The Spatial Distribution of Financial Industry and Its Relations with Urban Spatial Structure in Stockholm, Sweden

Abstract

Financial industry plays an important role in the process of urban economic development, and its spatial distribution is influenced by the urban spatial structure of a metropolitan area. This essay purposes to take Stockholm as an example, analyzing and interpreting the location selection, agglomeration and dispersion in the spatial distribution of commercial banks in financial industry, and their relations with the urban spatial structure of Metropolitan Stockholm. This essay employs GIS mapping, weighted mean center and standard deviational ellipse analysis as main research methods, finding out that both domestic banks and foreign banks concentrate and agglomerate in Stockholm City Centre, but some branches of domestic banks are dispersed in the whole Metropolitan Stockholm; such features of agglomeration and dispersion are interpreted in detail. Moreover, findings in this essay show that the spatial distribution of the whole financial industry is similar to the urban spatial structure of Metropolitan Stockholm, while the distributions of certain banks have some differences. The significance and contribution of this essay are the demonstration and interpretation of accurate geographic distribution of financial industry, and its relations with certain factors of the urban spatial structure of Metropolitan Stockholm.

Keywords

Spatial distribution; Financial industry; Urban spatial structure; Metropolitan Stockholm; GIS
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Concepts</td>
<td>1</td>
</tr>
<tr>
<td>Methods</td>
<td>2</td>
</tr>
<tr>
<td>Results</td>
<td>4</td>
</tr>
<tr>
<td>Discussion</td>
<td>13</td>
</tr>
<tr>
<td>Conclusion</td>
<td>16</td>
</tr>
<tr>
<td>References</td>
<td>17</td>
</tr>
</tbody>
</table>
Introduction

Since the end of World War I, geographers and economists have shown great interest in studying the spatial distribution of financial industry in cities, which will contribute to the understanding of financial industry in the process of urban economic development. Powell (1915) analyzed the process of the agglomeration of banks in London over a time. Gras (1922) discussed in depth the specialization of financial institutions as a function of metropolis. Kindleberger (1974) studied the reasons and process of the formulation of financial center from a perspective of comparative economic history. Reed (1981) used mass data to rank main international financial centers in the 1970s. Many other researchers have done relative studies in the years that followed.

However, regarding the spatial distribution of financial institutions, especially the accurate geographic locations within a metropolitan area and their specific relation with the urban spatial structure, there are fewer researches and the methods are very limited: some studies discuss the spatial distribution using macro empirical data (Coffey, et al. 1996; Gonzalez and Sales, 2001; Clark, 2002) or theoretical analysis (Pan, 2003), lacking more accurate and micro empirical researches. In order to fill the research blank, this essay intends to answer the two questions: what’s the accurate spatial distribution of financial industry, especially commercial banks in Stockholm, and what’s its relation with the urban spatial structure? These two questions will be analyzed and discussed in detail.

After the introduction, the essay explains the key concepts and reviews the methods. Then, it uses GIS mapping to show accurate geographic locations of financial institutions, drawing their weighted mean centers, and standard deviational ellipses. This essay also applies to weighted mean centers, standard deviational ellipses to show the different factors of the urban spatial structure. Finally, this essay analyzes the relation between the spatial distribution of financial industry and the urban spatial structure, making detailed discussion.

Concepts

This essay has three key concepts: “financial industry”, “urban spatial structure”, and “Stockholm”. Firstly, “financial industry” is defined as the typical financial institutions, especially commercial banks, which play the most important role in the whole financial industry. In Stockholm, commercial banks are generally categorized into two types: foreign banks, and domestic banks. This essay analyzes all the foreign banks in Stockholm, and four biggest domestic banks in Stockholm: Swedbank, SEB (Skandinaviska Enskilda Banken), Nordea Bank, Svenska Handelsbanken, since it’s impossible to analyze all the domestic banks because the total number is too large. All the foreign banks and four biggest domestic banks as a whole can represent the main part of financial industry in Stockholm.

Secondly, “urban spatial structure” is generally defined as the spatial pattern of social structure and economic structure of a city, and this essay uses different population factors to represent social structure, and different economic scale factors to represent economic
structure. The population can be divided according to different attributes, i.e. different birthplaces, nationalities, and levels of education. As a result, this essay includes total population, highly educated population (who are more likely to use bank services than less educated people), total immigration and foreign nationals (who are more likely to go to foreign banks than domestic banks) as factors of population, in consideration of data accessibility. Economic scale factors include total employment and average total income, measuring employment scale and income level, which can represent economic scale of a region. Finally, “Stockholm” refers to the Metropolitan Stockholm (Greater Stockholm) as showed below:

![Map 1 the Metropolitan Stockholm (Tim, 2006)](image)

**Methods**

1. **Main methods:**
This essay uses GIS mapping to demonstrate and analyze the spatial distribution of financial industry. It is to use Google Earth software to get the latitudes and longitudes of typical institutions in financial industry, and then input the latitudes and longitudes into ArcGIS software so as to draw GIS maps demonstrating the accurate geographic locations of those institutions, shown as dots.

What’s more, this essay also applies to weighted mean center and standard deviational ellipse analysis to make standardized demonstrations and comparisons between the spatial distribution of financial industry and urban spatial structure. Firstly, weighted mean center analysis (Esri, 2012) is defined as below: in the maps of banks, the weighted mean center is the mean center of the bank branches with a weight of 1, because all the branches are equal. However, in the maps of urban spatial structure (i.e. the distribution of total population), this essay will calculate geometric centers of each municipalities, putting the factors of urban spatial structure (i.e. total population) as weight, then calculate the weighted mean center of...
those geometric centers.

Secondly, standard deviational ellipse analysis (Esri, 2012) is to draw the standard deviational ellipses from bank branches with a weight of 1, or from geometric centers of each municipalities with weights of certain factors of urban spatial structure (i.e. total population), showing some spatial characteristics of their geographic distribution: central tendency, dispersion, and directional trends, etc. The standard deviational ellipse in this essay uses Euclidean Distance and 2-standard deviations (containing approximately 95 percent of the features).

2. Data sources:
Regarding banks, there are thirty foreign banks concerned in this essay, and the list for them comes from the Swedish Financial Supervisory Authority (2012). The latitudes and longitudes of the thirty foreign banks and four biggest domestic banks analyzed in this essay are obtained from Google Earth software.

For urban spatial structure, this essay uses six factors (total population, highly educated population, total immigration, foreign nationals, total employment, and average total income) to demonstrate the urban spatial structure of Stockholm. The raw data of these factors are obtained from Statistics Sweden (2012). The original names of those data are in Swedish. As mentioned in the part of Concepts, data accessibility has restricted the choices of those factors, which are relevant to each other, affecting the validity inevitably.
Results

1. The spatial distribution of financial industry:
1.1 Domestic banks in Stockholm:
This essay uses Google Earth and ArcGIS to show the accurate geographic distributions of different banks and draw their weighted mean centers and standard deviational ellipses, in order to demonstrate the spatial distribution of commercial banks. The GIS map results are showed as below:

Map 2 the geographic distribution (left-hand), weighted mean center and standard deviational ellipse (right-hand) of Nordea Bank

In the maps of Nordea Bank above (Map 2), some of the branches are clustered in Stockholm Municipality, especially Stockholm City Centre. Other branches disperse in the whole area, and near to centers of many municipalities. The weighted mean center of Nordea Bank is located inside the Stockholm City Centre, and its standard deviational ellipse has a major axis oriented from southwest to northeast, which can be regarded as the main direction of its geographic distribution.
The maps of SEB above (Map 3) are quite similar to those of Nordea Bank. The only difference is that the standard deviational ellipse of SEB has a shorter minor axis than that of Nordea Bank, indicating the spatial distribution of SEB is more concentrated in the direction from southwest to northeast.

According to maps above (Map 4), the spatial distribution of Swedbank is also similar to that of Nordea Bank; except that Swedbank has a standard deviational ellipse with a longer minor axis than that of Nordea Bank, so the shape appears like an approximate circle, indicating the spatial distribution of Swedbank is more homogenous in all directions.

Map 5 the geographic distribution (left-hand), weighted mean center and standard deviational ellipse (right-hand) of Svenska Handelsbanken
In the maps above (Map 5), the spatial distribution of Svenska Handelsbanken is similar to that of Nordea Bank except for the size and major axis’s direction of standard deviational ellipse. These differences indicate the distribution of Svenska Handelsbanken is more concentrated and has a main direction from southeast to northwest.

1.2 Foreign banks in Stockholm:
Regarding the geographic location of foreign banks in Stockholm, the GIS map results are showed as below:

![Maps](image)

*Map 6 the geographic distribution (left-hand), weighted mean center and standard deviational ellipse (right-hand) of foreign banks*

It is obvious in the maps above (Map 6) that the spatial distribution of foreign banks differs sharply with those of domestic banks; except that their weighted mean center is still located in Stockholm City Centre. The standard deviational ellipse of foreign banks has a small size, an elongated shape with the major axis oriented in the direction from southeast to northwest, indicating foreign banks are distributed in the same direction and are highly concentrated in Stockholm Municipality, especially in Norrmalm area.

2. **The urban spatial structure**;

The main factors of urban spatial structure are population and economic scale, and these two factors can also be divided into minor factors as mentioned in the part of *Concepts*. The GIS map results of population factors (total population, highly educated population, total immigration, foreign nationals) are showed as below:
As showed in the maps above (Map 7), the spatial distribution of total population is mainly concentrated in Stockholm Municipality and some other municipalities in southern part of Metropolitan Stockholm. Its weighted mean center is situated in Stockholm Municipality and its standard deviational ellipse has a big size and a major axis oriented from southwest to northeast, which can be defined as the main distribution orientation of total population.

According to the maps above (Map 8), the spatial distribution of highly educated population is similar to that of total population, but it is less distributed in southern part of Metropolitan Stockholm and its standard deviational ellipse has a minor size, indicating the distribution of highly educated population is more concentrated.
In the maps above (Map 9), the spatial distribution of total immigration is similar to that of total population. The only difference is the bigger size of standard deviational ellipse showing that total immigration is distributed more dispersedly.

According to the maps above (Map 10), the spatial distribution of foreign nationals is quite similar to that of total immigration, in aspects of mean center, main distribution orientation, and extent of concentration, the descriptions of which will not be repeated again.
The other main factor of urban spatial structure is economic scale. As mentioned in the part of Concepts, economic scale factors include total employment and average total income, and the GIS map results for them are showed as below:

Map 11 the geographic distribution (left-hand), weighted mean center and standard deviational ellipse (right-hand) of total employment

As showed in the maps above (Map 11), the spatial distribution of total employment is mainly concentrated in Stockholm Municipality and some southern municipalities in Metropolitan Stockholm. Its weighted mean center is located between Stockholm Municipality and Solna Municipality, and its standard deviational ellipse has a big size and a major axis oriented from southwest to northeast, showing the main distribution orientation of total population. These features are similar to those of population factors mentioned above.

Map 12 the geographic distribution (left-hand), weighted mean center and standard deviational ellipse (right-hand) of average total income
As showed above (Map 12), the spatial distribution of average total income has many features in common with that of total employment, but differs in the aspects of the location of weighted mean center and the size of standard deviational ellipse, which mean the distribution of average total income is more dispersed with a mean center inside Solna Municipality.

When putting all the factors of population and economic scale into one GIS map, we can compare these factors and draw an overview of the urban spatial structure in Stockholm. The weighted mean centers of different factors are clustered in the central area of Stockholm Municipality and Solna Municipality, which can be regarded as the center of Metropolitan Stockholm. The GIS map result is showed as below:

![Map 13 weighted mean centers and standard deviational ellipses of different factors](image)

Comparing those factors, not only weighted mean centers are closely located, but also standard deviational ellipses are similar to each other, regarding directions and shapes. These similarities indicate there is relevance among geographic distribution patterns of those different factors. However, the sizes of those standard deviational ellipses are quite various, which mean the distributions of these factors can be ranked according to their degree of concentration. In a sequence from most concentrated factor to most dispersed one, the rank is: highly educated population, foreign nationals, total employment, total population, average total income, and total immigration.

3. **The relationship between the spatial distribution of financial institutions and urban spatial structure**:  
This section will compare the relationship between the spatial distribution of financial institutions and urban spatial structure by combing the spatial maps of the banks and the different factors. The criteria and standards are as follows: the similarity (if any) of the location of weighted mean center tells the similarity of spatial distribution center; the orientation of major axis of standard deviational ellipse tells the main distribution orientation;
the shape and size of standard deviational ellipse tell the orientation and degree of concentration.

3.1 Domestic banks in Stockholm:
In order to find the relation between the spatial distribution of financial institutions and urban spatial structure, we can compare a certain bank with all the factors of urban spatial structure, in the form of weighted mean centers and standard deviational ellipses. The GIS map results are showed as below:

Map 14 the relationship between Nordea Bank and different factors (total population, highly educated population, total immigration, foreign nationals, total employment, and average total income)

As showed in the map above (Map 14), the weighted mean centers and standard deviational ellipses of Nordea Bank and different factors are very similar to each other (especially Nordea Bank and foreign nationals), and this similarity ranks higher than all other banks analyzed later in this part, indicating the spatial distribution of Nordea Bank is more deeply influenced by urban spatial structure than any other bank concerned in this essay.
Map 15 the relationship between SEB and different factors (total population, highly educated population, total immigration, foreign nationals, total employment, and average total income)

In the map of SEB above (Map 15), it shows all weighted mean centers concentrate in the central place of the Metropolitan Stockholm, and the standard deviational ellipses of SEB and different factors are similar in size, but differ in direction and shape. The comparison indicates the direction of the spatial distribution of SEB differs slightly from urban spatial structure, but they both disperse to a similar extent (especially SEB and total employment) and their centers are located closely to each other.

Map 16 the relationship between Swedbank and different factors (total population, highly educated population, total immigration, foreign nationals, total employment, and average total income)

Regarding Swedbank above (Map 16), its weighted mean center is also close to those of different factors, but its standard deviational ellipse appears like an approximate circle, which means Swedbank expands its branches homogeneously in Stockholm, indicating its spatial distribution is similar to urban spatial structure in the aspects of mean center and degree of concentration (especially Swedbank and highly educated population), but differs in direction and shape.
Map 17 the relationship between Svenska Handelsbanken and different factors (total population, highly educated population, total immigration, foreign nationals, total employment, and average total income)

In the map of Svenska Handelsbanken showed above (Map 17), we can also find the weighted mean center of this bank is located quite closely to those of different factors. The direction of its standard deviational ellipse is still different from those of different factors, but the shapes and sizes are similar. In a word, the direction of the spatial distribution of Svenska Handelsbanken differs from those of different factors, but they all disperse to a comparable extent (especially Svenska Handelsbanken and highly educated population) and their centers almost overlap.

3.2 Foreign banks in Stockholm:

Map 18 the relationship between foreign banks and different factors (total population, highly educated population, total immigration, foreign nationals, total employment, and average total income)

According to the map above (Map 18), the weighted mean center of foreign banks is located more to the east, compared with those of different factors, but they all cluster closely. In sharp contrast, the standard deviational ellipse of foreign banks is extremely different from those of different factors, in aspects of direction, shape, and size. This finding indicates the spatial distribution of foreign banks is almost not influenced by the urban spatial structure, especially the factors analyzed in this essay, except that their centers are near to each other.

Discussion

1. Answer to the first research question:

The first research question of this essay is: what’s the spatial distribution of financial industry, especially commercial banks in Stockholm? In order to answer this question, this essay aims to demonstrate the accurate geographic distributions of four biggest domestic banks and all
foreign banks in GIS maps, drawing their weighted mean centers and standard deviational ellipses to make standardized description and comparison.

What this essay has found is showed in the first part of Result. Regarding four biggest domestic banks, they are all clustered in the area of Metropolitan Stockholm, but there are some differences among them, like the main direction of distribution. What’s more, some of their branches are concentrated and agglomerated in Stockholm City Centre (their weighted mean centers are also located there), while other branches disperse in the whole Metropolitan Stockholm. As a result, agglomeration and dispersion are both displayed in their spatial distributions. Regarding foreign banks, they are highly agglomerated in Stockholm Municipality, especially in Norrmalm area. In a word, this essay has found that the distributions of commercial banks have two main features: agglomeration and dispersion.

The first feature of agglomeration is displayed in both domestic banks and foreign banks, and they are mainly agglomerated in Stockholm City Centre for several reasons. Firstly, with Sergels Torg, T-Centralen and Drottninggatan, Stockholm City Centre is the economic center of Metropolitan Stockholm with plenty of companies and commercial activities, providing excellent economic foundation and huge potential market for commercial banks. Secondly, in Stockholm City Centre, there are abundant financial resources like mortgage institutions, insurance companies, private equity companies, mutual fund companies, and the central bank of Sweden: Sveriges Riksbank (Swedish Bankers’ Association, 2011), offering developed financial industrial base and updated information for commercial banks.

Furthermore, there are two special reasons explaining the agglomeration of foreign banks. Stockholm City Centre (especially Östermalm area) is the main place concentrating embassies (Going Global, 2010) and has many foreign customers (Statistics Sweden, 2012), who are long-term clients of foreign banks; thus foreign banks will follow these clients into Stockholm City Centre, embodying the internalization advantage (Dunning, 1988). Besides, Stockholm City Centre has lots of multinational companies and is the platform of Metropolitan Stockholm to connect with international economy, so foreign banks here can provide global banking service to the uttermost, embodying the ownership advantage (Dunning, 1988).

The second feature of dispersion is displayed mainly in domestic banks. Generally, when analyzing the dispersion in financial industry, there are two main factors (Fan, 2004). One factor is market segmentation caused by political and economic system, and the other is regional disparity caused by operating cost, etc. However, on one hand, market segmentations are generally caused by different economic policies from different local governments, but there isn’t much difference in economic policies among different municipalities in Metropolitan Stockholm, because all the municipalities are coordinated under the leadership of Stockholm County, in order to avoid overheated competition. On the other hand, there exists regional disparity inside Metropolitan Stockholm caused by land rent, utilities expense and so on, but the cost difference caused by such regional disparity is much minor compared with the huge profit of commercial banks, according to Li et al. (2006). In short, market segmentation and regional disparity contribute little to the dispersion of the commercial banks in Stockholm.

After further analysis, this essay has found that the dispersion factors discussed below are of more significant importance: firstly, such dispersion phenomenon mostly appears within the same bank. A certain bank will locate its sub-branches dispersedly in order to avoid internal competition.
Secondly, the institutions of commercial banks in Stockholm region are generally divided into two main levels: regional head office, and branches. This essay focuses on branches level, which is so low a level that it won’t deal with big financial activities like mergers and acquisitions, assets settlement, etc. Enterprises with these big financial activities require bank clerks to offer door-to-door service instead of branches agglomerated near the enterprises. As a result, the agglomeration factor of face-to-face communication will be displayed in door-to-door service instead of the agglomeration of branches, which is different from previous studies by Coffey and Shearmur (2002), Davis and Henderson (2004), etc.

Thirdly, retail depositors and enterprises are of equal importance to commercial banks, so outlets of banks should not only lie in economically developed centers with lots of enterprises, but also disperse into residential areas in order to serve retail depositors. However, this factor is not as significant as other factors because retail depositors in Sweden sometimes prefer Internet banking to over-the-counter transaction, due to the development of E-banking (Yakhlef, 2001).

Fourthly, bank branches need to be dispersed into sub-centers (they are also local economic centers) of Metropolitan Stockholm. It is because that Stockholm regional government has restrained the expansion of central city area and built many satellite towns like Rinkeby, Tensta, and so on, so the spatial structure of Metropolitan Stockholm is multi-core, and almost each of the cores or sub-centers has attracted at least one bank branch located inside them. This finding is similar to the previous research (Coffey, 2002).

Finally, this essay has found that demonstration effect is another important factor when banks make a decision on locations for their branches. Bank branches themselves are good physical advertisements to local residents, showing this bank is strong enough to set so many branches. As a result, the more dispersion of branches, the better demonstration effect. This interpretation hasn’t been done in any previous researches.

2. Answer to the second research question:
The second research question of this essay is: what’s the relation between the spatial distribution of financial industry and urban spatial structure in Stockholm? In order to answer this question, this essay purposes to demonstrate the urban spatial structure by analyzing accessible population factors (total population, highly educated population, total immigration, foreign nationals) and accessible economic scale factors (total employment, average total income), and to compare their weighted mean centers and standard deviational ellipses with those of commercial banks, seeking the relation between them.

What this essay has found is showed in the second and the third parts of Result. Above all, those factors of urban spatial structure are demonstrated in GIS maps, in the form of weighted mean centers and standard deviational ellipses. This essay has found that all the weighted mean centers of those factors are clustered in the central area of Stockholm Municipality and Solna Municipality, and the standard deviational ellipses for them are similar to each other, in the aspects of shape and major axis oriented from southwest to northeast, indicating there is relevance among geographic distribution patterns of those factors. The only difference is that the sizes of those standard deviational ellipses are quite various, which means those factors are distributed in different degree of concentration.
Then, this essay compares the spatial distributions of commercial banks and those different factors of urban spatial structure, seeking their relations. It is showed that all the commercial banks have their weighted mean centers located closely to those of different factors, indicating that the financial industry and urban spatial structure share similar distribution centers, which is a significant relation found between them in this essay.

Nevertheless, the specific situations of each bank are quite various. Firstly, the similarity in spatial distributions between Nordea Bank and different factors of urban spatial structure ranks the highest among all the banks concerned in this essay, showing that the spatial distribution of Nordea Bank is deeply influenced by urban spatial structure of Metropolitan Stockholm. Previous research (Xu et al. 2009) has also proved that the similar relation between financial industry and urban spatial structure.

Secondly, in contrast of Nordea Bank, the spatial distributions of SEB and Svenska Handelsbanken differ from urban spatial structure in aspect of orientation, indicating that certain part of financial industry in Stockholm is not distributed in strict consistency of urban spatial structure. The reason might be that the distribution of financial industry is influenced by other factors besides urban spatial structure, like banking strategies, economic policies, etc.

Thirdly, Swedbank is distributed homogeneously in Metropolitan Stockholm, which is different from other banks having main distribution orientations. This difference might be interpreted by Swedbank’s expansion strategy, but further researches on this bank need to be conducted.

Finally, the spatial distribution of foreign banks is extremely different from urban spatial structure. However, it doesn’t mean urban spatial structure is not an significant influential factor, because the number of foreign banks is quite small compared with those of domestic banks, thus foreign banks as a whole don’t have the ability to expand their branches into the whole metropolitan area. The limit in number of branches makes foreign banks highly concentrated in the center of Metropolitan Stockholm, so their distribution pattern differs from the urban spatial structure of the whole Metropolitan Stockholm.

In short, the spatial distribution of whole financial industry (considering four biggest domestic banks and foreign banks as a whole) is similar to the urban spatial structure, but distributions of certain banks have showed more differences.

Conclusion

This essay has analyzed and interpreted the spatial distribution of financial industry, and its relation with urban spatial structure of Metropolitan Stockholm. The financial industry is represented by four biggest domestic banks and foreign banks, and the urban spatial structure is demonstrated by population factors (total population, highly educated population, total immigration, foreign nationals) and economic scale factors (total employment, average total income), due to data accessibility.

Firstly, this essay has found that the spatial distribution of financial industry has two major features: agglomeration and dispersion. The feature of agglomeration is displayed in both
domestic banks and foreign banks, which are agglomerated in Stockholm City Centre, because it is the economic and financial center of Metropolitan Stockholm. Besides, the two special reasons for the agglomeration of foreign banks are: utilizing internalization advantage and ownership advantage.

The feature of dispersion is displayed mainly in domestic banks. The widely discussed dispersion factors, market segmentation and regional disparity, are of less importance to explain this phenomenon in Stockholm, and more significant dispersion factors found in this essay include: avoiding internal competition within the same bank, locating into sub-centers of metropolitan area, obtaining better demonstration effect, and approaching residential areas to serve retail depositors. What’s more, regarding big financial activities, face-to-face communication requires door-to-door service instead of the agglomeration of bank branches.

Secondly, this essay has found that the spatial distribution of whole financial industry (considering domestic banks and foreign banks as a whole) is similar to the urban spatial structure of Metropolitan Stockholm, for example, they share similar distribution centers. However, distributions of certain banks have showed more differences and are quite various. The similarity between urban spatial structure and the distribution of Nordea Bank ranks the highest among all banks, but those of SEB and Svenska Handelsbanken differ from urban spatial structure in the aspect of main distribution orientation. Swedbank is distributed homogeneously in Metropolitan Stockholm, while the distribution of foreign banks is extremely different from urban spatial structure and highly concentrated in Stockholm City Centre.

Finally, the limit of data accessibility and the correlation of different factors concerned in this essay will inevitably affect the validity of this research. Therefore, deeper researches should be done in the future, in order to get a better understanding of the relation between spatial distribution of financial industry and the urban spatial structure.

References


