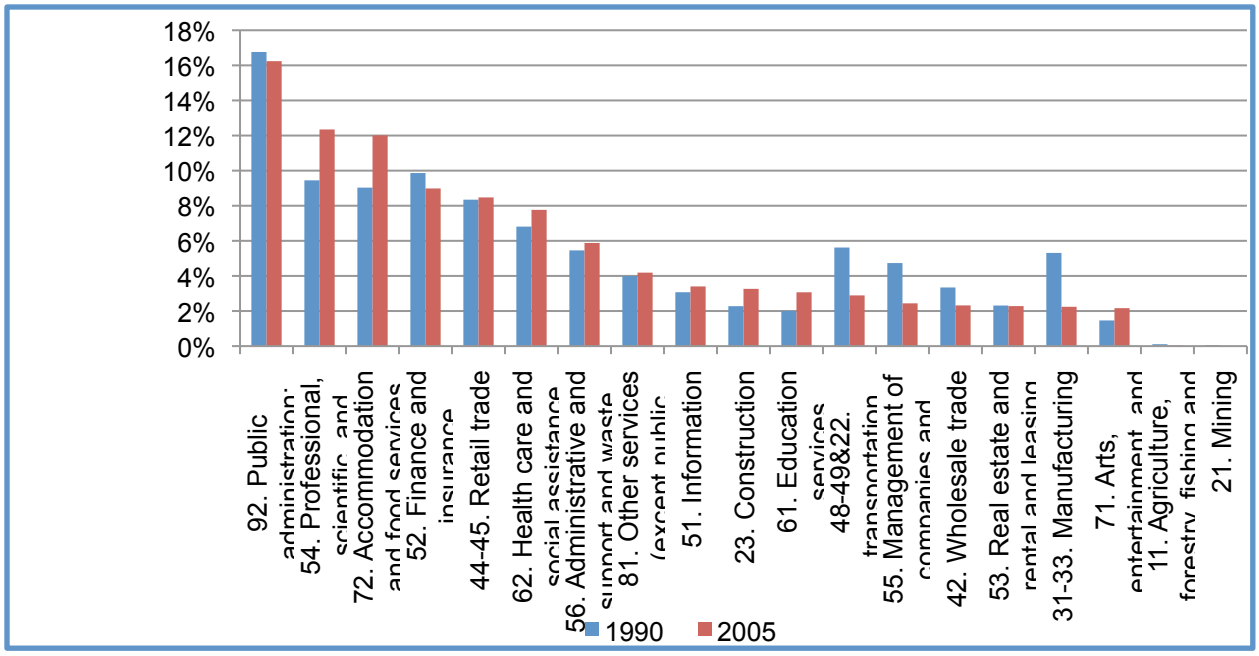

Figure 15 Employment Shares by Industry in San Francisco 1990 vs. 2005
Note: Industries are aligned by their employment shares in 2005 from the highest to the lowest.

Figure 15 compares the employment shares of different industries in San Francisco between 1990 and 2005. In this period, industries that declined their employment shares were more than those that increased their employment shares. This is partially related to the loss of San Francisco's total employment, partially related to the concentration of employment with fewer industries. Industries with employment share above 5 percent throughout the two and half decades include: Retail Trade; Finance and Insurance; Professional, Scientific and Technical Services; Administrative & Support & Waste Management & Remediation; Health Care and Social Services; Accommodation and Food; and Public Administration. Three industries were in the group of 5+ percent of employment share in 1990, but slipped out of the group in 2005: Manufacturing; Transportation, Warehouse & Utilities; and Management of Companies and Enterprise.

For most industries, employment share changes and LQ changes correspond, that is, they demonstrated concurrent patterns of growing employment share and LQ or declining employment and LQ. Industries of the former pattern include Construction; Retail Trade; Education; Arts, Entertainment and Recreation. Industries of the latter pattern include Wholesale Trade; Transportation, Warehouse and Utilities; Finance and Insurance; and Management of Companies and Enterprises. However, exceptions exist since LQ change is dependent on the industry's regional employment share too. There are industries with growing LQ but declining employment share like Real Estate and Rental and Leasing; and Public Administration. This indicates a greater shrinking of these industries in the Bay Area. There are also industries with declining LQ but growing employment share including Information; Professional, Scientific and Technical Services; Administrative and Support and Waste Management; and Health Care and Social Services.

This indicates greater growth and importance of these industries in the Bay Area despite their growing employment in San Francisco too. Greater growth and importance of such industries as Information; Professional, Scientific and Technical Services in the Bay Area reflects faster growth of these industries in centres such as the Silicon Valley than San Francisco.

5 Discussion & Conclusion

The following paragraphs summarise the patterns of San Francisco's urban transformations in the post-1980 decades observed through its functional concentration measured by land use, economic base measured by industry.

Functional Concentration

The changes of employments and employment shares by land use divisions in both the San Francisco City and the San Francisco CBD – the Financial District are analysed. Industrial reduced its absolute employment number as well as employment share in both the whole city and the CBD. In the City of San Francisco, Office, Retail, Hotel and CIE increased both employment number and employment share. Office and CIE increased their employment shares very significantly to offset the employment share decrease of Industrial which was 50 percent. In the Financial District, Office, Retail, and Hotel had employment share growth, and CIE's employment share kept constant. But of the four land use divisions with growing or constant employment shares, only Hotel and Retail increased absolute employment numbers. Like Industrial, both Office and CIE lost their employment, resulting in 25 percent of total employment loss in the Financial District in 1987-2005. Hotel had the most impressive growth in both employment number and employment share. Overall, both the San Francisco City and the Financial District had strengthened urban functions of Office and Retail as indicated in their increased employment share. The growth of Hotel tended to be concentrated in the Financial District, while the growth of CIE was dispersed in the non-CBD areas of the City.

The analysis of the changes of floor area by land use division focuses on the C-3 District, the central place of the San Francisco City. The total floor area in the C-3 District increased by more than 25 percent in 1982-2002, which resulted in floor area growth in all land use divisions except for Industrial. The top three floor area growers were Residential, CIE and Hotel, followed by Office and Retail. These changes of floor area by land use division reflected the effects of the planning strategies in these decades. One key goal of these strategies was to mix the Office dominance with more provision of residential and tourist accommodations for a liveable and lively downtown San Francisco. The process of mixing land uses was also evidenced by the floor area shares over years. The floor area share of Office was decreasing, while that of Residential, Hotel and CIE was increasing. Egon and Bell (2007) identify the emergence of a

Central Social District (CSD) extending from the San Francisco Museum of Modern Arts past the Westfield shopping centre and through Union Square as a social district to supplement the commercial core in the CBD of the Financial District to create mixed-use, liveable and 24-hour downtown neighbourhoods. The increasing floor area uses by the land uses of Residential, Hotel and CIE attests the formation of such a social district.

Measured by either employment or floor area, comparatively CIE and Hotel as land uses were increasingly growing and concentrated in central San Francisco areas. This points to the same finding from the economic base analysis that the industries of the experience economy were increasingly concentrated in San Francisco with reference to the Bay Area which is to be summarised next. The growth of such land uses and industries explains the contradictory overall trends of employment by land use and floor area by land use in central San Francisco, that is, the total floor area increased however the total employment decreased. This is counterintuitive that floor area growth should develop in parallel with employment growth to cater for more employment. However, in San Francisco the floor area growth mainly occurred in land uses which tended to hire fewer people, such as CIE and Hotel, or hire no people, such as Residential, while employment-intensive land use of Office increased very modest floor area in the period under investigation.

Economic Base

The economic base analysis of San Francisco is made on the data of employment by industry division. The focus is on finding out the economic drivers. The evolutions of San Francisco's economic drivers suggest the following patterns in the post-1980 decades:

Government as the public economy was the second largest employment sector by the SIC system in 1980-1989 and the largest employment sector by the NAICS system in 1990-2005 in San Francisco. Throughout the years in 1980-2005, government was categorised as growing basic economy sector, indicating its robust increase in terms of concentration and importance in San Francisco with reference to the Bay Area. The City of San Francisco has endorsed a so-called 'high-tax, high-service' approach of public sector (Metcalf, 2007) and has the fourth highest business taxes of US cities after New York, Washington DC and Philadelphia (Klinksiek, 2004), partially explaining its considerably high proportion of government employment to provide desired public services. On the other hand, San Francisco has been historically an important centre of government at several levels and has a high concentration of state and federal courts, including the chief location of the Ninth Circuit Court of Appeals. Furthermore, high concentration of government services has a magnetic effect on many types of firms which must be close to governments and government agencies because 'proximity allows quick travel, face-to-face interaction, and heightened lobbying visibility' (Klinksiek, 2004, p. 24). For example, law firms often choose to locate

to near courts. This explains the clustering of governments and government-related services in central San Francisco.

San Francisco has long been a knowledge economy centre of finance, insurance, professional and headquarters services. During the two and half decades under investigation, San Francisco's overall performance of the knowledge economy with reference to the Bay Area was on a decline, but different industry divisions indicated different extents of declining. San Francisco's status as a finance and insurance centre established from the Gold Rush days did not substantially change. Despite a very slight LQ value decrease, finance and insurance still had the highest LQ value of around 1.9 in 2005, far higher than all other industry divisions. This is a clear indication of high concentration and importance of finance and insurance services in San Francisco. Other knowledge based services like professional, scientific and technical services remained important and robust in San Francisco too, even though they also had LQ value decreases.

The most striking change occurred in company and enterprise management sector which declined its LQ value by the largest rate of all industry divisions in 1990-2005, indicating its fast decline of importance and concentration in San Francisco with reference to the Bay Area. However, its LQ value of 1.5 in 2005 indicated that it remained to be quite highly concentrated in San Francisco, but its employment was very small. San Francisco has been losing its corporate economy with fewer corporations having their headquarters located there. However, the lost corporate economy did not necessarily move to suburban centres of the Bay Area as generally assumed. At the same time, the Bay Area also lost its corporate economy, though at a much smaller rate than San Francisco (see Figure 7.17). Increasing globalisation and the consequent mandate that firms be competitive in a global environment have required that companies treat location decisions as an explicit part of their business strategy (Klinksiek, 2004). Corporations are now globally mobile. Major companies were fleeing, including the Fortune 500 giants which had been located in San Francisco. According to the CNNMoney Report (CNN, 2007), only six Fortune 500 headquarters were still based in San Francisco in 2006. The number of San Franciscans employed by firms of more than 1,000 employees has fallen by half from 1977 to 2005 (Egan, 2006).

Godfrey (1997) suggests that by the mid-1990s San Francisco had become less central to the Bay Area as businesses relocated to the suburbs and the electronics industry of Silicon Valley boomed. Restrictive office development regulations, high space rent, and insufficient infrastructure provision are blamed for the flee of corporate headquarters to more affordable suburban centres or other cities (Hartman, 2002), but increasingly to attract corporate economy is not a matter of intra-metropolitan competition within the Bay Area, rather one of inter-metropolitan and global competition since the Bay Area was also losing the corporate economy since the 1990s as stated above. The loss of corporate economy has been offset by the increasing importance of small business in San Francisco. In 2005, small businesses with fewer than

10 employees and self-employed firms made up 85 percent of total business establishments in San Francisco (San Francisco City Government, 2006).

San Francisco's performance in the other sector of knowledge economy – the new economy of information industry – was not so impressive with reference to the Bay Area. Even though the information industry's employment share increased in 1990-2005 in San Francisco, but its regional importance as measured by LQ was offset by extremely high growth in the Bay Area (see Figure 7.17). Report from the Bay Area Council Economic Institute indicates that overall knowledge-based employment share in the Bay Area is in line with peer city regions of London, Boston, New York and Tel-Aviv, but the Bay Area's competitiveness is its productivity advantage in information services, computer and electronics design and manufacturing (Bay Area Council Economic Institute, 2008). Other researches also point to the Bay Area's globally leading status in the high-tech information technology. In the 2007 index of high-tech economy regions released by the Milken Institute, the Silicon Valley (the San Jose – Santa Clara metro area) ranked the first as the preeminent high-tech cluster in North America based on measures of the concentration of technology employment and wage in the local economy and each metro's relative share of aggregate North America activity (DeVol, Klowden, Bidroussian, & Yeo, 2009). When Richard Florida first proposed his 'creative class' concept, he produced a creativity index of large US cities based on a 3-Ts measures (talent, technology and tolerance), in which the San Francisco metro area ranked the first too (Florida, 2002).

However, San Francisco still gained from being a gateway city of the creative Bay Area. The new economy of information industry helped facilitate San Francisco's economic revival in the second half of the 1990s . The hi-tech information economies were incubated in or applied the technology from the suburbs and exurbs, such as Silicon Valley, and then were 'urbanised' (Godfrey, 1997) in San Francisco to commercialise and disseminate the final products. Dot-com and media content firms mushroomed in the late 1990s in San Francisco. Sims (2000: 3-7) argues that 'the dot-coms are a nearly perfect fit with San Francisco': San Francisco had the supporting business established required by the digital content producers, such as media, advertising, printing, telecommunication, and graphic design; San Francisco's rich talent pool provided the dot-coms with ready workforce; San Francisco had ready large space of office and efficient public transport to meet their need; San Francisco had a magnetic urban life style aspired by the creative talents of the digital age. New dot-com and other knowledge based workers are attracted by those characteristics which only urban areas have, and which San Francisco has in spades – real neighbourhoods, walkability, architectural characters, mixed use, diversity of lifestyles, high levels of personal interaction, anonymity, and multiple cultural venues (Pamuk, 2004). San Francisco's inherent attractiveness and local amenities were then able to be capitalised (Black, Gates, Sanders, & Taylor, 2002). Geographically, the dot-coms were concentrated in the SoMA area where the industrial workshops and warehouses were easily converted for use at affordable cost. The SoMA area's amenities of cultural

facilities, night clubs, pubs, and the tolerant and casual atmosphere appealed to the young digital generations. The blurred division between work and live of the dot-coms favoured the proliferated live/work loft units in the area (Durandet, 2007). The dot-com boom thus triggered a live/work loft surge in the late 1990s which mostly located in the SoMA area. By 2001, 1,860 units were constructed or converted and 2,314 additional units were approved (San Francisco Planning Department, 2007, p. 17). The SoMA was thus developing into an artistic and digital area as a counterpart of the business centre of the Financial District across the Market Street.

The above discussion of San Francisco's knowledge economy base is derived from the LQ analysis of San Francisco's industries with the Bay Area as the reference region. San Francisco's relative performance in the information industry was not so impressive given the industry's more solid economic base in the Bay Area. However, if the LQ analysis is made with the US nation as the reference region, San Francisco's performance in the information industry will be highly enhanced. A recent economic study using the latter model indicates that San Francisco's present economic base falls in two broad categories: a knowledge sector that spans financial, professional and headquarters services, and media and information technology industries (Egan, 2007).

The industries of the experience economy had the fastest and strongest growth of importance and concentration in San Francisco as seen in their high LQ values and LQ changes. This corresponds to the comparative growth of CIE and Hotel land uses in central San Francisco measured by either employment or floor area as examined in the functional concentration analysis. Though the experience economy did not develop to be as important as the knowledge economy as measured by absolute LQ values (finance and insurance had the highest LQ value of all industry divisions), the rising trend of the experience economy industries have been very robust. San Francisco was a recognised world class tourist destination. It was the second most popular tourist city in North America only after New York in 2006 and 2007 (Swivel Preview, 2008). In 2007, more than 16 million visitors came to San Francisco, injecting nearly $8.3 billion expenses to the economy (San Francisco Convention & Visitors Bureau, 2008). However, San Francisco's tourism industry was more than sightseeing. Its tourism market has historically been based on a 'three-legged stool': one-third convention/meetings travel, one-third leisure/consumer travel and one-third business travel, but in recent years the business travels have been shrinking, while convention travels remained robust with the Yerba Buena area growing into a world-class convention clustering area (San Francisco Convention & Visitors Bureau, 2007, p. 11). The fact of shrinking business travels and rising convention travels matches the findings of the economic base analysis that indicate declining corporate economy and growing experience economy in San Francisco.

The structural transition of San Francisco's economy to be increasingly dependent on the experience economy sector was timely recognised and incorporated in the urban planning and development efforts in

the 1990s. Mayor Willie Brown's strive for urban redevelopments in the late 1990s was centred on promoting conventions, international tourism, the arts, entertainment, and sports stadium. In an increasingly decentralised Bay Area, San Francisco became ever more reliant on national and international finance, tourism and conventions (Godfrey, 1997) in another round of its globalisation (Walker, 1996). Like many US competitor cities, San Francisco has a high concentration of employment in the FIRE industries (finance, insurance and real estate), as well as business and professional services including law and accounting, however, however, what differentiates San Francisco's economy is its higher employment concentration in leisure and hospitality driven (Klinksiek & Shih, 2006).

The overall pattern of San Francisco's private economy development in the post-1980s decades can be summarised as the slight decline of the dominant knowledge economy and the firm growth of the important experience economy. Their comparatively transformative trends are demonstrated in Figure 16. Both the knowledge economy and the experience economy are above the economic base line, which is determined by their LQ values and indicate that they make the economic base of San Francisco. But they indicate contrary transformative patterns – the knowledge economy was very highly concentrated and was still the dominant urban functions of San Francisco, but its relative importance was towards a slightly declining trend; the experience economy was highly concentrated too, but its relative importance was growing. The two dotted arrows indicate their future development path based on their prior and current development patterns.

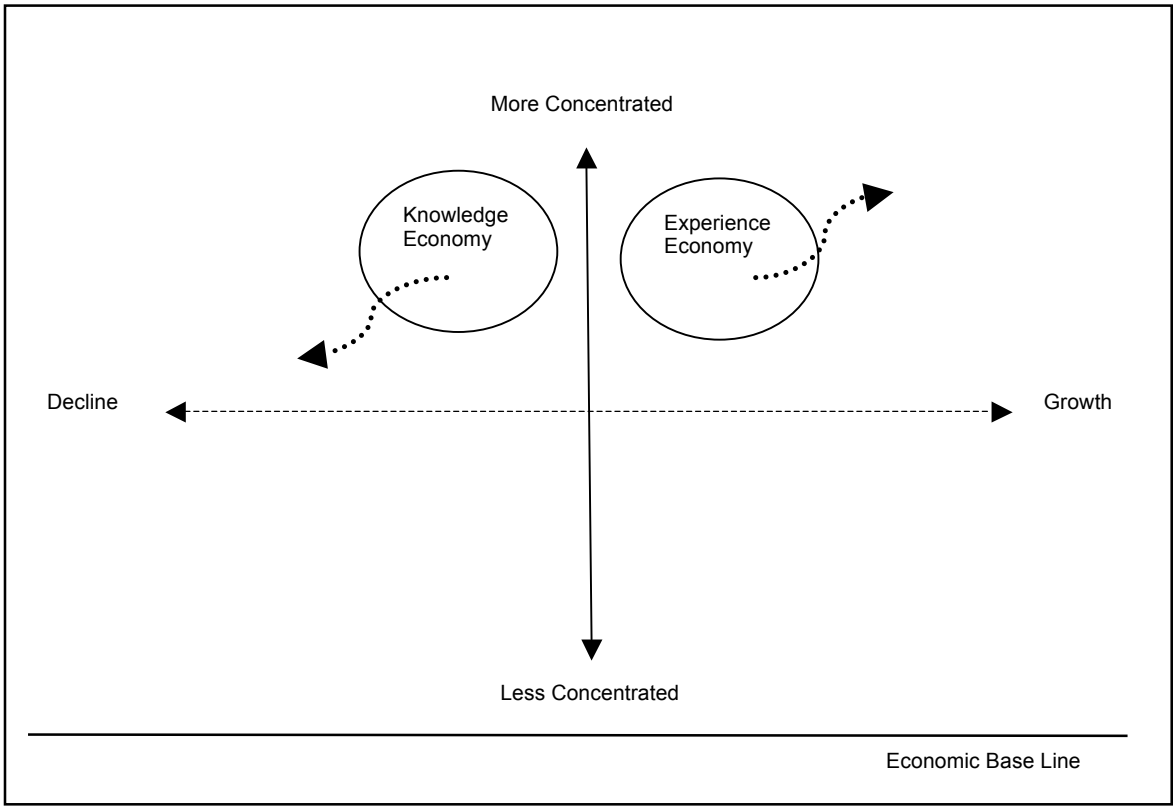

Figure 16 Transformative Trends of Knowledge Economy and Experience Economy in San Francisco

Figure 16 demonstrates the transformative trends of the knowledge economy and the experience economy inside the City of San Francisco. Since the economic base of San Francisco is analysed in relation to the Bay Area as the reference region, any economic transformation pattern inside San Francisco was related to that in the Bay Area. Figure 17 demonstrates the relative shifts of the knowledge economy and the experience economy between San Francisco as the central city and the Bay Area as the metropolitan region. The relative decline of the knowledge economy in San Francisco means the relative increase of it in the Bay Area; the relative increase of the experience economy in San Francisco means the relative decline of it in the Bay Area.

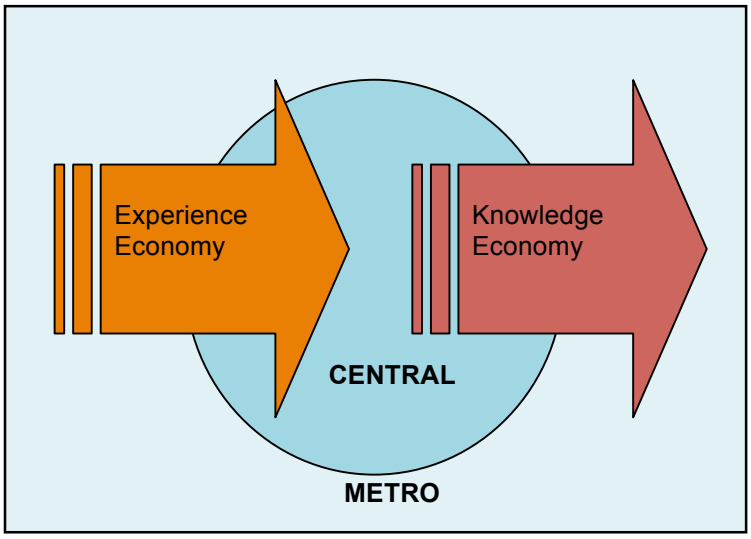

Figure 17 Dynamic Movement of Knowledge Economy and Experience Economy between Central and Metro San Francisco

Appendix

Appendix 1 Employment by Land Use Division in San Francisco (1980-2005)

Land Use Division	1980	1980 Share	1985	1985 Share	1990	1990 Share	1995	1995 Share	2000	2000 Share	2005	2005 Share	Change (1985-2005)
OFFICE	**158,479**	**28.72%**	**176,753**	**31.99%**	**186,988**	**33.45%**	**197,077**	**37.20%**	**243,290**	**39.99%**	**195,521**	**37.36%**	**10.62%**
agriculture			3,142	0.57%	1,824	0.33%	1,786	0.34%	1,674	0.28%	241	0.05%	-92.33%
finance			53,189	9.63%	42,135	7.54%	39,224	7.40%	49,366	8.11%	33,554	6.41%	-36.92%
insurance			20,487	3.71%	18,144	3.25%	16,658	3.14%	15,448	2.54%	12,174	2.33%	-40.58%
real estate			10,927	1.98%	13,433	2.40%	9,953	1.88%	10,576	1.74%	10,033	1.92%	-8.18%
office services			74,809	13.54%	90,644	16.22%	97,938	18.49%	133,830	22.00%	108,312	20.69%	44.78%
legal			14,198	2.57%	20,807	3.72%							
public admin.							31,518	5.95%	32,395	5.33%	29,834	5.70%	
RETAIL	**80,255**	**14.54%**	**86,295**	**15.62%**	**87,738**	**15.70%**	**84,124**	**15.88%**	**103,508**	**17.01%**	**96,033**	**18.35%**	**11.28%**
general merchandise			7,971	1.44%	8,129	1.45%	4,863	0.92%	4,800	0.79%	4,401	0.84%	-44.79%
food stores			7,625	1.38%	7,999	1.43%	8,005	1.51%	8,448	1.39%	8,394	1.60%	10.09%
apparel stores			7,468	1.35%	9,214	1.65%	8,819	1.66%	12,259	2.02%	9,509	1.82%	27.33%
eating & drinking			31,911	5.78%	31,305	5.60%	34,427	6.50%	42,820	7.04%	42,139	8.05%	32.05%
other retail stores			19,621	3.55%	20,789	3.72%	18,285	3.45%	22,174	3.65%	22,794	4.36%	16.17%
personal & repair			11,700	2.12%	10,302	1.84%	9,725	1.84%	13,006	2.14%	8,795	1.68%	-24.83%
INDUSTRIAL	**165,463**	**29.98%**	**144,998**	**26.24%**	**125,620**	**22.47%**	**116,418**	**21.98%**	**116,540**	**19.16%**	**84,693**	**16.18%**	**-41.59%**
construction			14,188	2.57%	15,066	2.70%	12,239	2.31%	18,812	3.09%	16,615	3.17%	17.11%
transportation			25,163	4.55%	24,453	4.37%	26,857	5.07%	25,313	4.16%	20,222	3.86%	-19.64%
utilities			10,684	1.93%	9,069	1.62%	10,326	1.95%	11,401	1.87%	10,503	2.01%	-1.69%
information			17,190	3.11%	9,911	1.77%	9,310	1.76%	12,101	1.99%	6,930	1.32%	-59.69%
wholesale			35,480	6.42%	29,568	5.29%	23,740	4.48%	20,263	3.33%	12,087	2.31%	-65.93%
food mfg			6,988	1.26%	4,386	0.78%	3,432	0.65%	2,898	0.48%	2,572	0.49%	-63.19%
apparel mfg			11,928	2.16%	13,906	2.49%	14,631	2.76%	10,574	1.74%	3,387	0.65%	-71.60%
printing & publishing			8,591	1.55%	9,001	1.61%	8,006	1.51%	8,724	1.43%	7,494	1.43%	-12.77%
other mfg			14,787	2.68%	10,260	1.84%	7,877	1.49%	6,452	1.06%	4,815	0.92%	-67.44%
HOTEL	**14,504**	**2.63%**	**14,373**	**2.60%**	**17,741**	**3.17%**	**18,580**	**3.51%**	**18,862**	**3.10%**	**18,424**	**3.52%**	**28.18%**
CIE	**90,205**	**16.35%**	**93,624**	**16.95%**	**104,347**	**18.67%**	**111,915**	**21.13%**	**126,066**	**20.72%**	**128,726**	**24.59%**	**37.49%**
art & recreation			9,347	1.69%	10,927	1.95%	13,060	2.47%	15,391	2.53%	10,006	1.91%	7.05%
health care			33,259	6.02%	35,739	6.39%	35,914	6.78%	33,011	5.43%	36,222	6.92%	8.91%
education services			30,072	5.44%	32,223	5.76%	34,617	6.53%	41,779	6.87%	46,507	8.89%	54.65%
social assistance			7,409	1.34%	10,738	1.92%	13,549	2.56%	15,915	2.62%	10,439	1.99%	40.90%
other services			13,537	2.45%	14,719	2.63%	14,775	2.79%	19,970	3.28%	25,553	4.88%	88.76%
TOTAL	**551,842**	**100.00%**	**552,500**	**100.00%**	**59,000**	**100.00%**	**529,719**	**100.00%**	**608,340**	**100.00%**	**523,396**	**100.00%**	**-5.27%**

Data source: (San Francisco Planning Department, 1993, 2000, 2005, 2006)

Appendix 2 Employment by Land Use Division in the Financial District, San Francisco (1987-2005)

Land Use Division	1987	1987 Share	1990	1990 Share	1996	1996 Share	2000	2000 Share	2005	2005 Share	Change (1987-2005)
Office	114,651	51.97%	118,176	56.08%	69,460	64.68%	116,820	63.17%	107,463	65.26%	-6.27%
Retail	16,080	7.29%	13,599	6.45%	11,310	10.53%	20,972	11.34%	17,479	10.61%	8.70%
Industrial	50,225	22.77%	45,851	21.76%	13,148	12.24%	28,557	15.44%	21,281	12.92%	-57.63%
Hotel	1,674	0.76%	2,413	1.14%	4,354	4.05%	5,897	3.19%	6,250	3.80%	273.30%
CIE	15,568	7.06%	14,922	7.08%	8,625	8.03%	12,672	6.85%	12,202	7.41%	-21.62%
Total	**220,615**	100.00%	**210,743**	100.00%	**107,391**	100.00%	**184,918**	100.00%	**164,675**	100.00%	**-25.36%**

Data source: (San Francisco Planning Department, 1992, 1994b, 2006)

Appendix 3 Floor Area by Land Use Division in the C-3 District, San Francisco (1982-2002)

Land Use Division	1982 (000s ft²)	1982 Share	1993 (000s ft²)	1993 Share	2002 (000s ft²)	2002 Share	Change (1982-2002)
Office	60,957	69.70%	69,420	69.95%	74,293	67.13%	21.88%
Retail	9,058	10.36%	9,023	9.09%	11,012	9.95%	21.57%
Industrial	2,229	2.55%	2,037	2.05%	2,046	1.85%	-8.19%
Hotel	9,665	11.05%	12,446	12.54%	13,448	12.15%	39.14%
Cultural & Institutional	3,585	4.10%	3,945	3.98%	5,580	5.04%	55.64%
Residential	1,964	2.25%	2,368	2.39%	4,298	3.88%	118.81%
Total	**87,458**	100.00%	**99,239**	100.00%	**110,677**	100.00%	**26.55%**

Data source: (San Francisco Planning Department, 1994a, 2004)

Appendix 4 Corresponding Industry Divisions between SIC (1995-2000) and NAICS (2001)

SIC (1995-2000)	NAICS (2001)
00-09 Agriculture, forestry, and fishing	11 Agriculture, forestry, fishing and hunting
10-14 Mining	21 Mining
15-17 Construction	23 Construction
20-39 Manufacturing	31-33 Manufacturing
40-49 Transportation, communications, and utilities	48-49 Transportation and warehousing
	22 Utilities
	51 Information
50-51 Wholesale trade	42 Wholesale trade
52-59 Retail trade	44-45 Retail trade
60-67 Finance, insurance, and real estate	52 Finance and insurance
	53 Real estate and rental and leasing
70-89 Service industries (includes business, engineering, hotels, motels, repair services, entertainment, recreation, health, education, social, and other services related industries)	54 Professional, scientific, and technical services
	55 Management of companies and enterprises
	56 Administrative and support, waste management and remediation services
	61 Education services
	62 Health care and social assistance
	71 Arts, entertainment, and recreation
	72 Accommodation and food services
	81 Other services (except public administration)
90-98 Public administration	92 Public administration

Appendix 5 Employment by Industry in San Francisco and the Bay Area and their Location Quotients (1980-1989)

Industry Divisions by SIC	1980			1985			1989			LQ Change (1980-1989)
	Bay Area	San Francisco	LQ	Bay Area	San Francisco	LQ	Bay Area	San Francisco	LQ	
70-89 Services	527,800	153,600	1.24	642,300	171,400	1.23	762,500	192,900	1.25	1%
52-59 Retail	372,300	68,700	0.78	429,800	75,000	0.81	466,900	80,400	0.85	8%
20-39 Manufacturing	465,600	50,500	0.46	481,900	42,600	0.41	487,300	41,800	0.42	-8%
60-67 FIRE	179,500	85,800	2.03	198,700	84,300	1.96	207,500	77,700	1.85	-9%
15-17 Construction	100,100	13,000	0.55	118,500	14,100	0.55	132,900	15,300	0.57	3%
50-51 Wholesale Trade	135,600	37,600	1.18	155,000	35,200	1.05	173,700	32,100	0.91	-23%
90-98 Government	391,300	89,400	0.97	390,000	88,700	1.05	410,100	91,100	1.10	13%
40-49 Transportation	91,200	24,900	1.16	95,700	21,600	1.04	97,100	21,300	1.08	-7%
40-49 Communications/Utilities	65,000	27,700	1.81	72,600	26,900	1.71	65,500	18,500	1.39	-23%
00-14 Mining/Agriculture	22,400	3,000	0.57	19,800	1,500	0.35	21,600	1,000	0.23	-60%
Total	**2,351,300**	**553,600**	**1.00**	**2,597,600**	**562,000**	**1.00**	**2,824,400**	**572,100**	**1.00**	**0%**

Data source: (San Francisco Planning Department, 1991 #11)

Appendix 6 Employments by Industry in San Francisco and the Bay Area and their Location Quotients (1990-2005)

Industry Divisions by NAICS	1990			1995			2000			2005			LQ Change (1990-2005)
	Bay Area	San Francisco	LQ	Bay Area	San Francisco	LQ	Bay Area	San Francisco	LQ	Bay Area	San Francisco	LQ	
11. Agriculture, forestry, fishing and hunting	22,200	600	0.14	21,100	400	0.11	25,800	300	0.07	20,400	200	0.06	-56.7%
21. Mining	5,200	300	0.31	3,700	100	0.16	3,700	-	0.00	2,150	50	0.15	-51.9%
23. Construction	131,700	12,600	0.51	116,300	12,300	0.61	186,400	19,100	0.61	188,900	16,600	0.56	9.6%
31-33. Manufacturing	461,400	29,400	0.34	430,100	26,700	0.36	485,700	22,000	0.27	350,400	11,400	0.21	-39.0%
42. Wholesale trade	126,000	18,500	0.78	122,300	15,100	0.71	139,400	14,800	0.63	123,000	11,800	0.61	-22.0%
44-45. Retail trade	315,800	46,200	0.78	306,000	37,800	0.71	352,500	46,900	0.79	336,700	43,100	0.81	4.4%
48-49&22. transportation, warehousing and utilities	114,700	31,100	1.44	117,200	24,100	1.19	126,500	21,400	1.00	100,300	14,700	0.93	-35.5%
51. Information	84,600	17,000	1.07	92,500	18,900	1.18	156,200	36,600	1.39	112,900	17,300	0.97	-9.0%
52. Finance and insurance	148,200	54,600	1.96	132,900	47,100	2.04	142,900	53,700	2.23	151,000	45,700	1.92	-1.9%
53. Real estate and rental and leasing	58,000	12,800	1.17	57,600	12,700	1.27	62,400	13,100	1.24	61,200	11,600	1.20	2.5%
54. Professional, scientific, and technical services	189,800	52,300	1.46	216,000	52,800	1.41	334,900	75,700	1.34	295,300	62,800	1.35	-7.9%
55. Management of companies and enterprises	54,900	26,200	2.54	67,400	23,500	2.01	77,300	18,500	1.42	52,500	12,400	1.50	-40.9%
56. Administrative and support and waste management and remediation services	151,400	30,200	1.06	173,000	29,900	1.00	237,600	39,700	0.99	182,100	29,900	1.04	-1.7%
61. Education services	53,300	11,100	1.11	55,600	11,400	1.18	65,900	15,900	1.43	77,300	15,600	1.28	15.7%
62. Health care and social assistance	222,400	37,700	0.90	244,700	37,700	0.89	270,100	37,500	0.82	284,500	39,500	0.88	-2.2%
71. Arts, entertainment, and recreation	42,900	8,100	1.00	41,200	8,100	1.13	46,800	11,400	1.44	50,700	11,000	1.38	37.2%
72. Accommodation and food services	203,800	50,000	1.30	220,500	51,600	1.35	252,300	61,800	1.45	261,300	61,100	1.48	13.8%
81. Other services (except public administration)	96,500	22,100	1.22	101,300	24,000	1.37	111,300	25,500	1.36	108,800	21,300	1.24	2.0%
92. Public administration: federal, state and local government	460,000	92,800	1.07	442,100	79,400	1.04	465,000	83,800	1.07	468,200	82,600	1.12	4.4%
Total	2,942,800	553,600		2,961,500	513,600		3,542,700	597,700		3,227,650	508,650		

Data source: (California Employment Development Department, 2007)

References

Bay Area Council Economic Institute. (2008). *Sustaining the Bay Area's Competitiveness in a Globalizing World*. San Francisco: Bay Area Council Economic Institute.

Black, D., Gates, G., Sanders, S., & Taylor, L. (2002). Why Do Gay Men Live in San Francisco? *Journal of Urban Economics, 51*(1), 54-76.

California Employment Development Department. (2007). Industry Employment & Labour Force. Retrieved 1 April 2007, from www.edd.ca.gov

Cervero, R., & Wu, K. (1998). Sub-centring and Commuting: Evidence from the San Francisco Bay Area, 1980-90. *Urban Studies, 35*(7), 1059-1076.

CNN. (2007). Fortune 500 in 2006. Retrieved 20 April 2007, from http://money.cnn.com/magazines/fortune/fortune500/cities/

DeVol, R. C., Klowden, K., Bidroussian, A., & Yeo, B. (2009). *North America's High-tech Economy: The geography of knowledge-based industries /Executive Summary*. Santa Monica, CA: Milken Institute.

Durandet, K. J. (2007). *Live/Work Loft Development in San Francisco: A case study of gentrification and urban regimes.* San Francisco State University, San Francisco.

Egan, T. (2006). *An Overview of San Francisco's Recent Economic Performance: Executive summary*. San Francisco: ICF Consulting.

Egan, T. (2007). San Francisco's Economy: Where do we go from here? *SPUR Newsletter/Calendar*.

Florida, R. (2002). *The Rise of the Creative Class: And how it's transforming work, leisure, community and everyday life*. New York: Basic Books.

Godfrey, B. J. (1997). Urban Development and Redevelopment in San Francisco *The Geographical Review, 87*(3), 309-334.

Hartman, C. (2002). *City for Sale: the transformation of San Francisco* (Revised and updated ed.). Berkeley and Los Angeles: University of California Press.

Klinksiek, B. (2004). *Business Taxes in San Francisco: A review of how taxes affect business-location decisions*. San Francisco: San Francisco Planning and Urban Research Association.

Klinksiek, B., & Shih, K. (2006, August). The Tortoise and the Hare: Comparing the Chicago and San Francisco economies *SPUR Newsletter*.

McGovern, S. J. (1998). *The Politics of Downtown Development: Dynamic political cultures in San Francisco and Washington, D. C.* Lexington, KY: The University Press of Kentucky.

Metcalf, G. (2007). *Reinventing Government in San Francisco: 11 ideas that could work here*. San Francisco: San Francisco Planning and Urban Research Association.

Pamuk, A. (2004). Geography of Immigrant Clusters in Global Cities: A case study of San Francisco, 2000. *International Journal of Urban and Regional Research, 28*(2), 287-307.

San Francisco City Government. (2006). Small Business in San Francisco. Retrieved 15 April 2006, from http://www.sfgov.org/site/osb_index.asp

San Francisco Convention & Visitors Bureau. (2007). *San Francisco Convention & Visitors Bureau 2007/08 Business Plan*. San Francisco: San Francisco Convention & Visitors Bureau.

San Francisco Convention & Visitors Bureau. (2008). *Breakdown of San Francisco Annual Visitor Volume & Spending, 2007*. San Francisco: San Francisco Convention & Visitors Bureau.

San Francisco Planning Department. (1992). *San Francisco Commerce & Inventory* San Francisco: San Francisco Planning Department.

San Francisco Planning Department. (1993). *San Francisco Commerce & Inventory* San Francisco: San Francisco Planning Department.

San Francisco Planning Department. (1994a). *Downtown Plan Monitoring Report*. San Francisco: San Francisco Planning Department.

San Francisco Planning Department. (1994b). *San Francisco Commerce & Inventory* San Francisco: San Francisco Planning Department.

San Francisco Planning Department. (2000). *San Francisco Commerce & Inventory* San Francisco: San Francisco Planning Department.

San Francisco Planning Department. (2004). *Downtown Plan Monitoring Report*. San Francisco: San Francisco Planning Department.

San Francisco Planning Department. (2005). *San Francisco Commerce & Inventory* San Francisco: San Francisco Planning Department.
San Francisco Planning Department. (2006). *San Francisco Commerce & Inventory* San Francisco: San Francisco Planning Department.
San Francisco Planning Department. (2007). *Profiles for Community Planning Areas: San Francisco's eastern neighborhoods*. San Francisco: San Francisco Planning Department.
San Francisco Planning Department. (2009). C-3 District Summary. 15 March 2009, from http://www.sfgov.org/site/planning_index.asp?id=24903
Schwarzer, M. (2001). *San Francisco by Numbers: Planning after the 2000 census*. San Francisco: SPUR.
Short, J. R., & Kim, Y. (1999). *Globalisation and the City*. Essex, England: Addison Wesley Longman.
Sims, K. (2000). *San Francisco Economy: Implications for public policy*. San Francisco: San Francisco Planning and Urban Research Association.
Swivel Preview. (2008). Top 10 Tourist Cities US & Canada. Retrieved 13 June 2008, from http://www.swivel.com/data_sets/spreadsheet/1002165
Terplan, E., & Bell, L. (2007). Framing the Future of Downtown San Francisco. *SPUR Newsletter*.
US Census Bureau. (2006). NAICS. Retrieved 1 March 2006, from http://www.census.gov/epcd/naics02/
US Census Bureau. (2008). State & County QuickFacts. Retrieved 20 May 2008, from http://quickfacts.census.gov/qfd/states/06/06075.html
Walker, R. (1996). Another Round of Globalization in San Francisco. *Urban Geography, 17*(1), 60-94.
Walker, R. (2004). Industry Builds out the City: The suburbanization of manufacturing in the San Francisco Bay Area, 1985-1940. In R. Lewis (Ed.), *The Manufactured Metropolis*. Philadelphia: Temple University Press.

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